



2013

Integrated Resource Plan

Volume II - Appendices

Let's turn the answers on.

PacifiCorp

Rocky Mountain Power
Pacific Power
PacifiCorp Energy

April 30, 2013

This 2013 Integrated Resource Plan Report is based upon the best available information at the time of preparation. The IRP action plan will be implemented as described herein, but is subject to change as new information becomes available or as circumstances change. It is PacifiCorp's intention to revisit and refresh the IRP action plan no less frequently than annually. Any refreshed IRP action plan will be submitted to the State Commissions for their information.

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Hydroelectric: *Lemolo 1 on North Umpqua River*
Wind Turbine: *Leaning Juniper I Wind Project*
Thermal-Gas: *Chehalis Power Plant*
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APPENDIX A – LOAD FORECAST DETAILS

Introduction

This appendix reviews the load forecast used in the modeling and analysis of the 2013 Integrated Resource Plan (“IRP”), including scenario development for case sensitivities. The load forecast used in the IRP is an estimate of the energy sales, and peak demand over a 20-year period. The 20-year horizon is important to anticipate electricity demand in order to develop timely response of resources.

In the development of its load forecast PacifiCorp employs econometric models that use historical data and inputs such as regional and national economic growth, weather, seasonality, and other customer usage and behavior changes. The forecast is divided into classes that use energy for similar purposes and at comparable retail rates. The different classes are modeled separately using variables specific to their usage patterns. For residential customers, typical energy uses include space heating, water heating, lighting, cooking, refrigeration, dish washing, laundry washing, televisions and various other end use appliances. Commercial and industrial customers use energy for production and manufacturing processes, space heating, air conditioning, lighting, computers and other office equipment.

Jurisdictional peak load forecasts are developed using econometric equations that relate observed monthly peak loads, peak producing weather and the weather-sensitive loads for all classes. The system coincident peak forecast, which is used in portfolio development, is the maximum load required on the system in any hourly period and is extracted from the hourly forecast model.

Summary Load Forecast

The Company updated its load forecast in July 2012. Relative to the load forecast prepared for the 2011 IRP update, PacifiCorp system sales decreased approximately 0.8 percent in average annual growth through 2022. The lower load forecast is driven by reduced industrial sector loads in Utah and Wyoming that reflect load request cancellations and postponements prompted by prolonged recessionary impacts and permitting issues. The most current load forecast also incorporates projections of increased industrial self-generation driven largely by lower wholesale gas prices. Finally, the Company’s new industrial load forecast uses regression analysis in place of probability assessment of customer-provided forecasts.

Tables A.1 and A.2 show the annual load and coincident peak load forecast excluding load reduction projections from new energy efficiency measures (Class 2 DSM).[1] Tables A.3 and A.4 show the forecast changes relative to the 2011 IRP update load forecast for loads and coincident system peak, respectively.

[1] Class 2 DSM load reductions are included as resources in the System Optimizer model.

Table A.1 – Forecasted Annual Load Growth, 2013 through 2022 (Megawatt-hours)

Year	Total	OR	WA	CA	UT	WY	ID	SE-ID
2013	61,556,386	14,877,800	4,453,504	903,816	25,153,750	10,190,043	3,740,820	2,236,653
2014	62,698,447	15,150,179	4,479,048	905,134	25,718,951	10,408,489	3,779,427	2,257,219
2015	63,527,998	15,371,114	4,510,405	908,752	26,010,382	10,626,524	3,819,927	2,280,894
2016	63,431,505	15,638,182	4,561,495	916,004	26,478,252	10,856,135	3,868,348	1,113,089
2017	63,246,311	15,821,900	4,587,861	918,237	27,010,019	11,012,432	3,895,861	
2018	64,219,328	16,003,367	4,630,207	923,755	27,542,259	11,188,259	3,931,482	
2019	65,183,187	16,181,469	4,672,594	928,941	28,073,752	11,360,999	3,965,432	
2020	66,226,672	16,377,833	4,722,544	935,083	28,622,538	11,563,805	4,004,870	
2021	66,917,769	16,491,188	4,746,086	935,580	29,021,169	11,698,580	4,025,165	
2022	67,814,244	16,652,789	4,784,841	938,914	29,514,597	11,866,488	4,056,614	
Average Annual Growth Rate for 2013-2022								
2013-2022	**1.08%**	**1.26%**	**0.80%**	**0.42%**	**1.79%**	**1.71%**	**0.90%**	

Table A.2 – Forecasted Annual Coincident Peak Load (Megawatts)

Year	Total	OR	WA	CA	UT	WY	ID	SE-ID
2013	10,135	2,329	743	143	4,632	1,277	685	327
2014	10,331	2,377	752	140	4,745	1,302	684	331
2015	10,494	2,408	758	141	4,826	1,326	701	334
2016	10,359	2,457	765	143	4,930	1,349	714	
2017	10,513	2,492	772	144	5,014	1,371	721	
2018	10,687	2,522	803	145	5,100	1,390	727	
2019	10,815	2,547	786	146	5,194	1,410	732	
2020	10,972	2,576	795	144	5,290	1,429	737	
2021	11,133	2,604	801	145	5,387	1,448	748	
2022	11,280	2,631	807	146	5,475	1,467	754	
Average Annual Growth Rate for 2013-2022								
2013-2022	**1.20%**	**1.36%**	**0.92%**	**0.23%**	**1.88%**	**1.56%**	**1.07%**	

Table A.3 – Annual Load Growth Change: November 2011 Forecast less July 2012 Forecast (Megawatt-hours)

Year	Total	OR	WA	CA	UT	WY	ID	SE-ID
2013	(1,734,236)	(462)	(71,339)	(41,408)	(1,456,454)	(76,649)	(53,890)	(34,034)
2014	(2,500,990)	(65,008)	(83,667)	(44,776)	(1,828,067)	(261,914)	(173,476)	(44,082)
2015	(3,234,992)	(54,370)	(86,451)	(45,926)	(2,173,032)	(572,064)	(249,858)	(53,291)
2016	(3,933,522)	(12,540)	(93,075)	(47,494)	(2,616,993)	(803,790)	(327,267)	(32,363)
2017	(5,299,846)	(100,262)	(96,937)	(65,836)	(3,032,564)	(1,615,158)	(389,090)	
2018	(5,513,237)	(96,772)	(99,309)	(65,757)	(3,148,301)	(1,690,539)	(412,558)	
2019	(5,740,510)	(93,880)	(100,878)	(66,020)	(3,248,967)	(1,807,650)	(423,115)	
2020	(6,015,091)	(99,673)	(102,183)	(67,092)	(3,423,365)	(1,888,205)	(434,572)	
2021	(6,284,160)	(94,696)	(103,330)	(68,142)	(3,583,213)	(1,991,980)	(442,800)	
2022	(6,682,754)	(218,649)	(151,116)	(71,341)	(3,739,231)	(2,051,017)	(451,401)	

Table A.4 – Annual Coincident Peak Growth Change: November 2011 Forecast less July 2012 Forecast (Megawatts)

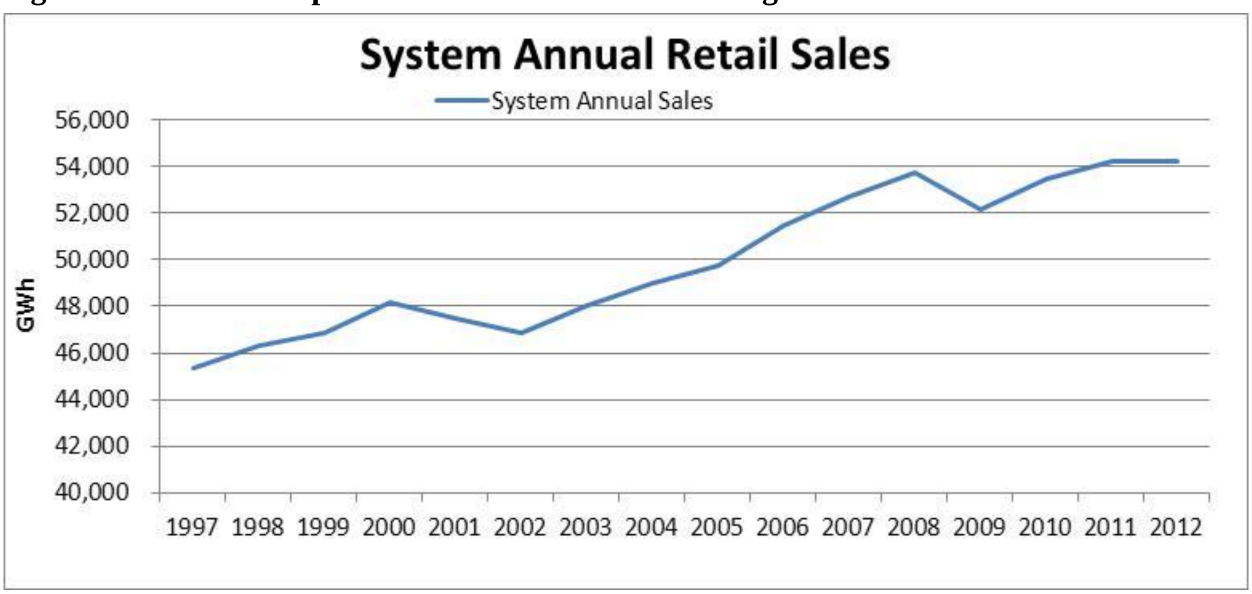
Year	Total	OR	WA	CA	UT	WY	ID	SE-ID
2013	(283)	(19)	(17)	(16)	(169)	(28)	(15)	(18)
2014	(403)	(29)	(18)	(16)	(240)	(46)	(34)	(20)
2015	(491)	(25)	(24)	(18)	(295)	(63)	(49)	(17)
2016	(521)	(5)	(24)	(19)	(321)	(90)	(63)	
2017	(687)	(17)	(24)	(24)	(375)	(173)	(73)	
2018	(707)	(14)	(4)	(24)	(408)	(180)	(77)	
2019	(763)	(16)	(25)	(24)	(429)	(190)	(79)	
2020	(804)	(18)	(25)	(24)	(463)	(196)	(79)	
2021	(843)	(15)	(26)	(25)	(485)	(209)	(83)	
2022	(887)	(38)	(25)	(20)	(497)	(222)	(84)	

Load Forecast Assumptions

Regional Economy by Jurisdiction

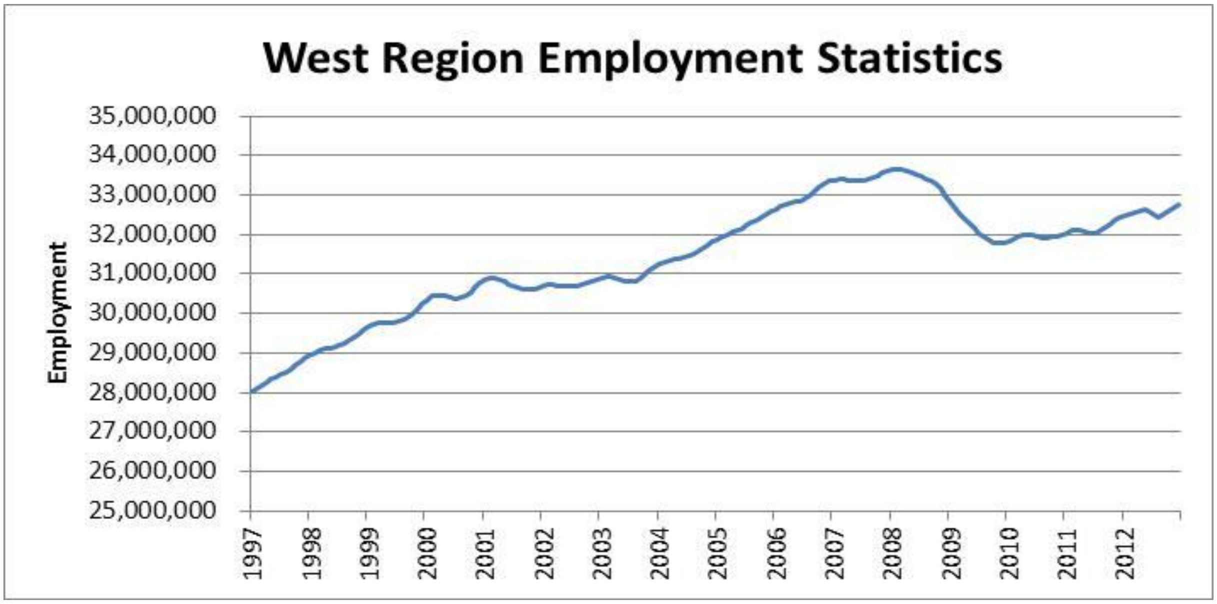
The PacifiCorp electric service territory is comprised of six states and within those states the Company serves a total of 90 counties. The level of retail sales for each state and county is correlated with economic conditions and population statistics for each area. The Company uses both economic data, such as employment, and population information, such as household data, to forecast its retail sales. Looking at historical sales data for PacifiCorp, 1997 through 2012, in Figure A.1 and Western Regional historical employment data in Figure A.2, it is apparent that the Company's retail sales are correlated to economic conditions in its service territory, and most recently the 2008-2009 recession.[2]

Figure A.1 – PacifiCorp Annual Retail Sales 1997 through 2012



[2] The historical sales data provide in Figure A.1 is annual weather normalized retail sales for the PacifiCorp system.

Figure A.2 – West Region Employment Statistics 1997 through 2012



Source: United States Department of Labor, Bureau of Labor Statistics

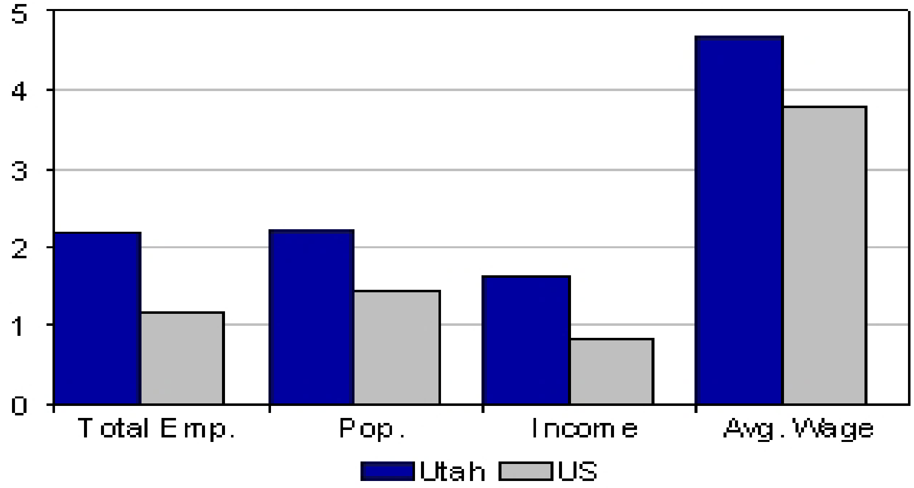
Given the correlation between employment and electricity usage, it is important to understand the changes in the employment and household formation forecasts that contributed to the decrease in the 2013 IRP load forecast. The majority of economic and household formation forecasts provided by IHS Global Insight in its February 2012 forecast were lower than the February 2011 forecast. The primary reason for the decrease across all states is underperformance relative to the prior forecast, and the economy not recovering in a manner that was as anticipated, or at a more protracted rate of growth. The effect of the decrease in the forecasts provided by IHS Global Insight is that it lowers the expected retail sales forecast. Following is a discussion by state of IHS Global Insights expectations and change in their forecast relative to the 2011 IRP Update.

Utah

The Utah economy continues to benefit from a relatively young, well educated, and well-qualified workforce to attract employers, and ranks highly in quality-of-life measures, which contributes to population growth. Utah is expected to remain among the leading states in terms of job growth over the next five years, with payrolls increasing an average of 2.2 percent annually. Figure A.3 below shows the growth in Utah relative to the United States average.[3]

[3] Source: IHS Globe Insight, April 2012

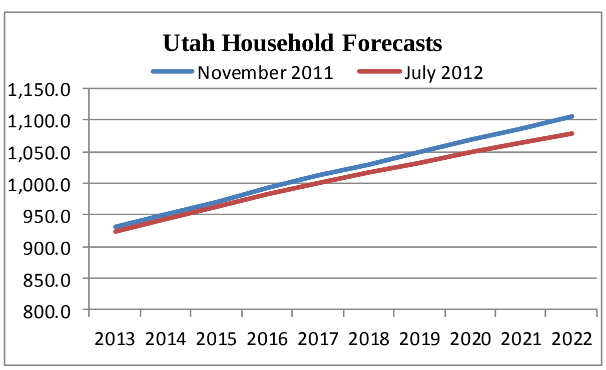
Figure A.3 – Growth Relative to the US Average (Average annual percent change, 2011 to 2013)

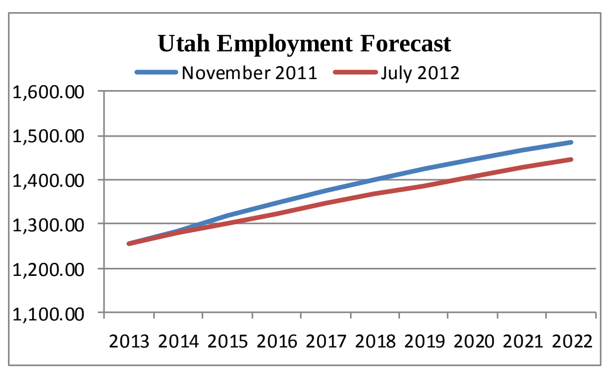


PacifiCorp serves 26 of the 29 counties in the state of Utah. The Company expects retail sales to continue to grow in the state, with increases in the construction sector from a housing recovery and continued strong growth in the extraction industries. A risk to the load forecast is commodity prices, such as oil and natural gas, where volatility in prices and profitability can lead to swings in production and employment which translates to potential swings in the retail sales forecast.

To gain an understanding of one of the drivers of the changes in the Company retail sales forecast for Utah, Figure A.4, below, shows the change in household and employment forecasts for the 2011 IRP Update relative to the 2013 IRP load forecast. IHS Global Insight lowered its forecast of household formation and employment for Utah relative to the November 2011 load forecast citing slowed job gains at the end of 2011 and beginning of 2012.

Figure A.4 – IHS Global Insight Utah Household and Employment forecasts from the November 2011 load forecast and the July 2012 load forecast



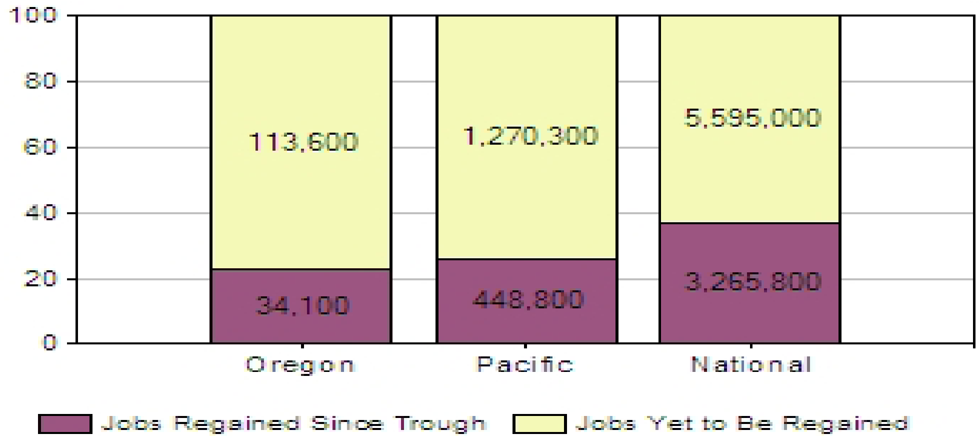


Oregon

The Oregon economy has faced a slow recovery from the 2008-2009 recession. Most of the employment gains in 2010 were tepid and not enough to pull Oregon out of the deep hole the recession had dug. The construction sector has been performing well relative to the country, due to commercial construction projects, however, it is still dependent on the rebound of the residential market. PacifiCorp serves 25 of the 36 counties in Oregon, but only 28 percent of ultimate electric retail sales in the state of Oregon.[4] Medford Oregon is the largest metropolitan area served by PacifiCorp in Oregon and has seen tepid growth, less than 0.4 percent, since the 5.8 percent decline in gross domestic product ("GDP") in 2009.[5]

Figure A.5 is an illustration of Oregon's economic recovery relative to the Pacific and National regions.

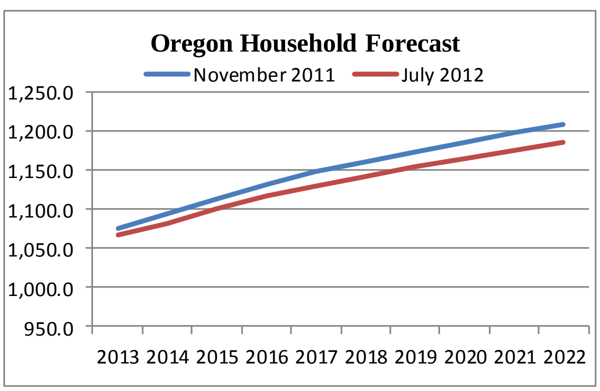
Figure A.5 – Recession Recovery: Changes in Employment (Percent)

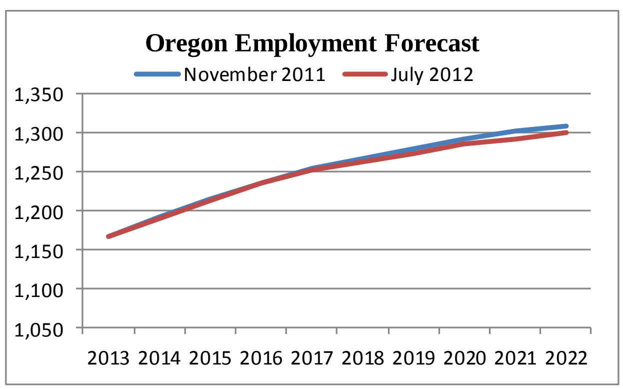


Source: Globe Insight, April 2012

IHS Global Insight provides county level economic data to reflect the PacifiCorp service territory in Oregon. A comparison of the IHS Global Insight forecast for the Company's Oregon service territory showing a decrease in household formation and employment from the 2013 IRP load forecast relative to the 2011 IRP update provided in Figure A.6 below.

Figure A.6 – IHS Global Insight Oregon service territory Household and Employment forecasts from the November 2011 load forecast and the July 2012 load forecast



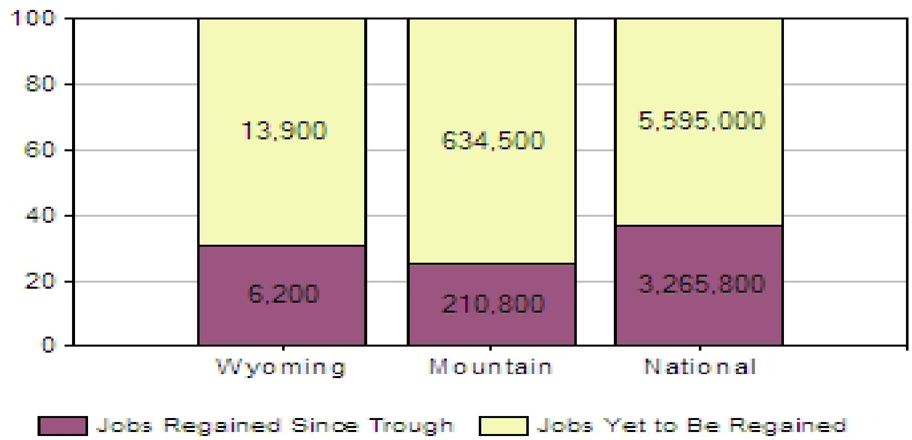


[4] Source: Oregon Public Utility Commission, 2011 Oregon Utility Statistics.
[5] Source: Bureau of Economic Analysis.

Wyoming

Economic activity in Wyoming is expected to moderate significantly over the medium term. Between 2012 and 2013, employment will expand just 1.0 percent annually on average. The state's employment growth was generally faster than the U.S. average since the recovery began, however, the mining and extraction sector, which has been the main driver of growth in recent years, will contract over the medium term despite a recent uptick in mining activity to serve global growth. IHS Global Insight's expects that federal permitting issues, land use policies, and environmental concerns will restrain new exploration in the state.[6] Figure A.7 is an illustration of Wyoming's economic recovery relative to the Mountain and National regions.

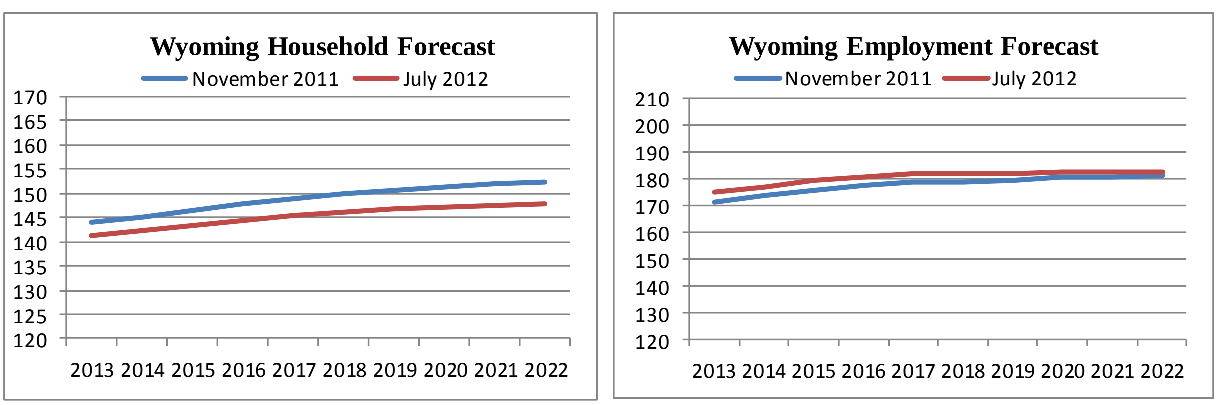
Figure A.7 – Recession Recovery: Changes in Employment (Percent)



Source: Globe Insight, April 2012

The Company serves 15 of the 23 counties in Wyoming, with the largest metropolitan area served by the Company being Casper, Wyoming. A comparison of the IHS Global Insight forecast for the Wyoming service territory household formation and employment from the 2011 IRP update and the 2013 IRP load forecast is provided in Figure A.8 below.

Figure A.8 – IHS Global Insight Wyoming service territory Household and Employment forecasts from the November 2011 load forecast and the July 2012 load forecast



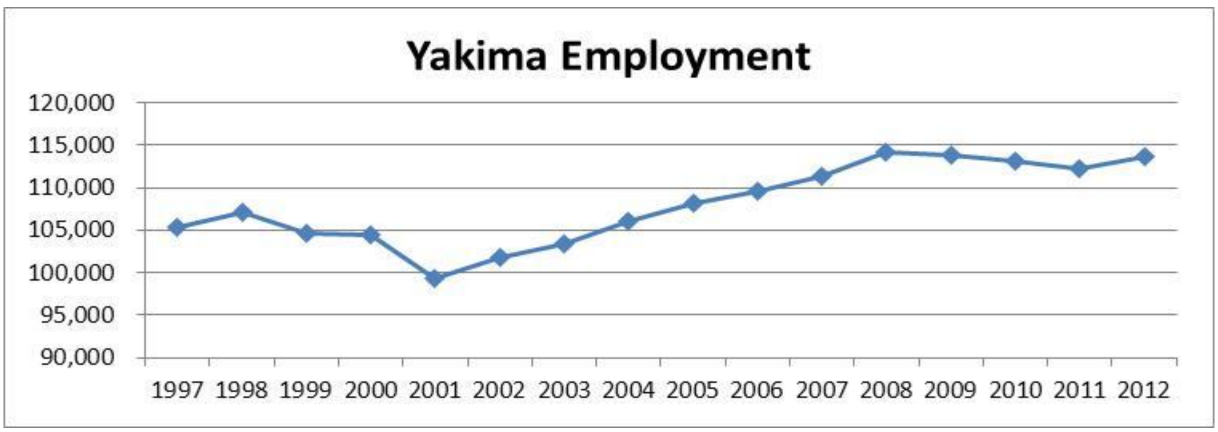
[6] IHS Global Insight.

The national level outlook for household formation was lowered in the February 2012 forecast, which resulted in a lower household forecast for Wyoming. Housing starts in Wyoming will increase over the medium-term, but from low levels, and despite the growth, they will remain below their pre-recession peak levels. Employment growth was stronger than expected in 2011 due to the mining sector, while manufacturing finished weaker. Overall, there was not much change in forecasted job growth in either manufacturing or total employment over the next five years.[7]

Washington

The national recession took its toll on the Washington economy and reduced output and income growth during the end of 2007. Washington's best short-term strength is the presence of large companies such as Boeing and Microsoft, which drive employment growth in their respective industries and also create a local base of skilled labor that generates new companies. Nearly 60 percent of jobs in Washington are in the Seattle metro area, while PacifiCorp serves only the following counties in Washington state: Benton, Columbia, Garfield, Klickitat, Walla Walla, and Yakima. Yakima is the most populated area that the Company serves in Washington State and has a large concentration in agriculture and food processing. Figure A.9 below shows the changes in employment in Yakima since 1997, and the slow economic recovery since the recession.[8]

Figure A.9 – Yakima, WA Metropolitan Statistical Area Employment Statistics, 1997 through 2012

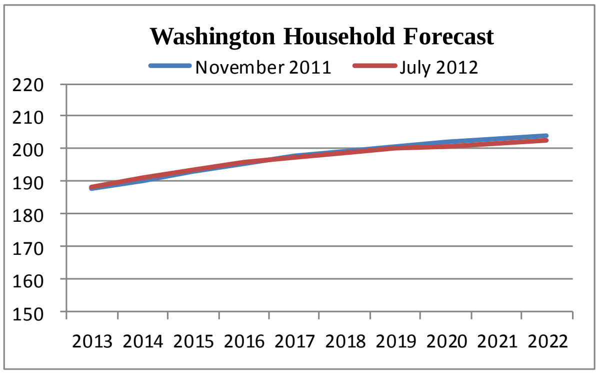


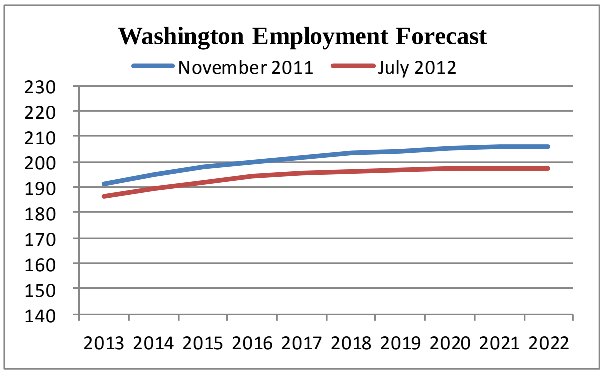
Source: Bureau of Labor Statistics

IHS Global Insight projects near term reductions in gross state product and the food sector was lower than their expectations in 2011, which pushed the forecast lower, especially near 2016. A comparison of the IHS Global Insight forecast for the Washington service territory household formation and employment from the 2011 IRP update and the 2013 IRP load forecast is provided in Figure A.10 below.

[7] *Id.*
[8] *Id.*

Figure A.10 – IHS Global Insight Washington service territory Household and Employment forecasts from the November 2011 load forecast and the July 2012 load forecast

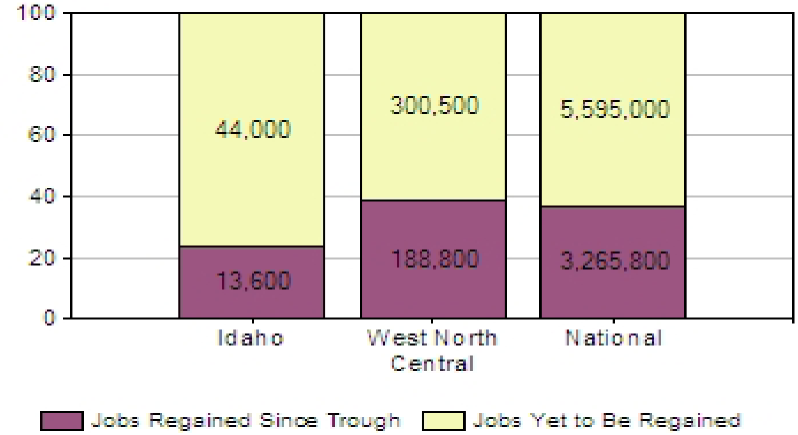




Idaho

The Company serves 14 of the 44 counties in the state of Idaho, with the majority of the Company's service territory in rural Idaho. Idaho's recession recovery has been difficult, with shut down's in wood product manufacturing in 2009 and overseas job exports in the computer and electronic manufacturing. According to the Idaho Department of Labor, rural counties have been hit hardest in Idaho with a decline of 0.6 percent in gross state product in 2011 while urban counties grew 1.1 percent. Figure A.11 is an illustration of Idaho's economic recovery relative to the West North Central and National regions.

Figure A.11 - Recession Recovery: Changes in Employment (Percent)

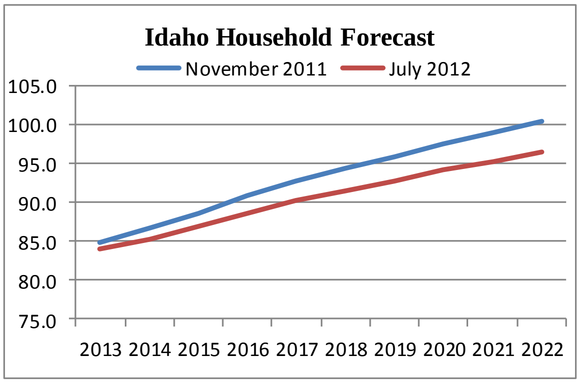


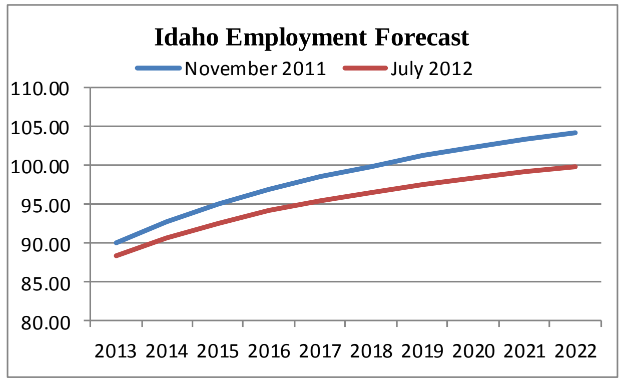
Source: IHS Global Insight, April, 2012

Idaho's household growth has been weaker during the recession, and was therefore lowered in the near-term forecast. The construction sector has continued to lag behind the national economic recovery, but it is starting to show signs of growth.[9]

[9] *Id.*

Figure A.12 - IHS Global Insight Idaho service territory Household and Employment forecasts from the November 2011 load forecast and the July 2012 load forecast

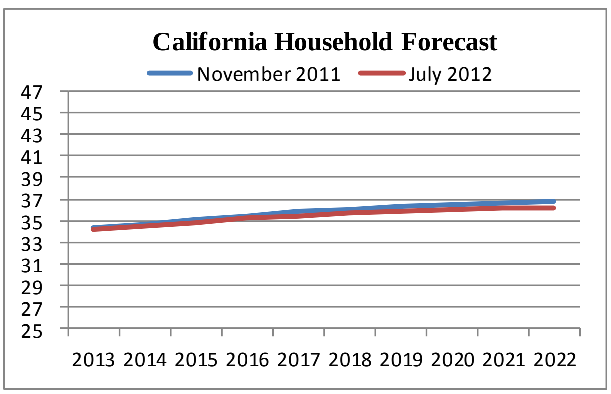


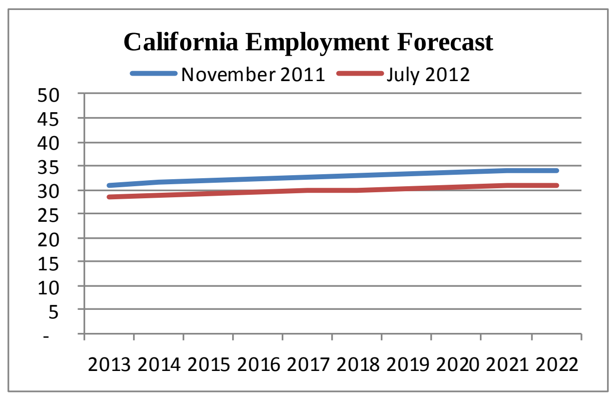


California

The California counties served by PacifiCorp are: Del Norte, Modoc, Shasta and Siskiyou. The sectors that will drive growth over the next decade in the northern California counties served by PacifiCorp are the professional and business services, trade and transportation, and construction.

Figure A.13 – IHS Global Insight Idaho service territory Household and Employment forecasts from the November 2011 load forecast and the July 2012 load forecast





Weather

The Company's load forecast is based on normal weather defined by the 20-year time period of 1992-2011. The Company updated its temperature spline models to the five-year time period of 2007-2011. The Company's spline models are used to model the commercial and residential class temperature sensitivity at varying temperatures.

Statistically Adjusted End-Use ("SAE")

The Company models sales per customer for the residential class using the SAE model, which combines the end-use modeling concepts with traditional regression analysis techniques. Major drivers of the SAE-based residential model are heating and cooling related variables, equipment shares, saturation levels and efficiency trends, and economic drivers such as household size, income and energy price. The Company uses ITRON for its load forecasting software and services, as well as SAE. To predict future changes in the efficiency of the various end uses for the residential class, an excel spreadsheet model obtained from ITRON was utilized. That model includes appliance efficiency trends based on appliance life and past and future efficiency standards. The model embeds all currently applicable laws and regulations regarding appliance efficiency, along with life cycle models of each appliance. The life cycle models are based on the decay and replacement rates, which are necessary to estimate how fast the existing stock of any given appliance turns over and newer more efficient equipment replaces older less efficient equipment. The underlying efficiency data is based on estimates of energy efficiency from the US Department of Energy's Energy Information Administration (EIA). The EIA estimates the efficiency of appliance stocks and the saturation of appliances at the national level and for the Census Regions.

Individual Customer Forecast

The Company updated its load forecast of a select group of large industrial customers, self-generation facilities of large industrial customers, and data center forecasts within the respective jurisdictions. Customer forecasts are provided by the customer to the Company through a customer account manager ("CAM").

Actual Load Data

The Company uses actual load data from January 1997 through March 2012, except for the industrial class, for its monthly retail sales forecast. The historical data period used to develop the industrial monthly sales is from January 2002 through March 2012.

The following tables are the annual actual retail sales, non-coincident peak, and coincident peak by state that were used in calculating the 2013 IRP retail sales forecast.

Table A.5 Weather Normalized Jurisdictional Retail Sales 1997 through 2012

System Retail Sales - Gigawatt-hours (GWh)*							
Year	California	Idaho	Oregon	Utah	Washington	Wyoming	System
1997	768	3,032	13,551	16,647	3,978	7,391	45,367
1998	757	2,994	14,303	16,989	4,027	7,213	46,283
1999	774	3,077	13,736	17,998	4,059	7,250	46,894
2000	782	3,065	14,046	18,806	4,043	7,412	48,154
2001	787	3,003	13,380	18,613	4,005	7,716	47,504
2002	814	3,194	12,997	18,587	3,956	7,318	46,865
2003	836	3,197	13,222	18,997	4,141	7,640	48,033
2004	845	3,291	13,169	19,775	4,075	7,820	48,975
2005	839	3,237	13,209	20,233	4,229	8,028	49,775
2006	847	3,291	13,851	21,070	4,137	8,301	51,497
2007	878	3,400	14,026	21,861	4,060	8,499	52,724
2008	867	3,360	13,756	22,467	4,012	9,307	53,768
2009	827	2,956	13,093	22,053	4,073	9,193	52,195
2010	843	3,357	12,921	22,577	4,047	9,690	53,436
2011	798	3,432	12,923	23,317	3,996	9,771	54,236
2012	780	3,465	12,789	23,624	4,052	9,503	54,214
Average Annual Growth Rate							
1997-2012	0.10%	0.89%	(0.38%)	2.36%	0.12%	1.69%	1.19%

*System retail sales do not include sales for resale

Table A.6 Non-Coincident Jurisdictional Peak 1997 through 2012

Non-Coincident Peak - Megawatts (MW)*						
Year	California	Idaho	Oregon	Utah	Washington	Wyoming
1997	178	697	2,799	3,071	863	1,157
1998	212	686	3,118	3,213	863	1,063
1999	229	711	2,574	3,270	809	1,011
2000	176	686	2,605	3,721	785	1,062
2001	162	616	2,739	3,516	755	1,124
2002	174	713	2,639	3,810	771	1,113
2003	169	722	2,452	4,038	788	1,126
2004	193	708	2,525	3,900	920	1,111
2005	189	753	2,722	4,119	844	1,224
2006	180	723	2,724	4,357	822	1,208
2007	187	789	2,856	4,615	834	1,230
2008	187	759	2,922	4,523	923	1,339
2009	193	688	3,121	4,448	917	1,383
2010	176	777	2,553	4,491	893	1,366
2011	177	770	2,686	4,640	854	1,404
2012	159	800	2,551	4,764	797	1,338
Average Annual Growth Rate						
1997-2012	-0.75%	0.93%	-0.62%	2.97%	-0.53%	0.97%

*Non-coincident peak's do not include sales for resale

Table A.7 Jurisdictional Contribution to Coincident Peak 1997 through 2012

Coincident Peak - Megawatts (MW)*							
Year	**California**	**Idaho**	**Oregon**	**Utah**	**Washington**	**Wyoming**	**System**
1997	174	616	2,799	3,014	843	1,129	7,770
1998	190	647	2,900	3,166	810	1,046	8,354
1999	214	697	2,547	3,242	804	983	7,972
2000	166	651	2,602	3,721	770	1,014	8,480
2001	152	573	2,739	3,514	724	1,091	7,899
2002	162	689	2,621	3,758	771	1,096	8,549
2003	156	594	2,452	4,038	774	1,083	8,922
2004	167	619	2,525	3,869	886	1,098	8,628
2005	173	681	2,501	4,056	844	1,182	8,937
2006	170	666	2,684	4,140	816	1,192	9,322
2007	178	701	2,844	4,473	793	1,230	9,775
2008	171	727	2,903	4,253	865	1,325	9,501
2009	193	517	3,121	4,394	891	1,361	9,420
2010	157	712	2,513	4,371	809	1,336	9,418
2011	154	747	2,510	4,638	798	1,384	9,431
2012	156	782	2,444	4,756	786	1,316	9,831
Average Annual Growth Rate							
1997-2012	-0.73%	1.60%	-0.90%	3.09%	-0.47%	1.03%	1.58%

*Coincident peak's do not include sales for resale

System Losses

System line losses were updated to reflect actual losses for the 5-years ending December 31, 2011.

Forecast Methodology Overview

Class 2 Demand-side Management Resources in the Load Forecast

PacifiCorp modeled Class 2 DSM as a resource option to be selected as part of a cost-effective portfolio resource mix using the Company’s capacity expansion optimization model, System Optimizer. The load forecast used for IRP portfolio development excluded forecasted load reductions from Class 2 DSM. System Optimizer then determines the amount of Class 2 DSM—expressed as supply curves that relate incremental DSM quantities with their costs—given the other resource options and inputs included in the model. The use of Class 2 DSM supply curves, along with the economic screening provided by System Optimizer, determines the cost-effective mix of Class 2 DSM for a given scenario.

Modeling overview

The load forecast is developed by forecasting the monthly sales by customer class for each jurisdiction. The residential and commercial class sales forecast by jurisdiction is developed as a use per customer times the forecasted number of customers.

The customer forecasts are based on a combination of regression analysis and exponential smoothing techniques using historical data from January 1997 to March 2012. For the residential class, the Company forecasts the number of customers using IHS Global Insight’s forecast of each state’s number of households as the major driver. For the commercial class, the Company develops the forecast for number of customers with the forecasted residential customer numbers used as the major driver.

The Company models sales per customer for the residential class using the SAE model discussed above, which combines the end-use modeling concepts with traditional regression analysis techniques.

For the commercial class, the Company forecasts sales per customer using regression analysis techniques with non-manufacturing employment used as the major economic driver, in addition to weather-related variables. As already described, the sales forecast for the residential and commercial classes is the product of the number of customer forecast and the use per customer forecast. The development of the forecast of monthly commercial sales involves an additional step. To reflect the addition of a large "lumpy" change in sales such as a new data center, monthly commercial sales are increased based on input from the Company's CAM's. Although the scale is much smaller, the treatment of large commercial additions is similar to the previous methodology for large industrial customer sales, which is discussed below.

Monthly sales for irrigation and street lighting are forecasted directly from historical sales volumes, not as a product of the use per customer and number of customers.

The majority of industrial customers are modeled using regression analysis with trend and economic variables. Manufacturing employment is used as the major economic driver. For a small number of industrial customers, the largest on the Company's system, the Company individually forecasts these customers based on input from the customer and information provided by the CAM's.

Previously, the Company separated the industrial class into three categories: (1) existing customers tracked by CAMs; (2) new large customers or expansions by existing large customers; and (3) industrial customers that are not monitored by CAMs. The Company developed the forecast for the first two categories through the usage data gathered by the CAMs based on direct input from the customers, forecasted load factors, and the probability of the project occurrence. The third category was forecasted using regression analysis consistent with how the total industrial class is now forecast.

The Company has changed the way that it forecasts the majority of its large industrial customer due to the fact that for existing large industrial customers and for new large industrial customers, the Company found that the inputs provided by customers for their existing loads and for new load tended to be overly optimistic and ultimately overstated. Therefore, the Company uses a regression analysis for the entire industrial class, excluding those largest industrial customers and taking into consideration historical patterns of industrial growth. The Company believes this is a reasonable means of forecasting existing customer load and future growth. The Company continues to monitor new load requests and planned expansions of existing customers for significant changes that would require an adjustment to the forecast.

After the Company develops the forecasts of monthly energy sales by customer class, a forecast of hourly loads is developed in two steps. First, monthly peak forecasts are developed for each state. The monthly peak model uses historical peak-producing weather for each state, and incorporates the impact of weather on peak loads through several weather variables that drive heating and cooling usage. These weather variables include the average temperature on the peak day and lagged average temperatures from up to two days before the day of the forecast. The peak forecast is based on average monthly historical peak-producing weather for the 20-year period 1992 through 2011. Second, the Company develops hourly load forecasts for each state using hourly load models that include state-specific hourly load data, daily weather variables, the 20-year average temperatures identified above, a typical annual weather pattern, and day-type variables such as weekends and holidays as inputs to the model. The hourly loads are adjusted to match the monthly peaks from the first step above. Also, the hourly loads are adjusted so the monthly sum of hourly loads equals monthly sales plus line losses.

After the hourly load forecasts are developed for each state, hourly loads are aggregated to the total system level. The system coincident peaks can then be identified, as well as the contribution of each jurisdiction to those monthly peaks.

Sales Forecast at the Customer Meter

This section provides total system and state-level forecasted retail sales summaries measured at the customer meter by customer class including load reduction projections from new energy efficiency measures from the Preferred Portfolio.

Table A.8 – System Annual Sales Forecast 2013 through 2022

System Retail Sales – Gigawatt-hours (GWh)							
Year	Residential	Commercial	Industrial	Irrigation	Lighting	Other	**Total**
2013	15,892,523	16,972,872	19,240,051	1,245,659	141,420	278,110	**53,770,635**
2014	15,891,128	17,304,602	19,495,342	1,245,013	141,650	276,500	**54,354,234**
2015	15,961,243	17,579,339	19,486,869	1,244,379	141,720	275,360	**54,688,910**
2016	16,119,367	17,856,944	19,633,350	1,243,744	142,200	274,640	**55,270,245**
2017	16,178,084	18,036,974	19,858,482	1,242,654	141,830	273,960	**55,731,984**
2018	16,320,488	18,178,182	20,096,253	1,241,766	141,880	273,570	**56,252,140**
2019	16,467,391	18,285,923	20,362,319	1,240,676	141,930	273,270	**56,771,509**
2020	16,631,788	18,452,865	20,663,756	1,239,860	142,380	273,150	**57,403,799**
2021	16,689,586	18,514,785	20,855,752	1,238,940	142,050	272,920	**57,714,033**
2022	16,821,408	18,630,240	21,104,262	1,237,944	142,090	272,810	**58,208,753**
Average Annual Growth Rate							
2013-22	**0.63%**	**1.04%**	**1.03%**	**-0.07%**	**0.05%**	**0.00%**	**0.89%**

Residential

Average annual growth of the residential class sales forecast declined from 0.7 percent in the 2011 IRP to 0.6 percent in the 2013 IRP. Residential use per customer across all six of PacifiCorp's states is changing due to changes in lighting efficiency standards resulting from the 2007 Federal Energy legislation and other energy efficiency and conservation programs.

The number of residential customers across PacifiCorp's system is expected to grow at an annual average rate of 0.7 percent with Rocky Mountain Power states adding 0.9 percent per year and Pacific Power states adding 0.5 percent per year reaching approximately 1.6 million customer's by 2022. New customer's on PacifiCorp's system will contribute to declining average use of the residential class due to the expectation that new single-family homes are likely to use gas for space and water heating and use more efficient appliances than the existing customer base.

Commercial

Average annual growth of the commercial class sales forecast declined from 1.9 percent annual average growth to 1.0 percent expected annual growth. The Company lowered its data center load expectations in Utah and Oregon in the 2013 IRP load forecast due to lower than expected initial loads and additional energy efficiency gains in the technology industry. Commercial loads related to non-manufacturing employment are also lower, shown by the lower IHS Global Insight forecast used in the July 2012 load forecast relative to the November 2011 forecast.

PacifiCorp commercial customers are expected to grow at an annual average rate of 0.8 percent, reaching 231,818 customers in 2022. Rocky Mountain Power is expected to add commercial customers at 1.1 percent annually, and Pacific Power is forecasted to add 0.4 percent annually.

Industrial

Industrial sales have decreased in the July 2012 load forecast to 1.0 percent average annual growth through 2022. The November 2011 load forecast projected average annual growth of 1.9 percent for the industrial class, which reflected expected growth in the Utah and Wyoming industrial extraction and manufacturing industries.

A portion of the Company's industrial load is in the oil and natural gas business in Utah and Wyoming, therefore, changes in natural gas and oil prices can impact the Company's load forecast. With the decline in natural gas prices over the last several years the Company has seen several large industrial customers cancel expected new loads. Specifically, Wyoming's mining and natural resource sector is facing falling employment and over the past six month's jobs in the sector declined 0.8 percent.[10] In addition, environmental legislation may impact new exploration in the future. However, if natural gas prices were to increase in the short-term the Company may face higher growth rates than currently reflected. The risk to the Company's load forecast due to commodity price changes is reflected in the high economic growth scenario discussed below.

Self-generation elections by some of the Company's largest industrial customer's reduced the load forecast in the 2013 IRP. However, the majority of the load decreases also remove the customer owned qualifying generation facility (QF) as a resource in the load resource balance. For example, if 100 MW of load is now offset by a company's QF generation that was previously used to provide power to the PacifiCorp system, it is a zero net change to the load resource balance.

As previously discussed, PacifiCorp changed the methodology that it uses to forecast the majority of its large industrial customers and uses a regression methodology versus using probability weighted customer forecasts. The change in methodology of the industrial load forecast had a minimal impact on the industrial forecast.

[10] IHS Global Insight.

State Summaries

Oregon

Table A.9 summarizes Oregon state forecasted retail sales growth by customer class.

Table A.9 – Forecasted Sales Growth in Oregon

Oregon Retail Sales – Gigawatt-hours (GWh)							
Year	Residential	Commercial	Industrial	Irrigation	Lighting	Other	**Total**
2013	5,411,440	5,258,837	2,147,544	238,210	36,750	0	**13,092,781**
2014	5,381,652	5,378,564	2,132,753	238,210	36,940	0	**13,168,119**
2015	5,380,412	5,440,133	2,137,674	238,210	36,960	0	**13,233,388**
2016	5,407,424	5,523,431	2,136,728	238,240	37,070	0	**13,342,893**
2017	5,402,600	5,576,598	2,134,157	238,210	36,960	0	**13,388,526**
2018	5,429,131	5,602,093	2,131,611	238,210	36,960	0	**13,438,005**
2019	5,463,250	5,630,591	2,131,077	238,210	36,960	0	**13,500,088**
2020	5,504,944	5,677,591	2,132,199	238,240	37,070	0	**13,590,044**
2021	5,510,144	5,690,504	2,134,050	238,210	36,960	0	**13,609,867**
2022	5,540,019	5,715,827	2,134,811	238,210	36,960	0	**13,665,827**
Average Annual Growth Rate							
2013-22	**0.26%**	**0.93%**	**-0.07%**	**0.00%**	**0.06%**	**0.00%**	**0.48%**

Washington

Table A.10 summarizes Washington state forecasted retail sales growth by customer class.

Table A.10 – Forecasted Sales Growth in Washington

Washington Retail Sales – Gigawatt-hours (GWh)							
Year	Residential	Commercial	Industrial	Irrigation	Lighting	Other	**Total**
2013	1,604,806	1,393,879	787,342	157,950	9,930	0	**3,953,907**
2014	1,596,722	1,396,080	783,374	157,950	9,870	0	**3,943,996**
2015	1,593,870	1,398,210	779,487	157,950	9,880	0	**3,939,397**
2016	1,601,704	1,402,674	780,101	157,960	9,910	0	**3,952,349**
2017	1,599,472	1,399,530	776,337	157,950	9,880	0	**3,943,170**
2018	1,608,223	1,401,755	775,894	157,950	9,880	0	**3,953,702**
2019	1,617,306	1,403,765	775,473	157,950	9,880	0	**3,964,373**
2020	1,628,171	1,409,972	777,641	157,960	9,910	0	**3,983,654**
2021	1,627,509	1,408,601	775,425	157,950	9,880	0	**3,979,365**
2022	1,634,603	1,410,691	775,362	157,950	9,880	0	**3,988,486**
Average Annual Growth Rate							
2013-22	**0.20%**	**0.13%**	**-0.17%**	**0.00%**	**-0.06%**	**0.00%**	**0.10%**

California

Table A.11 summarizes California state forecasted sales growth by customer class.

Table A.11 – Forecasted Retail Sales Growth in California

California Retail Sales – Gigawatt-hours (GWh)							
Year	Residential	Commercial	Industrial	Irrigation	Lighting	Other	Total
2013	380,422	274,429	24,148	95,740	2,480	0	777,219
2014	377,522	274,946	23,399	95,740	2,480	0	774,087
2015	376,263	275,410	22,500	95,740	2,480	0	772,392
2016	377,322	275,948	22,440	95,760	2,480	0	773,951
2017	375,569	275,028	22,247	95,740	2,480	0	771,063
2018	376,273	275,115	22,165	95,740	2,480	0	771,773
2019	377,028	275,052	22,082	95,740	2,480	0	772,382
2020	378,117	275,582	22,074	95,760	2,480	0	774,013
2021	375,925	274,252	21,912	95,740	2,480	0	770,309
2022	375,445	273,446	21,824	95,740	2,480	0	768,935
Average Annual Growth Rate							
2013-22	-0.15%	-0.04%	-1.12%	0.00%	0.00%	0.00%	-0.12%

Utah

Table A.12 summarizes Utah state forecasted sales growth by customer class.

Table A.12 – Forecasted Retail Sales Growth in Utah

Utah Retail Sales – Gigawatt-hours (GWh)							
Year	Residential	Commercial	Industrial	Irrigation	Lighting	Other	Total
2013	6,720,885	7,979,093	7,754,583	187,500	77,610	278,110	22,997,781
2014	6,734,483	8,145,495	7,894,805	187,500	77,650	276,500	23,316,432
2015	6,782,580	8,315,720	7,753,540	187,500	77,650	275,360	23,392,350
2016	6,875,135	8,460,421	7,760,376	187,520	77,870	274,640	23,635,961
2017	6,928,116	8,563,743	7,912,169	187,500	77,650	273,960	23,943,138
2018	7,015,004	8,648,996	8,054,146	187,500	77,650	273,570	24,256,866
2019	7,099,052	8,701,692	8,225,171	187,500	77,650	273,270	24,564,335
2020	7,191,309	8,783,756	8,399,911	187,520	77,870	273,150	24,913,516
2021	7,241,742	8,820,185	8,525,736	187,500	77,650	272,920	25,125,732
2022	7,324,392	8,889,035	8,681,001	187,500	77,650	272,810	25,432,388
Average Annual Growth Rate							
2013-22	0.96%	1.21%	1.26%	0.00%	0.01%	-0.21%	1.12%

Idaho

Table A.13 summarizes Idaho state forecasted sales growth by customer class.

Table A.13 – Forecasted Retail Sales Growth in Idaho

Idaho Retail Sales – Gigawatt-hours (GWh)							
Year	Residential	Commercial	Industrial	Irrigation	Lighting	Other	**Total**
2013	705,895	438,865	1,711,758	545,899	2,710	0	**3,405,127**
2014	717,289	448,476	1,716,591	545,153	2,770	0	**3,430,279**
2015	731,279	458,456	1,719,879	544,399	2,810	0	**3,456,823**
2016	748,393	469,083	1,726,161	543,584	2,890	0	**3,490,112**
2017	760,771	476,315	1,720,329	542,504	2,920	0	**3,502,838**
2018	774,717	483,775	1,720,487	541,526	2,970	0	**3,523,475**
2019	787,131	490,076	1,720,573	540,336	3,020	0	**3,541,136**
2020	799,309	497,675	1,725,216	539,330	3,070	0	**3,564,601**
2021	806,807	502,048	1,719,649	538,390	3,140	0	**3,570,035**
2022	816,694	507,401	1,720,681	537,314	3,180	0	**3,585,271**
Average Annual Growth Rate							
2013-22	**1.63%**	**1.63%**	**0.06%**	**-0.18%**	**1.79%**	**0.00%**	**0.57%**

Wyoming

Table A.14 summarizes Wyoming state forecasted sales growth by customer class.

Table A.14 – Forecasted Retail Sales Growth in Wyoming

Wyoming Retail Sales – Gigawatt-hours (GWh)							
Year	Residential	Commercial	Industrial	Irrigation	Lighting	Other	**Total**
2013	1,069,076	1,627,768	6,814,676	20,360	11,940	0	**9,543,819**
2014	1,083,460	1,661,040	6,944,420	20,460	11,940	0	**9,721,321**
2015	1,096,840	1,691,410	7,073,790	20,580	11,940	0	**9,894,559**
2016	1,109,388	1,725,387	7,207,544	20,680	11,980	0	**10,074,979**
2017	1,111,556	1,745,760	7,293,243	20,750	11,940	0	**10,183,249**
2018	1,117,141	1,766,449	7,391,950	20,840	11,940	0	**10,308,320**
2019	1,123,623	1,784,748	7,487,944	20,940	11,940	0	**10,429,195**
2020	1,129,938	1,808,290	7,606,714	21,050	11,980	0	**10,577,972**
2021	1,127,459	1,819,195	7,678,982	21,150	11,940	0	**10,658,726**
2022	1,130,254	1,833,840	7,770,582	21,230	11,940	0	**10,767,847**
Average Annual Growth Rate							
2013-22	**0.62%**	**1.33%**	**1.47%**	**0.47%**	**0.00%**	**0.00%**	**1.35%**

Alternative Load Forecast Scenarios

The purpose of the alternative load forecast cases is to determine the resource type and timing impacts resulting from a change in the economy or system peaks as a result of higher than normal temperatures.

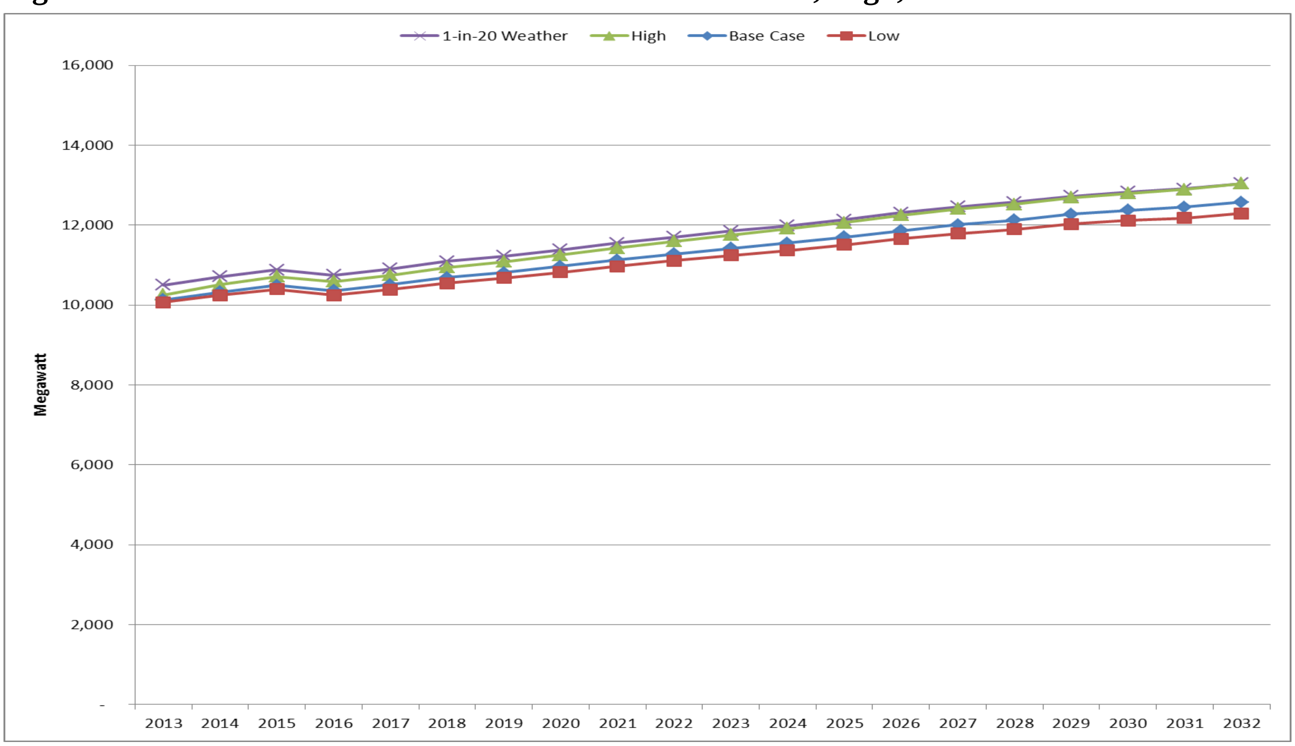
The July 2012 forecast is the baseline (Medium) scenario. For the high and low economic growth scenarios assumptions from IHS Global Insight were applied to the economic drivers in the Company's load forecasting models. These growth assumptions were extended for the entire forecast horizon.

Recognizing the volatility associated with the oil and gas extraction industries, PacifiCorp applied additional assumptions for the Utah and Wyoming industrial class load forecasts in the high and low scenario. Specifically, the Company analyzed the increased uncertainty of the industrial load forecast as it moves further out in time. In order to capture this increased uncertainty the Company modeled 100 possible annual loads for each year based on the standard error of the medium scenario regression equation. The 100 load values are then ranked and the Company selected the 95th percentile and 5th percentile of the Utah and Wyoming industrial loads for both the low and high growth scenarios. Lastly, in the high growth scenario the Company removed the assumption that a large customer owned generation facility was constructed in 2015.

For the 1-in-20 year (5 percent probability) extreme weather scenario, the Company used 1-in-20 year peak weather for summer (July) months for each state. The 1-in-20 year peak weather is defined as the year for which the peak has the chance of occurring once in 20 years.

Figure A.14 shows the comparison of the above scenarios relative to the Base Case scenario.

Figure A.14 – Load Forecast Scenarios for 1-in-20 Weather, High, Base Case and Low



APPENDIX B – IRP REGULATORY COMPLIANCE

Introduction

This appendix describes how PacifiCorp's 2013 IRP complies with (1) the various state commission IRP standards and guidelines, (2) specific analytical requirements stemming from acknowledgment orders for the Company's last IRP ("2011 IRP"), and (3) state commission IRP requirements stemming from other regulatory proceedings.

Included in this appendix are the following tables:

- Table B.1 – Provides an overview and comparison of the rules in each state for which IRP submission is required.[11]
- Table B.2 – Provides a description of how PacifiCorp addressed the 2011 IRP acknowledgement requirements and other commission directives.
- Table B.3 – Provides an explanation of how this plan addresses each of the items contained in the Oregon IRP guidelines, including new guidelines issued in January 2012 for assessing flexible resource demand and supplies.
- Table B.4 – Provides an explanation of how this plan addresses each of the items contained in the Public Service Commission of Utah IRP Standard and Guidelines issued in June 1992.
- Table B.5 – Provides an explanation of how this plan addresses each of the items contained in the Washington Utilities and Trade Commission IRP guidelines issued in January 2006.
- Table B.6 – Provides an explanation of how this plan addresses each of the items contained in the Wyoming Public Service Commission IRP guidelines.

General Compliance

PacifiCorp prepares the IRP on a biennial basis and files the IRP with state commissions. The preparation of the IRP is done in an open public process with consultation between all interested parties, including commissioners and commission staff, customers, and other stakeholders. This open process provides parties with a substantial opportunity to contribute information and ideas in the planning process, and also serves to inform all parties on the planning issues and approach. The public input process for this IRP, described in Volume I, Chapter 2 (Introduction), as well as Volume II, Appendix C (Public Input Process) fully complies with IRP Standards and Guidelines.

The IRP provides a framework and plan for future actions to ensure PacifiCorp continues to provide reliable and least-cost electric service to its customers. The IRP evaluates, over a twenty-year planning period, the future loads of PacifiCorp customers and the capability of existing resources to meet this load.

[11] California guidelines exempt a utility with less than 500,000 customers in the state from filing an IRP. However, PacifiCorp files its IRP and IRP supplements with the California Public Utilities Commission to address the Company plan for compliance with the California RPS requirements.

To fill any gap between changes in loads and existing resources, while taking into consideration potential early retirement of existing coal units as an alternative to investments that achieve compliance with environmental regulations, the IRP evaluates a broad range of available resource options, as required by state commission rules. These resource alternatives include supply-side, demand-side, and transmission alternatives. The evaluation of the alternatives in the IRP, as detailed in Volume I, Chapters 7 (Modeling and Portfolio Evaluation Approach) and Chapter 8 (Modeling and Portfolio Selection Results) meets this requirement and includes the impact to system costs, system operations, supply and transmission reliability, and the impacts of various risks, uncertainties and externality costs that could occur. To perform the analysis and evaluation, PacifiCorp employs a suite of models that simulate the complex operation of the PacifiCorp system and its integration within the Western Interconnection. The models allow for a rigorous testing of a reasonably broad range of commercially feasible resource alternatives available to PacifiCorp on a consistent and comparable basis. The analytical process, including the risk and uncertainty analysis, fully complies with IRP Standards and Guidelines, and is described in detail in Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach).

The IRP analysis is designed to define a resource plan that is least cost, after consideration of risks and uncertainties. To test resource alternatives and identify a least-cost, risk adjusted plan, portfolio resource options were developed and tested against each other. This testing included examination of various tradeoffs among the portfolios, such as average cost versus risk, reliability, customer rate impacts, and average annual CO_2 emissions. This portfolio analysis and the results and conclusions drawn from the analysis are described in Volume I, Chapter 8 (Modeling and Portfolio Selection Results).

Consistent with the IRP Standards and Guidelines of Oregon, Utah, and Washington, this IRP includes an Action Plan in Volume I, Chapter 9 (Action Plan). The Action Plan details near-term actions that are necessary to ensure PacifiCorp continues to provide reliable and least-cost electric service after considering risk and uncertainty. Volume I, Chapter 9 (Action Plan) also provides a progress report on action items contained in the 2011 IRP and 2011 IRP Update.

The 2013 IRP and the related Action Plan are filed with each commission with a request for prompt acknowledgment. Acknowledgment means that a commission recognizes the IRP as meeting all regulatory requirements at the time the acknowledgment is made. In the case where a commission acknowledges the IRP in part or not at all, PacifiCorp works with the commission to modify and re-file an IRP that meets acknowledgment standards.

State commission acknowledgment orders or letters typically stress that an acknowledgment does not indicate approval or endorsement of IRP conclusions or analysis results. Similarly, an acknowledgment does not imply that favorable ratemaking treatment for resources proposed in the IRP will be given.

California

Subsection (i) of California Public Utilities Code, Section 454.5, states that utilities serving less than 500,000 customers in the state are exempt from filing an Integrated Resource Plan for California. The number of PacifiCorp customers, located in the most northern parts of the state, fall below this threshold. PacifiCorp filed for and received an exemption on July 10, 2003.

Idaho

The Idaho Public Utilities Commission's Order No. 22299, issued in January 1989, specifies integrated resource planning requirements. The Order mandates that PacifiCorp submit a Resource Management Report (RMR) on a biennial basis. The intent of the RMR is to describe the status of IRP efforts in a concise format, and cover the following areas:

> *Each utility's RMR should discuss any flexibilities and analyses considered during comprehensive resource planning, such as: (1) examination of load forecast uncertainties; (2) effects of known or potential changes to existing resources; (3) consideration of demand and supply side resource options; and (4) contingencies for upgrading, optioning and acquiring resources at optimum times (considering cost, availability, lead time, reliability, risk, etc.) as future events unfold*.

This IRP is submitted to the Idaho PUC as the Resource Management Report for 2013, and fully addresses the above report components. The IRP also evaluates demand side management (DSM) using a load decrement approach, as discussed in Volume I, Chapter 6 (Resource Options) and Volume II, Appendix D (Demand-Side Management and Supplemental Resources). This approach is consistent with using an avoided cost approach to evaluating DSM as set forth in IPUC Order No. 21249.

Oregon

This IRP is submitted to the Oregon PUC in compliance with its planning guidelines issued in January 2007 (Order No. 07-002). The Commission's IRP guidelines consist of substantive requirements (Guideline 1), procedural requirements (Guideline 2), plan filing, review, and updates (Guideline 3), plan components (Guideline 4), transmission (Guideline 5), conservation (Guideline 6), demand response (Guideline 7), environmental costs (Guideline 8, Order No. 08-339), direct access loads (Guideline 9), multi-state utilities (Guideline 10), reliability (Guideline 11), distributed generation (Guideline 12), resource acquisition (Guideline 13), and flexible resource capacity (Order No. 12-013[12]). Consistent with the earlier guidelines (Order 89-507), the Commission notes that acknowledgment does not guarantee favorable ratemaking treatment, only that the plan seems reasonable at the time acknowledgment is given.

Table B.3 provides detail on how this plan addresses each of the requirements.

Utah

This IRP is submitted to the Public Service Commission of Utah in compliance with its 1992 Order on Standards and Guidelines for Integrated Resource Planning (Docket No. 90-2035-01, "Report and Order on Standards and Guidelines"). Table B.4 documents how PacifiCorp complies with each of these standards.

Washington

This IRP is submitted to the Washington Utilities and Transportation Commission (WUTC) in compliance with its rule requiring least cost planning (Washington Administrative Code 480-

[12] Public Utility Commission of Oregon, Order No. 12-013, Docket No. 1461, January 19, 2012.

100-238), and the rule amendment issued on January 9, 2006 (WAC 480-100-238, Docket No. UE-030311). In addition to a least cost plan, the rule requires provision of a two-year action plan and a progress report that "relates the new plan to the previously filed plan."

The rule requires PacifiCorp to submit a work plan for informal commission review not later than 12 months prior to the due date of the plan. The work plan is to lay out the contents of the IRP, the resource assessment method, and timing and extent of public participation. PacifiCorp filed a work plan with the Commission on March 28, 2012.

Table B.5 provides detail on how this plan addresses each of the rule requirements.

Wyoming

In 2008, Wyoming proposed draft rule 253 for any utility serving Wyoming to file its Integrated Resource Plan with the commission. The rule went into effect in September 2009.

> ***Rule 253: Integrated Resource Planning***.
> *Any utility serving in Wyoming required to file an integrated resource plan (IRP) in any jurisdiction, shall file that IRP with the Wyoming Public Service Commission. The Commission may require any utility serving in Wyoming to prepare and file an IRP when the Commission determines it is in the public interest. Commission advisory staff shall review the IRP as directed by the Commission and report its findings to the Commission in open meeting. The review may be conducted in accordance with guidelines set from time to time as conditions warrant.*

Table B.1 – Integrated Resource Planning Standards and Guidelines Summary by State

Topic	Oregon	Utah	Washington	Idaho	Wyoming
Source	Order No. 07-002, *Investigation Into Integrated Resource Planning*, January 8, 2007, as amended by Order No. 07-047. Order No. 08-339, *Investigation into the Treatment of CO2 Risk in the Integrated Resource Planning Process*, June 30, 2008. Order No. 09-041, New Rule OAR 860-027-0400, implementing Guideline 3, "Plan Filing, Review, and Updates". Order No. 12-013, "Investigation of Matters related to Electric Vehicle Charging", January 19, 2012.	Docket 90-2035-01 *Standards and Guidelines for Integrated Resource Planning* June 18, 1992.	WAC 480-100-251 Least cost planning, May 19, 1987, and as amended from WAC 480-100-238 *Least Cost Planning Rulemaking*, January 9, 2006 (Docket # UE-030311)	Order 22299 *Electric Utility Conservation Standards and Practices* January, 1989.	Wyoming General Regulations, Chapter 2 (Introduction), Section 253.
Filing Requirements	Least-cost plans must be filed with the Commission.	An Integrated Resource Plan (IRP) is to be submitted to Commission.	Submit a least cost plan to the Commission. Plan to be developed with consultation of Commission staff, and with public involvement.	Submit "Resource Management Report" (RMR) on planning status. Also file progress reports on conservation, low-income programs, lost opportunities and capability building.	Any utility serving in Wyoming required to file an integrated resource plan (IRP) in any jurisdiction, shall file that IRP with the Wyoming Public Service Commission.

Topic	Oregon	Utah	Washington	Idaho	Wyoming
Frequency	Plans filed biennially, within two years of its previous IRP acknowledgment order. An annual update to the most recently acknowledged IRP is required to be filed on or before the one-year anniversary of the acknowledgment order date. While informational only, utilities may request acknowledgment of proposed changes to the action plan.	File biennially.	File biennially.	RMR to be filed at least biennially. Conservation reports to be filed annually. Low income reports to be filed at least annually. Lost Opportunities reports to be filed at least annually. Capability building reports to be filed at least annually.	The Commission may require any utility serving in Wyoming to prepare and file an IRP when the Commission determines it is in the public interest.
Commission Response	Least-cost plan (LCP) *acknowledged* if found to comply with standards and guidelines. A decision made in the LCP process does not guarantee favorable rate-making treatment. The OPUC may direct the utility to revise the IRP or conduct additional analysis before an acknowledgment order is issued. Note, however, that Rate Plan legislation allows pre-approval of near-term resource investments.	IRP acknowledged if found to comply with standards and guidelines. Prudence reviews of new resource acquisitions will occur during rate making proceedings.	The plan will be considered, with other available information, when evaluating the performance of the utility in rate proceedings. WUTC sends a letter discussing the report, making suggestions and requirements and acknowledges the report.	Report does not constitute pre-approval of proposed resource acquisitions. Idaho sends a short letter stating that they accept the filing and acknowledge the report as satisfying Commission requirements.	Commission advisory staff shall review the IRP as directed by the Commission and report its findings to the Commission in open meeting.

Topic	Oregon	Utah	Washington	Idaho	Wyoming
Process	The public and other utilities are allowed significant involvement in the preparation of the plan, with opportunities to contribute and receive information. Order 07-002 requires that the utility present IRP results to the OPUC at a public meeting prior to the deadline for written public comments. Commission staff and parties should complete their comments and recommendations within six months after IRP filing. Competitive secrets must be protected.	Planning process open to the public at all stages. IRP developed in consultation with the Commission, its staff, with ample opportunity for public input.	In consultation with Commission staff, develop and implement a public involvement plan. Involvement by the public in development of the plan is required. PacifiCorp is required to submit a work plan for informal commission review not later than 12 months prior to the due date of the plan. The work plan is to lay out the contents of the IRP, resource assessment method, and timing and extent of public participation.	Utilities to work with Commission staff when reviewing and updating RMRs. Regular public workshops should be part of process.	The review may be conducted in accordance with guidelines set from time to time as conditions warrant. The Public Service Commission of Wyoming, in its Letter Order on PacifiCorp's 2008 IRP (Docket No. 2000-346-EA-09) adopted Commission Staff's recommendation to expand the review process to include a technical conference, an expanded public comment period, and filing of reply comments.
Focus	20-year plan, with end-effects, and a short-term (two-year) action plan. The IRP process should result in the selection of that mix of options which yields, for society over the long run, the best combination of expected costs and variance of costs.	20-year plan, with short-term (four-year) action plan. Specific actions for the first two years and anticipated actions in the second two years to be detailed. The IRP process should result in the selection of the optimal set of resources given the expected combination of costs, risk and uncertainty.	20-year plan, with short-term (two-year) action plan. The plan describes mix of resources sufficient to meet current and future loads at "lowest reasonable" cost to utility and ratepayers. Resource cost, market volatility risks, demand-side resource uncertainty, resource dispatchability, ratepayer risks, policy impacts, and environmental risks, must be considered.	20-year plan to meet load obligations at least-cost, with equal consideration to demand side resources. Plan to address risks and uncertainties. Emphasis on clarity, understandability, resource capabilities and planning flexibility.	Identification of least-cost/least-risk resources and discussion of deviations from least-cost resources or resource combinations.

Topic	Oregon	Utah	Washington	Idaho	Wyoming
Elements	Basic elements include: • All resources evaluated on a consistent and comparable basis. • Risk and uncertainty must be considered. • The primary goal must be least cost, consistent with the long-run public interest. • The plan must be consistent with Oregon and federal energy policy. • External costs must be considered, and quantified where possible. OPUC specifies environmental adders (Order No. 93-695, Docket UM 424). • Multi-state utilities should plan their generation and transmission systems on an integrated-system basis. • Construction of resource portfolios over the range of identified risks and uncertainties. • Portfolio analysis shall include fuel transportation and transmission requirements. • Plan includes conservation potential study, demand response resources, environmental costs, and distributed generation technologies.. • Avoided cost filing required within 30 days of acknowledgment.	IRP will include: • Range of forecasts of future load growth • Evaluation of all present and future resources, including demand side, supply side and market, on a consistent and comparable basis. • Analysis of the role of competitive bidding • A plan for adapting to different paths as the future unfolds. • A cost effectiveness methodology. • An evaluation of the financial, competitive, reliability and operational risks associated with resource options, and how the action plan addresses these risks. • Definition of how risks are allocated between ratepayers and shareholders • DSM and supply side resources evaluated at “Total Resource Cost” rather than utility cost.	The plan shall include: • A range of forecasts of future demand using methods that examine the effect of economic forces on the consumption of electricity and that address changes in the number, type and efficiency of electrical end-uses. • An assessment of commercially available conservation, including load management, as well as an assessment of currently employed and new policies and programs needed to obtain the conservation improvements. • Assessment of a wide range of conventional and commercially available nonconventional generating technologies • An assessment of transmission system capability and reliability. • A comparative evaluation of energy supply resources (including transmission and distribution) and improvements in conservation using “lowest reasonable cost” criteria. • Integration of the demand forecasts and resource evaluations into a long-range (at least 10 years) plan. • All plans shall also include a progress report that relates the new plan to the previously filed plan.	Discuss analyses considered including: • Load forecast uncertainties; • Known or potential changes to existing resources; • Equal consideration of demand and supply side resource options; • Contingencies for upgrading, optioning and acquiring resources at optimum times; • Report on existing resource stack, load forecast and additional resource menu.	Proposed Commission Staff guidelines issued on January 2009 cover: • Sufficiency of the public comment process • Utility strategic goals and preferred portfolio • Resource need and changes in expected resource acquisitions • Environmental impacts • Market purchase evaluation • Reserve margin analysis • Demand-side management and energy efficiency

Table B.2 – Handling of 2011 IRP Acknowledgment and Other IRP Requirements

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
Idaho		
Order No. PAC-E-11-10, p. 10.	[T]he Commission orders the Company to advise the Commission of any changes made to its system-wide IRP methodology or IRP results emanating from the review conducted by another state utility Commission.	PacifiCorp summarizes its IRP methodology in Volume I, Chapter 7 of the 2013 IRP, which is consistent with methods used in the 2011 IRP. While advancements in modeling methods have been implemented, they were done so at the discretion of the Company.
Oregon		
Order No. 12-082, p. 9-10.	We direct PacifiCorp to continue discussions with Staff and other parties, started during review of the company's 2011 IRP, to prepare for the company's next IRP cycle. In particular, we direct PacifiCorp to convene two workshops to address concerns in two related areas. The first workshop should address the development of candidate resource portfolios for the next IRP. PacifiCorp currently uses the System Optimizer model to develop the candidate resource portfolios it will consider in an IRP. The company identifies future scenarios comprised of key model inputs and the System Optimizer model selects an "optimal" resource portfolio for each scenario. We are concerned that the resource portfolio with the best combination of cost and risk for the utility and its ratepayers may not be "optimal" for any one particular scenario. In other words, the best portfolio may be one that performs well across a wide range of future scenarios but is not "optimal" for any one scenario. We are concerned that the process used by PacifiCorp to develop candidate resource portfolios may be limiting the diversity of portfolios considered in the IRP. The second workshop should address the development of the company's load and resource balances for both capacity and energy and the appropriate capacity planning reserve margin. The workshop should also address the development of an IRP action plan that identifies the contribution of each planned resource to the company's capacity and energy balances. In PacifiCorp's IRP it is often difficult to identify the contribution of	PacifiCorp held a "portfolio development roundtable" discussion at the June 20, 2012 public meeting to address the first workshop requirement. The Company outlined its goals to enhance resource diversity among portfolios and requested input from Oregon Commission staff and other meeting participants on an enhanced portfolio development framework. Incorporating stakeholder comments, the Company introduced draft core case definitions at the August 13, 2012 a public meeting and discussed with parties transmission scenarios and benefit analysis. Further discussions on portfolio development were held at the September 14, 2012 public meeting. One outcome of the discussions was PacifiCorp's proposal to include stakeholder-defined portfolio development scenarios to achieve greater resource diversity. A subsequent public meeting was held on January 31, 2013 to review the core portfolio results with an update on modeling results at the February 27, 2013 public meeting. Discussion of stochastic modeling results of portfolios was done at the March 21, 2013 and April 5, 2013 public meetings. Sensitivity case results were reviewed with parties at the April 17, 2013 public meeting. The workshop to discuss the planning reserve margin and development of load & resource balances (both capacity and energy) was held during the August 2, 2012, public input meeting. The major issues identified by public stakeholders for the 2011 IRP planning reserve margin study were addressed through the 2013 IRP study design. The Company held a conference call on September 24, 2012 to discuss planning reserve margin modeling. At the public meeting on November 27, 2013 the study results and recommendation were reviewed by the stakeholders. The Company discussed with parties at the August 2, 2012 public input meeting different ways to report the energy contribution from preferred portfolio resources. Volume I, Chapter 8 (Modeling and Portfolio Selection Results) of the 2013 IRP contains figures showing how preferred portfolio resources contribute to growing loads over time.

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
	each planned resource to the energy balance. Our overall concern is that it is difficult to identify how the planned resource actions are matched to meeting the capacity and energy needs of the company.	
Order No. 12-493, p.33.	We expect a utility to fully evaluate all major investments that have implications for the utility's resource mix – including those where the investment will extend the useful life of an asset and where a plant shutdown is an option – in its IRP. Although the IRP process is not a legal prerequisite for a utility to seek recovery of investment in rates, we have repeatedly stated that the IRP process serves as a complement to the rate-making process and reduces the uncertainty of recovery. We give considerable weight to actions that are consistent with an acknowledged IRP, and consistency with the plan is evidence to support favorable rate-making treatment of the action. If a utility seeks rate recovery of a significant investment that has not been included in an IRP, we will hold the utility to the same level of rigorous review required by the IRP to demonstrate the prudence of a project. Regardless of whether a utility intends to use the IRP process for a resource decisions, we expect to be kept informed about anticipated majority utility investment.	The Company has analyzed in the 2013 IRP major environmental investments required to meet known and prospective compliance obligations across PacifiCorp's existing coal fleet. Building upon modeling techniques developed in the 2011 IRP and the 2011 IRP Update, environmental investments specific to individual coal units required to achieve compliance with known and prospective federal and state environmental regulations have been integrated into the portfolio modeling process in the 2013 IRP. Potential alternatives to coal unit environmental investments are considered in the development of *all* resource portfolios developed for the 2013 IRP. Integrating potential environmental investment decisions into the portfolio development process allows each portfolio to reflect potential early retirement and resource replacement and/or natural gas conversion as alternatives to incremental environmental investment projects on a unit-by-unit basis. See Volume I, Chapters 7 (Modeling and Portfolio Evaluation Approach), and Chapter 8 (Modeling and Portfolio Selection Results). In addition to integrating coal unit environmental investment decisions into the portfolio development process, the Company has completed detailed financial analysis of near-term investment decisions in Confidential Volume III of the 2013 IRP.
Utah		
Order, Docket No. 11-2035-01, p. 17.	We generally accept the Company's approach [on externality cost values] and suggest continued discussion in the IRP public input process to determine a reasonable and manageable range of values. This could also include the notion that once a permit has been obtained, the external costs addressed through the permit are internalized; all other values should be treated as uncertainties through scenario development and a range of potential values.	PacifiCorp discussed the approach for modeling externality costs with CO_2 price scenarios. The Company discussed with stakeholders CO_2 price levels and in the context of defining portfolio case definitions and in interpreting model results at several public meetings (6/20/12, 7/13/12, 9/14/12, 1/13/2013, 3/21/2013, 4/5/2013, 4/17/2013). The Company worked closely with stakeholders, adopting numerous recommendations, in defining assumptions for portfolio development cases and sensitivities. Costs for adding pollution control equipment to meet current and potential environmental regulations are explicitly incorporated into the cost for affected generating assets, whether new or existing. See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) and Volume II, Appendix M (Case Study

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
		Fact Sheets).
Order, Docket No. 11-2035-01, p. 15.	[A]ny Potentials Study used to inform the IRP should be filed concurrently with the IRP.	The Demand-side Management Potentials study is posted to PacifiCorp's IRP website, referenced in Volume II, Appendix D (Demand-Side Management and Supplemental Resources). [13] An updated stochastic loss of load probability study prepared by Ventyx, is included in Volume II, Appendix I (Stochastic Loss of Load Study). A 2011 Geothermal Information Request was posted for stakeholder review on PacifiCorp's IRP website.[14] An energy storage screening study for integrating variable energy resources was posted for stakeholder review on the PacifiCorp IRP website.[15]
Order, Docket No. 11-2035-01, p. 21.	The Company should conduct a meeting to explain its development of DSM resource bundles. This meeting could be in an IRP technical conference, a DSM Advisory Group meeting or an IRP public input meeting. The Company should address its plans to closely monitor DSM resource acquisitions for adherence to IRP forecasts in its next IRP.	The topic of modeling energy efficiency resources was covered at the June 20, 2012 public input meeting, and was also discussed at the Utah stakeholder meeting held August 14, 2012. PacifiCorp distributed a paper on energy efficiency ramping assumptions October 10, 2012. Monitoring of DSM resource acquisitions is covered in Volume I, Chapter 9 (Action Plan).
Order, Docket No. 11-2035-01, p. 20.	The Company should consider hosting a public input meeting to discuss the objectives of and options for addressing long-term load volatility and long-term load-growth uncertainty and to respond to the five GDS recommendations. The Company should provide interested parties with any analysis it performs regarding the five GDS recommendations in advance of the meeting. GDS recommendations: 1. PacifiCorp should obtain and examine economic forecasts from one or two vendors in addition to IHS Global Insights. 2. GDS continues to contend that use of a measure of commercial and industrial output (e.g., retail sales or gross regional product) would be a better	PacifiCorp held a public meeting on September 14, 2012, to discuss the GDS report and PacifiCorp's plans for addressing the recommendations.

[13]http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/2013IRP_EnergyEfficiencyResourceRamping_10-22-2012.pdf
[14]http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/PacifiCorp_GIR_Report-PUBLIC_04-16-12.pdf
[15]http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/Report_Energy-Storage-Screening-Study2012.pdf

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
	theoretical driver in the commercial and industrial sales models. 3. We recommend that PacifiCorp initiate an investigation into line losses for Utah and Oregon, specifically, and for any other jurisdictions that exhibiting a strong trend over the last seven years and adjust their line loss projections accordingly. 4. GDS recommends the Company review economic range forecasts prepared by other utilities and produce ranges that have greater uncertainty built into them as the forecast horizon expands. 5. GDS recommends the Company move from a 1-in-10 year weather scenario to a 1-in-20 year weather scenario to produce an even more extreme weather case.	
Order, Docket No. 11-2035-01, p. 20.	[W]e have also found the state historic load information contained in IRPs to be valuable and prefer the Company include a ten year history of monthly energy, coincident peak, and non-coincident peak, by state, in all future IRPs.	State historical load information is reported in Volume II, Appendix A (Load Forecast Details).
Order, Docket No. 11-2035-01, pp. 7-8.	For acknowledgement in the future, the Company should provide all stochastic portfolio performance measures for the Preferred Portfolio and identify the additional cost associated with addressing the non-modeled objectives cited by the Company, e.g., social concerns, and cost recovery risk of geothermal resources. As required by Guideline 4.h., the Company should identify who will bear this financial risk, shareholders or customers.	PacifiCorp provided stochastic results for the preferred portfolio in Volume I, Chapter 8 (Modeling and Portfolio Selection Results). Volume II, Appendices K (Detailed Capacity Expansion Results) and L (Stochastic Production Cost Simulation Results) provide details on portfolio results and stochastic modeling results. The Company provides costs for additional modeling completed to inform selection of the preferred portfolio in Volume I, Chapter 8 (Modeling and Portfolio Selection Results).
Order, Docket No. 11-2035-01, p. 13.	The Company should fully vet changes in methods or evaluation criteria with public participants. The public input process schedule needs to be better managed to fully consider comments provided on the draft IRP.	PacifiCorp's portfolio selection methodology and performance criteria were fully vetted with stakeholders at the November 5, 2012 public input meeting. Enhanced modeling methods used in the portfolio development process related to analysis of renewable resources were vetted with stakeholders at the August 13, 2012 public input meeting. DSM modeling improvements were reviewed with stakeholders at the June 20, 2012 public input meeting. Transmission benefit modeling tools were reviewed with Stakeholders at the July 13, 2012, November 5, 2012, and February 27, 2013 public input meetings. Analysis of coal unit environmental investments were reviewed in the context of developing core and sensitivity case definitions, reviewed with stakeholders at several public input meetings. Improvements were made to the public comment and response process, including

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
		establishment of a stakeholder communications Web page for logging comments and PacifiCorp responses. Moreover, opportunities for stakeholder involvement were greatly expanded for the 2013 IRP, which included 15 public input meetings (more than twice the number of meetings held for the 2011 IRP public process), communications with stakeholders through several conference calls, and five state meetings.
Order, Docket No. 11-2035-01, pp. 13-14.	Going forward, the Company, in its next IRP, should spend more effort developing comparable cases and ensuring consistent and comparable evaluation of alternative resources. -- The Company should allow public input for developing a strategy to specify cases, and alternative "future" scenarios. -- The Company should also ensure this strategy provides a sufficient number of cases with common sets of inputs, with consistent assumptions, to perform meaningful comparisons of cases and scenarios. -- The next IRP should identify the cost tradeoffs to achieve different levels of performance with respect to the public interest criteria. -- Criteria the Company previously identified and addressed by manually modifying a given portfolio at the end of the evaluation process should be identified at the beginning of the IRP process. Cases should then be developed and evaluated using all criteria to determine cost, risk and reliability consequences. We will evaluate the success of this approach when the next IRP process concludes.	PacifiCorp worked collaboratively with stakeholders to produce core case definitions applied uniformly among five different Energy Gateway transmission scenarios and to produce sensitivity case definitions incorporating comments from a broad range of stakeholder interests. Comments from stakeholders were logged, responses by the Company generated, and discussion held on core case definitions among three public input meetings (6/20/12, 7/13/12, and 9/14/12). Through this process, the Company solicited specific case definition request from all stakeholders. See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) for a description of the core and sensitivity case definitions used in the 2013 IRP. Public interest criteria include "resource diversity" and "generator CO_2 emissions". PacifiCorp compared portfolios on the basis of these criteria. Costs for CO_2 emissions are incorporated into portfolios where CO_2 prices are assumed, allowing for a direct comparison of how emissions differences among portfolios contribution to system costs. See Chapter 8 (Modeling and Portfolio Selection Results). The Company did not perform manual modification of portfolios at the end of the portfolio evaluation process. Supplemental analysis, showing cost and risk metrics, were used to inform final selection of the preferred portfolio.
Order, Docket No. 11-2035-01, pp. 13-21.	UAE suggests the next IRP include the cost increase of alternative acquisition strategies. The Company should explore this suggestion. (From UAE comments: ..."the next IRP should also include the estimated increase in cost of the alternative near and long term acquisition strategies" [shown in Table 9.2])	Costs for portfolios, representing alternate acquisition strategies, are summarized in in Volume I, Chapter 8 (Modeling and Portfolio Selection Results) and in Volume II, Appendix K (Detailed Capacity Expansion Results) and Appendix L (Stochastic Production Cost Simulation Results).
Order, Docket No. 11-2035-01, p. 35.	In the future, the Company is directed to omit from its core cases any resource for which it does not already have a signed final procurement contract or certificate of public convenience and necessity. However, this does not preclude the Company from including such resources in sensitivity cases. This will assist with	The Company complies with this directive. See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) and Chapter 8 (Modeling and Portfolio Selection Results) as well as Volume II, Appendix K (Detailed Capacity Expansion Results), and Appendix L (Stochastic Production Cost Simulation Results).

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
	the consistent and comparable treatment of resources going forward.	
Order, Docket No. 11-2035-01, p. 13.	The Company argues steps to address model transparency will be expensive and time consuming. Rather, the Company recommends stakeholders identify specific modeling or assumption development concerns which the Company could investigate based on a clearly defined scope of work, considering schedules and analytical priorities, in the next IRP. This could involve additional model runs. The Company argues this type of validation strategy would be on-going and makes sense given evolving models and study requirements. We generally concur with the Company's suggested approach for the next IRP.	PacifiCorp and Ventyx established a Ventyx model support opportunity where stakeholders can pay time and material rates for Ventyx to run PacifiCorp's models and answer technical questions on model operations. So far no stakeholders have expressed interest beyond requesting more information on the opportunity.
Order, Docket No. 11-2035-01, p. 11.	UAE [Utah Association of Energy Users] notes IRP 2011 provides no discussion of rate design as required in Guideline 4.g. The Company should include this information in future IRPs.	The information is included in Volume I, Chapter 3 (The Planning Environment).
Order, Docket No. 11-2035-01, p. 10.	We find the Company has provided insufficient information in [the] IRP 2011 regarding the cost impacts to customers associated with the change from geothermal to wind resources in its Preferred Portfolio. This incremental cost of replacing the geothermal resources with wind resources could be included by the Company in its IRP update, along with a statement regarding whether the customer or shareholder should bear this cost.	PacifiCorp's renewable acquisition analysis and strategy is outlined in Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach), Chapter 8 (Modeling and Portfolio Selection Results), and Chapter 9 (Action Plan), and in Volume II, Appendix K (Detailed Capacity Expansion Results) and Appendix L (Stochastic Production Cost Simulation Results). Geothermal resources, modeled as a power purchase agreement, were not included the top performing portfolios analyzed in the 2013 IRP and are not in the preferred portfolio.
Order, Docket No. 11-2035-01, p. 11.	In its next IRP, the Company should evaluate the geothermal resource cost recovery risk directly. Since the geothermal cost already includes a development cost estimate, the Company in future IRPs could evaluate higher estimates, and compare this risk with the risks of other portfolios. Finally, we note the action plan contains no action item to address the cost recovery risk issue. The Company should also identify the actions it is taking to address this issue i.e., obtaining regulatory or legislative relief in other states, and include an action plan item in the IRP update to this end.	Geothermal resource recovery risk is addressed by assuming that geothermal resource acquisition would be in the form of Power Purchase Agreements (PPA) with size and location of these resources based on data received from a recent Request for Information. See Volume I, Chapter 6 (Resource Options). The Company developed proxy PPA geothermal resources using bids submitted for the all-source RFP for a 2016 resource. Core case C16 includes geothermal PPA resource options as described in Volume I, Chapter 7 (Modeling Results and Resource Analysis) and Volume II, Appendix M (Case Study Fact Sheets).

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
Order, Docket No. 11-2035-01, p. 15.	The Company should perform sensitivity and scenario analyses around key renewable resource cost assumptions in its next IRP.	PacifiCorp evaluated the core cases with and without renewable portfolio standard requirements to isolate the effect of these obligations on renewable resource selection. Case definitions also reflected different federal tax incentive assumptions, which influence the cost of new renewable resources. See Volume I, Chapter 7 (Modeling Results and Resource Analysis) and Volume II, Appendix M (Case Study Fact Sheets). In addition stakeholder input influenced cost assumptions for solar resources, which are assumed to experience real de-escalation in cost.
Order, Docket No. 11-2035-01, p. 18.	The Company should continue to provide the western market analysis in support of its reliance on market purchases.	See Volume II, Appendix J (Western Resource Adequacy Evaluation).
Order, Docket No. 11-2035-01, p. 18.	We accept a 13 percent planning reserve as reasonable for this IRP and recommend continued analysis of this issue [of the appropriate PRM level], both through LOLP and tradeoff analysis, and the testing of the 1.5 percent adjustment [for reserve sharing among Northwest Power Pool participants].	See Volume II, Appendix I (Stochastic Loss of Load Study). PacifiCorp's planning reserve margin study focused on estimating the marginal cost of reliability for different planning reserve margin levels, using the stochastic Expected Unserved Energy (EUE) measure. The reliability impact of reserve sharing among Northwest Power Pool members was explicitly incorporated in the production cost modeling.
Order, Docket No. 11-2035-01, p. 21.	The Company should continue to provide sensitivity analysis [on the assumed cost of Energy Not Served] and to discuss this issue in future meetings. This reliability measure is intended to identify the cost differences between portfolios. The Company could host a discussion regarding this measure and the extent to which the ENS measure is accomplishing this goal.	PacifiCorp held a public conference call (9/24/12) and a public meeting (11/27/12) to discuss the methodology and results of planning reserve margin study, one purpose of which is to measure the cost of avoiding Energy Not Served. See Volume II, Appendix I (Stochastic Loss of Load Study). ENS assumptions tied to FERC market cap levels, are incorporated in all portfolio simulations.
Washington		
UE-100514, pp. 3-4.	The next Plan should contain more analysis and discussion of the timing of the acquisition of the resources called for in the Company's preferred portfolio. For instance, the Plan could examine how lower load growth affects resource acquisition or risk-to-market exposure.	This is addressed in the Acquisition Path Analysis section in Volume I, Chapter 9 (Action Plan).
UE-100514, p. 2.	[T]he Company should provide more analysis and explanation of how it intends to meet the RPS requirements in Washington just as it describes the depth of its length (or shortage) in meeting capacity and energy.	The 2013 IRP incorporates a more detailed evaluation of state RPS requirements and compliance strategies including Washington. See Volume I, Chapter 8 (Modeling and Portfolio Selection Results) and Chapter 9 (Action Plan). Additional analysis of compliance with Washington's RPS requirements directly informed final selection of the preferred portfolio.
UE-100514, p. 2.	[T]he Company should consider in future Plans the addition of more localized resources, such as anaerobic digesters that may develop in Yakima, Grant, Benton and Franklin counties. Since the Company	Distributed generation resources are addressed in Volume I, Chapter 6 (Resource Options) and Chapter 9 (Action Plan).

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2013 IRP
	states that West Control Area resources options reflect its recent cost studies and project experience, we believe it should monitor opportunities to purchase the output of biodigesters in this part of its service territory.	
UE-100514, p. 3.	Wallula to McNary (Energy Gateway Segment A): While we recognize that the Company is obligated to provide sufficient transmission capacity to interconnect such generators pursuant to FERC policies, the IRP should conduct a detailed and separate analysis on how this additional transmission capacity benefits native load customers, whether it is necessary to meet increased load in this service territory or to provide enhanced reliability.	The Company is modeling individual transmission segments. See Volume I, Chapter 4 (Transmission), Chapter 7 (Modeling and Portfolio Evaluation Approach), and Chapter 9 (Action Plan) for details on how transmission investments were analyzed in the 2013 IRP and the specific actions the Company will take over the next two to four years based on this analysis.
UE-100514, p. 3.	West of Hemingway (Energy Gateway Segment H): At a minimum, we encourage the Company to participate actively in the various regional and sub-regional transmission planning efforts currently underway that are relevant to Hemingway to better inform its planning.	The Transmission Section, Chapter 4 (Transmission Planning and Investment) addresses all Energy Gateway evaluations and the Company's participation in other regional and sub regional transmission planning efforts.
Wyoming		
The Wyoming Public Service Commission provided the following comment in its Letter Order (Docket No. 20000-394-EA-11, record No. 12813, dated 12/8/2011) on PacifiCorp's 2011 IRP: *Pursuant to open meeting action taken on November 17, 2011, PacifiCorp d/b/a Rocky Mountain Power's 2011 Integrated Resource Plan (IRP) is hereby placed in the Commission's files. No further action will be taken and this docketed matter is closed.*		

Table B.3 – Oregon Public Utility Commission IRP Standard and Guidelines

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
Guideline 1. Substantive Requirements		
1.a.1	All resources must be evaluated on a consistent and comparable basis: All known resources for meeting the utility's load should be considered, including supply-side options which focus on the generation, purchase and transmission of power – or gas purchases, transportation, and storage – and demand-side options which focus on conservation and demand response.	PacifiCorp considered a wide range of resources including renewables, demand-side management, distributed generation, energy storage, power purchases, thermal resources, and transmission. Volume I, Chapter 4 (Transmission Planning), Chapter 6 (Resource Options), and Chapter 7 (Modeling and Portfolio Evaluation Approach) document how PacifiCorp developed these resources and modeled them in its portfolio analysis. All these resources were established as resource options in the Company's capacity expansion optimization model, System Optimizer, and selected by the model based on load requirements, relative economics, resource size, availability dates, and other factors.

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
1.a.2	All resources must be evaluated on a consistent and comparable basis: Utilities should compare different resource fuel types, technologies, lead times, in-service dates, durations and locations in portfolio risk modeling.	All portfolios developed with System Optimizer were subjected to Monte Carlo production cost simulation. These portfolios contained a variety of resource types with different fuel types (coal, gas, biomass, nuclear fuel, "no fuel" renewables), lead-times (ranging from front office transactions to nuclear plants), in-service dates, life-times, and locations. See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach), Chapter 8 (Modeling and Portfolio Selection Results), and Volume II, Appendix K (Detail Capacity Expansion Results) and Appendix L (Stochastic Production Cost Simulation Results).
1.a.3	All resources must be evaluated on a consistent and comparable basis: Consistent assumptions and methods should be used for evaluation of all resources.	PacifiCorp fully complies with this requirement. The company developed generic supply-side resource attributes based on a consistent characterization methodology. For demand-side resources, the company used the Cadmus Group's supply curve data developed in 2012 for representation of DSM and distributed generation resources, which was also based on a consistently applied methodology for determining technical, market, and achievable DSM potentials. All portfolio resources were evaluated using the same sets of price and load forecast inputs. These inputs are documented in Volume I, Chapter 5 (Resource Needs Assessment), Chapter 6 (Resource Alternatives), and Chapter 7 (Modeling and Portfolio Evaluation Approach) as well as Volume II, Appendix D (Demand-Side Management and Supplemental Resources).
1.a.4	All resources must be evaluated on a consistent and comparable basis: The after-tax marginal weighted-average cost of capital (WACC) should be used to discount all future resource costs.	PacifiCorp applied its nominal after-tax WACC of 6.88 percent to discount all cost streams.
1.b.1	Risk and uncertainty must be considered: At a minimum, utilities should address the following sources of risk and uncertainty: 1. Electric utilities: load requirements, hydroelectric generation, plant forced outages, fuel prices, electricity prices, and costs to comply with any regulation of greenhouse gas emissions.	Each of the sources of risk identified in this guideline is treated as a stochastic variable in Monte Carlo production cost simulation with the exception of CO_2 emission compliance costs, which are treated as a scenario risk. Additional scenario risk is used to evaluate load sensitivities. See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach).
1.b.2	Risk and uncertainty must be considered: Utilities should identify in their plans any additional sources of risk and uncertainty.	Resource risk mitigation is discussed in Volume I, Chapter 9 (Action Plan). Regulatory and financial risks associated with resource and transmission investments are highlighted in several areas in the IRP document, including Volume I, Chapter 3 (The Planning Environment), Chapter 4 (Transmission), Chapter 7 (Modeling and Portfolio Evaluation Approach), and Chapter 8 (Modeling and Portfolio Selection Results).
1.c	The primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers ("best cost/risk portfolio").	PacifiCorp evaluated cost/risk tradeoffs for each of the portfolios considered. See Volume I, Chapter 8 (Modeling and Portfolio Selection Results), Chapter 9 (Action Plan), and Volume II, Appendix K (Detailed Capacity Expansion Results) and Appendix L (Stochastic Production Cost

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
		Simulation Results) for the Company's portfolio cost/risk analysis and determination of the preferred portfolio.
1.c.1	The planning horizon for analyzing resource choices should be at least 20 years and account for end effects. Utilities should consider all costs with a reasonable likelihood of being included in rates over the long term, which extends beyond the planning horizon and the life of the resource.	PacifiCorp used a 20-year study period (2013-2032) for portfolio modeling, and a real levelized revenue requirement methodology for treatment of end effects.
1.c.2	Utilities should use present value of revenue requirement (PVRR) as the key cost metric. The plan should include analysis of current and estimated future costs for all long-lived resources such as power plants, gas storage facilities, and pipelines, as well as all short-lived resources such as gas supply and short-term power purchases.	Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) provides a description of the PVRR methodology.
1.c.3.1	To address risk, the plan should include, at a minimum: 1. Two measures of PVRR risk: one that measures the variability of costs and one that measures the severity of bad outcomes.	PacifiCorp uses the standard deviation of stochastic production costs as the measure of cost variability. For the severity of bad outcomes, the company calculates several measures, including stochastic upper-tail mean PVRR (mean of highest five Monte Carlo iterations) and the 95th percentile stochastic production cost PVRR.
1.c.3.2	To address risk, the plan should include, at a minimum: 2. Discussion of the proposed use and impact on costs and risks of physical and financial hedging.	A discussion on hedging is provided in Volume I, Chapter 9 (Action Plan).
1.c.4	The utility should explain in its plan how its resource choices appropriately balance cost and risk.	Volume I, Chapter 8 (Modeling and Portfolio Selection Results) summarizes the results of PacifiCorp's cost/risk tradeoff analysis, and describes what criteria the Company used to determine the best cost/risk portfolios and the preferred portfolio.
1.d	The plan must be consistent with the long-run public interest as expressed in Oregon and federal energy policies.	PacifiCorp considered both current and potential state and federal energy/pollutant emission policies in portfolio modeling. Volume I, Chapter 7 describes the decision process used to derive portfolios, which includes consideration of state and federal resource policies and regulations that are summarized in Volume I, Chapter 3 (The Planning Environment). Volume I, Chapter 8 (Modeling and Portfolio Selection Results) provides the results. Volume I, Chapter 9 (Action Plan) presents an acquisition path analysis that describes resource strategies based on regulatory trigger events.
Guideline 2. Procedural Requirements		
2.a	The public, which includes other utilities, should be allowed significant involvement in the preparation of the IRP. Involvement includes opportunities to contribute information and ideas, as well as to receive information. Parties must have an opportunity to make	PacifiCorp fully complies with this requirement. Volume I, Chapter 2 (Introduction) provides an overview of the public process, all public meetings held for the 2013 IRP, which are documented in Volume II, Appendix C (Public Input Process).

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
	relevant inquiries of the utility formulating the plan. Disputes about whether information requests are relevant or unreasonably burdensome, or whether a utility is being properly responsive, may be submitted to the Commission for resolution.	
2.b	While confidential information must be protected, the utility should make public, in its plan, any non-confidential information that is relevant to its resource evaluation and action plan. Confidential information may be protected through use of a protective order, through aggregation or shielding of data, or through any other mechanism approved by the Commission.	2013 IRP Volumes I and II provide non-confidential information the Company used for portfolio evaluation, as well as other data requested by stakeholders. PacifiCorp also provided stakeholders with non-confidential information to support public meeting discussions via email. Volume III of the 2013 IRP is confidential and will be protected through the use of a protective order.
2.c	The utility must provide a draft IRP for public review and comment prior to filing a final plan with the Commission.	PacifiCorp distributed draft IRP materials for external review throughout the process prior to each of the public input meetings and solicited/and received feedback at various times when developing the 2013 IRP. The materials shared with stakeholders at these meetings, outlined in Volume I Chapter 2 (Introduction), is consistent with materials presented in Volumes I, II, and III of the 2013 IRP report. PacifiCorp requested and responded to comments from stakeholders in developing core case definitions. The Company considered comments received following the April 5, 2013 and April 17, 2013 public input meetings in developing its final plan.
Guideline 3: Plan Filing, Review, and Updates		
3.a	A utility must file an IRP within two years of its previous IRP acknowledgment order. If the utility does not intend to take any significant resource action for at least two years after its next IRP is due, the utility may request an extension of its filing date from the Commission.	The 2013 IRP complies with this requirement.
3.b	The utility must present the results of its filed plan to the Commission at a public meeting prior to the deadline for written public comment.	This activity will be conducted subsequent to filing this IRP.
3.c	Commission staff and parties must complete their comments and recommendations within six months of IRP filing.	This activity will be conducted subsequent to filing this IRP.
3.d	The Commission will consider comments and recommendations on a utility's plan at a public meeting before issuing an order on acknowledgment. The Commission may provide the utility an opportunity to revise the IRP before issuing an acknowledgment order.	This activity will be conducted subsequent to filing this IRP.

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
3.e	The Commission may provide direction to a utility regarding any additional analyses or actions that the utility should undertake in its next IRP.	Not applicable.
3.f	(a) Each energy utility must submit an annual update on its most recently acknowledged IRP. The update is due on or before the acknowledgment order anniversary date. Once a utility anticipates a significant deviation from its acknowledged IRP, it must file an update with the Commission, unless the utility is within six months of filing its next IRP. The utility must summarize the update at a Commission public meeting. The utility may request acknowledgment of changes in proposed actions identified in an update.	This activity will be conducted subsequent to filing this IRP.
3.g	Unless the utility requests acknowledgment of changes in proposed actions, the annual update is an informational filing that: (a)Describes what actions the utility has taken to implement the plan; (b) Provides an assessment of what has changed since the acknowledgment order that affects the action plan to select best portfolio of resources, including changes in such factors as load, expiration of resource contracts, supply-side and demand-side resource acquisitions, resource costs, and transmission availability; and (c) Justifies any deviations from the acknowledged action plan.	This activity will be conducted subsequent to filing this IRP.
Guideline 4. Plan Components (at a minimum, must include…)		
4.a	An explanation of how the utility met each of the substantive and procedural requirements.	The purpose of this table is to comply with this guideline.
4.b	Analysis of high and low load growth scenarios in addition to stochastic load risk analysis with an explanation of major assumptions.	PacifiCorp developed low, high, and extreme peak temperature (one-in-twenty probability) load growth forecasts for scenario analysis using the System Optimizer model. Stochastic variability of loads was also captured in the risk analysis. See Volume I, Chapters 5 (Resource Needs Assessment) and Chapter 7 (Modeling and Portfolio Evaluation Approach), and Volume II, Appendix A (Load Forecast) for load forecast information.
4.c	For electric utilities, a determination of the levels of peaking capacity and energy capability expected for each year of the plan, given existing resources; identification of capacity and energy needed to bridge the gap between expected loads and resources; modeling of all existing transmission rights, as well as future transmission additions associated with the resource portfolios tested.	See Chapter 5 (Resource Need Assessment) for details on annual capacity and energy balances. Existing transmission rights are reflected in the IRP model topologies. Future transmission additions used in analyzing portfolios are summarized in Volume I, Chapter 4 (Transmission) and Chapter 7 (Modeling and Portfolio Evaluation Approach)

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
4.d	For gas utilities only	Not applicable
4.e	Identification and estimated costs of all supply-side and demand side resource options, taking into account anticipated advances in technology	Volume I, Chapter 6 (Resource Options) identifies the resources included in this IRP, and provides their detailed cost and performance attributes. Additional information on energy efficiency resource characteristics is available in Volume II, Appendix D (Demand-Side Management and Supplemental Resources) referencing additional information on PacifiCorp's IRP Web, site see footnote 3 of this Appendix B.
4.f	Analysis of measures the utility intends to take to provide reliable service, including cost-risk tradeoffs	In addition to incorporating a 13 percent planning reserve margin for all portfolios evaluated, as supported by an updated Stochastic Loss of Load Study in Volume II, Appendix I), the Company used several measures to evaluate relative portfolio supply reliability. These measures (Energy Not Served and Loss of Load Probability) are described in Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach).
4.g	Identification of key assumptions about the future (e.g., fuel prices and environmental compliance costs) and alternative scenarios considered	Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) describes the key assumptions and alternative scenarios used in this IRP. Volume II, Appendix M (Case Study Fact Sheets) includes summaries of assumptions used for each case definition analyzed in the 2013 IRP.
4.h	Construction of a representative set of resource portfolios to test various operating characteristics, resource types, fuels and sources, technologies, lead times, in-service dates, durations and general locations – system-wide or delivered to a specific portion of the system	This Plan documents the development and results of portfolios designed to determine resource selection under a variety of input assumptions in Volume I, Chapters7 (Modeling and Portfolio Evaluation Approach) and Chapter 8 (Modeling and Portfolio Selection Results).
4.i	Evaluation of the performance of the candidate portfolios over the range of identified risks and uncertainties	Volume I, Chapter 8 (Modeling and Portfolio Selection Results) presents the stochastic portfolio modeling results, and describes portfolio attributes that explain relative differences in cost and risk performance.
4.j	Results of testing and rank ordering of the portfolios by cost and risk metric, and interpretation of those results.	Volume I, Chapter 8 (Modeling and Portfolio Selection Results) provides tables and charts with performance measure results, including rank ordering.
4.k	Analysis of the uncertainties associated with each portfolio evaluated.	See responses to 1.b.1 and 1.b.2 above.
4.l	Selection of a portfolio that represents the best combination of cost and risk for the utility and its customers.	See 1.c above.
4.m	Identification and explanation of any inconsistencies of the selected portfolio with any state and federal energy policies that may affect a utility's plan and any barriers to implementation.	This IRP is designed to avoid inconsistencies with state and federal energy policies therefore none are currently identified.
	An action plan with resource activities the utility intends to undertake over the next two to four years to acquire the identified resources, regardless of whether the activity was acknowledged in a previous IRP, with the key	Chapter 9 (Action Plan) presents the 2013 IRP action plan.

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
	attributes of each resource specified as in portfolio testing.	
Guideline 5: Transmission		
5	Portfolio analysis should include costs to the utility for the fuel transportation and electric transmission required for each resource being considered. In addition, utilities should consider fuel transportation and electric transmission facilities as resource options, taking into account their value for making additional purchases and sales, accessing less costly resources in remote locations, acquiring alternative fuel supplies, and improving reliability.	PacifiCorp evaluated five Energy Gateway transmission project configurations on a consistent and comparable basis with respect to other resources. Fuel transportation costs were factored into resource costs.
Guideline 6: Conservation		
6.a	Each utility should ensure that a conservation potential study is conducted periodically for its entire service territory.	A multi-state demand-side management potential study was completed in 2012, and those results were incorporated into this plan.
6.b	To the extent that a utility controls the level of funding for conservation programs in its service territory, the utility should include in its action plan all best cost/risk portfolio conservation resources for meeting projected resource needs, specifying annual savings targets.	PacifiCorp's energy efficiency supply curves incorporate Oregon resource potential. Oregon potential estimates were provided by the Energy Trust of Oregon. See the demand-side resource section in Volume I, Chapter 6 (Resource Alternatives), the results in Volume I, Chapter 8 (Modeling and Portfolio Selection Results) and the implementation steps outlined in Volume I, Chapter 9 (Action Plan).
6.c	To the extent that an outside party administers conservation programs in a utility's service territory at a level of funding that is beyond the utility's control, the utility should: 1. Determine the amount of conservation resources in the best cost/risk portfolio without regard to any limits on funding of conservation programs; and 2. Identify the preferred portfolio and action plan consistent with the outside party's projection of conservation acquisition.	See the response for 6.b above.
Guideline 7: Demand Response		
7	Plans should evaluate demand response resources, including voluntary rate programs, on par with other options for meeting energy, capacity, and transmission needs (for electric utilities) or gas supply and transportation needs (for natural gas utilities).	PacifiCorp evaluated demand response resources (Class 1 and 3 DSM) on a consistent basis with other resources.
Guideline 8: Environmental Costs		
8.a	Base case and other compliance scenarios: The utility should construct a base-case scenario to reflect what it considers to be the most likely regulatory compliance future for carbon dioxide (CO_2), nitrogen oxides, sulfur oxides, and mercury emissions. The utility should develop	See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach). "Medium" assumptions used to define core cases reflect PacifiCorp's base scenario considered to be the most likely regulatory compliance scenario at this time.

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
	several compliance scenarios ranging from the present CO_2 regulatory level to the upper reaches of credible proposals by governing entities. Each compliance scenario should include a time profile of CO_2 compliance requirements. The utility should identify whether the basis of those requirements, or "costs," would be CO_2 taxes, a ban on certain types of resources, or CO_2 caps (with or without flexibility mechanisms such as allowance or credit trading as a safety valve). The analysis should recognize significant and important upstream emissions that would likely have a significant impact on resource decisions. Each compliance scenario should maintain logical consistency, to the extent practicable, between the CO_2 regulatory requirements and other key inputs.	Multiple compliance scenarios were used in core case definitions, including ranges in CO2 prices between zero and those assumed to achieve an 80% reduction in power sector emissions by 2050. For modeling purposes, the cost of CO2 emissions are applied as a tax in which there is a cost imputed on each ton of CO2 emissions generated by system resources. This approach is used in recognition that there are a wide range of policy mechanisms that might be used to regulate CO2 emissions in the power sector at some point in the future. Application of CO2 prices as a tax is a means to assign costs to CO2 emissions as a surrogate for a wide range of potential future policy tools, whether implemented as a tax, cap-and-trade program, emission performance standards, or some other policy mechanism. PacifiCorp used both base case and stringent case assumptions for future Regional Haze regulations requiring investments to control nitrogen oxides and sulfur oxides. All cases developed for the 2013 IRP include investments required to achieve compliance with the Mercury and Air Toxics Standards.
8.b	Testing alternative portfolios against the compliance scenarios: The utility should estimate, under each of the compliance scenarios, the present value revenue requirement (PVRR) costs and risk measures, over at least 20 years, for a set of reasonable alternative portfolios from which the preferred portfolio is selected. The utility should incorporate end-effect considerations in the analyses to allow for comparisons of portfolios containing resources with economic or physical lives that extend beyond the planning period. The utility should also modify projected lifetimes as necessary to be consistent with the compliance scenario under analysis. In addition, the utility should include, if material, sensitivity analyses on a range of reasonably possible regulatory futures for nitrogen oxides, sulfur oxides, and mercury to further inform the preferred portfolio selection.	Volume II, Appendix L (Stochastic Production Costs Simulation Results) provides the Stochastic mean PVRR versus upper tail mean less stochastic mean PVRR scatter plot diagrams that for a broad range of portfolios developed with a range of compliance scenarios as summarized in 8.c above. The Company considers end-effects in its use of Real Levelized Revenue Requirement Analysis, as summarized in Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) and uses a 20-year planning horizon. Early retirement and gas conversion alternatives to coal unit environmental investments were considered in the development of all resource portfolios. Alternate scenarios were applied in the 2013 IRP to capture the possibility of more stringent Regional Haze compliance obligations.
8.c	Trigger point analysis: The utility should identify at least one CO_2 compliance "turning point" scenario, which, if anticipated now, would lead to, or "trigger" the selection of a portfolio of resources that is substantially different from the preferred portfolio. The utility should develop a substitute portfolio appropriate for this trigger-point scenario and compare the substitute portfolio's expected cost	See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) for a description of core case definitions. Several of these core case definitions "triggered" portfolios with extensive coal unit retirements and gas conversions that differ substantially from the preferred portfolio. Comparative analysis of results is included in Volume I, Chapter 8 (Modeling and Portfolio Selection Results).

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
	and risk performance to that of the preferred portfolio – under the base case and each of the above CO_2 compliance scenarios. The utility should provide its assessment of whether a CO_2 regulatory future that is equally or more stringent that the identified trigger point will be mandated.	
	Oregon compliance portfolio: If none of the above portfolios is consistent with Oregon energy policies (including state goals for reducing greenhouse gas emissions) as those policies are applied to the utility, the utility should construct the best cost/risk portfolio that achieves that consistency, present its cost and risk parameters, and compare it to those the preferred and alternative portfolios.	Several portfolios yield system emissions aligned with state goals for reducing greenhouse gas emissions. These cases are summarized in Volume I, Chapter 8 (Modeling and Portfolio Selection Results).
Guideline 9: Direct Access Loads		
9	An electric utility's load-resource balance should exclude customer loads that are effectively committed to service by an alternative electricity supplier.	PacifiCorp continues to plan for load for direct access customers.
Guideline 10: Multi-state Utilities		
10	Multi-state utilities should plan their generation and transmission systems, or gas supply and delivery, on an integrated system basis that achieves a best cost/risk portfolio for all their retail customers.	The 2013 IRP conforms to the multi-state planning approach as stated in Volume I, Chapter 2 under the section "The Role of PacifiCorp's Integrated Resource Planning". The Company notes the challenges in complying with multi-state integrated planning given differing state energy policies and resource preferences.
Guideline 11: Reliability		
11	Electric utilities should analyze reliability within the risk modeling of the actual portfolios being considered. Loss of load probability, expected planning reserve margin, and expected and worst-case unserved energy should be determined by year for top-performing portfolios. Natural gas utilities should analyze, on an integrated basis, gas supply, transportation, and storage, along with demand-side resources, to reliably meet peak, swing, and base-load system requirements. Electric and natural gas utility plans should demonstrate that the utility's chosen portfolio achieves its stated reliability, cost and risk objectives.	See the response to 1.c.3.1 above. Volume I, Chapter 8 (Modeling and Portfolio Selection Results) walks through the role of reliability, cost, and risk measures in determining the preferred portfolio. Scatter plots of portfolio cost versus risk at different CO_2 cost levels were used to inform the cost/risk tradeoff analysis.
Guideline 12: Distributed Generation		
12	Electric utilities should evaluate distributed generation technologies on par with other supply-side resources and should consider, and quantify where possible, the additional benefits of distributed generation.	PacifiCorp evaluated several types of distributed generation resources, including combined heat and power (CHP) and solar photovoltaic systems. The results of these evaluations are documented in Chapter 8 (Modeling and Portfolio Selection Results).
Guideline 13: Resource Acquisition		

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
13.a	An electric utility should, in its IRP: 1. Identify its proposed acquisition strategy for each resource in its action plan. 2. Assess the advantages and disadvantages of owning a resource instead of purchasing power from another party. 3. Identify any Benchmark Resources it plans to consider in competitive bidding.	Chapter 9 (Action Plan) outlines the procurement approaches for resources identified in the preferred portfolio. A discussion of the advantages and disadvantages of owning a resource instead of purchasing it is included in Chapter 9 (Action Plan). There are no Benchmark Resources in Chapter 9 (Action Plan).
13.b	For gas utilities only	Not applicable
Flexible Capacity Resources		
1	Forecast the Demand for Flexible Capacity: The electric utilities shall forecast the balancing reserves needed at different time intervals (e.g. ramping needed within 5 minutes) to respond to variation in load and intermittent renewable generation over the 20-year planning period.	See Volume II, Appendix F (Flexible Resource Needs Assessment).
2	Forecast the Supply of Flexible Capacity: The electric utilities shall forecast the balancing reserves available at different time intervals (e.g. ramping available within 5 minutes) from existing generating resources over the 20-year planning period.	See Volume II, Appendix F (Flexible Resource Needs Assessment).
3	Evaluate Flexible Resources on a Consistent and Comparable Basis: In planning to fill any gap between the demand and supply of flexible capacity, the electric utilities shall evaluate all resource options, including the use of EVs, on a consistent and comparable basis.	See Volume II, Appendix F (Flexible Resource Needs Assessment).

Table B.4 – Utah Public Service Commission IRP Standard and Guidelines

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
Procedural Issues		
1	The Commission has the legal authority to promulgate Standards and Guidelines for integrated resource planning.	Not addressed; this is a Public Service Commission of Utah responsibility.
2	Information Exchange is the most reasonable method for developing and implementing integrated resource planning in Utah.	Information exchange has been conducted throughout the IRP process.
3	Prudence reviews of new resource acquisitions will occur during ratemaking proceedings.	Not an IRP requirement as the Commission acknowledges that prudence reviews will occur during ratemaking proceedings, outside of the IRP process.
4	PacifiCorp's integrated resource planning process will be open to the public at all stages. The Commission, its staff, the Division, the	PacifiCorp's public process is described in Volume I, Chapter 2 (Introduction). A record of public meetings is provided in Volume II, Appendix C (Public Input Process).

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
	Committee, appropriate Utah state agencies, and other interested parties can participate. The Commission will pursue a more active-directive role if deemed necessary, after formal review of the planning process.	
5	Consideration of environmental externalities and attendant costs must be included in the integrated resource planning analysis.	PacifiCorp used a scenario analysis approach along with externality cost adders to model environmental externality costs. See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) for a description of the methodology employed, including how CO_2 cost uncertainty is factored into the determination of relative portfolio performance.
6	The integrated resource plan must evaluate supply-side and demand-side resources on a consistent and comparable basis.	Supply, transmission, and demand-side resources were evaluated on a comparable basis using PacifiCorp's capacity expansion optimization model. Also see the response to number 4.b.ii below.
7	Avoided cost should be determined in a manner consistent with the Company's Integrated Resource Plan.	Consistent with the Utah rules, PacifiCorp determination of avoided costs in Utah will be handled in a manner consistent with the IRP, with the caveat that the costs may be updated if better information becomes available.
8	The planning standards and guidelines must meet the needs of the Utah service area, but since coordination with other jurisdictions is important, must not ignore the rules governing the planning process already in place in other jurisdictions.	This IRP was developed in consultation with parties from all state jurisdictions, and meets all formal state IRP guidelines.
9	The Company's Strategic Business Plan must be directly related to its Integrated Resource Plan.	Volume I, Chapter 9 (Action Plan) describes the linkage between the 2013 IRP preferred portfolio and 2013 business plan resources approved in December 2012. Significant resource differences are highlighted.
Standards and Guidelines		
1	Definition: Integrated resource planning is a utility planning process which evaluates all known resources on a consistent and comparable basis, in order to meet current and future customer electric energy services needs at the lowest total cost to the utility and its customers, and in a manner consistent with the long-run public interest. The process should result in the selection of the optimal set of resources given the expected combination of costs, risk and uncertainty.	Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) outlines the portfolio performance evaluation and preferred portfolio selection process, while Chapter 8 (Modeling and Portfolio Selection Results) chronicles the modeling and preferred portfolio selection process. This IRP also addresses concerns expressed by Utah stakeholders and the Utah commission concerning comprehensiveness of resources considered, consistency in applying input assumptions for portfolio modeling, and explanation of PacifiCorp's decision process for selecting top-performing portfolios and the preferred portfolio.
2	The Company will submit its Integrated Resource Plan biennially.	The company submitted its last IRP on March 31, 2011, and filed this IRP on April 30, 2013, after requesting a one month filing extension. PacifiCorp normally files the IRP with all commissions on March 31 in each odd-numbered year.
3	IRP will be developed in consultation with the Commission, its staff, the Division of Public Utilities, the Committee of Consumer Services, appropriate Utah state agencies and interested	PacifiCorp's public process is described in Volume I, Chapter 2 (Introduction). A record of public meetings is provided in Volume II, Appendix C (Public Input Process).

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
	parties. PacifiCorp will provide ample opportunity for public input and information exchange during the development of its Plan.	
4.a	PacifiCorp's integrated resource plans will include: a range of estimates or forecasts of load growth, including both capacity (kW) and energy (kWh) requirements.	PacifiCorp implemented a load forecast range for both capacity expansion optimization scenarios as well as for stochastic variability, covering both capacity and energy. Details concerning the load forecasts used in the 2013 IRP are provided in Volume I, Chapter 5 (Resource Needs Assessment) and Volume II, Appendix A (Load Forecast Details).
4.a.i	The forecasts will be made by jurisdiction and by general class and will differentiate energy and capacity requirements. The Company will include in its forecasts all on-system loads and those off-system loads which they have a contractual obligation to fulfill. Non-firm off-system sales are uncertain and should not be explicitly incorporated into the load forecast that the utility then plans to meet. However, the Plan must have some analysis of the off-system sales market to assess the impacts such markets will have on risks associated with different acquisition strategies.	Load forecasts are differentiated by jurisdiction and differentiate energy and capacity requirements. See Volume I, Chapter 5 (Resource Needs Assessment) and Volume II, Appendix A (Load Forecast Details). Non-firm off-system sales are not incorporated into the load forecast. Off-system sales markets are included in IRP modeling and are used for system balancing purposes.
4.a.ii	Analyses of how various economic and demographic factors, including the prices of electricity and alternative energy sources, will affect the consumption of electric energy services, and how changes in the number, type and efficiency of end-uses will affect future loads.	Volume II, Appendix A (Load Forecast Details) documents how demographic and price factors are used in PacifiCorp's load forecasting methodology.
4.b	An evaluation of all present and future resources, including future market opportunities (both demand-side and supply-side), on a consistent and comparable basis.	Resources were evaluated on a consistent and comparable basis using the System Optimizer model and Planning and Risk production cost model using both supply side and demand side alternatives. See explanation in Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) and the results in Volume I, Chapter 8 (Modeling and Portfolio Selection Results). Resource options are summarized in Volume I, Chapter 6 (Resource Options).
4.b.i	An assessment of all technically feasible and cost-effective improvements in the efficient use of electricity, including load management and conservation.	PacifiCorp included supply curves for Class 1 DSM (dispatchable/schedulable load control) and Class 2 DSM (energy efficiency measures) in its capacity expansion model. Details are provided in Volume I, Chapter 6 (Resource Options). A sensitivity study of demand-response programs (Class 3 DSM) was also conducted and reported in Volume I, Chapter 8 (Modeling and Portfolio Selection Results).
4.b.ii	An assessment of all technically feasible generating technologies including: renewable resources, cogeneration, power purchases from other sources, and the construction of thermal resources.	PacifiCorp considered a wide range of resources including renewables, cogeneration (combined heat and power), power purchases, thermal resources, energy storage, and Energy Gateway transmission configurations. Volume I, Chapters 6 (Resource Options) and 7 (Modeling and Portfolio Evaluation Approach) contain assumptions and describe the process under which PacifiCorp developed and assessed these technologies and resources.

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
4.b.iii	The resource assessments should include: life expectancy of the resources, the recognition of whether the resource is replacing/adding capacity or energy, dispatchability, lead-time requirements, flexibility, efficiency of the resource and opportunities for customer participation.	PacifiCorp captures and models these resources attributes in its IRP models. Resources are defined as providing capacity, energy, or both. The DSM supply curves and distributed generation resources used for portfolio modeling explicitly incorporate estimated rates of program and event participation. Replacement capacity is considered in the case of early coal unit retirements as evaluated in this IRP as an alternative to coal unit environmental investments. Dispatchability is accounted for in both IRP models used; however, the Planning and Risk model provides a more detailed representation of unit dispatch than System Optimizer, and includes modeling of unit commitment and reserves.
4.c	An analysis of the role of competitive bidding for demand-side and supply-side resource acquisitions	A description of the role of competitive bidding and other procurement methods is provided in Volume I, Chapter 9 (Action Plan).
4.d	A 20-year planning horizon.	This IRP uses a 20-year study horizon (2013-2032)
4.e	An action plan outlining the specific resource decisions intended to implement the integrated resource plan in a manner consistent with the Company's strategic business plan. The action plan will span a four-year horizon and will describe specific actions to be taken in the first two years and outline actions anticipated in the last two years. The action plan will include a status report of the specific actions contained in the previous action plan.	The IRP action plan is provided in Volume I, Chapter 9 (Action Plan). A status report of the actions outlined in the previous action plan (2011 IRP update) is provided in Volume I, Chapter 9 (Action Plan). In Volume I, Chapter 9 (Action Plan) Table 9.1 identifies actions anticipated in the next two years and in the next four years.
4.f	A plan of different resource acquisition paths for different economic circumstances with a decision mechanism to select among and modify these paths as the future unfolds.	Volume I, Chapter 9 (Action Plan) includes an acquisition path analysis that presents broad resource strategies based on regulatory trigger events, change in load growth, extension of federal renewable resource tax incentives and procurement delays.
4.g	An evaluation of the cost-effectiveness of the resource options from the perspectives of the utility and the different classes of ratepayers. In addition, a description of how social concerns might affect cost effectiveness estimates of resource options.	PacifiCorp provides resource-specific utility and total resource cost information in Volume I, Chapter 6 (Resource Options). The IRP document addresses the impact of social concerns on resource cost-effectiveness in the following ways: ● Portfolios were evaluated using a range of CO_2 cost futures. ● A discussion of environmental policy status and impacts on utility resource planning is provided in Volume I, Chapter 3 (The Planning Environment). ● State and proposed federal public policy preferences for clean energy are considered for development of the preferred portfolio, which is documented in Volume I, Chapter 8 (Modeling and Portfolio Selection Results). ● Volume II, Appendix G (Plant Water Consumption) of reports historical water consumption for PacifiCorp's thermal plants.

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
4.h	An evaluation of the financial, competitive, reliability, and operational risks associated with various resource options and how the action plan addresses these risks in the context of both the Business Plan and the 20-year Integrated Resource Plan. The Company will identify who should bear such risk, the ratepayer or the stockholder.	The handling of resource risks is discussed in Volume I, Chapter 9 (Action Plan), and covers managing environmental risk for existing plants, risk management and hedging and treatment of customer and investment risk. Transmission expansion risks are discussed in Chapter 4 (Transmission). Resource capital cost uncertainty and technological risk is addressed in Volume I, Chapter 6 (Resource Options). For reliability risks, the stochastic simulation model incorporates stochastic volatility of forced outages for new thermal plants and hydro availability. These risks are factored into the comparative evaluation of portfolios and the selection of the preferred portfolio upon which the action plan is based. Identification of the classes of risk and how these risks are allocated to ratepayers and investors is discussed in Volume I, Chapter 9 (Action Plan).
4.i	Considerations permitting flexibility in the planning process so that the Company can take advantage of opportunities and can prevent the premature foreclosure of options.	Flexibility in the planning and procurement processes is highlighted in Volume I, Chapter 9 (Action Plan), specifically, Table 9.1.
4.j	An analysis of tradeoffs; for example, between such conditions of service as reliability and dispatchability and the acquisition of lowest cost resources.	PacifiCorp examined the trade-off between portfolio cost and risk, taking into consideration a broad range of resource alternatives defined with varying levels of dispatchability. This trade-off analysis is documented in Volume I, Chapter 8 (Modeling and Portfolio Selection Results), and highlighted through the use of scatter-plot graphs showing the relationship between stochastic mean and upper-tail mean stochastic PVRR.
4.k	A range, rather than attempts at precise quantification, of estimated external costs which may be intangible, in order to show how explicit consideration of them might affect selection of resource options. The Company will attempt to quantify the magnitude of the externalities, for example, in terms of the amount of emissions released and dollar estimates of the costs of such externalities.	PacifiCorp incorporated environmental externality costs for CO_2 and costs for complying with current and proposed U.S. EPA regulatory requirements. For CO_2 externality costs, the company used scenarios with various cost levels to capture a reasonable range of cost impacts. These cost assumptions are described in Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach).
4.l	A narrative describing how current rate design is consistent with the Company's integrated resource planning goals and how changes in rate design might facilitate integrated resource planning objectives.	See Volume I, Chapter 3 (The Planning Environment). The role of Class 3 DSM (price response programs) at PacifiCorp and how these resources are modeled in the IRP are described in Volume I, Chapter 6 (Resource Options).
5	PacifiCorp will submit its IRP for public comment, review and acknowledgment.	PacifiCorp distributed draft IRP materials for external review throughout the process prior to each of the public input meetings and solicited/and received feedback at various times when developing the 2013 IRP. The materials shared with stakeholders at these meetings, outlined in Volume I Chapter 2 (Introduction), is consistent

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
		with materials presented in Volumes I, II, and III of the 2013 IRP report. PacifiCorp requested and responded to comments from stakeholders in developing core case definitions. The Company considered comments received following the April 5, 2013 and April 17, 2013 public input meetings in developing its final plan.
6	The public, state agencies and other interested parties will have the opportunity to make formal comment to the Commission on the adequacy of the Plan. The Commission will review the Plan for adherence to the principles stated herein, and will judge the merit and applicability of the public comment. If the Plan needs further work the Commission will return it to the Company with comments and suggestions for change. This process should lead more quickly to the Commission's acknowledgment of an acceptable Integrated Resource Plan. The Company will give an oral presentation of its report to the Commission and all interested public parties. Formal hearings on the acknowledgment of the Integrated Resource Plan might be appropriate but are not required.	Not addressed; this is a post-filing activity.
7	Acknowledgment of an acceptable Plan will not guarantee favorable ratemaking treatment of future resource acquisitions.	Not addressed; this is not a PacifiCorp activity.
8	The Integrated Resource Plan will be used in rate cases to evaluate the performance of the utility and to review avoided cost calculations.	Not addressed; this refers to a post-filing activity.

Table B.5 – Washington Utilities and Transportation Commission IRP Standard and Guidelines (WAC 480-100-238)

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
(4)	Work plan filed no later than 12 months before next IRP due date.	PacifiCorp filed the IRP work plan on March 28, 2012 in Docket No. UE-120416, given an anticipated IRP filing date of March 31, 2013.
(4)	Work plan outlines content of IRP.	See pages 1-2 of the Work Plan document for a summarization of IRP contents.
(4)	Work plan outlines method for assessing potential resources. (See LRC analysis below)	See pages 3-6 of the Work Plan document for a summarization of resource analysis.
(5)	Work plan outlines timing and extent of public participation.	See pages 6-7 of the Work Plan. Figure 2, page 6, document for the IRP schedule.
(4)	Integrated resource plan submitted within two years of previous plan.	The Commission issued an Order on December 11, 2008, under Docket no. UE-070117, granting the Company permission to file its IRP on March 31 of each odd numbered year. PacifiCorp requested a one-month filing extension on January 8, 2013 ("PacifiCorp's

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
		Petition for Modification of Filing Date for its Integrated Resource Plan Pursuant to WAC 480-100-238”). PacifiCorp filed the 2013 IRP on April 30, 2013.
(5)	Commission issues notice of public hearing after company files plan for review.	This activity is conducted subsequent to filing this IRP.
(5)	Commission holds public hearing.	This activity is conducted subsequent to filing this IRP.
(2)(a)	Plan describes the mix of energy supply resources.	Volume I, Chapter 5 (Resource Need Assessment) describes the mix of existing resources, while Volume I, Chapter 8 (Modeling and Portfolio Selection Results) describes the 2013 IRP preferred portfolio.
(2)(a)	Plan describes conservation supply.	See Volume I, Chapter 6 (Resource Options) for a description of how conservation supplies are represented and modeled, and Volume I, Chapter 8 (Modeling and Portfolio Selection Results) for conservation supply in the preferred portfolio. Additional information on energy efficiency resource characteristics is available on PacifiCorp’s IRP Web site. See Footnote 3 of this Appendix.
(2)(a)	Plan addresses supply in terms of current and future needs at the lowest reasonable cost to the utility and its ratepayers.	The 2013 IRP preferred portfolio was based on a resource needs assessment that accounted for forecasted load growth, expiration of existing power purchase contracts, resources under construction, contract, or reflected in the Company’s capital budget, as well as a capacity planning reserve margin. Details on PacifiCorp’s findings of resource need are described in Volume I, Chapter 5 (Resource Needs and Assessment).
(2)(b)	Plan uses lowest reasonable cost (LRC) analysis to select the mix of resources.	PacifiCorp uses portfolio performance measures based on the Present Value of Revenue Requirements (PVRR) methodology. See the section on portfolio performance measures in Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) and Volume I Chapter 8 (Modeling and Portfolio Selection Results).
(2)(b)	LRC analysis considers resource costs.	Volume I, Chapter 6 (Resource Options), provides detailed information on costs and other attributes for all resources analyzed for the IRP.
(2)(b)	LRC analysis considers market-volatility risks.	PacifiCorp employs Monte Carlo production cost simulation with a stochastic model to characterize market price and gas price volatility. Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) provides a summary of the modeling approach.
(2)(b)	LRC analysis considers demand side resource uncertainties.	PacifiCorp captured demand-side resource uncertainties through the development of numerous portfolios based on different sets of input assumptions.
(2)(b)	LRC analysis considers resource dispatchability.	PacifiCorp uses two IRP models that simulate the dispatch of existing and future resources based on such attributes as heat rate, availability, fuel cost, and variable O&M cost. The chronological production cost simulation model also incorporates unit commitment logic for handling start-up, shutdown, ramp rates, minimum up/down times, and run up rates, and reserve holding characteristics of individual generators.
(2)(b)	LRC analysis considers resource effect on system operation.	PacifiCorp’s IRP models simulate the operation of its entire system, reflecting dispatch/unit commitment, forced/unforced outages, access to markets, and system reliability and transmission constraints.

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
(2)(b)	LRC analysis considers risks imposed on ratepayers.	PacifiCorp explicitly models risk associated with uncertain CO_2 regulatory costs, wholesale electricity and natural gas price escalation and volatility, load growth uncertainty, resource reliability, renewable portfolio standard requirement uncertainty, plant construction cost escalation, and resource affordability. These risks and uncertainties are handled through stochastic modeling and scenarios depicting alternative futures. In addition to risk modeling, the IRP discusses a number of resource risk topics not addressed in the IRP system simulation models. For example, Volume I, Chapter 9 (Action Plan) covers the following topics: (1) managing carbon risk for existing plants, (2) assessment of owning vs. purchasing power, (3) purpose of hedging, (4) procurement delays and (5) treatment of customer and investor risks. Volume I, Chapter 4 (Transmission) covers similar risks associated with transmission system expansion.
(2)(b)	LRC analysis considers public policies regarding resource preference adopted by Washington state or federal government.	In Volume I, Chapter 7 (Modeling and Portfolio Evaluation) the IRP modeling incorporates resource expansion constraints tied to renewable portfolio standards (RPS) currently in place for Washington. PacifiCorp also evaluated various CO_2 regulatory schemes, including different levels of CO_2 price assumptions and future Regional Haze compliance requierments. The I-937 conservation requirements are also explicitly accounted for in developing Washington conservation resource costs.
(2)(b)	LRC analysis considers cost of risks associated with environmental effects including emissions of carbon dioxide.	See (2)(b) above.
(2)(c)	Plan defines conservation as any reduction in electric power consumption that results from increases in the efficiency of energy use, production, or distribution.	A description of how PacifiCorp classifies and defines energy conservation is provided in Volume I, Chapter 6 (Resource Options).
(3)(a)	Plan includes a range of forecasts of future demand.	PacifiCorp implemented a load forecast range. Details concerning the load forecasts used in the 2013 IRP (high, low, and extreme peak temperature) are provided in Volume I, Chapters 5 (Resource Needs Assessment) and Volume II, Appendix A (Load Forecast Details).
(3)(a)	Plan develops forecasts using methods that examine the effect of economic forces on the consumption of electricity.	PacifiCorp's load forecast methodology employs econometric forecasting techniques that include such economic variables as household income, employment, and population. See Volume II, Appendix A (Load Forecast Details) for a description of the load forecasting methodology.
(3)(a)	Plan develops forecasts using methods that address changes in the number, type and efficiency of electrical end-uses.	Residential sector load forecasts use a statistically-adjusted end-use model that accounts for equipment saturation rates and efficiency. See Volume II, Appendix A (Load Forecast Details), for a description of the residential sector load forecasting methodology.
(3)(b)	Plan includes an assessment of commercially available conservation, including load management.	PacifiCorp updated the system-wide demand-side management potential study in 2012, which served as the basis for developing DSM resource supply curves for resource portfolio modeling. The supply curves account for technical and achievable (market) potential, while the IRP capacity expansion model identifies a cost-effective mix of DSM resources based on these limits and other model inputs. The 2012 DSM potentials study is available on PacifiCorp's IRP Web site. See footnote 3 in this Appendix.

No.	Requirement	How the Standards and Guidelines are Addressed in the 2013 IRP
(3)(b)	Plan includes an assessment of currently employed and new policies and programs needed to obtain the conservation improvements.	A description of the current status of DSM programs and on-going activities to implement current and new programs is provided in Volume I, Chapter 5 (Resource Needs Assessment).
(3)(c)	Plan includes an assessment of a wide range of conventional and commercially available nonconventional generating technologies.	PacifiCorp considered a wide range of resources including renewables, cogeneration (combined heat and power), customer standby generation, power purchases, thermal resources, energy storage, and transmission. Volume I, Chapters 6 (Resource Options and Chapter 7 (Modeling and Portfolio Evaluation Approach) document how PacifiCorp developed and assessed these technologies.
(3)(d)	Plan includes an assessment of transmission system capability and reliability; to the extent such information can be provided consistent with applicable laws.	PacifiCorp modeled transmission system capability to serve its load obligations, factoring in updates to the representation of major load and generation centers, regional transmission congestion impacts, import/export availability, external market dynamics, and significant transmission expansion plans explained in Volume I, Chapter 4 (Transmission) and Chapter 7 (Modeling and Portfolio Evaluation Approach). System reliability given transmission capability was analyzed using stochastic production cost simulation and measures of insufficient energy and capacity for a load area (Energy Not Served and Unmet Capacity, respectively).
(3)(e)	Plan includes a comparative evaluation of energy supply resources (including transmission and distribution) and improvements in conservation using LRC.	PacifiCorp's capacity expansion optimization model (System Optimizer) is designed to compare alternative resources—including transmission expansion options—for the least-cost resource mix. System Optimizer was used to develop numerous resource portfolios for comparative evaluation on the basis of cost, risk, reliability, and other performance attributes. The DSM potentials study considered improvements in conservation distribution considered alternative transmission expansion options.
(3)(f)	Plan includes integration of the demand forecasts and resource evaluations into a long range integrated resource plan describing the mix of resources that is designated to meet current and project future needs at the lowest reasonable cost to the utility and its ratepayers.	PacifiCorp integrates demand forecasts, resources, and system operations in the context of a system modeling framework described in Volume I, Chapter 7(Modeling and Portfolio Evaluation Approach). The portfolio evaluation covers a 20-year period (2013-2032). PacifiCorp developed its preferred portfolio of resources judged to be least-cost after considering load requirements, risk, uncertainty, supply adequacy/reliability, and government resource policies in accordance with this rule.
(3)(g)	Plan includes a two-year action plan that implements the long range plan.	See Table 9.1 in Volume I, Chapter 9 (Action Plan), for PacifiCorp's 2013 IRP action plan.
(3)(h)	Plan includes a progress report on the implementation of the previously filed plan.	A status report on action plan implementation is provided as in Volume I, Chapter 9 (Action Plan).

Table B.6 – Wyoming Public Service Commission IRP Standard and Guidelines (Docket 90000-107-XO-09)

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
A	The public comment process employed as part of the formulation of the utility's IRP, including a description, timing and weight given to the public process;	PacifiCorp's public process is described in Volume I, Chapter 2 (Introduction) and in Volume II, Appendix C (Public Input Process).

No.	Requirement	How the Guideline is Addressed in the 2013 IRP
B	The utility's strategic goals and resource planning goals and preferred resource portfolio;	Volume I, Chapter 8 (Modeling and Portfolio Selection Results) documents the preferred resource portfolio and rationale for selection. Volume I, Chapter 9 (Action Plan) constitutes the IRP action plan and the descriptions of resource strategies and risk management.
C	The utility's illustration of resource need over the near-term and long-term planning horizons;	See Volume I, Chapter 5 (Resource Needs Assessment).
D	A study detailing the types of resources considered;	Volume, I Chapter 6 (Resource Options), presents the resource options used for resource portfolio modeling for this IRP.
F	Changes in expected resource acquisitions and load growth from that presented in the utility's previous IRP;	A comparison of resource changes relative to the 2011 IRP Update is presented in Volume I, Chapter 9 (Action Plan). A chart comparing the peak load forecasts for the 2011 IRP, 2011 IRP Update, and 2013 IRP is included in Volume II, Appendix A (Load Forecast Details).
G	The environmental impacts considered;	Portfolio comparisons for CO_2 and a broad range of environmental impacts are considered, including prospective early retirement of existing coal units as an alternative to environmental investments. See Volume I, Chapter 7 (Modeling and Portfolio Evaluation Approach) and Chapter 8 (Modeling and Portfolio Selection) as well as Volume II, Appendix L (Stochastic production Cost Simulation Results).
H	Market purchases evaluation;	Modeling of firm market purchases (front office transactions) and spot market balancing transactions is included in this IRP.
I	Reserve Margin analysis; and	PacifiCorp's planning reserve margin study, which documents selection of a capacity planning reserve margin is in Volume I, Appendix I (Stochastic Loss of Load Study).
J	Demand-side management and conservation options;	See Volume I, Chapter 6 (Resource Options) for a detailed discussion on DSM and conservation resource options. Additional information on energy efficiency resource characteristics is available on the Company's website. See footnote 3 in this Appendix.

APPENDIX C – PUBLIC INPUT PROCESS

A critical element of this resource plan is the public input process. PacifiCorp has pursued an open and collaborative approach involving the Commissions, customers and other stakeholders in PacifiCorp's planning process prior to making resource planning decisions. Since these decisions can have significant economic and environmental consequences, conducting the resource plan with transparency and full participation from Commissions and other interested and affected parties is essential.

The public has been involved in this resource plan from its earliest stages and at each decisive step. Participants have both shared comments and ideas and received information. As reflected in the report, many of the comments provided by the participants have been adopted by PacifiCorp and have contributed to the quality of this resource plan. PacifiCorp will adopt further comments going forward, either as elements of the Action Plan or as future refinements to the planning methodology.

The cornerstone of the public input process has been full-day public input meetings held approximately throughout the year-long plan development period. These meetings have been held jointly in two locations—Salt Lake City, Utah and Portland Oregon—using telephone and video conferencing technology.

The IRP public process continued with state stakeholder dialogue sessions from July through August 2012. The goal of these sessions, targeting a state-specific audience, were to (1) capture key resource planning issues of most concern to each state, and discuss how these can be tackled from a system planning perspective, (2) ensure that stakeholders understand PacifiCorp's planning principles and the logic behind its planning process, and (3) set expectations for what can be accomplished in the current IRP/business planning cycle. These State focused meetings continued to enhance interaction with stakeholders in the planning cycle, and provided a forum to directly address stakeholder concerns regarding equitable representation of state interests during general public meetings.

As far as agenda setting is concerned, PacifiCorp solicited recommendations from the state stakeholders in advance of the session, as well as allowing open time to ensure that participants had adequate time for dialogue. Some follow-up activities arising from the sessions were addressed in subsequent public meetings.

In response to stakeholder requests, PacifiCorp has introduced an additional IRP comments website intended for PacifiCorp's IRP public participants only at the following link - (http://www.pacificorp.com/es/irp/irpcomments.html).

Participant List

Among the organizations that were represented and actively involved in this collaborative effort were:

Commissions

- Idaho Public Utilities Commission
- Oregon Public Utilities Commission
- Public Service Commission of Utah
- Washington Utilities and Transportation Commission
- Wyoming Public Service Commission

Stakeholders

- Attorney General of Washington
- Blue Castle Holdings, Inc.
- Bonneville Power Administration
- Brigham Young University
- Citizen's Utility Board of Oregon
- Committee for Consumer Services State of Utah
- Encana Corporation
- enXco
- Energy Trust of Oregon
- Energy Strategies, LLC
- E-Quant Consulting
- First Wind
- GE Energy
- HEAL Utah and Utah Physicians for a Healthy Environment
- Health Environment Alliance of Utah (HEAL)
- Horizon Wind Energy
- Iberdrola Renewables
- Idaho Conservation League
- Industrial Customers of Northwest Utilities
- Interwest Energy Alliance
- Kennecott Utah Copper
- Magnum Energy
- Monsanto Company
- National Renewable Energy Laboratory
- Northwest Power and Conservation Council
- Northwest Pipeline GP
- NW Energy Coalition
- Oregon Department of Energy
- Powder River Basin Resource Council
- Renewables Northwest Project
- Salt Lake City

- Salt Lake Community Action Program
- Sierra Club Environmental Law Program
- Synapse Energy Economics
- The Energy Project
- Utah Associated Municipal Power Systems (UAMPS)
- Utah Clean Energy
- Utah Division of Public Utilities
- Utah Industrial Energy Consumers (UIEC)
- Utah Municipal Power Agency (UMPA)
- Utah Office of Consumer Services (OCS)
- Washington Legislature (Representative Dist. 40)
- Western Clean Energy Campaign (WCEC)
- Western Electricity Coordination Council (WECC)
- Western Resource Advocates
- West Wind Wires
- Wyoming Industrial Energy Consumers
- Wyoming Office Of Consumer Advocacy

Others

- Avista Utilities
- Cadmus Group Inc.
- GDS Associates
- Idaho Power Company
- John Klingele (Washington Customer)
- Peter Ashcroft
- Portland General Electric (PGE)
- Ventyx

PacifiCorp extends its gratitude for the time and energy these participants have given to the resource plan. Their participation has contributed significantly to the quality of this plan, and their continued participation will help as PacifiCorp strives to improve its planning efforts going forward.

Public Input Meetings

PacifiCorp hosted 15 full-day public input meetings, five public conference calls, and five state meetings during the 2012-2013. During the 2013 IRP process presentations and discussions covered various issues including inputs and assumptions, risks, modeling techniques, and analytical results. Below are the agendas from the public input meetings and the technical workshops.

General Meetings

May 7, 2012 – General Public Meeting

- Introductions
- IRP Group and Support Team
- IRP preparation schedule
- 2013 IRP regulatory compliance
- Public process
- Modeling Methodology Changes
- Resource Acquisition Activities
- 2012 Wind Integration Study
- Action Plan status update: coal, demand-side management, transmission

June 20, 2012 – General Public Meeting

- Energy efficiency modeling workshop
- 2012 Wind Integration Study workshop
- Portfolio development roundtable discussion

July 13, 2012 – General Public Meeting

- Portfolio Case Development
  - "Strawman" portfolio cases
  - Stakeholder comments and next steps
- Transmission Scenarios in Portfolio Case Development
  - Energy Gateway Scenarios
  - Prior perspectives on IRP/transmission
  - Action items and goals from 2011 IRP
  - Inclusion of transmission projects
- Transmission Benefit Analysis
  - Drivers and objectives
  - FERC Order 1000
  - Benefit identification and valuation example

August 2, 2012 – General Public Meeting

- Conservation Voltage Reduction Project Update
- Resource Adequacy Workshop
  - Planning Reserve Margin
  - Load and Resource Balance
- Portfolio Case Development Comment Update

August 13, 2012 – General Public Meeting

- Utility-scale Supply-Side Resources
- Renewable Portfolio Standards
- Wind Integration Study Update

September 14, 2012 – General Public Meeting

- Public Input Meeting Schedule Update

- Environmental Compliance Update
- Portfolio Development Cases
    - Load Forecast
    - IRP Scenarios
- GRD Recommendations
- Load Forecast (continued)
- Capacity Load and Resource Balance

October 24, 2012 – General Public Meetings
- IRP modeling schedule update
- Utility-scale resource option updates
- Wind Integration Study Update
- Planning reserve margin development using the WECC building block approach
- Portfolio development case fact sheets

November 5, 2012 – General Public Meeting
- Transmission benefit evaluation
    - 2011 IRP Action Plan commitment
    - Transmission System Benefits Tool
    - Overview
    - Review of Sigurd-Red Butte benefits evaluation
    - Segment D preview
- Stochastic modeling and preferred portfolio selection approach

November 27, 2012 – General Public Meeting
- Planning reserve margin (PRM) recommendation and study results
- Methodology update overview

January 31, 2013 – General Public Meeting
- Status Update
- Core Case Portfolio Results
- Wind Integration Update

February 27, 2013 – General Public Meeting
- Transmission System Benefits Tool
- IRP modeling and results update
- Class 2 Demand-Side Management supply curves review

March 21, 2013 – General Public Meeting
- Draft Preferred Portfolio Overview
    - Initial screening
    - Final screening
    - Portfolio selection
- Other results
    - PaR RPS analysis
    - PaR Energy Gateway Segment D update

April 5, 2013 – General Public Meeting
- Updated PaR Analysis
- Draft Preferred Portfolio Update
- Action Plan
- Next Steps

April 17, 2013 – General Public Meeting
- Sensitivity Studies
- Draft IRP Document
- DSM Decrement
- Filing Update

April 17, 2013 – Confidential Meeting
- Discussion on Volume 3

Public Conference Call Meetings

August 24, 2012 - Public Conference Call
- Distributed Generation Resource Assumptions

September 24, 2012 – Public Conference Call
- Planning Reserve Margin Methodology
- Price Scenarios / Modeling Methodology
  - Natural Gas
  - Carbon dioxide tax
  - Electricity

October 3, 2012 – Public Conference Call
- Utility-scale costs of single-axis solar PV resources
- Updated Cadmus distributed solar PV memo (September 28th, 2012)

December 6, 2012 – Public Conference Call
- Brief on forthcoming action from U.S. Environmental Protection Agency
- IRP Filing Schedule Update

December 14, 2012 – Public Conference Call
- Smart Grid Update

December 18, 2012 – Public Conference Call
- Update on IRP Filing Schedule
- Update on Core Case Fact Sheets and Price Curve Scenarios

State Meetings

July 11, 2012 – Idaho State Stakeholder Meeting
July 12, 2012 – Wyoming State Stakeholder Meeting
July 19, 2012 – Oregon State Stakeholder Meeting
July 20, 2012 – Washington State Stakeholder Meeting
August 14, 2012 – Utah State Stakeholder Meeting

Parking Lot Issues

During the course of the public input meetings, certain concerns or questions needed additional follow-up from PacifiCorp. These questions or issues were taken off-line and addressed in a meeting report or at a subsequent public input meeting or workshop.

Public Review of IRP Draft Document

PacifiCorp received comments from many of our stakeholders submitted throughout our public process addressing many of the key assumptions and methodologies used in our portfolio evaluations. Stakeholder written comment is noted on the IRP comment website from the following parties:

- Citizen's Utility Board of Oregon
- Encana Corporation
- HEAL Utah and Utah Physicians for a Healthy Environment
- Idaho Public Utility Commission Staff
- Interwest Energy Alliance
- NW Energy Coalition
- Oregon Department of Energy
- Oregon Public Utilities Commission Staff
- Powder River Basin Resource Council
- Renewable Northwest Project
- Sierra Club
- Utah Association of Energy Users
- Utah Clean Energy
- Utah Division of Public Utilities
- Utah Office of Consumer Services
- Utah Public Service Commission Staff
- U.S. Department of Energy - Northwest Clean Energy Application Center
- U.S. Department of Energy - Intermountain Clean Energy Application Center
- Washington Utility and Transportation Commission Staff
- Western Resource Advocates

Many of the clarifications and information requested through the written comments, verbal suggestions, public meetings, teleconference calls and data requests, have been incorporated into the final version of the IRP. Many of the Company's inputs were modified based on stakeholder comments received, such as, , Solar photovoltaic costs, Solar water heating costs, higher wind capacity factors, the geothermal request for information (RFI), DSM Ramping, DSM cost bundles, suggestions for study assumptions, recommendations on development of portfolio cases, and prioritization of case studies. In addition, the technical review committee has provided comments on the wind integration study.

Contact Information

PacifiCorp's IRP internet website contains many of the documents and presentations that support recent Integrated Resource Plans. To access it, please visit the company's website at http://www.PacifiCorp.com click on the menu "Energy Sources" and select "Integrated Resource Planning".

PacifiCorp requests that any informal request be sent in writing to the following address or email address below.

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(503) 813-5245

APPENDIX D – DEMAND-SIDE MANAGEMENT AND SUPPLEMENTAL RESOURCES

Introduction

Appendix D reviews the studies and reports used to support the demand-side management and supplemental resource information used in the modeling and analysis of the 2013 Integrated Resource Plan (IRP).

Class 2 Demand-Side Management Resource Ramping

This document presents the methods used by The Cadmus Group, Inc. (Cadmus) and the Energy Trust of Oregon (Energy Trust) to develop reasonable estimates of annual Class 2 Demand-Side Management (DSM) (energy-efficiency) potential available for acquisition in PacifiCorp's service territory for consideration in PacifiCorp 2013 IRP. The Energy Trust method is applied to resources in Oregon while the Cadmus method applies to the other five states PacifiCorp serves. Though the mechanics of the two methods differ, the objectives are the same – to estimate the amount of reasonably achievable Class 2 DSM potential in each year of the 20-year study period.

Please find the report at:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/2013IRP_EnergyEfficiencyResourceRamping_10-22-2012.pdf

Assessment of Long-Term, System-Wide Potential for Demand-Side and Other Supplemental Resources

Since 1989, PacifiCorp has developed biennial IRPs to identify an optimal mix of resources that balance considerations of cost, risk, uncertainty, supply reliability/deliverability, and long-run public policy goals. The optimization process accounts for capital, energy, and ongoing operation costs as well as the risk profiles of various resource alternatives, including: traditional generation and market purchases, renewable generation, and DSM resources such as energy efficiency, and demand response or capacity-focused resources. Since the 2008 IRP, DSM resources have competed directly against supply-side options, allowing the IRP model to guide decisions regarding resource mixes, based on cost and risk.

This study, conducted by Cadmus, in collaboration with Nexant, Inc., primarily seeks to develop reliable estimates of the magnitude, timing, and costs of DSM resources likely available to PacifiCorp over a 20-year planning horizon, beginning in 2013. The study focuses on resources realistically achievable during the planning horizon, given normal market dynamics that may hinder resource acquisition. Study results were incorporated into PacifiCorp's 2013 IRP and will be used to inform subsequent DSM planning and program design efforts. This study serves as an update of similar studies completed in 2007 and 2011.

For resource planning purposes, PacifiCorp classifies DSM resources into four categories, differentiated by two primary characteristics: reliability and customer choice. These resources can be defined as: Class 1 DSM (firm, capacity focused), Class 2 DSM (energy efficiency), Class 3 DSM (non-firm, capacity focused), and Class 4 DSM (educational).

From a system-planning perspective, Class 1 DSM resources can be considered the most reliable, as they can be dispatched by the utility. In contrast, behavioral changes, resulting from voluntary educational programs included in Class 4 DSM, tend to be the least reliable. With respect to customer choice, Class 1 DSM and Class 2 DSM resources should be considered involuntary in that, once equipment and systems have been put in place, savings can be expected to flow. Class 3 and Class 4 DSM activities involve greater customer choice and control. This assessment estimates potential from Class 1, 2, and 3 DSM.

In addition to the three DSM resource classifications, this study also estimates potential from supplemental resources, which fall outside PacifiCorp's classification of DSM and include renewable and nonrenewable customer-sited generation. For this study, supplemental resources include: combined heat and power (CHP), solar photovoltaics (PV), and solar water heaters (SWH).

This study excludes an assessment of Oregon's Class 2 DSM potential and supplemental resource potential for SWHs, as this potential has been captured in assessment work conducted by the Energy Trust, which provides energy-efficiency potential in Oregon to PacifiCorp for resource planning purposes.

The study can be found at:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Demand_Side_Management/DSM_Potential_Study/PacifiCorp_DSMPotential_FINAL_Vol%20I.pdf
The appendices for the study can be found at:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Demand_Side_Management/DSM_Potential_Study/PacifiCorp_DSMPotential_Vol-II_Mar2013.pdf

Class 3 Demand Side Management load impact market survey study

In its 2011 IRP, PacifiCorp did not include Class 3 options as a base resource for planning purposes. In its action plan update, PacifiCorp committed to have a third-party consultant review and report on how other utilities treat price-responsive products in their resource planning process, and prepare a recommendation on how the Company might apply contributions from price products to help defer investments in other resource options cost-effectively.

To inform the treatment of Class 3 in PacifiCorp's 2013 IRP, PacifiCorp engaged Cadmus , to conduct a survey addressing how other utilities typically incorporate the incremental load impact of similar, non-dispatchable, demand response/focused DSM resources (Class 3) in their integrated resource plans. This memorandum reports the results of that survey.

The memo can be found at:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/2013IRP_TOUMemo-09-04-2012.pdf

Other Supplemental Resource Studies

Combined Heat and Power study

Cadmus, under contract to PacifiCorp, prepared a study that calculated the levelized cost and produced supply curves for combined heat and power (CHP) systems projected to be installed in PacifiCorp territory over the next 20 years as part of the 2013 IRP. The Cadmus memo in particular completed the following: 1) explain the sources referenced for this analysis, 2) present data used in the analysis, and 3) provide the results.

Cadmus presented draft results to stakeholders on August 24, 2012. Stakeholder input was considered in refining the analysis. The final results were presented in a memo, with responses to stakeholder comments included at the end.

The memo can be found at following:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/2013IRP_CHP-Memo-LCOEexcel_10-04-12.pdf

Solar Water Heating Market Potential and Associated Cost study

Cadmus, under contract to PacifiCorp, calculated the total market potential and associated levelized cost for SWH systems projected to be installed in PacifiCorp territory over the next 20 years. The results of this analysis are used in PacifiCorp's 2013 IRP.

This memorandum discusses the assumptions, data sources, results, and updates to Cadmus' analysis. It also addresses the feedback from the public stakeholder meeting held on August 24, 2012, at which preliminary results were presented.

The memo can be found at:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/PAC%202013IRP_SWH%20Memo_10-05-12.pdf

Solar Photovoltaic Market Potential and Associated cost study

Cadmus, under contract to PacifiCorp, calculated the predicted technical potential, market potential, and levelized cost of energy for PV systems installed and operating in PacifiCorp territory from 2013-2032. The results of this analysis are used in PacifiCorp's 2013 IRP.

This memorandum outlines the assumptions, data sources, and preliminary results of Cadmus' analysis. Preliminary results were discussed at a stakeholder meeting on August 24, 2012. Based on feedback received at that meeting, this memorandum reflects relevant updates to assumptions, methodology, and results.

The memo can be found at:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2013IRP/PAC_2013IRP_Memo_PVInputs_09282012.pdf

APPENDIX E – CONSERVATION VOLTAGE REDUCTION

Introduction

Conservation Voltage Reduction (CVR) and Voltage Optimization (VO) have seen renewed industry interest in recent years as stakeholders strive to experience greater system efficiencies. These terms refer to the reduction in energy usage realized by operating the distribution system and customer equipment at a reduced, but still satisfactory, voltage. In response to a voter-approved initiative in Washington, PacifiCorp (the Company) began detailed analysis of distribution circuits there in order to ascertain what energy savings might be achievable from CVR. Commission staff in Oregon also requested the Company screen distribution circuits in its other major states to determine whether cost effective energy savings potential existed elsewhere in the Company's service territory. The Company's recent progress in CVR analysis has centered on the four areas described below.

Washington Tier 1 study (2011)

The scope of this study was to identify all cost-effective, reliable and feasible system improvements on 19 circuits at 12 substations in Yakima, Sunnyside and Walla Walla. The circuits were chosen based on what the Company thought would be likely to yield energy savings from voltage reduction. In some cases the analyzed circuits were adjacent to[16] other circuits not part of the study, which generated improvement recommendations which could not be incorporated without additional analysis. Three different levels of investment (*low-cost* non-capital improvements, *medium-cost* capital improvements and *high-cost* communication-based capital improvements) were studied to determine whether additional investment could be justified by the associated incremental energy savings.

Fourteen of the nineteen circuits showed potential for cost-effective energy savings, and four of them were chosen for the 2012 pilot implementation. The other ten were adjacent to unstudied circuits. Implementation on these would be postponed until the adjacent circuits could be studied, in order to avoid risk[16] and quantify any additional savings.

The completed study and subsequent CVR factor adjustments based on customer classes yielded a net forecast of 0.24 aMW in energy savings from the recommended projects (0.09 aMW from the four pilot circuits (Clinton substation in Yakima and Mill Creek substation in Walla Walla) and 0.16 aMW from the other ten circuits).

The recommended improvements on the four pilot circuits included a total of eleven single phase swaps (two on 5Y608, four on 5Y610 and five on 5W127) and the addition of one line capacitor

[16] "Adjacent circuits" refers to multiple circuits regulated by the same device. For instance, if Circuits C1 and C2 are regulated by Regulator R1, C1 may have been studied in detail because it was a short urban circuit. Circuit C2 may not have been studied because it was long or had existing low voltage issues. Recommended improvements for Circuit C1 might include minor improvements and a lower voltage setting. There is a risk that Circuit C2 would be adversely affected by the lower voltage setting, and therefore C1 and C2 should be studied together. In the Tier 1 study, the Company picked what it thought were the most promising circuits to determine the magnitude of potential energy savings in the region. In those cases where improvements were forecast to be cost effective and adjacent circuits had not been included, the group of circuits was added to the Tier 2 study.

(600 kVAR on 5W127). Substation voltage band centers, 121 volts at Clinton and 122.75 volts at Mill Creek, were lowered to 119 volts. The median band center in Washington is 121 volts. Interval metering at the start and end of each feeder was also included.

Washington Tier 2 study (2012)

The scope of this study, defined after the Tier 1 study was complete, was to identify all cost-effective, reliable and feasible system improvements on 25 circuits in Yakima and Sunnyside. All Walla Walla savings had been identified. Eleven of the 25 chosen circuits had been studied in Tier 1; the other 14 were adjacent to those eleven. In sum, nine regulated substation buses were studied at seven substations: Grandview, Nob Hill, North Park, Orchard, River Road, Sunnyside and Wiley.

Of the nine buses, three were identified as potentially cost effective for voltage reduction improvements given the assumptions in the study. The forecast energy savings were 0.10 aMW at Orchard substation (two buses) and 0.07 aMW at Sunnyside substation (one bus).

The primary reason for the difference in results between studies is the analysis of adjacent circuits. As an example, North Park substation's 5Y356 was predicted to yield cost-effective savings in Tier 1. When studied with the adjacent 5Y398 in Tier 2, no cost-effective solution for the pair existed. The improvements necessary to make 5Y398 compliant with voltage reduction were high enough to cause the pair of circuits to be non-cost effective.

Washington pilot project results

Of the 0.09 aMW predicted to be acquired through the four 2012 pilot circuits, less than 0.01 aMW was achieved. All four circuits failed to meet the protocol efficiency thresholds both before and after voltage reduction. This meant that energy savings could not be verified by an approved method, since the Simplified Protocol scope requires that the thresholds be met. The estimated savings from the metered data, ignoring the threshold violations, is 0.017 aMW at Clinton and zero or negative energy savings at Mill Creek.

The Clinton pilot was not cost effective. Less than half of the anticipated reduction in average voltage was achieved, and the estimated cost of energy savings was $112.49/MWh, a value 23% higher than the marginal (avoided) purchase energy rate used in Washington. These values come with the caveat that protocol thresholds were violated and confidence in both the voltage reduction value and energy savings value are consequently very low. For the purposes of reporting savings toward the Company's 2012-13 conservation target[17] in Washington, zero energy savings will be claimed for both Clinton and Mill Creek on account of the threshold violations and resulting inapplicability of protocol scope.

[17] In Washington, the Company files its ten-year achievable conservation potential and biennial conservation target every two years. For the 2012-13 biennium, the target for the distribution efficiency portion of the portfolio was filed as a range (0 to 0.346 aMW), because the ability of the Company to achieve its forecast voltage reduction energy savings was unknown.

Multi-state high-level screening effort

Using the results of both studies, a statistical principal component analysis of circuit parameters and energy availability was conducted in 2012 and early 2013. Using system knowledge and sound engineering principles, strong correlations were found between cost-effective energy savings and key indicators such as maximum circuit length, total line miles and residential energy usage.

Two key lessons from the studies and subsequent screening effort are:

1. Most of the Company's circuits are already operating at a relatively low voltage and improvements necessary to allow an even lower voltage are not usually justified by the value of the energy saved.
2. Small amounts of saved energy on the utility system cannot be accurately and repeatedly measured due to the dynamic interplay between the system and the customers' requirements.

In 2012 and 2013, 100% of the active distribution circuits in Oregon, Idaho, Wyoming and Utah were screened by the statistical method described above, and pilot project results were applied where possible to ensure realistic projections. Without identifying the improvements required, this analysis suggests that between 0 and 0.2 aMW of CVR energy savings might exist within the Company's service territory in those four states. The cost of this energy is likely to exceed the Company's marginal purchase cost, and accurate measurement does not appear to be possible at this time.

Future Conservation Voltage Reduction

Future investment decisions regarding voltage reduction as an energy resource must take into account the cost effectiveness, reliability and feasibility of such project. The Company will not pursue distribution efficiency projects that do not meet all three of these criteria. The 2012 pilot on four of the most promising circuits in Washington shows that voltage reduction as a distribution efficiency measure is not cost effective at PacifiCorp.

With regard to reliability of energy savings from voltage reduction, the pilot has also provided valuable information. Actual energy savings appear to be less than one tenth of that predicted by rigorous and detailed system analysis. The Tier 2 study also called out limitations in circuit analysis as a project risk. Additionally, future system reconfiguration needs identified around Clinton substation highlight the danger of long-term energy savings predictions. At this time, energy savings from voltage reduction cannot be reliably acquired at PacifiCorp.

With regard to feasibility of energy savings from voltage reduction, the pilot has helped the Company to better appreciate the difficulty in accurately predicting feeder voltages at varying load levels. State estimation and Advanced Metering Infrastructure research conducted by the Electric Power Research Institute and the Institute of Electrical and Electronic Engineers Energy in 2012[18] highlighted the critical nature of this industry hurdle. The Tier 2 report also acknowledged that load variations create challenges in measuring small voltage and energy

[18] R.F. Arritt, R.C. Dugan, R.W. Uluski and T.F. Weaver, "Investigating Load Estimation Methods with the Use of AMI Metering for Distribution System Analysis," IEEE, 978-1-4673-0338, 2012.

changes. Without more accurate load allocation and voltage modeling technology, the Company has concluded that energy savings from voltage reduction cannot be feasibly measured on its system at this time.

APPENDIX F – FLEXIBLE RESOURCE NEEDS ASSESSMENT

Introduction

In its Order No. 12013 issued on January 19, 2012 in Docket No. UM 1461 on "Investigation of matters related to Electric Vehicle Charging," the Oregon Public Utility Commission (OPUC) adopted the OPUC staff's proposed IRP guideline:

1. Forecast the Demand for Flexible Capacity: The electric utilities shall forecast the balancing reserves needed at different time intervals (e.g. ramping needed within 5 minutes) to respond to variation in load and intermittent renewable generation over the 20-year planning period;

2. Forecast the Supply of Flexible Capacity: The electric utilities shall forecast the balancing reserves available at different time intervals (e.g. ramping available within 5 minutes) from existing generating resources over the 20-year planning period; and

3. Evaluate Flexible Resources on a Consistent and Comparable Basis: In planning to fill any gap between the demand and supply of flexible capacity, the electric utilities shall evaluate all resource options including the use of EVs, on a consistent and comparable basis.

In this appendix, the Company first identifies its flexible resource needs for the IRP study period of 2013 through 2032, as well as the calculation method used to estimate the requirements. Then, the Company identifies its supply of flexible capacity in accordance with the Western Electricity Coordinating Council (WECC) operating reserves guidelines from its generation resources and demonstrates that PacifiCorp has sufficient flexible resources to meet its requirements.

Flexible Resource Requirements Forecast

PacifiCorp estimated its flexible resource needs as being its requirements for operating reserves over the planning horizon to maintain reliability and in compliance with the North American Electric Reliability Corporation (NERC) regional reliability standards. NERC regional reliability standard BAL-STD-002-0[19] requires each balancing authority, such as PacifiCorp East and PacifiCorp West, to carry sufficient operating reserve at all times. Operating reserve consists of contingency reserve and regulating margin. Each of these types of operating reserves is further defined below.

Contingency Reserve

Contingency reserve is the capacity of resources that a balancing authority holds in reserve that can be used to respond to contingency events on the bulk power system (e.g., an instantaneous trip of a large generator). The amount of required contingency reserve is defined in NERC BAL-STD-002-0. Contingency reserve may not be applied to manage other system fluctuations such

[19] http://www.nerc.com/files/BAL-STD-002-0.pdf

as changes in load or output from variable energy resources, which are mainly wind generation resources on PacifiCorp's system.

Regulating Margin

Regulating margin is the additional capacity that a balancing authority holds in reserve to ensure that it has adequate reserves at all times to meet the NERC Control Performance Criteria in BAL-007-1[20]. In the current IRP, regulating margin is composed of ramp reserve and regulation reserve, which are discussed in more details in Volume II, Appendix H, PacifiCorp's 2012 Wind Integration Study. Briefly,

> Ramp Reserve: This category of reserves is to follow net balancing area load changes from minute-to-minute, hour-to-hour continuously at all times. The variability in net balancing area load is assumed to be perfectly known for future time intervals (as though the operator would know exactly what the net balancing area load would be a minute from now, ten minutes from now, and an hour from now) defines the ramp of the system.
>
> Regulation Reserve: Variations in load or wind generation from their respective forecasts are not considered contingency events, yet these events still require generating capacity be set aside in order to follow the variations.

As operating reserves include separate and distinct components, PacifiCorp estimated the forward requirements for each component separately. The contingency reserve requirements are from the stochastic simulation study of the preferred portfolio in the Planning and Risk model, as it is affected by the hourly interchange and generation dispatch represented in the study. The regulating margin requirements, which reflect the additional reserve capacity requirement from the flexible resources and are part of the inputs to the Planning and Risk model, are calculated applying the methods developed in PacifiCorp's 2012 Wind Integration Study (Volume II, Appendix H). Given the similar requirements of regulating margins in terms of response time, they are grouped together with spinning reserves for modeling in this IRP. PacifiCorp has two balancing authority areas, east and west. The reserve requirements for the two balancing authority areas are shown in Table F.1.

[20] NERC Standard BAL-007-1: http://www.nerc.com/docs/standards/sar/BAL-007-011_clean_last_posting_30-day_Pre-ballot_06Feb07.pdf.
WECC Operating Committee extended the field trial for one year at the meeting on February 8, 2013: https://www.wecc.biz/committees/StandingCommittees/MIC/10102012/Lists/Presentations/1/OC%20Oct%202012%20Highlights%20-%20Paul%20Rice.pdf

Table F.1 - Reserve Requirements (MW)

	East		West	
Year	Spin Req	Non-Spin Req	Spin Req	Non-Spin Req
2013	435	194	329	209
2014	443	199	332	211
2015	467	221	334	212
2016	457	214	337	214
2017	462	218	339	215
2018	468	222	342	217
2019	474	226	342	218
2020	480	230	344	219
2021	487	234	346	220
2022	493	238	347	221
2023	498	242	349	222
2024	540	246	350	223
2025	564	250	352	224
2026	571	254	354	225
2027	577	258	355	226
2028	581	261	357	227
2029	586	265	359	229
2030	591	268	359	229
2031	598	273	357	227
2032	599	274	362	231

Flexible Resource Supply Forecast

Requirements by NERC and the Western Electricity Coordinating Council (WECC) dictate types of resources that can be used to serve reserve requirements. At least one half of the contingency reserve requirements must be spinning reserves, and the remainder is non-spinning reserves:

- Spinning reserves can only be served by resources currently online and synchronized to the transmission grid.

- Non-spinning reserves may be served by fast-start resources that are capable of being online and synchronized to the transmission grid within ten minutes. Interruptible load can only serve non-spinning reserves. Non-spinning reserves may be served by resources that are capable of providing spinning reserves.

The resources that PacifiCorp employs to serve its reserve requirements include owned hydro resources that have storage, owned thermal resources, and purchased power contracts that provide the Company with reserve capabilities.

Hydro resources are generally deployed first to meet the spinning reserve requirements because of their flexibility and ability to quickly respond to changes. The amount of reserves that these resources can provide depends upon the difference between their expected capacities and generation at the time. The hydro resources that PacifiCorp may use to serve reserve requirements in the PacifiCorp West balancing authority area include its facilities on the Lewis River, and Klamath River, as well as purchase contracts for generation from the Mid-Columbia projects. In the PacifiCorp East balancing authority area, the Company may use facilities on the Bear River to provide spinning reserves.

Thermal resources are also used to meet the spinning reserve requirements when they are online. The amount of reserves provided by these resources is determined by their ability to ramp up within a 10-minute interval. For natural gas-fired thermal resources, the amount of reserves can be close to the differences between their nameplate capacities and their minimum generation levels. In the current IRP, PacifiCorp's reserves are served from not only existing coal- and gas-fired resources that the Company operates, but also from Lake Side 2 that will be online in 2014 and the additional new gas-fired resources selected in the preferred portfolio.

Table F.2 lists the annual capacity of resources that are capable of serving reserves on the east and west side of PacifiCorp's system. All the resources included in the calculation are capable of providing spinning reserves, which can also be used to serve non-spinning reserves. The non-spinning reserve resources under contract with third parties are excluded in the calculations. The changes in supply reflect retirement of existing resources, addition of new preferred portfolio resources, variation in hydro capability due to stream-flow conditions, and expiration of contracts for capacity from the Mid-Columbia projects that are reflected in the preferred portfolio.

Table F.2 - Flexible Resource Supply Forecast (MW)

Year	East Supply	West Supply
2013	1,086	586
2014	1,181	764
2015	1,150	756
2016	1,150	753
2017	1,150	760
2018	1,151	749
2019	1,151	738
2020	1,150	722
2021	1,150	706
2022	1,150	732
2023	1,149	728
2024	1,341	722
2025	1,341	722
2026	1,341	722
2027	1,340	718
2028	1,607	726
2029	1,608	722
2030	1,949	722
2031	1,948	718
2032	2,039	722

Figures F.1 and F.2 graphically display the balances of reserve requirements and capability of spinning reserve resources in PacifiCorp's East and West balancing authority areas. The graphs clearly demonstrate that PacifiCorp's system has sufficient resources to serve its reserve requirements through the IRP planning period.

Figure F.1 - Comparison of Reserve Requirements and Resources, East Balancing Authority Area (MW)

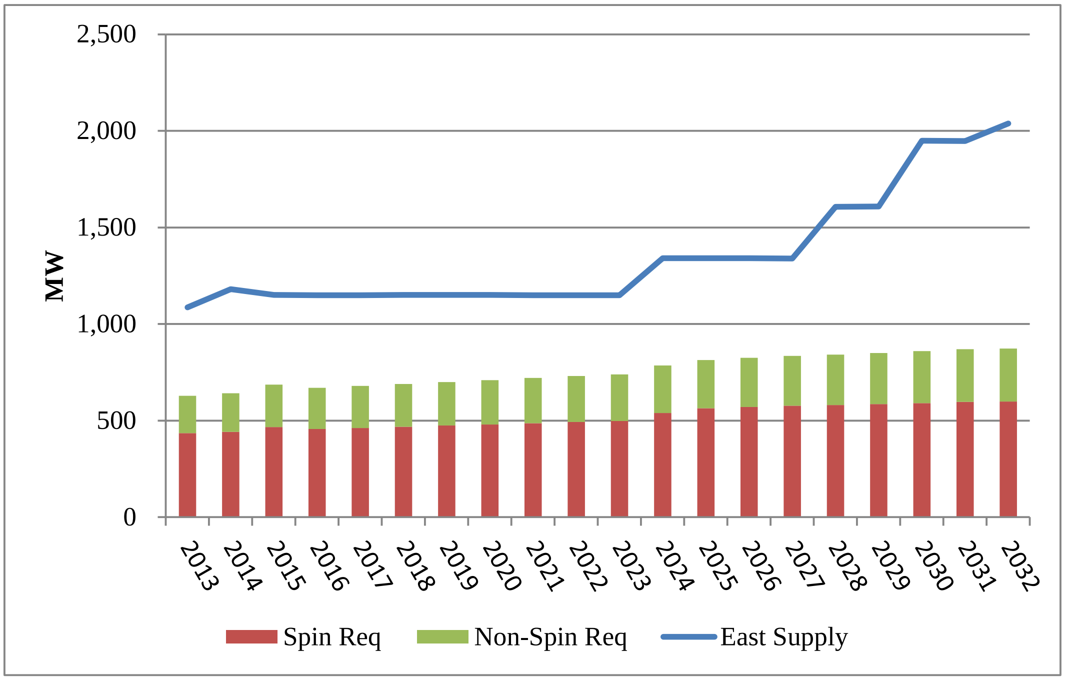
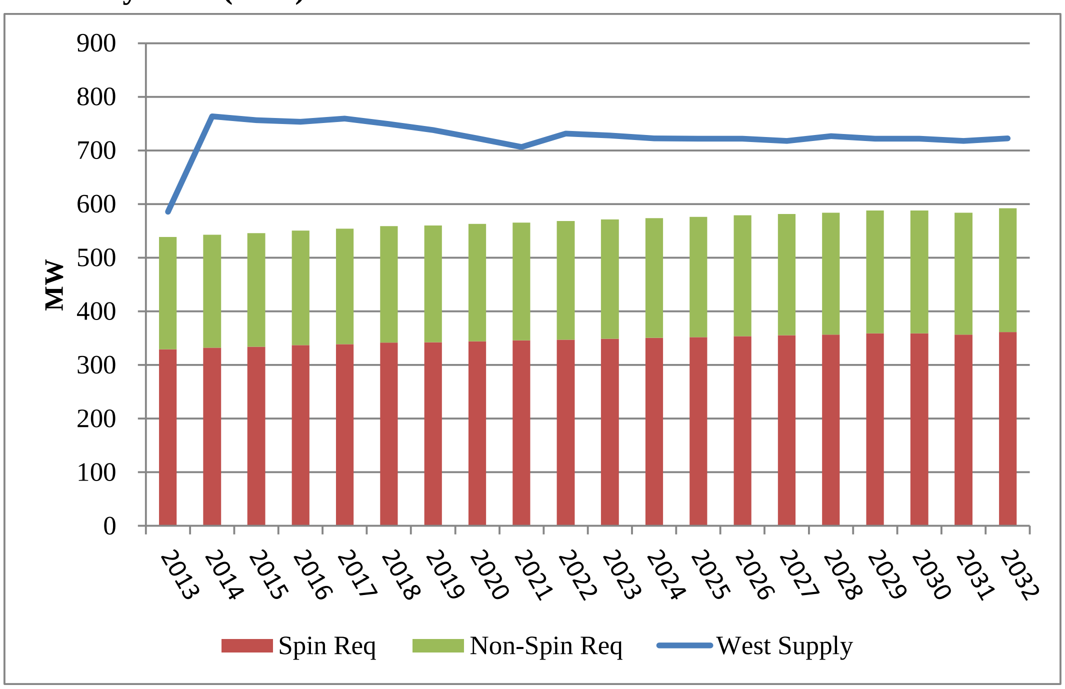


Figure F.2 - Comparison of Reserve Requirements and Resources, West Balancing Authority Area (MW)



Flexible Resource Supply Planning

In actual operations, PacifiCorp has been able to serve its reserve requirements and has not experienced any incidences where it was short of reserves. PacifiCorp manages its resource requirements to meet its reserve obligation in the same manner as is done to meet its load obligation, through long term planning, market transactions and operational activities that are performed on an economic basis considering utilization of the transmission capability between the two balancing authority areas.

In addition, as discussed in Volume I, Chapter 3 of the 2013 IRP report, PacifiCorp has signed a memorandum of understanding with the California Independent System Operator Corporation February 12, 2013 to outline terms for the implementation of an energy imbalance market (EIM) by October 2014. The implementation of the EIM is expected to provide alternatives to more economic dispatch of PacifiCorp's resources and may eventually reduce regulating margin requirements.

As indicated in the OPUC order, electric vehicle technologies may be able to meet flexible resource needs at some point in the future. However, given the electric vehicle technology and market have not been developed sufficiently to provide data for the present study, and given PacifiCorp's analysis shows there is no gap between projected demand and supply of flexible resources over the IRP planning horizon, PacifiCorp's study has not attempted to specifically address how electric vehicles could be used to meet future flexible resource needs.

APPENDIX G – PLANT WATER CONSUMPTION

The information provide in this appendix is for PacifiCorp owned plants. Total water consumption and generation includes all owners for jointly-owned facilities

Table G.1 – Plant Water Consumption with Acre-Feet Per Year

			Acre-Feet Per Year					MWhs Per Year					
Plant Name	Zero Discharge	Cooling Media	2008	2009	2010	2011	Average	2008	2009	2010	2011	Gals/ MWH	GPM/ MW
Carbon		Water	2,199	2,349	2,193	2,458	2,300	1,204,984	1,211,875	1,296,004	1,332,218	594	9.9
Chehalis		Air	-	-	-	-	-	715,441	1,750,041	1,296,741	664,323	-	-
Currant Creek	Yes	Air	82	108	82	78	88	2,799,585	2,464,463	2,536,660	2,397,142	11	0.2
Dave Johnston		Water	7,746	6,983	6,604	7,233	7,141	5,638,807	5,017,794	4,704,694	5,059,927	456	7.6
Gadsby **		Water	426	680	893	864	716	482,903	607,387	359,404	194,389	567	9.5
Hunter	Yes	Water	19,380	19,300	18,941	16,961	18,645	10,246,965	9,438,683	8,785,827	8,719,300	653	10.9
Huntington	Yes	Water	11,385	10,922	9,549	9,069	10,231	7,148,850	6,753,764	6,107,379	5,961,371	513	8.6
Jim Bridger	Yes	Water	27,322	25,361	20,757	22,282	23,931	15,303,508	15,188,184	14,828,906	12,771,611	537	8.9
Lake Side		Water	1,821	1,287	1,533	1,154	1,449	2,863,246	2,099,013	2,537,046	1,845,528	200	3.3
Naughton		Water	10,992	10,846	13,354	14,157	12,337	5,114,409	4,752,632	5,339,385	5,102,251	754	12.6
Wyodak	Yes	Air	446	365	396	367	393	2,811,590	2,732,796	2,565,341	1,831,459	48	0.8
TOTAL			**81,799**	**78,201**	**74,302**	**74,622**	**78,101**	**54,330,288**	**52,016,632**	**50,357,387**	**45,879,519**	**497**	**8.3**

**Gadsby includes a mix of both rankine steam units and peaking gas turbines
Plants Owned and Operated by PacifiCorp
Total water consumption and generation includes all owners for jointly-owned facilities

1 acre-foot of water is equivalent to: 325,851 Gallons or
43,560 Cubic Feet

Table G.2 – Plant Water Consumption by State (acre-feet)

UTAH PLANTS				
Plant Name	**2008**	**2009**	**2010**	**2011**
Carbon	2,199	2,349	2,193	2,458
Currant Creek	82	108	82	78
Gadsby	426	680	893	864
Hunter	19,380	19,300	18,941	16,961
Huntington	11,385	10,922	9,549	9,069
Lake Side	1,821	1,287	1,533	1,154
TOTAL	**35,293**	**34,646**	**33,191**	**30,583**

Percent of total water consumption = 43.3%

WYOMING PLANTS				
Plant Name	**2008**	**2009**	**2010**	**2011**
Dave Johnston	7,746	6,983	6,604	7,233
Jim Bridger	27,322	25,361	20,757	22,282
Naughton	10,992	10,846	13,354	14,157
Wyodak	446	365	396	367
TOTAL	**46,506**	**43,555**	**41,111**	**44,039**

Percent of total water consumption = 56.7%

Table G.3 – Plant Water Consumption by Fuel Type (acre-feet)

COAL FIRED PLANTS						
Plant Name	**2008**	**2009**	**2010**	**2011**	**Generation Capacity**	**Ac-ft/MW**
Carbon	2,199	2,349	2,193	2,458	172	13.4
Dave Johnston	7,746	6,983	6,604	7,233	762	9.4
Hunter	19,380	19,300	18,941	16,961	1,341	13.9
Huntington	11,385	10,922	9,549	9,069	903	11.3
Jim Bridger	27,322	25,361	20,757	22,282	2,118	11.3
Naughton	10,992	10,846	13,354	14,157	700	17.6
Wyodak	446	365	396	367	335	1.2
TOTAL	**79,470**	**76,126**	**71,794**	**72,526**	**Average**	**11.2**

Percent of total water consumption = 97.1%

NATURAL GAS FIRED PLANTS						
Plant Name	**2008**	**2009**	**2010**	**2011**	**Generation Capacity**	**Ac-ft/MW**
Currant Creek	82	108	82	78	537	0.2
Gadsby	426	680	893	864	351	2.0
Lake Side	1,821	1,287	1,533	1,154	544	2.7
TOTAL	**2,329**	**2,075**	**2,508**	**2,096**	**Average**	**1.6**

Percent of total water consumption = 2.9%

Table G.4 – Plant Water Consumption for Plants Located in the Upper Colorado River Basin (acre-feet)

Plant Name	2008	2009	2010	2011
Hunter	19,380	19,300	18,941	16,961
Huntington	11,385	10,922	9,549	9,069
Carbon	2,199	2,349	2,193	2,458
Naughton	10,992	10,846	13,354	14,157
Jim Bridger	27,322	25,361	20,757	22,282
TOTAL	**71,278**	**68,778**	**64,794**	**64,927**

Percent of total water consumption = 87.3%

APPENDIX H – WIND INTEGRATION STUDY

This appendix provides the 2012 Wind Integration Study conducted during the 2013 IRP planning process. A draft version of this study was sent to participants in November 2012. The 2012 Wind Integration Study will be presented to the Technical Review Committee for approval in May 2013.

PACIFICORP

2012 WIND INTEGRATION RESOURCE STUDY

APRIL 30, 2013

1. Introduction

The purpose of this study is to estimate the operating reserves required to maintain PacifiCorp's system reliability and comply with North American Electric Reliability Corporation (NERC) reliability standards. The Company must provide sufficient operating reserves to allow the Balancing Authority to meet NERC's control performance criteria (See BAL-007-1[21]) at all times, incremental to contingency reserves which the Company maintains to comply with NERC Standard BAL-002-0[22]. These incremental operating reserves are necessary to maintain area control error[23] within required parameters, apart from disturbance events that are addressed through contingency reserves, due to sources outside direct operator control including intra-hour changes in load demand and wind generation. The study results in an estimate of operating reserve volume and estimated cost of these operating reserves required to manage load and wind generation variation in PacifiCorp's Balancing Authority Areas (BAAs).

The operating reserves contemplated within this study represent regulating margin, which is comprised of ramp reserve extracted directly from operational data, and regulation reserve, which is estimated based on operational data. The study calculates regulating margin demand over two common operational timeframes: ten-minute intervals, called regulating; and one-hour-intervals, called following. The regulating margin requirements are calculated from operational data recorded during PacifiCorp's operations from January 2007 through December 2011 (Study Term). The regulating margin requirements for load variation, and separately for load variation combined with wind variation, are then applied in PacifiCorp's Planning and Risk (PaR) production cost model to isolate the effect additional reserve requirements due to wind generation have on overall system costs. This cost is attributed to the integration of wind generation resources and will change over time with changes in market prices for power and natural gas, changes in PacifiCorp's resource portfolio and potential changes in regional market design, such as an energy imbalance market.

Technical Review Committee

In order to ensure the Company's study is performed according to current best practices and benefits from guidance provided by individuals with diverse wind integration study experience, PacifiCorp used a Technical Review Committee (TRC) for its 2012 Study. The TRC was involved during the Study process, and their recommendations are reflected in the Study method and scenarios addressed. All study results have been presented to and reviewed by the TRC. The members of the TRC are:

- Andrea Coon - Director, Western Renewable Energy Generation Information System (WREGIS) for the Western Electricity Coordinating Council (WECC)
- Randall Falkenberg – President, RFI Consulting, Inc.
- Matt Hunsaker - Manager, Renewable Integration for the Western Electricity Coordinating Council (WECC)
- Michael Milligan - Lead research for the Transmission and Grid Integration Team at the National Renewable Energy Laboratory (NREL)

[21] NERC Standard BAL-007-1:http://www.nerc.com/docs/standards/sar/BAL-007-011_clean_last_posting_30-day_Pre-ballot_06Feb07.pdf.
[22] NERC Standard BAL-002-0: http://www.nerc.com/files/BAL-002-0.pdf
[23] "Area Control Error" is defined in the NERC glossary here: http://www.nerc.com/files/Glossary_12Feb08.pdf

- J. Charles Smith - Executive Director, Utility Variable-Generation Integration Group (UVIG)
- Robert Zavadil - Executive Vice President of Power Systems Consulting, EnerNex

The study method incorporates improvements resulting from recommendations made by TRC members as well as analyses requested by them. The Company thanks all the TRC members for their reviews of the study method and professional feedback.

1.1 Executive Summary

The 2012 Wind Integration Study (the "Wind Study") estimates the regulating margin requirement from historical load and wind generation production data. The regulating margin is required to manage variations to area control error due to load and wind variations within PacifiCorp's BAAs. The Wind Study estimates the regulating margin requirement based on load combined with wind variation and separately estimates the regulating margin requirement based solely on load variation. The difference between these two calculations, with and without the estimated regulating margin required to manage wind variability and uncertainty, provides the amount of incremental operating reserves required to maintain system reliability due to the presence of wind generation in the PacifiCorp's BAAs. The resulting regulating margin requirement was evaluated deterministically in PaR, a production cost model used in the Company's Integrated Resource Plan (IRP) to evaluate stochastic risk in selection of a preferred resource portfolio, so that the incremental cost of the regulating margin required to manage wind resource variability and uncertainty can be reported on a dollar per megawatt hour (MWh) of wind generation basis.[24]

Table H.1 depicts the combined PacifiCorp BAA annual average regulating margin calculated in this Wind Study, and separates the regulating margin due to load from the regulating margin due to wind.

Table H.1 - Average Annual Regulating Margin Reserves, 2012 Wind Study (MW)

	West BAA	East BAA	Combined
Load-Only Regulating Margin	147	247	394
Incremental Wind Regulating Margin	54	131	185
Total Regulating Margin	202	378	579

Table H.2 depicts the cost to integrate wind generation in PacifiCorp's BAAs. The cost to integrate wind includes the incremental regulating margin reserves to manage intra-hour variances as outlined above and the costs associated with day-ahead forecast variances that affect daily system balancing. Each of these component costs were calculated using PacifiCorp's PaR model. A series of PaR simulations were completed to isolate each wind integration cost component by using a "with and without" approach. For instance, PaR was first used to calculate system costs solely with the regulating margin requirement due to load variations, and then again

[24] The PaR model can be run with stochastic variables in Monte Carlo simulation mode or in deterministic mode whereby variables such as natural gas and power prices do not reflect random draws from probability distributions. For purposes of the Wind Study, the intention is not to evaluate stochastic portfolio risk, but to estimate production cost impacts of incremental operating reserves required to manage wind generation on the system based on current projections of future market prices for power and natural gas.

with the increased regulating margin requirements due to load combined with wind generation. The change in system costs between the two PaR simulations results in the wind integration cost.

Table H.2 - Wind Integration Cost (2012$ per MWh of Wind Generation)

Study	2010 Wind Integration Study	2012 Wind Integration Study
Wind Capacity Penetration	2046 MW	2126 MW, 2011 Operational Data
Tenor of Cost	3-year levelized, 2010$	1 year levelized, 2012$
Hourly Reserve ($/MWh)	$8.85	$2.19
Interhour/System Balancing ($/MWh)	$0.86	$0.36
Total Wind Integration ($/MWh)	$9.70	$2.55

The 579 megawatts of regulating margin identified in this study (in Table H.1) is comparable to the 530 megawatts of regulating margin identified in the prior wind integration study developed for the 2011 IRP. While overall operating reserve levels are similar, this Study shows the estimated costs of these operating reserves are lower, and that the reduced cost is primarily driven by declining natural gas and power market prices. Table H.3 compares natural gas and power price assumptions used in the 2010 Wind Integration Study to those used in the 2012 Wind Integration Study.

Table H.3 - Nominal Levelized Natural Gas and Power Prices Used in the 2010 and 2012 Wind Integration Studies

	Palo Verde High Load Hour Power	Palo Verde Low Load Hour Power	Opal Natural Gas
2010 Wind Study	$51.26	$35.60	$5.36
2012 Wind Study	$37.05	$25.74	$3.43

The effect of changing power and natural gas prices on the cost of wind integration is significant, even if the volume of wind being integrated does not change. The value of reserves is often the opportunity cost of a lost sale at a given generation station. This opportunity cost is foregone margin (which is equal to the lost revenue from the wholesale sale) less the variable cost to run the generation plant at a higher level, which is primarily the cost of fuel. Second to hydro generation, natural gas generation is often used to meet the Company’s reserve requirements and to manage variability and uncertainty in wind and retail load. This is because gas-fired generation typically has less economic impact when used for reserves than coal-fired generation and has the operational flexibility to ramp up and down as the load and wind fluctuate. As natural gas prices have fallen, the costs of holding reserve capacity have correspondingly dropped even though the quantity of regulating margin requirement has increased.

2. Data

2.1 Overview

The calculation of regulating margin reserve requirement was based entirely on actual historical load and wind production data over the Study Term from January 2007 through December 2011. No simulated wind production data was incorporated in the Wind Study, which is a change from prior studies that did not have the benefit of a more complete historical data set. Table H.4

shows that the ten-minute interval data for wind resources grew substantially during this period as wind resources came online in PacifiCorp's BAAs.

Table H.4 - Historical Wind Production and Load Data Inventory

	Nameplate Capacity	Beginning of Data	End of Data	Location
Wind Plants within PacifiCorp BAAs				
Chevron Wind	17	12/1/2009	12/31/2011	East
Combine Hills	41	1/1/2007	12/31/2011	West
Dunlap I Wind	111	10/1/2010	12/31/2011	East
Foote Creek Generation	85	1/1/2007	12/31/2011	East
Glenrock Wind	99	1/1/2009	12/31/2011	East
Glenrock III Wind	39	1/17/2009	12/31/2011	East
High Plains Wind	99	9/13/2009	12/31/2011	East
Marengo I	140	8/3/2007	12/31/2011	West
Marengo II	70	6/26/2008	12/31/2011	West
McFadden Ridge Wind	29	9/29/2009	12/31/2011	East
Mountain Wind 1 QF	61	7/2/2008	12/31/2011	East
Mountain Wind 2 QF	80	9/29/2008	12/31/2011	East
Oregon Wind Farm QF	65	3/31/2009	12/31/2011	West
Rock River I	50	1/1/2007	12/31/2011	East
Rolling Hills Wind	99	1/17/2009	12/31/2011	East
Seven Mile Wind	99	12/31/2008	12/31/2011	East
Seven Mile II Wind	20	12/31/2008	12/31/2011	East
Spanish Fork Wind 2 QF	19	7/31/2008	12/31/2011	East
Stateline Contracted Generation	150	1/1/2007	12/31/2011	West
Three Buttes Wind	99	12/1/2009	12/31/2011	East
Top of the World Wind	200	10/1/2010	12/31/2011	East
Wolverine Creek	65	1/1/2007	12/31/2011	East
Long Hollow Wind		1/1/2007	12/31/2011	East
Stateline Transmission Customer		1/1/2007	12/31/2011	West
Campbell Wind		12/1/2009	12/31/2011	West
Jolly Hills 1		10/1/2010	12/31/2011	East
Jolly Hills 2		10/1/2010	12/31/2011	East
Wind Plants out of PacifiCorp BAAs				
Goodnoe Hills Wind	94	5/31/2008	12/31/2011	West - out of BAA
Leaning Juniper 1	101	1/1/2007	12/31/2011	West - out of BAA
Load Data				
PACW Load		1/1/2007	12/31/2011	West
PACE Load		1/1/2007	12/31/2011	East

2.2 Historical Load and Load Forecast Data

The historical hourly day-ahead load forecasts and day-ahead hourly wind forecasts used to operate the generation system through the Study Term (2007-2011) were retrieved from Company records. Historical load data for the PacifiCorp East (PACE) and PacifiCorp West (PACW) BAAs were collected for the Study Term from the PacifiCorp PI system[25]. These data

[25] The PI system collects load and generation data and is supplied to PacifiCorp by OSISoft. The Company Web site is http://www.osisoft.com/software-support/what-is-pi/what_is_PI_.aspx .

were used for all the calculations involving historical load in the Study. The raw load data were reviewed for anomalies prior to further use. Data anomalies can include:

- Incorrect or reversal of sign (recorded data switching from positive to negative)
- Significant and unexplainable changes in load from one ten-minute interval to the next
- Excessive load values

After such review, out of 262,944 ten-minute intervals in the Wind Study, only three ten-minute intervals were identified as representing spurious data; each had extremely high load values that would have been impossible to serve. As depicted in Table H.5, these values were corrected by interpolating the values of the prior and successive ten-minute periods to create a smooth line across the spurious intervals. Since reserves demands are created by sudden, unexpected changes from one period to the next, this correction was intended to mitigate the impacts of spurious data on the calculation of the eventual reserve requirements and costs in this study. No other load data issues were encountered in this study.

Table H.5 - Load Data Anomalies and their Interpolated Solutions

Time	Original	Final	Replacement
8/12/2010 9:10	2,654.20	2,654.20	
8/12/2010 9:20	-288,687,072.00	2,669.24	Average of 9:10 and 9:30
8/12/2010 9:30	2,684.28	2,684.28	
2/3/2011 9:50	3,135.41	3,135.41	
2/3/2011 10:00	409,630.75	3,103.82	9:50 + 1/3 of (10:20 minus 9:50)
2/3/2011 10:10	213,667.91	3,072.23	9:50 + 2/3 of (10:20 minus 9:50)
2/3/2011 10:20	3,040.65	3,040.65	

2.3 Historical Wind Generation and Wind Generation Forecast Data

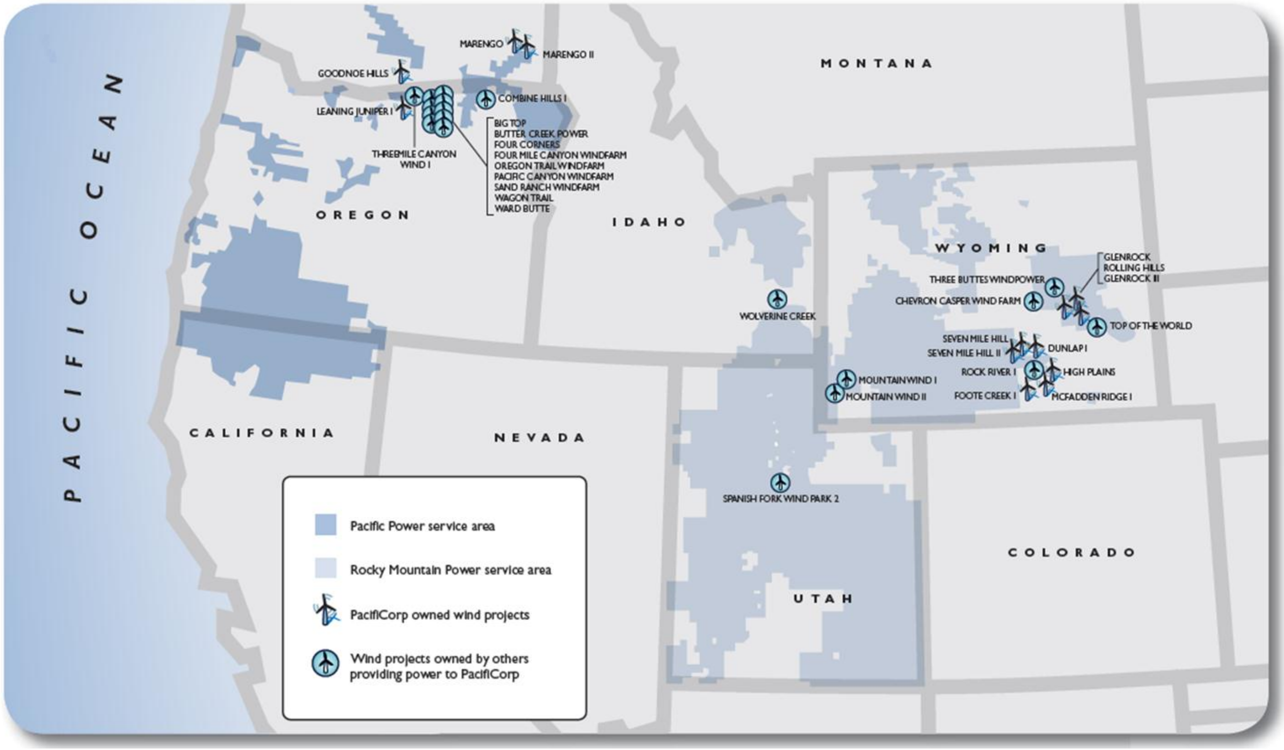
2.3.1 Overview of the Wind Generation Data Used in the Analysis

Over the Study Term, ten-minute interval wind generation data were available for the wind sites as summarized in Table H.4. The wind output data were collected from the PI system. In addition to historical wind generation data, the Wind Study requires historical day-ahead wind forecasts. All of these data sets were needed to establish wind integration costs using the PaR model, and are discussed in turn below.

2.3.2 Historical Wind Generation Data

As shown in Figure H.1, a cluster of PacifiCorp owned and contracted wind generation plants is located in PACW and another cluster is located in PACE. It is worth noting that three wind sites, Wolverine Creek in Idaho, Spanish Fork in Utah, and Mountain Wind in Wyoming, are within PACE, but are geographically distant from both the western and the eastern clusters.

Figure H.1 - Representative Map of PacifiCorp Wind Generating Stations Used in this Study



The wind data collected from the PI system is grouped into a series of sampling points, or nodes, each of which may represent one or more wind plants' output. In consideration of occasional irregularities in the system collecting the data, the raw wind data was reviewed for reasonableness considering the following criteria:

- Incorrect or reversal of sign (recorded data switching from positive to negative)
- Commercial operation date of wind facilities
- Output greater than expected for the wind generation capacity being collected at a given node
- Wind generation appearing constant over a period of days or weeks at a given node

Some PI system data streams exhibit large negative generation output readings in excess of that attributable to station service. These readings reflect positive generation and a reversed polarity on the meter, rather than negative generation or system load. The meter polarity generally remains constant for a long period, and in such instances, the sign was reversed for all data in the period of polarity reversal.

Most of the wind plants in the Wind Study first came online within the Study Period. To reduce one-time impacts due to startup testing or partial facility output as individual wind generators at a given plant were commissioned, wind generation prior to each facility's commercial operation date was not included in the Wind Study.

The PI system ten-minute interval data streams also sometimes exhibit unduly long periods of unchanged or "stuck" values for a given node. Because reserve requirements are driven by large, sudden changes in either wind or load, these data anomalies needed to be addressed. To address these anomalies, the values were held constant when "stuck" values were observed but for the last hour of "stuck" output to smooth the transition to the rest of the data series. For example, if a node's measured wind generation output was 50 megawatts (MW) for three weeks and the first new, fluctuating data value was 75 MW, the value of the last hour of "stuck" data would be replaced with the average of 50 MW and 75 MW. The Company investigated the impact of replacing some of the stuck values with corresponding hourly generation data on the Mountain Wind and Spanish Fork wind plants. As the effect of substituting Mountain Wind and Spanish Fork wind data for some of the stuck values was ascertained to be minimal (less than a tenth of a percent change in the resulting component reserve requirement), the operational data used for the Wind Study was not changed other than the instances described above.[26] In total, the wind generation data adjusted for stuck values represented only 0.5 percent of the wind data used in the Wind Study.

2.3.3 Historical Day-ahead Wind Generation Forecasts

Day-ahead wind forecasts for all owned and contracted wind resources were collected from daily historical records maintained by PacifiCorp commercial operations as well as from the Company's third party wind forecast service provider, Garrad Hassan Co. From year 2007 to year 2009 the same sets of historical day-ahead wind forecast data that were used for the Company's 2010 wind integration study were used again for the 2012 study for consistency. From year 2010 to the end of year 2011, Garrad Hassan provided complete data sets for the historical day-ahead wind forecasts. For transmission customers' resources the Company used the actual hourly wind generation data, eliminating the contribution of day-ahead "forecast error" from these resources, which is consistent with the fact PacifiCorp does not schedule transmission customers' resources located within the Company's BAAs.

During the review process of the 2010 and 2011 data sets, PacifiCorp found the following issues:

- Negative wind generation forecast for a period of consecutive hours
- Wind forecast data shown before the wind resources' official operational dates
- Missing forecast on some hours or on consecutive days

Only one resource had a negative generation forecast, Goodnoe Hills, for the 3-day period 10/3/2011 through 10/6/2011. After confirming the resource was not in station service or maintenance, the sign was corrected and reversed to positive. Any forecast generation before the official commercial operational date was removed from the data series of then newly added resources, consistent with the practice adopted for actual generation as described in the section above.

In the 2010 and 2011 day-ahead forecast data sets, 1.3 percent of the forecast hours were missing data, from one hour up to a week consecutive. If only one hour was missing, that hour forecast was created using the average of the previous hour forecast and the next hour forecast in order to smooth out the fluctuation in the data set. If several days' forecasts were missing, then the latest

[26] By leaving stuck values in place but for the last interval, variability and uncertainty in wind generation from a facility was removed for those intervals in which "stuck" values were observed, which all else equal would result in understating regulation margin requirements.

24 hours of forecast data immediately before the missing days were copied and repeated to fill in the days-long gap. This approach is intended to preserve the smoothness of forecast data while trying not to reduce intermittency in real wind generation forecasts.

3. Method

3.1 Method Overview

This section presents the approach used to establish regulating margin reserve requirements and the method for calculating the associated wind integration costs. Ten-minute interval load and wind data was used to estimate the amount of regulating margin reserves, both up and down, needed to manage variation in load and wind generation within PacifiCorp's BAAs.

3.1.1 Operating Reserves

In order to clarify this requirement, this section discusses the NERC regional reliability standard operating reserve requirement and how it fits into this study. NERC regional reliability standard BAL-STD-002-0[27] requires each Balancing Authority, such as PacifiCorp, to carry sufficient operating reserve at all times. Operating reserve consists of contingency reserve and regulating margin. These reserve requirements necessitate available generation surplus to that required to meet load obligations. Each of these types of operating reserve is further defined below.

Contingency reserve is capacity the Company holds in reserve that can be used to respond to contingency events on the bulk power system (e.g., an instantaneous trip of a large generator). The amount of required contingency reserve is defined in NERC BAL-STD-002-0. Contingency reserve may not be applied to manage other system fluctuations such as changes in load or wind generation output. Therefore, this study focuses on the operating reserve component to manage load and wind generation variations, which is incremental to contingency reserve, and also referred to in NERC BAL-STD-002-0 as regulating margin.

Regulating margin is the additional capacity the Company holds in reserve to ensure it has adequate reserve at all times to meet the NERC Control Performance Criteria in BAL-007-1[28]. NERC Control Performance Criteria require the Company to carry regulating reserves incremental to contingency reserves to maintain reliability. However, these additional regulating reserves are not defined by a simple formula, but rather are the amount of reserves required by each BA to meet the control performance standards. Since the Company's 2010 Wind Integration Study[29], the performance standards have evolved from a calculated Control Performance Standard 2 (CPS2)[30] mandated by NERC BAL-001-0[31] to a more dynamic regime mandated by

[27] http://www.nerc.com/files/BAL-STD-002-0.pdf
[28] NERC Standard BAL-007-1:http://www.nerc.com/docs/standards/sar/BAL-007-011_clean_last_posting_30-day_Pre-ballot_06Feb07.pdf. According to WECC Operating Committee meeting highlights (page 4, item 5), the field trial of this standard has been extended an additional year. The highlights are published here: http://www.wecc.biz/committees/StandingCommittees/OC/20130108/Lists/Agendas/1/OC%20Voting%20Record%20January%202013_Final_Revised.pdf
[29] http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/Wind_Integration/PacifiCorp_2010WindIntegrationStudy_090110.pdf, page 11
[30] PacifiCorp has not controlled to CPS2 since March 1, 2010.
[31] http://www.nerc.com/files/BAL-001-0_1a.pdf

NERC BAL-007-1, called Balancing Authority ACE Limit (BAAL), in which the Company's performance standard can be affected by the frequency of the interconnection. This new standard allows a greater ACE during periods when the ACE is helping frequency. However, the Company cannot plan on knowing when ACE will help or exacerbate frequency so the L_{10} is used for the bandwidth in both directions of the ACE. Thus the Company determines, based on the unique level of wind and load variation in its system, and the prevailing operating conditions, the unique level of incremental operating reserve it must carry. This reserve, or regulating margin, must respond to follow load and wind changes throughout the delivery hour. PacifiCorp further segregates regulating margin into two components to assist in the analysis: ramp reserve and regulation reserve.

> Ramp Reserve: Due to a number of factors (fluctuations in customer demand, spot transactions, varying amounts of generation produced by variable resources such as wind and solar generation) the net balancing area load changes from minute-to-minute, hour-to-hour continuously at all times. This variability (increasing and decreasing load) requires ready capacity to follow continuously, through short deviations, at all times. Treating this variability as though it is perfectly known for future time intervals (as though the operator would know exactly what the net balancing area load would be a minute from now, ten minutes from now, and an hour from now) defines the ramp of the system.
>
> Regulation Reserve: Changes in load or wind generation are not considered contingency events, yet these events still require that capacity be set aside. The Company has defined two types of regulation reserve – regulating and following reserves. Regulating reserve covers short term variations (seconds to minutes, normally using automatic generation control) in system load and wind, whereas following reserve covers uncertainty across an hour normally using manual generation control.

To summarize, regulating margin represents operating reserves the Company holds over and above the mandated contingency reserve requirement to maintain moment-to-moment system balance between load and generation. The regulating margin is the sum of two parts; ramp reserve and regulation reserve. The ramp reserve represents a minimum amount of flexibility required to follow the actual net system load (load minus wind generation output) with dispatchable generation. The regulation reserve represents flexibility maintained to manage intra-hour and hourly forecast errors about the net system load, and consists of four components: load following, load regulating, wind following, and wind regulating.

3.1.2 Method Steps

The regulating margin requirements are calculated for each of the Company's BAAs from production data via a five step process, each described in more detail later in this section. The five steps include:

1. Calculation of the ramp reserve from the historical data (with and without wind generation).
2. Creation of hypothetical forecasts from historical load and wind production data.
3. Compare actual generation and load values in each ten-minute interval of the study term to the hypothetical forecast values, and record the differences as deviations.
4. Group these deviations into bins that can be analyzed for the reserves requirements per forecast value of wind and load, respectively, such that a specified percentage (or

tolerance level) of these deviations would be covered by some level operating reserves.

5. Apply the reserve requirements noted for the various wind and load forecast values are then applied back to the operational data, enabling an average reserves requirement to be calculated for any chosen time interval within the Study Term.

Once the amount of regulating margin is estimated, the cost of holding the specified reserves on PacifiCorp's system is estimated using the PaR model. In addition to using PaR for evaluating operating reserve cost, the PaR model is also used to estimate wind integration cost associated with daily system balancing activities. These system balancing costs result from the unpredictable nature of wind generation on a day-ahead basis and can be characterized as system costs borne from committing generation resources against a forecast of load and wind generation and then dispatching generation resources under actual load and wind conditions as they occur in real time.

3.2 Regulating Margin Requirements

As noted above, ten-minute interval wind generation and load data drives the calculation of the regulating margin requirement for ramp reserve and regulation reserve. The approach for calculating regulating margin requirements necessary to supply adequate operational capacity is based on merging current operational practice with a survey of papers on wind integration[32] and input from the TRC.

3.2.1 Ramp Reserve

The ramp reserve represents the minimal amount of flexible system capacity required to follow the net load requirements without any error or deviation; in other words, if a system operator had the gift of perfect foresight for following changes in load and wind generation from minute-to-minute, and hour-to-hour. These amounts are as follows:

- If system is ramping down: [(Net Area Load Hour H – Net Area Load Hour (H+1))/2]
- If system is ramping up: [(Net Area Load Hour (H+1)– Net Area Load Hour H)/2]

Essentially, the ramp reserve is half the absolute value of the difference between the net balancing area load at the top of one hour minus the net balancing load at the top of the prior hour.

The ramp reserve is calculated for load using only the load values for each BAA at the top of each hour. The ramp reserve for load and wind is calculated using the net load (load minus wind generation output) at the top of each hour. The ramp reserve required for wind is the difference between that for load and that for load and wind.

3.2.2 Regulation Reserve

As ramp reserves represent the system flexibility required to follow the system's requirements without any uncertainty or error, the regulation reserve is necessary to cover uncertainty ever-present in power system operations. Very short-term fluctuations in weather, load patterns, wind generation output and other system conditions cause short term forecasts to change at all times.

[32] Many of the external studies PacifiCorp has relied on can be found on the Utility Variable Integration Group (UVIG) website at the following link: http://www.uwig.org/opimpactsdocs.html

Therefore, system operators rely on regulation reserve to allow for the unpredictable changes bound to occur between the time the next hour's schedule is made and the arrival of the next hour, or the ability to follow net load. Also, these very same sources of instability are active throughout each hour, requiring flexibility to regulate the generation output to the myriad ups and downs of customer demand, fluctuations in wind generation, and other system disturbances. To assess the regulation reserve requirements for PacifiCorp's BAAs, the Company compared the operational data to hypothetical forecasts as described below.

3.2.3 Hypothetical Operational Forecasts

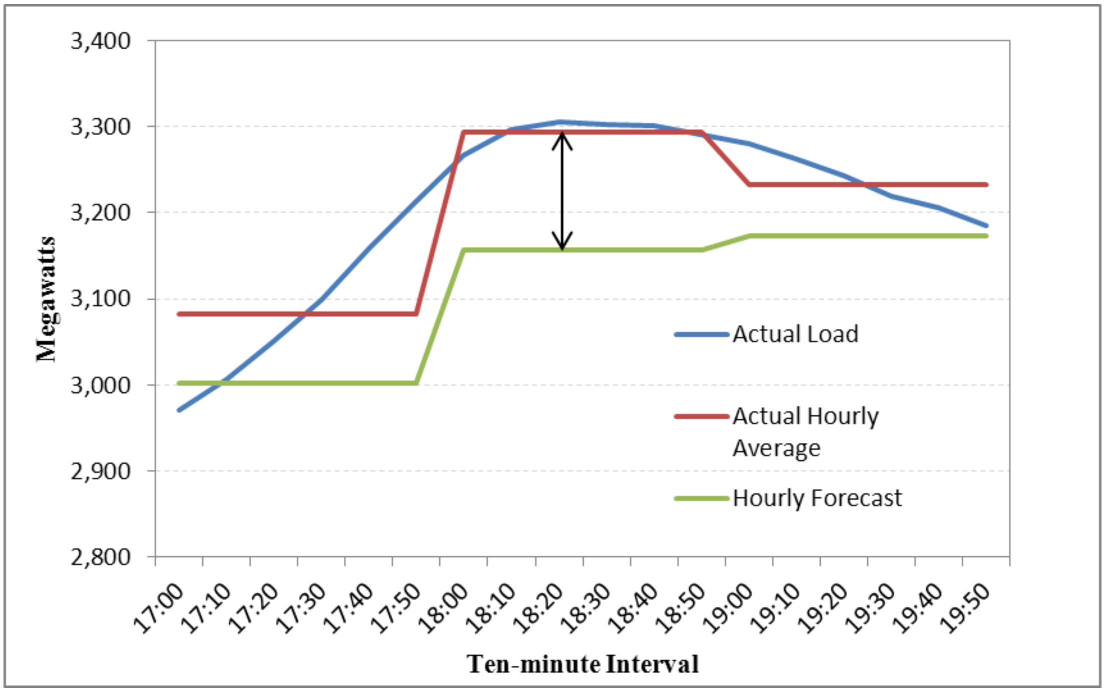
Regulation reserve consists of two components: (1) regulating, which is developed using the ten-minute interval data, and (2) following, which is calculated using the same data but estimated on an hourly basis. The Study Term load data and wind generation data are applied individually to calculate estimated reserve requirements for each month in the Study Term. For purposes of the Study, the regulating calculation compares observed ten-minute interval load and wind generation production to a ten-minute interval forecast, and following compares observed hourly averages to an average hourly forecast. Therefore, the calculation of regulation reserve requirements begins with the development of four component requirements: load following, wind following, load regulating, and wind regulating.

3.2.3.1 Hypothetical Load Following Operational Forecast

PacifiCorp maintains system balance by optimizing its operations to an hourly forecast every hour with changes in generation and market activity. This planning interval represents hourly changes in generation that are assessed roughly 20 minutes into each hour to account for a bottom-of-the-hour (30 minutes after the hour) scheduling deadline. Taking into account the conditions of the present and the expected load and wind generation, PacifiCorp must schedule generation to meet demands with an expectation of how much higher or lower load (net of wind generation) may be.

PacifiCorp's real-time desk updates the next hour's load forecast forty minutes prior to each operating hour. This forecast is created by comparing the current hour load to the load of a similar-load-shaped day. The hour-to-hour change in load from the similar day and hours (the load difference or "delta") is applied to the "current" hour load and the sum is used as the forecast for the ensuing hour. For example, on a given Monday the PacifiCorp real-time desk operator may be forecasting hour to hour changes in system load by referencing the hour to hour changes on the prior Monday, a similar-load-shaped day. If the hour to hour load change between the same hours that occurred from the prior Monday's was 5 percent, the operator will use a 5 percent change in load as the next hour's following forecast. For purposes of the calculation made in this Wind Study, the load forecast was modeled per the approximation described above with a shaping factor calculated using the day from one week prior, and applying a prior Sunday to shape any NERC holiday schedules. The differences observed between hourly average load and the load following forecasts comprise the load following deviations. Figure H.2 shows an illustrative example of a load following deviation using operational data from PACW, depicted by the black arrow.

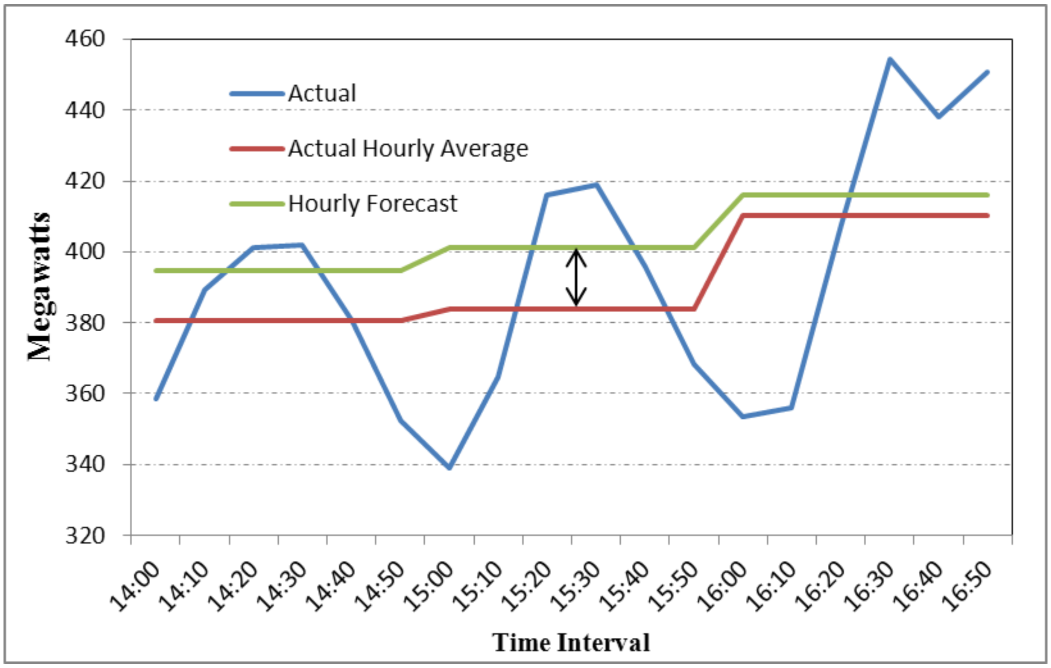
Figure H.2 - Illustrative Load Following Forecast and Deviation



3.2.3.2 Hypothetical Wind Following Operational Forecast

For the corresponding short term hourly operational wind forecast, the hourly wind forecast is prepared based on the concept of persistence; applying the instantaneous sample of the wind generation output 20 minutes past the current hour to the next hour as a forecast and balancing the system to that point. For purposes of the calculation made in this study, the hourly wind forecast consisted of the 20th minute output from the prior hour, and this output is assumed to be the volume of wind produced in the ensuing hour. For example, if the wind generation is producing 200 MW of power at 1:20pm in PACW, then it is assumed that 200 megawatt-hour (MWh) of power will be generated from the wind plants between 2:00pm and 3:00pm that day. The difference observed between hourly average wind generation and the wind following forecast represents the wind following deviation. Figure H.3 shows an illustrative example of a wind following deviation using operational data from PACW, depicted by the black arrow.

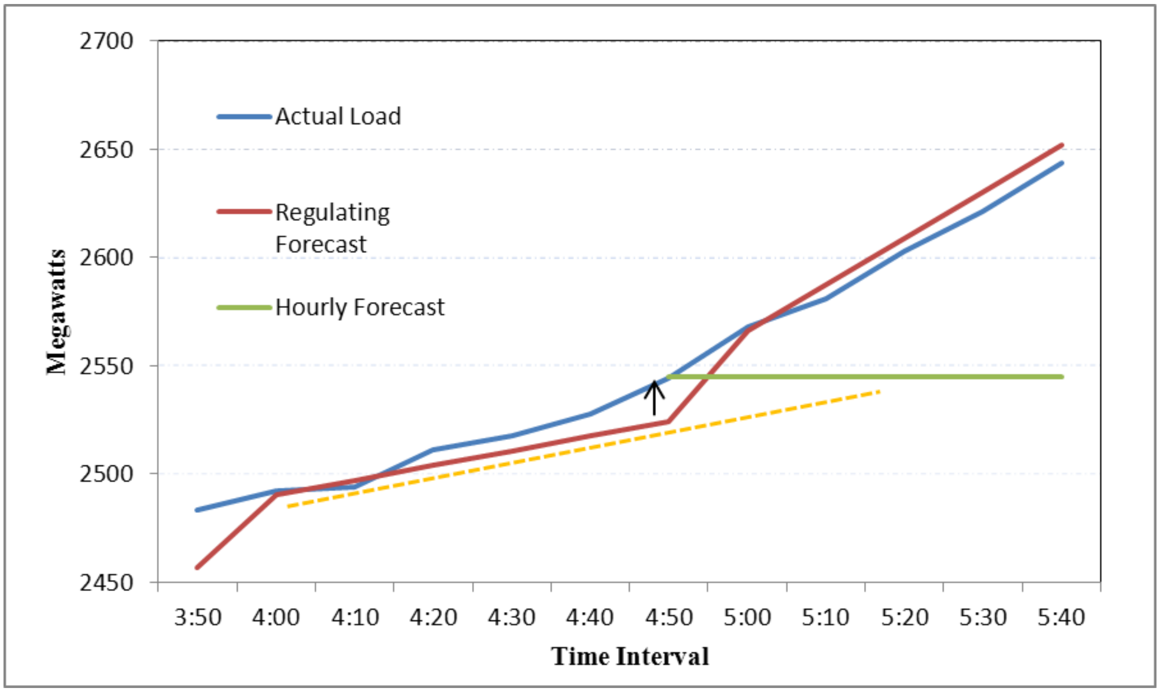
Figure H.3 - Illustrative Wind Following Forecast and Deviation



3.2.3.3 Hypothetical Load Regulating Operational Forecast

Separate from the variations in the hourly scheduled loads, the ten-minute load variability and uncertainty was analyzed by comparing the ten-minute actual load values to a line of intended schedule, which was represented by a line interpolated between an actual top-of-the-hour load value and the next hour's load forecast target at the bottom of that (next) hour. A sample of how the intended schedule compares to actual load data is shown in Figure H.4, with the trend of the line of intended schedule tracking the orange line toward the load following forecast at the middle of the ensuing hour as based upon data from PACW from December 2010. The method approximates the real time operations process for each hour. At the top of the given hour, the actual load is known and a forecast for the next hour was made. For the purposes of this study, a line joining the two points was made to represent the ideal path for the ramp or decline expected within the given hour. The actual ten-minute load values were compared to this straight line to produce a corresponding strip of load regulating deviations at each ten-minute interval, with one such deviation represented by the black arrow in Figure H.4.

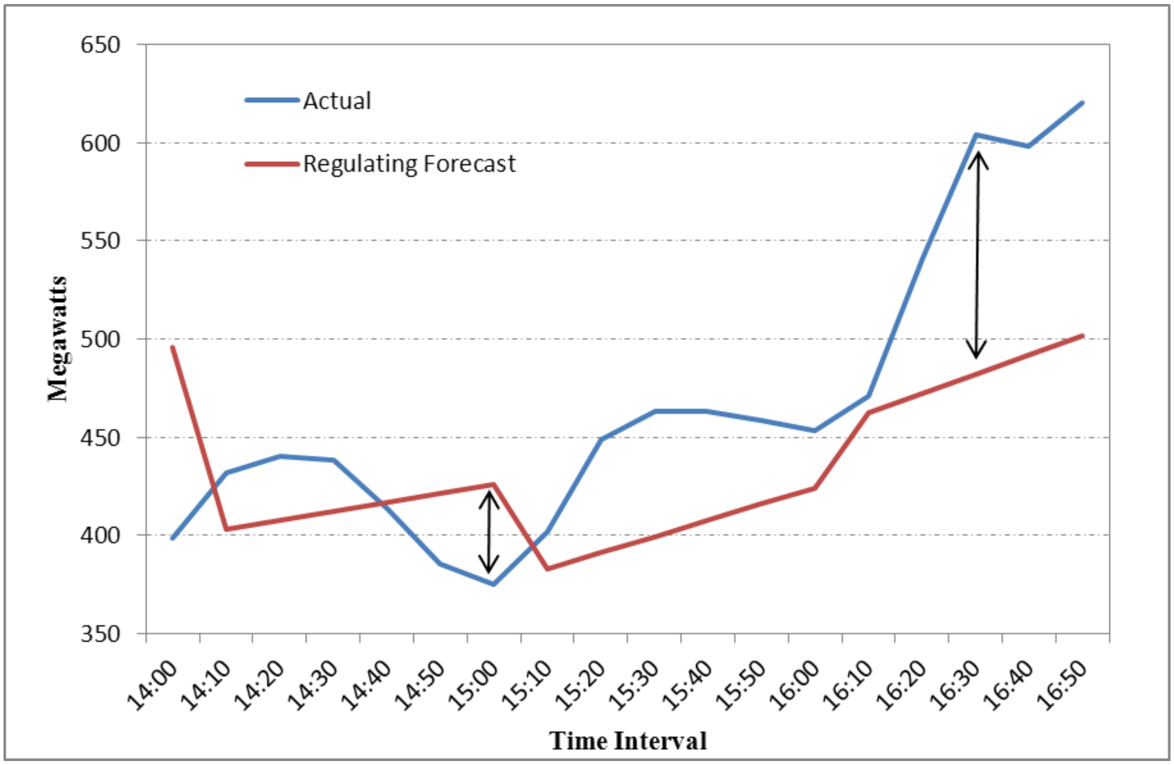
Figure H.4 - Illustrative Load Regulating Forecast and Deviation



3.2.3.4 Hypothetical Wind Regulating Operational Forecast

To parse the ten-minute interval wind variability from the following analysis, a line of intended schedule similar to that applied to load regulating deviations is developed. A line is drawn from the top of the hour's instantaneous wind output to the next hour's wind-following forecast output, but at the bottom (middle) of that next hour. This creates a line from the top of the hour actual output toward the next hour's average output. Figure H.5 shows an illustrative example using operational data from PACW of a wind regulation deviation, as depicted by the black arrow.

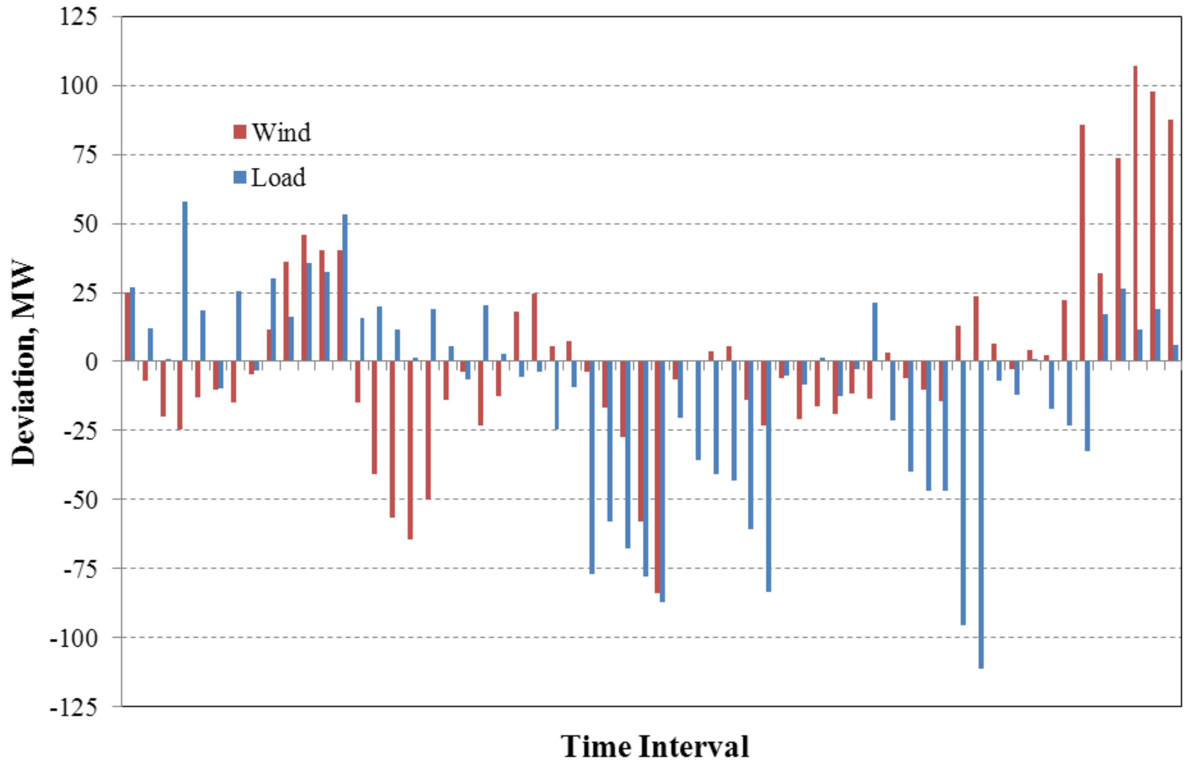
Figure H.5 - Illustrative Wind Regulating Forecast and Deviation



3.2.4 Recording of Deviations

The four hypothetical operational forecasts are netted against historical load and wind production data to derive four component forecast deviations (load following, wind following, load regulating, wind regulating). The deviations each represent different components (like vectors) of forecast error which have to be covered by operating reserves. For example, if the difference between the wind following forecast for a given hour is 550 MW, and the average wind generation on the system only produces 400 MW for that hour, then 150 average MW will have to be produced by other generation on the system to remedy the shortfall and maintain system balance. This is an example of reserves being deployed upward (additional generation dispatched) in real time. A similar effect happens when load exceeds the load forecast – additional generation is dispatched to cover the shortfall due to changing forecasts or unpredictable conditions. Figure H.6 shows an illustrative example of independent load and wind regulating deviations from the PACE on June 1, 2011. Each time interval as represented on the horizontal axis represents ten minutes. Note how the deviations are randomly constructive (both positive or both negative) or destructive (opposing, one positive and one negative).

Figure H.6 - Illustrative Example of Independent Load and Wind Regulating Deviations



The deviations are calculated for each ten-minute interval in the Study Term, for each of the four components of regulation reserves (load following, wind following, load regulating, wind regulating). Across any given hourly time interval, the six ten-minute intervals within each hour would have a common following deviation, but different regulation deviations. For example, considering load deviations only, if the load forecast for a given hour was 300 MW below the actual load realized in that hour, then a load following deviation of -300 MW would be recorded for all six of the ten-minute periods within that hour. However, as the load regulation forecast and the actual load recorded in each ten-minute interval vary, so will the deviations for load regulation. The same trend holds for wind following and wind regulating deviations. The following deviation is recorded as equal for the hour, and the regulating deviation varies each ten-minute interval.

3.2.5 Analysis of Deviations

Since the recorded deviations represent the amount of unpredictable variation on the electrical system, the key question becomes how much regulation reserve to hold in order to cover the deviations, thereby maintaining system reliability. The deviations are analyzed by separating the deviations into bins by their characteristic forecasts for each month in the Study Term. The bins are defined by every 5th percentile of recorded forecasts, creating 20 bins for each month's deviations for each component hypothetical operational forecast. In other words, each month of the Study Term will exhibit 20 bins of load following deviations, 20 of load regulating deviations, and the same for wind following and wind regulating. Tables H.6 and H.7 depict this process in action for June 2011.

Table H.6 depicts the calculation of percentiles (every 5 percent) among the load regulating forecasts for June 2011 using PACE operational data. For example, a load regulating forecast of

4,403.7 MW represents the fifth percentile of such forecasts for that month. Any forecast values below that value will be in Bin 20, along with the respective deviations recorded for those time intervals. Any forecast values between 4,403.7 MW and 4,508.8 MW will land the deviation for that particular interval in Bin 19.

Table H.6 - Percentiles Dividing the June 2011 Load Regulating Forecasts into 20 Bins

East		
Bin Number	Percentile	Load Forecast
	MAX	7,615.4
1	0.95	6,916.8
2	0.90	6,549.0
3	0.85	6,210.6
4	0.80	5,984.1
5	0.75	5,803.9
6	0.70	5,685.5
7	0.65	5,599.5
8	0.60	5,523.1
9	0.55	5,445.0
10	0.50	5,356.4
11	0.45	5,267.4
12	0.40	5,160.0
13	0.35	5,037.1
14	0.30	4,924.5
15	0.25	4,812.5
16	0.20	4,683.5
17	0.15	4,570.0
18	0.10	4,447.5
19	0.05	4,359.9
20	MIN	4,107.2

Table H.7 depicts a sample of the assignment of several intervals' data into bins following the definition of bins in Table H.6.

Table H.7 - Recorded Interval Load Regulating Forecasts and their Respective Errors, or Deviations, for June 2011 Operational Data from PACE

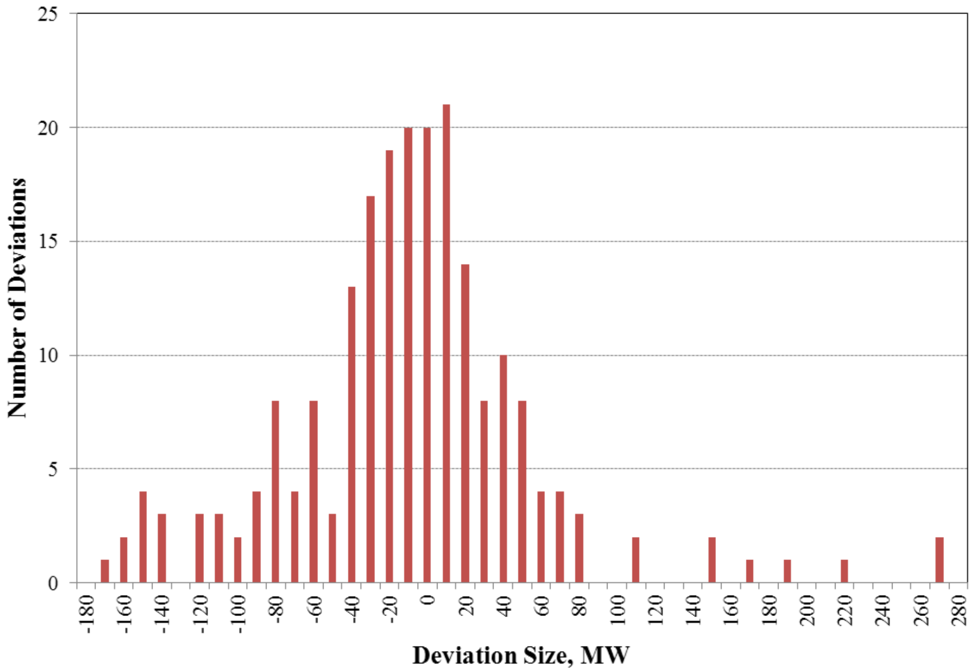
EAST			
DATE / TIME	LOAD REGULATION FORECAST	LOAD REGULATION ERROR	BIN ASSIGNMENT
06/01/2011 01:00	4,297.0	26.89	20
06/01/2011 01:10	4,277.7	12.17	20
06/01/2011 01:20	4,285.3	0.76	20
06/01/2011 01:30	4,292.9	57.93	20
06/01/2011 01:40	4,300.4	18.72	20
06/01/2011 01:50	4,308.0	-9.78	20
06/01/2011 02:00	4,315.6	25.25	20
06/01/2011 02:10	4,315.9	-3.19	20
06/01/2011 02:20	4,341.4	29.87	20
06/01/2011 02:30	4,366.9	16.33	19
06/01/2011 02:40	4,392.4	35.67	19
06/01/2011 02:50	4,417.9	32.28	19
06/01/2011 03:00	4,443.5	53.28	19
06/01/2011 03:10	4,429.4	15.66	19
06/01/2011 03:20	4,468.6	20.02	18
06/01/2011 03:30	4,507.8	11.52	18
06/01/2011 03:40	4,547.0	1.15	18
06/01/2011 03:50	4,586.2	18.98	17
06/01/2011 04:00	4,625.4	5.76	17
06/01/2011 04:10	4,658.2	-6.29	17
06/01/2011 04:20	4,696.8	20.29	16
06/01/2011 04:30	4,735.3	2.56	16
06/01/2011 04:40	4,773.9	-5.57	16
06/01/2011 04:50	4,812.5	-3.52	16
06/01/2011 05:00	4,851.0	-24.55	15
06/01/2011 05:10	4,905.0	-9.43	15

The binned approach is necessary to prevent over-assignment of reserves in different system states, owing to certain characteristics of load and wind generation. For example, when the balancing area load is near the lowest values for any particular day, it is highly unlikely the load deviation will require substantial down reserves to maintain balance because load will typically drop only so far. Similarly, when the load is near the peak of the month's load values, it is likely perhaps to go only a little higher, but could drop substantially at any time. Similarly for wind, when wind generation output is at the peak value for a system, there will not be a deviation taking the wind value above that peak. In other words, the directional nature of the reserves requirements can change greatly by the state of the load or wind output. At high load or wind generation states, there is not likely to be a significant need for reserves covering a surprise increase in those values. Similarly, at the lowest states, there is not likely to be a need for the direction of reserves covering a significant shortfall in load or wind generation.

For example, consider the deviations grouped into one of the load regulating bins for June 2011 data in Figure H.7. The deviations in this bin all occurred in time intervals with a load regulating forecast near 6,898 MW, from the PACE using June 2011 operational data. Most of the deviations are within 80 MW of the actual load value (a little over one percent, plus or minus).

However, for load regulating deviations in this range, there is apparently a greater tendency where actual load was lower (more negative deviations than positive in Figure H.7 below, and of greater magnitude), which requires the system's installed generation to have to increase its output in a very short timeframe to balance, thus requiring what are called "up reserves". It also bears noting that the deviations form a statistical distribution which is not normally shaped; and as more bins are examined, they also are not normally distributed and the longer tail can appear on either side.

Figure H.7 - Histogram of Deviations Occurring About a June 2011 PACE Load Regulating Forecast of 6,097 MW



Bin Analysis

Up and down deviations must be served by operating reserves, so the percentile equivalent to a deviation tolerance was sampled above and below the median of each of the bins. The difference between the target reliability percentiles and the median of the bins represents the implied incremental load following service for regulation reserve demand within that bin for a given tolerance level. The component reserve value for each bin, as a function of the tolerance target is represented in Equation 1:

Equation 1. **Derivation of the component reserves requirement as a function of deviations recorded in each bin.**

$$\textbf{Component Reserve}_j = \mathbf{f(P}_{tolerance}\,(\textbf{Forecast Bin}_i))$$

Where:

$\mathbf{P_{tolerance}}$ = The percentile of a two-tailed distribution representing an operational tolerance target

$\textbf{Forecast Bin}_i$ = the component forecast errors in each bin

The tolerance level, per Equation 1, represents a percentage of component deviations intended to be covered by the associated component reserve. As detailed in the method overview, section 3.1, the Company cannot apply contingency reserves to manage load and wind fluctuations, and therefore must carry sufficient regulating margin to avoid dipping into contingency reserve for this purpose. Any failure to manage these fluctuations can lead to disruption of services to customers. Surveying other recent wind integration studies[33], the company focused on two other large regional entities grappling with the same concerns; BC Hydro and Bonneville Power Administration ("BPA"). BC Hydro applies a 99.7 percent tolerance to respective load and wind reserve requirements[34], while the BPA customarily applies a 99.5 percent tolerance to its balancing requirements[35]. Considering the actions of other major market participants, and the requirement to maintain contingency reserves at all times, the Company has decided to apply a 99.7 percent tolerance in the calculation of component reserves, In doing so, the Company has sought to plan for as many deviations as possible, while excluding the very largest data points to allow for the potential existence of outlier values. However, in a departure from BC Hydro's and BPA's approaches, the Company will also net the appropriate system L_{10} from the resulting total reserves requirement[36], effectively reducing the target reserve requirement to a more aggressive level than those other market participants. The L_{10} represents a bandwidth of acceptable deviation prescribed by WECC between the net scheduled interchange and the net actual electrical interchange on the Company's BAAs. Subtracting the L_{10} credits customers with the natural buffering effect it entails. Despite exclusion of extreme deviations with the use of the 99.7 percent tolerance, the Company's system operators will still be expected to meet reserve requirements without exceptions. The Company may also change the tolerance based on operational and customer feedback in the future.

Taking the binned data illustrated in Figure H.7 as an example, approximately all of the deviations fall between -180 MW of deviation and +270 MW of deviation. Therefore, at a 99.7 percent tolerance level, the load regulating up reserves recommended for time intervals reflecting a load regulating forecast near 6,097 MW in the PACE in June 2011 is 173 MW. As each respective bin also has an implied probability by the number of data points falling within it (five percent), five percent of the ten-minute intervals in June 2011 will be assigned a load regulating component reserves value of 210 MW up reserves and 130 MW down reserves. The very same analysis is performed for each bin (20 in total) for wind regulating, load following, and wind following component reserves.

The binned results can be reviewed for a month at a time, and patterns in the up- and down-reserves requirements by forecast level become more apparent for load and for wind as shown in Figures H.8 and H.9. For example, Figure H.9 can be used to further explain the calculation

[33] PacifiCorp reviewed wind integration studies sponsored by other regional utilities (Portland General Electric, Avista, Idaho Power, BC Hydro, BPA) and the National Renewable Electrical Laboratory. The more recent BC Hydro and BPA approaches are consistent with the Company's requirement to maintain contingency reserve requirements at all times.

[34] BC Hydro's Wind Integration Study is part of its Integrated Resource Plan, Appendix 6E, page 6E-9: http://www.bchydro.com/etc/medialib/internet/documents/planning_regulatory/iep_ltap/2012q2/draft_2012_irp_appendix23.Par.0001.File.DRAFT_2012_IRP_APPX_6E.pdf

[35] Pacific Northwest National Laboratory, page 5: http://energyenvironment.pnnl.gov/ei/pdf/NWPP%20report.pdf

[36] The L_{10} of PacifiCorp's balancing authority areas are 33.41MW for the West and 47.88 MW for the East. For more information, please refer to: http://www.wecc.biz/committees/StandingCommittees/OC/OPS/PWG/Shared%20Documents/Annual%20Frequency%20Bias%20Settings/2012%20CPS2%20Bounds%20Report%20Final.pdf

method for the resulting component reserve demand. Bin 4 describes 36 hours (five percent of June's 720 hours) of wind generation forecast outcomes in the operational data from June, 2011. The average hypothetical operational forecast modeled for these hours was 710 MW of production, and 99.7 percent of the actual hourly production values would be between 305 MW (the bottom of the green shaded area) and 955 MW (the top of the red shaded area). Therefore, for these 36 hours, and other periods in the future where the PACE wind production forecast is near 710 MW, this method recommends 405 MW of up reserves (710 – 305 = 405) in order to be prepared for a shortfall in wind production compared to the hourly forecast.

Figure H.8 - Load Following Component Reserve Profile; Operational Data from June 2011

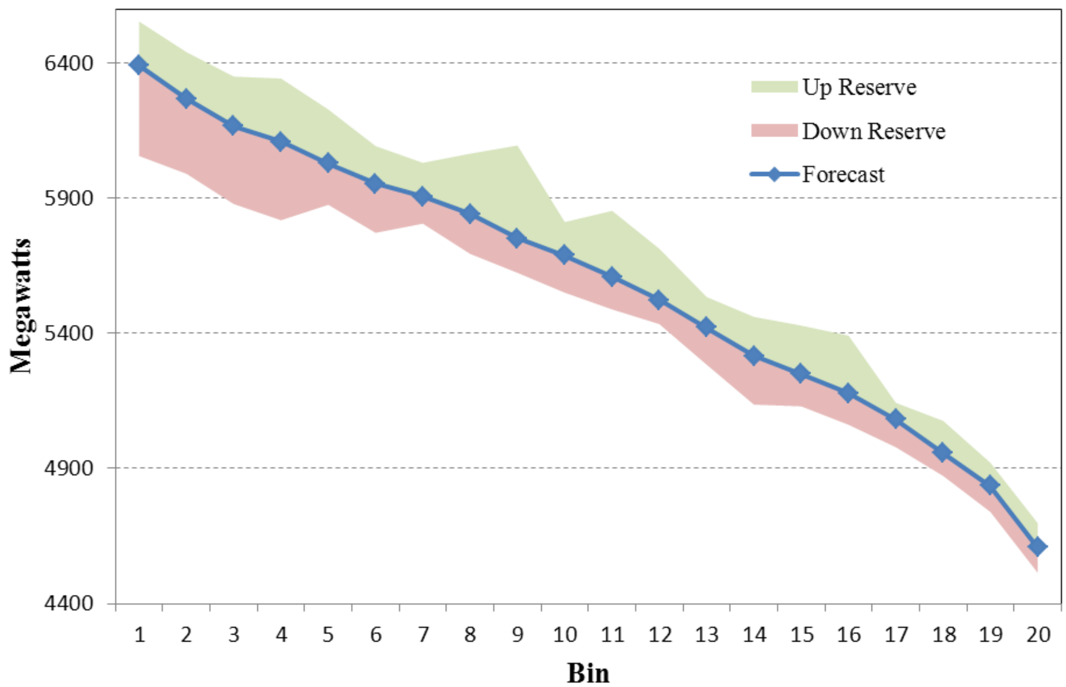
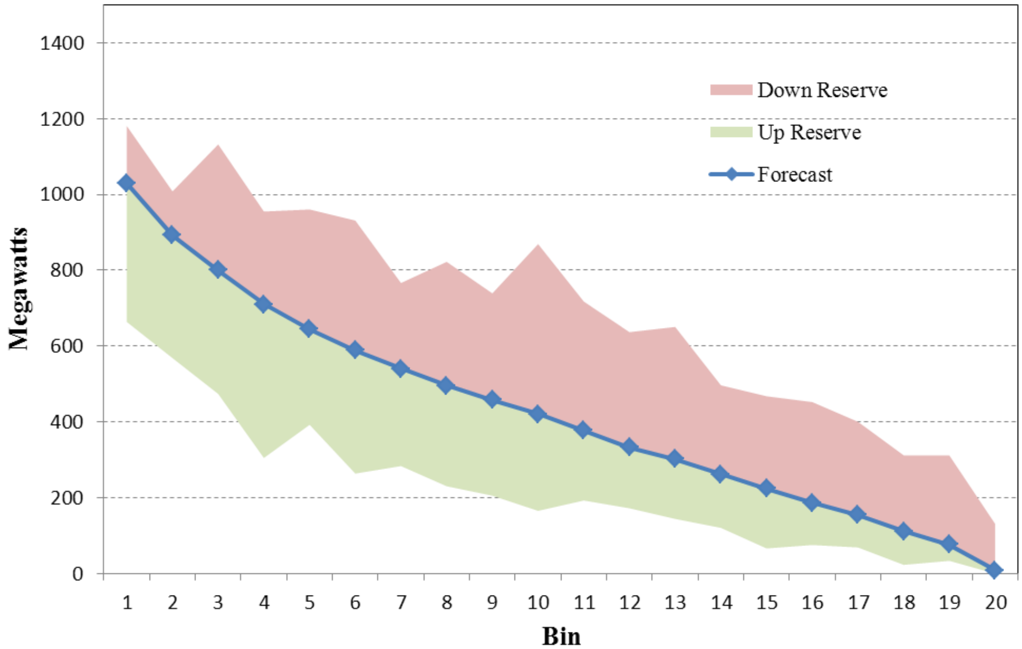


Figure H.9 - Wind Following Component Reserve Profile; Operational Data from June 2011



It is also useful to note the relatively small amount of up reserve required when the wind generation is forecast to be low (Bins 19 and 20), and vice-versa when little wind generation is forecast (Bins 1 and 2 in Figure H.9). This is how the bin analysis helps prevent over-assigning reserves—by adjusting the reserves requirements per wind generation state. For instance, the output of wind generators is less stable when the wind is picking up or slowing down, and the wind generators are speeding up or slowing down accordingly. This behavior is represented in Bins 3 through 15 in Figure H.9 above; the amount of wind following component reserve recommended in those bins (represented by the distance between the red forecast line and the blue and green lines) is greater than that needed at the higher and lower rates of production, which represent either sustained wind or sustained calmer conditions.

The result of the bin analysis is four component forecast values (load following, wind following, load regulating, wind regulating) for each ten-minute interval of the Study Period. The component forecasts and reserves requirements are then applied to the operational data and combined in the backcasting procedure described below.

3.2.6 Backcasting

Given the development of component reserves demands for regulating and following timeframes shaped to system state in section 3.2.5, reserve requirements were then assigned to each ten-minute interval in the Study term according to their respective hypothetical operational forecasts (created in the Wind Study's prior steps) to simulate the combination of the component reserves values as they would have happened in real-time operations. Doing so results in a total reserves requirement for each interval informed by the data.

To perform the backcasts, the component reserves requirements calculated from the bin analysis described above are first turned into reference tables. Table H.8 shows a sample (June 2011, PACE) reference tables for load and wind following reserves at varying levels of forecasted load and wind generation. Table H.9 shows a sample (June 2011, PACE) reference table for load and wind regulating reserves at varying forecast levels.

Table H.8 - Sample Reference Table for Load and Wind Following Component Reserves

	East			East		
Bin	Up	Load Forecast	Down	Up	Wind Forecast	Down
	163	10000	335	365	5000	151
1	163	6953	335	365	1029	151
2	172	6544	278	324	893	115
3	182	6240	289	327	801	331
4	233	5954	291	405	710	245
5	199	5802	153	252	645	316
6	138	5699	182	325	589	342
7	126	5601	99	256	540	227
8	223	5526	147	265	495	327
9	**345**	**5432**	**126**	**253**	**459**	**281**
10	123	5362	138	255	420	449
11	245	5260	120	184	377	340
12	189	5151	89	161	333	304
13	113	5033	137	158	302	348
14	145	4931	180	141	262	235
15	179	4809	120	158	224	243
16	213	4694	117	111	187	266
17	62	4551	102	86	155	246
18	119	4437	85	89	112	200
19	85	4338	97	44	77	234
20	90	4098	94	44	9	122
	90	0	94	44	0	122

Table H.9 - Sample Reference Table for Load and Wind Regulating Component Reserves

	East			East		
Bin	Up	Load Forecast	Down	Up	Wind Forecast	Down
	171	10000	263	244	10000	152
1	171	6917	263	244	1025	152
2	183	6549	251	302	902	224
3	177	6211	163	353	794	237
4	173	5984	272	224	713	180
5	204	5804	130	317	649	270
6	155	5686	156	263	585	450
7	219	5600	114	202	539	352
8	239	5523	146	260	501	394
9	**159**	**5445**	**134**	270	461	244
10	235	5356	124	**190**	**425**	**299**
11	170	5267	115	182	378	251
12	170	5160	112	149	334	265
13	239	5037	151	153	299	260
14	116	4925	138	148	261	172
15	126	4812	162	86	224	288
16	161	4683	103	122	188	287
17	98	4570	113	105	149	174
18	97	4448	95	60	112	144
19	82	4360	101	38	76	150
20	72	4107	92	39	10	82
	72	0	92	39	0	82

Each of the relationships recorded in the table is then applied to hypothetical operational forecasts. Building on the reference tables above, the hypothetical operational forecasts described in sections 3.2.3.1 through 3.2.3.4 are then used to calculate a reserves requirement for each interval of historical operational data. This is clarified in the example below.

Application to component forecasts
Each interval's component forecasts are used, in conjunction with Tables H.8 and H.9, to derive a recommended reserve requirement informed by the load and wind generation conditions for the time interval. This process is most easily explained with an example using the tables shown above, and hypothetical operational forecasts from June 2011 operational data for PACE. Table H.10 illustrates the outcome of the process for the load following and regulating components:

Table H.10 - Interval Load Forecasts and Component Reserves Requirement Data for Hour-ending 11 AM, June 1, 2011 in PACE

East	East	East	East	East	East	East	East	East
Time	Actual Load (10-min Avg)	Actual Load (Hourly Avg)	Following Forecast Load:	Load Following Up Reserves Specified by Tolerance Level	Load Following Down Reserves Specified by Tolerance Level	Regulating Load Forecast:	Load Regulating Up Reserves Specified by Tolerance Level:	Load Regulating Down Reserves Specified by Tolerance Level:
06/01/2011 10:00	5,533.04	5,543.46	5,509.68	344.8	126.2	5500.6	159.4	134.4
06/01/2011 10:10	5,525.38	5,543.46	5,509.68	344.8	126.2	5542.6	239.4	145.5
06/01/2011 10:20	5,525.54	5,543.46	5,509.68	344.8	126.2	5552.1	239.4	145.5
06/01/2011 10:30	5,550.23	5,543.46	5,509.68	344.8	126.2	5561.6	239.4	145.5
06/01/2011 10:40	5,551.93	5,543.46	5,509.68	344.8	126.2	5571.1	239.4	145.5
06/01/2011 10:50	5,574.64	5,543.46	5,509.68	344.8	126.2	5580.7	239.4	145.5

The load following forecast for this particular hour is 5,509.68 MW, which designates reserves requirements from Bin 9 as depicted (with shading for emphasis) in Table H.8. Note the same following forecast is applied to each interval in the hour for the purpose of developing reserves requirements. The first ten minutes of the hour exhibits a load regulating forecast of 5,500.6 MW, which designates reserves requirements from Bin 9 as depicted in Table H.9. Note that the regulating forecast changes every ten minutes, and as a result, the regulating component reserve requirement may do so as well. In this particular case, the second interval's forecast shifts the component reserves requirement from Bin 9 to Bin 8 (per Table H.8), and so the component reserves requirement changes accordingly. A similar process is followed for wind reserves, illustrated in Table H.11:

Table H.11 - Interval Wind Forecasts and Component Reserves Requirement Data for Hour-ending 11 AM June 1, 2011 in PACE

East	East	East	East	East	East	East	East	East
Time	Actual Wind (10-min Avg)	Actual Wind (Hourly Avg)	Following Forecast Wind:	Wind Follow Up Reserves Specified by Tolerance Level	Wind Follow Down Reserves Specified by Tolerance Level	East Wind Regulating Forecast:	Wind Regulating Up Reserves Specified by Tolerance Level:	Wind Regulating Down Reserves Specified by Tolerance Level:
06/01/2011 10:00	550.82	555.26	485.02	252.87	280.56	453.5	190.0	298.9
06/01/2011 10:10	557.30	555.26	485.02	252.87	280.56	548.5	201.5	352.2
06/01/2011 10:20	529.71	555.26	485.02	252.87	280.56	546.1	201.5	352.2
06/01/2011 10:30	550.40	555.26	485.02	252.87	280.56	543.8	201.5	352.2
06/01/2011 10:40	560.53	555.26	485.02	252.87	280.56	541.4	201.5	352.2
06/01/2011 10:50	582.79	555.26	485.02	252.87	280.56	539.1	259.7	394.0

The wind following forecast for this particular hour is 485.0 MW, which designates reserves requirements from Bin 9 under wind forecasts as depicted in Table H.8. Note the following forecast is applied to each interval in the hour for the same of developing reserves requirements. Meanwhile, the regulating forecast changes every ten minutes. The first ten minutes of the hour exhibits a wind regulating forecast of 453.5 MW, which designates reserves requirements from Bin 10 as depicted in Table H.9. As for load, the wind regulating forecast changes every ten minutes, and as a result, the regulating component reserve requirement may do so as well. In this particular case, the second interval's forecast shifts the wind regulating component reserves requirement from Bin 10 into Bin 7 (per Table H.9), and so the component reserves requirement changes accordingly.

The selection of component reserves using component hypothetical operational forecasts as depicted above is replicated for each ten-minute interval, assigning four component reserves requirements in each interval throughout the Study Term. The four components are combined into a single regulating reserves requirement as defined below.

Total Regulating Reserves Requirement

After the assignment of the component reserves requirements, each ten-minute interval of the Study Term exhibits values for load following reserves, wind following reserves, load regulating reserves, and wind regulating reserves. Each of these values is derived by comparing a unique component forecast to a unique actual value; in the case of load following, the load following forecast is compared to the average load for a given hour. For load regulating reserves requirements, the load regulating forecast is compared to the actual load observed at the same time. However, while adjusting operations for each of the four component factors is critical to maintaining system integrity, the components are not additive. Therefore, the wind and load reserve requirements are combined using the root-sum-square (RSS) calculation in each direction (up and down), assuming their variability in the short term independent or uncorrelated, by the RSS relationship in Equation 2. Then, the appropriate system L_{10} is netted from the result.

Equation 2. Total Regulation Reserves calculated from four component reserves using the root-sum-square formulation at time interval i:

$$\boldsymbol{Regulation\ Reserves_i} = \sqrt{LoadFollowing_i^{\ 2} + LoadRegulating_i^{\ 2} + WindFollowing_i^{\ 2} + WindRegulating_i^{\ 2}} - L_{10}$$

Drawing from the first ten-minute interval in the example above as depicted in Table H.s 7 and 8, the component up reserves requirements were as follows:

Load Following = 271.5 MW
Load Regulating = 142.4 MW
Wind Following = 242.5 MW
Wind Regulating = 238.1 MW
East System L_{10} = 47.9 MW

Applying Equation 2:

$$\boldsymbol{Regulation\ Reserves} = \sqrt{271.5^2 + 142.4^2 + 242.5^2 + 238.1^2} - 47.9$$

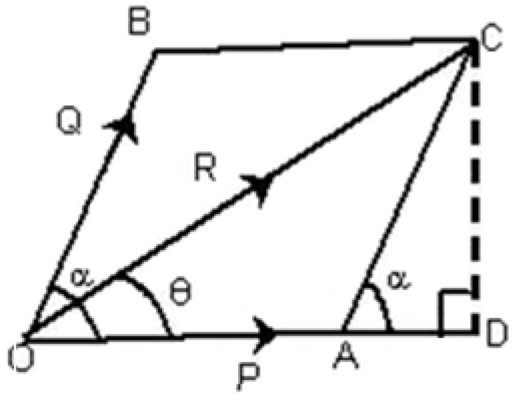
Per Equation 2, 409.8 MW of up reserves recommended for regulation reserve for the time interval between 10:00am and 10:10am, June 1, 2011 in PACE. In this manner, the component reserves requirements are used to calculate an overall reserves requirement for each ten-minute interval of the Study Term. A similar calculation is also made for the regulation reserve requirements pertaining only to the variability and uncertainty of load, which employs Equation 2 but applies zero reserves for the wind components. The incremental reserves assigned to wind generation demand are calculated as the difference between the total requirement and the load requirement. The results of these calculations can be quoted in hourly or monthly requirements by averaging the reserves requirements of all the ten-minute intervals within the specified hour or month. Annual reserves requirements are quoted as the average of the twelve monthly requirements.

Wind and Load Correlation

An important assumption underlying the application of Equation 2 is that there is no correlation between wind and load deviations. To test this assumption, this section describes an analysis of wind and load correlation.

The RSS equation is typically applied in the analysis engineering tolerances and supporting statistical concepts, and is derived from the Parallelogram Law[37].

Figure H.10 - Depiction of the Parallelogram Law



Equation 3. Vector combination as prescribed by the Parallelogram law in Figure H.10.
Resultant $\boldsymbol{R} = \sqrt{\boldsymbol{P}^2 + \boldsymbol{Q}^2 + 2\boldsymbol{PQ}\cos\alpha}$.

If **P** and **Q** act at right angles, α =90°, and cos(**α**)=0; $\boldsymbol{R} = \sqrt{\boldsymbol{P}^2 + \boldsymbol{Q}^2}$, which is equivalent to Equation 2.

The Parallelogram Law allows correlation to be constructive (with positive correlation) and destructive (with negative correlation). In cases of constructive correlation, the resultant (**R** in the illustration above, the parallelogram's diagonal) is increased as the angle (**α**) between (**Q**) and (**P**) is reduced. Destructive correlation causes the angle (**α**) to open wider, reducing the diagonal of the parallelogram, and reducing the length of the diagonal, **R**. The Law of Cosines can be used to illustrate a proof[38] that the cosine of angle **α** equals the correlation between vectors **P** and **Q** ($\cos(\boldsymbol{\alpha}) = \rho_{PQ}$).

In cases of zero correlation, the Parallelogram Law reduces to the RSS formulation (and **α** is a right angle, and the parallelogram is a square). For this Wind Study, rather than using two sides of a parallelogram to form a resultant (**R** in the illustration), four uncorrelated vectors

[37] A proof of the parallelogram law is available at: http://www.unlvkappasigma.com/parallelogram_law/
[38] http://www.johndcook.com/blog/2010/06/17/covariance-and-law-of-cosines/

corresponding to the component reserves for load following, load regulating, wind following, and wind regulating deviations are combined into a reserves requirement. The fact that there are four dimensions rather than two makes the process difficult to illustrate, but the effect is the same as in the two dimensional example above.

The Company applied the RSS formulation in its 2010 Wind Integration Study[39] after reviewing samples of the load and wind data used to perform the study[40], and reviewing studies by Idaho Power[41] and the Eastern Wind Integration and Transmission Study[42]. Since that time, additional studies have suggested use of this formulation directly[43] or noted that short term deviations from schedule in wind generation output and load are not correlated[44]. However, stakeholder interest has encouraged the Company to further review the correlation between wind and load reserve components.

Because reserves are intended to manage the deviations from expected load and wind generation output, the question becomes not whether the raw wind generation output and balancing area load are correlated, but rather whether the respective forecast errors between the Company's expected wind generation and load are correlated. These forecast errors drive the component reserves in the Wind Study, and reflect the level of reserves needed in real time operations. The analysis below assesses the correlation of deviations from forecasts for load and wind in both the hourly (following) and sub-hourly (regulating) timeframes.

Correlation Analysis

The forecast deviations for wind generation and load in the Company's BAAs were analyzed for correlation by performing a linear regression using the load deviation as an independent variable and the concurrent wind deviation as the dependent variable. Therefore, to estimate the East Wind Following deviation for a given time period, the East load following deviation was used as a predictive variable. The correlation between the two variables (load errors and wind errors) would be represented by the slope of the regression, and the predictive capability by the $\mathbf{r}^2$ (or goodness-of-fit). The procedure was followed for 2011 operational data applying the four component forecasts detailed previously for PACE and PACW. The results appear in Table H.12.

[39] http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/Wind_Integration/PacifiCorp_2010WindIntegrationStudy_090110.pdf, p. 19

[40] http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/Wind_Integration/PacifiCorp_2010WindIntegrationStudy_090110.pdf, Table 5, p. 6

[41] http://www.idahopower.com/pdfs/AboutUs/PlanningForFuture/wind/Addendum.pdf, pages 12, 20

[42] http://www.nrel.gov/C821B4E9-F70E-4245-9C6D-D5CB68B670DC/FinalDownload/DownloadId-286D6B0AF14A941F45E5F431BACF4DCF/C821B4E9-F70E-4245-9C6D-D5CB68B670DC/wind/systemsintegration/pdfs/2010/ewits_final_report.pdf, page 145

[43] http://www.bchydro.com/etc/medialib/internet/documents/planning_regulatory/iep_ltap/2012q2/draft_2012_irp_appendix23.Par.0001.File.DRAFT_2012_IRP_APPX_6E.pdf, page 6E-9

[44] http://www.nrel.gov/wind/systemsintegration/pdfs/2010/wwsis_final_report.pdf, page 92

Table H.12 - Results of Regression Analyses between Wind and Load Deviations

	Slope	r-Square
East Following	-0.097	0.45%
East Regulating	-0.087	0.63%
West Following	0.026	0.05%
West Regulating	-0.007	0.00%

The results indicate that while there is a calculable correlation between wind and load deviations in the data, the relationships are so weak such that neither explains the other, and so this relationship is not useful in an operational context. The value of the load deviation offers no ability to explain the wind deviation, and so the two are unrelated. This is consistent with the findings of wind studies noted above.

To illustrate the analysis, plots of the load and wind deviations (from their respective forecasts) have been prepared using 2011 operational data in Figures H.11 through H.14 below. Each point represents the respective deviation at any given time (a ten-minute interval for regulating deviations, a given hour for following deviations) by magnitude of the forecast error of load and wind, which would have to be managed by deploying reserves in real time operations. The magnitude of the load deviations are recorded on the horizontal (x) axis and the wind deviations on the vertical (y) axis. The correlation between the load and wind deviations is represented by slope of the (red) regression trend lines; a strongly predictive correlation would have little scatter about the line, while a weak, non-predictive correlation (with a low $\mathbf{r}^2$ value) would exhibit significant and varying amounts of scatter about the trend line.

Figures H.11 through H.14 demonstrate highly variable clouds of data, and the extension of each cloud along the horizontal axis suggest the load forecast deviations require more reserves than do the wind deviations. Additionally, the data do not follow the regression trend lines well; there is significant scatter and it varies from a dense population of occurrences in the middle to sparsely populated data at the ends of the line. These cloud patterns suggest factors other than load forecast error should be used to explain corresponding wind forecast error, and vice-versa.

For example, the greatest load deviations don’t necessarily seem to occur at the same time as most of the greatest wind deviations, nor are the deviations necessarily small. The range about the red regression line for East Following (in Figure H.11) exhibits several wind following deviations of about +/- 300 MW at +100 MW load following deviation (line A) and a similar amount and range at -100 MW load deviation (line B). The data suggest that increased forecast errors in either direction for load neither increase nor decrease the expected error in the wind forecast.

Figure H.11 - PACE Following Regression Plot

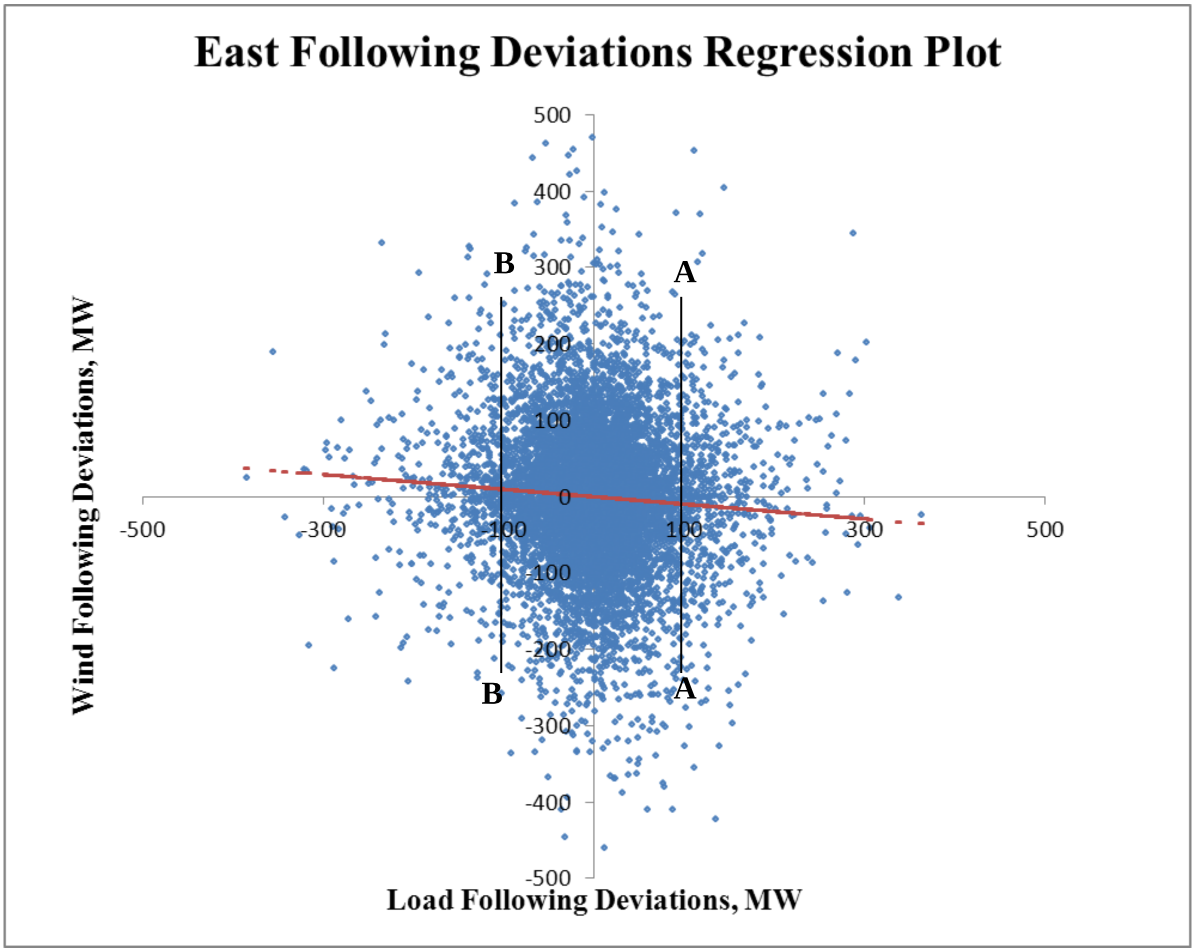
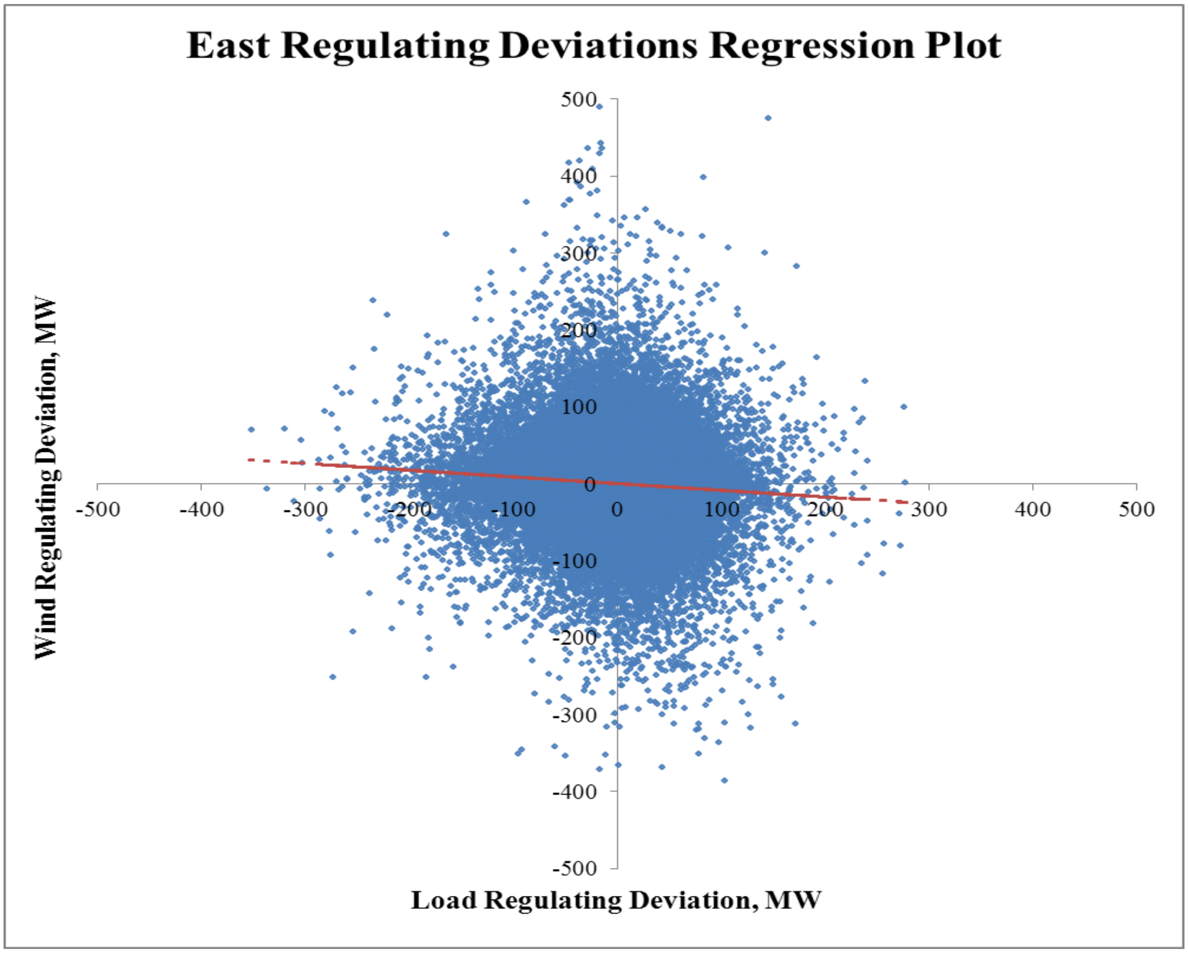
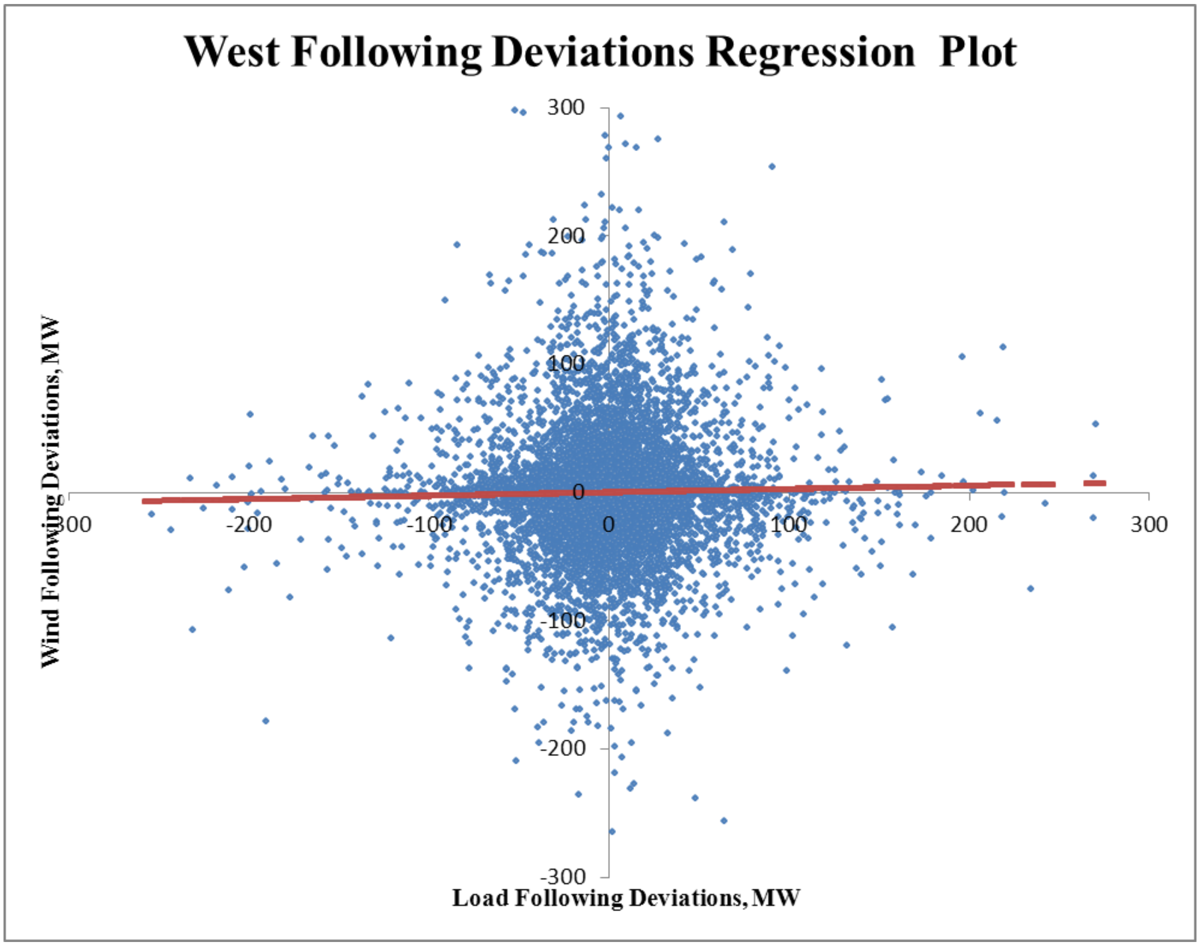


Figure H.12 - PACE Regulating Regression Plot[25]



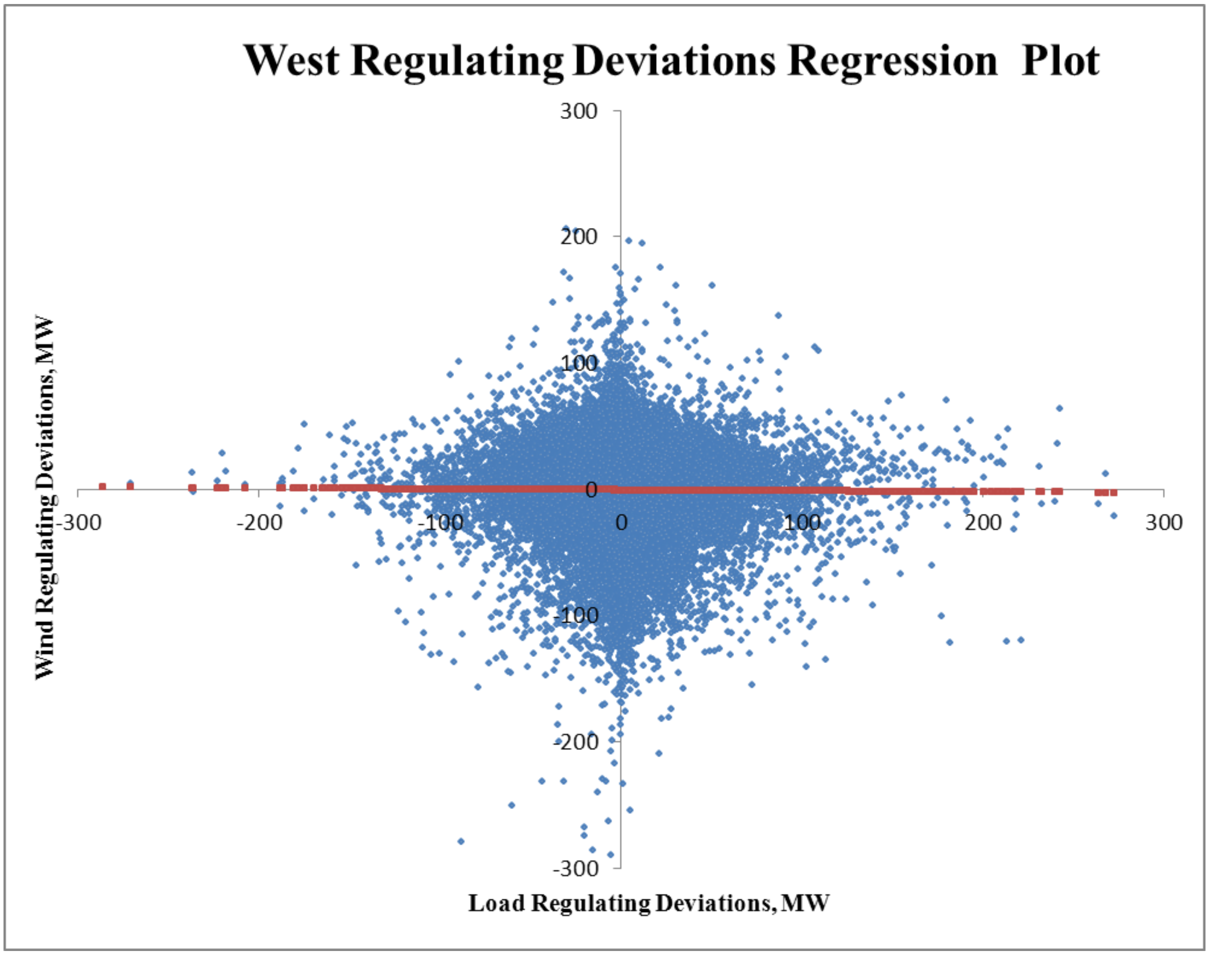
[25] Note cloud-like pattern of errors which is densest near zero, and the data does not tighten around the trend line.

Figure H.13 - PACW Following Regression Plot[26]



[26] Note another cloud of errors, with the red trend line describing little of the variation from one point to the other.

Figure H.14 - PACW Regulating Regression Plot[27]



3.3 Determination of Wind Integration Costs

3.3.1 Overview

Owing to the variability and uncertainty of load and wind generation, each hour of power system operations features a need to set aside operating reserve explicitly to cover load and contingency events inherent to the PacifiCorp system with or without wind in addition to contingency reserves. Additional costs are incurred with daily system balancing that is influenced by the unpredictable nature of wind generation on a day-ahead basis. To characterize how wind generation affects regulating margin costs and system balancing costs, the Study utilizes the PaR model, and applies the regulating margin requirements calculated by the method detailed in section 3.2.

[27] The dispersion in this cloud of data about the red regression trend line seems only to depend on how many data points are on either side of that line at any given point. Near the origin, there is a lot of data owing to most forecast errors being small, while at high deviations, there are very few points with which to assess fit, but there is scatter about the line.

PacifiCorp's PaR model, developed and licensed by Ventyx, Inc. uses the PROSYM chronological unit commitment and dispatch production cost simulation engine and is configured with a detailed representation of the PacifiCorp system. For this study, PacifiCorp developed five different PaR simulations. These simulations isolate wind integration costs associated with regulation margin reserves and enables separate calculation of wind integration costs associated with system balancing practice. The former reflects wind integration costs that arise from short-term (within the hour and hour ahead) variability in wind generation and the latter reflects integration costs that arise from errors in forecasting load and wind generation on a day-ahead basis.

The five PaR simulations used in the Wind Study are summarized in Table H.13. The first two simulations are used to tabulate operating reserve wind integration costs in forward planning timeframes. The approach uses a "P50" or expected wind profiles[28] and forecasted loads. The remaining three simulations support the calculation of system balancing wind integration costs. These simulations were run assuming operation in the 2013 calendar year, applying 2011 load and wind data. This calculation method combines the benefits of using actual system data with current forward price curves pertinent to calculating the costs for wind integration service on a forward basis.[29] PacifiCorp resources used in the simulations are based upon the 2011 IRP Update resource portfolio.[30]

Table H.13 - Wind Integration Cost Simulations in PaR

PaR Model Simulation	Forward Term	Load	Wind Profile	Incremental Reserve	Day-ahead Forecast Error
Regulating Margin Reserve Cost Runs					
1	2013	2013 Load Forecast	P50 Profiles	No	None
2	2013	2013 Load Forecast	P50 Profiles	Yes	None
Regulating Margin Cost = System Cost from PaR Simulation 2 less System Cost from PaR Simulation 1					
System Balancing Cost Runs					
3	2013	2011 Day-ahead Forecast	2011 Day-ahead Forecast	Yes	None
4	2013	2011 Actual	2011 Day-ahead Forecast	Yes	For Load*
5	2013	2011 Actual	2011 Actual	Yes	For Load and Wind**
Load System Balancing Cost = System Cost from PaR simulation 4 (which uses the unit commitment from Simulation 3) less system cost from PaR simulation 3 *Wind System Balancing Cost = System Cost from PaR simulation 5 (which uses the unit commitment from Simulation 4) less system cost from PaR simulation 4*					

3.3.2 Calculating Operating Reserve Wind Integration Costs

To assess the effects of wind capacity added to the PacifiCorp system on regulating margin costs,

[28] P50 signifies the probability exceedence level for the annual wind production forecast; at P50 generation is expected to exceed the assumed generation levels half the time and to fall below the assumed generation levels half the time.

[29] The Study uses the June 29, 2012 official forward price curve.

[30] The 2011 Integrated Resource Update report, filed with the state utility commissions on March 30, 2012 is available for download from PacifiCorp's IRP Web page using the following hyperlink: http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2011IRPUpdate/2011IRPUpdate_3-30-12_REDACTED.pdf.

the reserve requirements were simulated in PaR using 2013 load and P50 wind forecasts. Both of the first two PaR simulations excluded system balancing costs. Simulation 1 applied only the regulation reserves required for load obligations to 2013 forecast load and wind generation on PacifiCorp's systems with a 2013 resource profile. Simulation 2 used the same inputs except for adding the incremental operating reserve demand created by the variable nature of wind generation.

The system cost differences between these two simulations were divided by the total volume of wind generation to derive the wind integration costs associated with having to hold incremental operating reserve on a per unit of wind generation basis.

3.3.3 Calculating System Balancing Wind Integration Costs

PacifiCorp conducted another series of three PaR simulations to estimate daily system balancing wind integration costs consistent with the resource portfolio, labeled as Simulations 3 through 5 in Table H.13. In this phase of the analysis, PacifiCorp generation assets were committed consistent with a day-ahead forecast of wind and load, but dispatched against actual wind and load. To simulate this operational behavior, the three additional PaR simulations included the incremental reserves from Simulation 2 and the unit commitment states associated with simulating the portfolio with the day-ahead forecasts.

Simulation 3 incorporated day-ahead forecasts for both load and wind, dispatching PacifiCorp's generation to the forecasts as though there were no day-ahead forecast error. This served as the starting point for separately determining load and wind balancing impacts on total system balancing costs. Simulation 4 paired 2011 actual loads with day-ahead forecasts for wind generation, isolating the error due to load forecasting, and also applied the unit commitment state generated by Simulation 3 to capture system operations based on the day-ahead load forecasts. Simulation 5 incorporates actual wind generation output, thereby including forecast error for load and wind, and applied the unit commitment state generated by simulation 4. The change in system costs (Simulation 5 less Simulation 3) represents the total cost of day-ahead balancing on PacifiCorp's BAAs. Dividing the day-ahead wind balancing costs (Simulation 5 minus Simulation 4) by the volume of wind generation in the portfolio yields a system wind balancing cost on a per-unit of wind production basis.

3.3.4 Application of Study Results to Integrated Resource Plan Portfolio Modeling

The Study results are applied in the 2013 IRP portfolio development process as part of the costs of wind generation resources. In the portfolio development process using the System Optimizer (SO) model, the wind integration cost on a dollar per megawatt-hour basis is included as a cost to each wind resource's variable operation and maintenance cost. The exception is for prospective wind resources that could be located in the Bonneville Power Administration (BPA) balancing authority. The variable operation and maintenance adder for these resources includes BPA's variable integration charge[31]. The estimated wind integration cost is applied in the SO model (rather than increasing regulating margin) because the SO model builds least cost resource portfolios to meet system coincident peak loads with an assumed planning reserve margin. In meeting this coincident system peak capacity requirement, the SO model does not explicitly

[31] BPA's Variable Energy Balancing Service for wind resources is modeled at $1.23/kW-month, per their 2012 rate schedule, which at a 35% capacity factor equates to a charge of just over $4.80/MWh. The BPA rate schedule is available at: http://transmission.bpa.gov/Business/Rates/documents/2012_rate_schedules.pdf

evaluate operating reserve requirements. While operating reserve requirements are not explicitly in the SO model, the estimated cost of wind integration is accounted for in the development of resource portfolios.

Once candidate portfolios are developed using the SO model, additional analyses are performed using PaR, which can evaluate incremental operating reserve needs. Therefore, when performing IRP risk analysis using PaR, specific operating reserve requirements consistent with this wind study will be used.

When modeling the production costs and risk analyses of resource portfolios in the PaR model, the incremental reserve requirements, due to additional wind plants, are incorporated as part of the PaR model's total reserve requirements. These incremental reserve requirements reflect the amount of reserves required in PACE and PACW for the regulation of wind resources. The cost impact of holding this incremental spin reserve requirement is embedded in the total production cost, but cannot be isolated for reporting purposes.

3.3.5 Allocation of Operating Reserve Demand in PaR

The five PaR Simulations require operating reserve demand inputs consistent with the Company's supply portfolio are input to the model. The PaR model distinguishes reserve types by the priority order for unit commitment scheduling, and optimizes them to minimize cost in response to demand changes and the quantity of reserve required on an hour-to-hour basis. The highest-priority reserve types are regulation up and regulation down followed in order by spinning, non-spinning, and finally, 30-minute non-spinning.[32] Table H.14 shows these reserve categories and indicates which ones are used for the study. Reserve requirements calculated in the study are allocated into these PaR reserve categories per below, and are supplemental to the contingency requirements calculated within PaR.

Table H.14 - Operating Reserve Categories Used by the PaR model

Input Field	Definition	Reserve Requirements Entered
AS1	Up Regulation	Regulation
AS2	Down Regulation	not used
AS3	Spin	Ramp and Contingency
AS4	NonSpin	Contingency
AS5	30 Minute NonSpin	not used

The regulation up and regulation down reserves in PaR are considered spinning reserve that must be met before traditional spinning and non-spinning reserve demands are met. The incremental operating reserve demand needed to integrate wind generation was assigned in PaR as regulation up. As down regulation reserves are a deployment of generation already committed to load, this feature was omitted from the Study. The traditional spinning and non-spinning reserve inputs are used for ramp and contingency reserve[33] requirements. Contingency reserve requirements

[32] In PaR, spinning reserve is defined as unloaded generation which is synchronized, ready to serve additional demand and able to reach reserve amount within ten minutes. Non-spinning Reserve is defined as unloaded generation which is non-synchronized and able to reach required generation amount within ten minutes.

[33] Contingency Reserve is specified by the North American Electric Reliability Corporation in http://www.nerc.com/files/BAL-STD-002-0.pdf .

remain unchanged among all PaR simulations in the Study. The 30-minute non-spinning reserve product is not represented in PacifiCorp's supply portfolio, and thus it is not used. Unused regulation up reserve supply can be used in PaR to satisfy spinning or non-spinning reserve demand.

The PaR model balances the system hourly, committing adequate generation to serve the forecasted net system load and meet each hour's respective reserve requirements. In actual operations, any deviation from the load forecast may cause the reserves specified to be deployed (should the net system load be greater than expected) or for the amount of open generation capacity to be increased (should the net system load be less than expected). Because the direction of the deviation, greater or lesser, is unknown and random, this calculation of the cost to hold reserves above the generation required to meet forecast load is assumed to be unbiased to actual intra-hour outcomes.

4. Results

The regulating margin required to manage fluctuations in load and wind generation output are the sum of the ramp and regulation reserve requirements. The ramp reserve is dependent only on the observed load and wind generation in the operational data used throughout the Wind Study. The regulation reserve requirement is calculated by the methods detailed in section 3.2. Table H.15 below summarizes the regulating margin requirements as calculated by the Study.

Table H.15 - Regulating Margin Requirements Calculated for PACE and PACW (MW)

	West BAA	East BAA	Combined
Load-Only Regulating Margin	147	247	394
Incremental Wind Regulating Margin	54	131	185
Total Regulating Margin	202	378	579

The operational data used to calculate these results is based on 589 MW of wind capacity installed in PACW, and 1,526 MW in PACE. Additional wind resources added to resource portfolios in the 2013 IRP contribute a pro-rated regulating margin requirement in PaR model simulations based on these results[34].

4.1 Production Cost Results

As described in section 3.3 and detailed in Table H.13, PacifiCorp applied the reserve requirements calculated in this Wind Study to a production cost simulation in the Company's PaR model. For the regulating margin costs, the regulating margin required to manage variability due to load and wind on PACE and PACW was applied using a "with and without" approach; the margin required only to manage disturbances in load was modeled in a production cost simulation, then compared to a simulation run with the regulating margin necessary to manage load and wind disturbances. The regulating margin costs represents the costs incurred to hold additional reserves for wind to manage hour-to-hour operational disturbances, whereas the

[34] The regulating margin requirement added for potential West wind developments will be the ratio of calculated incremental reserve requirement to total installed capacity, or 9.2% of the proposed generating capacity (54/589); while for East wind developments it will be 8.6% (131/1526).

system balancing costs are incurred managing the deviation between the day ahead forecast for wind production and actual recorded production on PacifiCorp's Company-owned and contracted wind resources. Transmission customers' wind resources' day-ahead variability and uncertainty are excluded from the system balancing calculation. Wind integration costs are the sum of the regulating margin and system balancing costs, as presented in Table H.16:

Table H.16 - Nominal Levelized Production Cost Results for the 2012 and 2010 Wind Studies

	Regulating Margin Cost ($/MWh)	System Balancing Cost ($/MWh)	Wind Integration Cost ($/MWh)
2012 Wind Study	$2.19	$0.36	$2.55
2010 Wind Study	$8.85	$0.86	$9.70

The 2010 Wind Study's production cost results are presented for comparison. The 2012 Study's analysis reflects a significantly depressed commodity price environment when compared to the 2010 Study; this is chiefly responsible for the cost differential. Additionally, the 2010 Wind Study's published system balancing cost includes day-ahead load forecast error, which should not be attributed to wind resources.

4.2 Additional Scenarios

To further understand differences around the set-ups of the Study and respond to requests of IRP stakeholders and the TRC, the Company has evaluated several scenario calculations to highlight the effect of selected changes in assumptions on the calculated regulating margin requirements. For the purposes of these scenarios, the same 99.7 percent tolerance level (and subtraction of L_{10}) was applied to the calculation method described above using 2011 operational data unless specified otherwise.

Historical Evaluation

The operational data available throughout the Study Term permits the estimation of historical reserves requirements. This may inform future planning, as the amount of wind generation capacity installed in PacifiCorp's system has steadily increased through the Study Term. Applying the method above to all the operational data in the Study Term, the following historical regulating margin requirements are calculated, as depicted in Table H.17. Table H.18 breaks out the incremental operating reserves calculated to manage wind generation.

Table H.17 - Historical Reserves Calculated throughout the Study Term (MW)

	Regulation West	Regulation East	Ramp	Total	Average Wind Capacity, MW
2007	184	194	134	512	606
2008	184	193	122	499	787
2009	145	211	121	477	1364
2010	152	261	122	534	1810
2011	149	302	128	579	2126

Table H.18. Incremental Reserves Due to Installed Wind Generation Capacity (MW)

	Regulation West	Regulation East	Ramp	Total	Average Wind Capacity, MW
2007	15	11	2	28	606
2008	24	14	3	40	787
2009	31	45	4	80	1364
2010	40	78	6	124	1810
2011	50	126	9	185	2126

Concurrent Evaluation

The calculations in this scenario are made for the load and wind deviations combined concurrently, by adding their concurrent errors, producing state bins and integrating the results for following and regulating reserves for load and wind separately. Despite the estimation of load and wind quantities separately in real time operations, and given no indication that short-term changes in load and wind are correlated[35], many stakeholders requested a calculation of the estimated reserves with implied correlation and other characteristics that may be observed in the short term variations of load and wind. The results of these calculations are presented in Table H.19.

Table H.19 - Concurrent Netting of Load and Wind Errors Scenario Results (MW)

	Regulation West	Regulation East	Ramp	Total
Scenario	160	279	128	567
2012 Study	149	302	128	579

The combination of errors and system state were each made following the load minus wind generation paradigm and the resulting differences were used to estimate reserves positions. This approach imputes the spurious correlation mentioned in section 3.2.5 into the results.

Reliability Based Control Market Structure

A new control performance paradigm featuring a 30-minute balancing market is under regional evaluation. Per current operational practice, the 60-minute market and operational paradigm is the base of the Wind Study design. However, to assess the potential benefits of a 30-minute clearing market for PacifiCorp's customers, an alternate calculation has been prepared by reducing the load and wind forecasting time interval to 30 minutes, and also reducing the persistence forecast intervals for regulation to 30 minutes for wind and load demands. Table H.20 compares the regulation reserves for the 30-minute balancing market scenario and the default 60-minute balancing market case for PACE and PACW. This calculation assumes adequate market depth at all 30-minute intervals such that the Company can rebalance system deviations from the market. The ramp obligation is assumed to remain supplied by the Company's hourly generation planning.

[35] Western Wind and Solar Integration Study, prepared by NREL, (May, 2010), p. 92. The report is available for download from the following hyperlink:
http://www.nrel.gov/wind/systemsintegration/pdfs/2010/wwsis_final_report.pdf

Table H.20 - 30-minute Balancing Interval Scenario Results (MW)

	Regulation West	Regulation East	Ramp	Total
Scenario	105	233	128	466
2012 Study	149	302	128	579

Combination of PACE and PACW

The calculations can also estimate the effect of combining PacifiCorp's two BAAs, into a single, monolithic balancing authority area. This assumption is that these calculations would mimic the effect of significant transmission development, eliminating the seams between the PACE and PACW. The respective load and wind errors for following and regulation are combined concurrently (East plus West) and the resulting component reserves demands are compared to those required by the default method described above for separate BAAs in Table H.21. However, the Company is uncertain at this time exactly how revised operational and forecasting practices would affect this scenario, and so further updates are possible.

Table H.21 - Regulating Margin Requirements Calculated Assuming a Single PacifiCorp Balancing Authority Area (MW)

	Regulation	Ramp	Total
Scenario	356	121	477
2012 Study	451	128	579

5. Summary

The purpose of this Study is to determine the additional reserve requirement to integrate wind resources into the Company's existing resource portfolio and determine a cost that is used in the portfolio development stage of the 2013 IRP.

The Study is based on actual historical data in ten-minute intervals for both load and wind generation, as well as actual historical day-ahead load and wind generation forecasts, in the Company's east and west balancing authority areas. The data were reviewed for anomalies, and revised prior to be applied in the Study.

The Study defined the two components of the regulating margin to include ramp and regulation reserves:

1) Ramp: A number of factors (fluctuations in customer demand, spot transactions, varying amounts of generation produced by variable resources such as wind and solar generation) cause the net balancing load to change from minute-to-minute, hour-to-hour continuously at all times. This variability (increasing and decreasing load) requires ready capacity to follow continuously, through short deviations, at all times. Treating this variability as though it is perfectly known (as though the operator would know exactly what the net balancing area load would be a minute from now, ten minutes from now, and an hour from now) and allowing just enough generation flexibility on hand to manage it defines the ramp reserves requirement of the system. The amount of ramp reserve required is half the difference

between the net balancing area load (load minus wind generation output) from the top of one hour to the next.

2) Regulation: Deviations from forecasted load or wind generation are not considered contingency events, yet these events still also require that capacity be set aside. Reserves maintained to manage uncertainty around the net system load is called regulation reserve. The Company has defined four components of regulation reserve (load following, load regulating, wind following, and wind regulating), estimated by comparing actual data to hypothetical forecasts. The four components are uncorrelated over operational generation planning's short time frames; and so the requirements to cover them are combined using a root-sum-square method into a single regulation reserve requirement for each time interval. The average regulation reserve requirement over any given timeframe expresses the regulation requirement for that timeframe.

To summarize, regulating margin represents operating reserves the Company holds over and above the mandated contingency reserve requirement to maintain moment-to-moment system balance between load and generation. The regulating margin is the sum of two parts; ramp reserve and regulation reserve. The ramp reserve represents a minimum amount of flexibility required to follow the actual net system load (load minus wind generation output) with dispatchable generation. The regulation reserve represents flexibility maintained to manage intra-hour and hourly forecast errors about the net system load, and consists of four components: load following, load regulating, wind following, and wind regulating.

The four components of the regulation reserves were calculated as the differences between the respective hypothetical operational forecast and actual data, sampled at a 99.7th percentile. The 99.7th percentile is selected to remove the most extreme deviation values from the assessment of the forward reserve requirements, while still providing sufficient reserve to prevent operations from running out of regulating margin due to the uncertainties prevalent in hour-to-hour power operations. In the past, the Company managed its balancing areas to a target called the Control Performance Standard 2 (CPS2), which specified a limited number of excursions from a net system interchange target. Since March 1, 2010, the PacifiCorp has been participating in a regional field test of the Reliability Based Control standard, which replaces the system interchange requirements with a regional frequency-based requirement. Among other changes, this new operational paradigm means the Company responds to area control error depending on whether their respective area control error is exacerbating or mitigating the frequency excursion at the time. As the frequency depends on the instantaneous balance between loads and resources throughout the entire Western Interconnection, the Company must plan to supply its own reserve requirements assuming its area control error is exacerbating system frequency. This has modified reserves planning from considering CPS2 to an avoidance of using contingency reserve for anything other than specified contingency events, as that is not allowed. Therefore, the regulating margin requirement evaluated in each time interval of the Wind Integration Study is intended to cover all anticipated uncertainties in short term load and wind behavior, consistent with the requirement of the Company to meet its firm load obligations and not deploy contingency reserve to cover what it should manage with regulating margin.

The sampled component reserve requirements are then backcast against the hypothetical operational forecasts and data for each ten-minute interval of the study. The resulting (selected) component reserve requirements are then combined using the root-sum-square method to arrive at the total regulation requirement, by East and West BAA (PACE and PACW, respectively). This requirement is reduced by each BAA's respective L_{10} value[36][37].The total regulating margin is the sum of the regulation requirement plus ramp reserve. Table H.22 below is a summary of results.

Table H.22 - Regulating Margin Requirements Calculated for PacifiCorp's System (MW)

	West Regulation	East Regulation	Ramp	Combined
Load-Only Reserves	99	176	119	394
Incremental Wind Reserves	50	126	9	185
Total Reserves	149	302	128	579

The cost to hold the incremental regulating margin to integrate wind resources is estimated using the Company's PaR model (a production cost model set up to simulate the operation of PacifiCorp's electrical system)by calculating the difference in production costs with and without the incremental reserves to integrate wind resources using the projected Company's load and resource portfolio in 2013. This calculation results in the intra-hour reserves costs detailed in Table H.23. The day-ahead load and wind forecast data are used to commit the generation resources in the PaR model, and then it is set to simulate operations serving the actual system loads and received wind generation, isolating the effect of wind generation forecasts and actual generation in a three-stage process. This calculation yields the inter-hour/system balancing cost, also detailed in Table H.23:

Table H.23 - Wind Integration Costs

Study	2012 Wind Integration Study
Wind Capacity Penetration	2126 MW, 2011 Operational Data
System Assumption	2013 PacifiCorp System
Tenor of Cost	1 year levelized, 2012$
Hourly Reserve ($/MWh)	$2.19
Interhour/System Balancing ($/MWh)	$0.36
Total Wind Integration ($/MWh)	$2.55

The costs calculated in this study reflect the current market conditions for natural gas and electricity based on the June 29, 2012 official forward price curve. As these market conditions change, so will the value of the operating reserves required to meet the systems' regulating margin requirements. The total wind integration costs displayed in Table H.23 are used in the Company's System Optimizer model for IRP portfolio development, while the incremental regulating margin requirements for integrating wind displayed in Table H.22 are used to support IRP portfolio production cost modeling using the PaR model.

[36] The L_{10} represents a bandwidth of acceptable deviation prescribed by WECC between the net scheduled interchange and the net actual electrical interchange on the Company's BAAs. Subtracting the L_{10} credits customers with the natural buffering effect it entails.

[37] The L_{10} of PacifiCorp's balancing authority areas are 33.41MW for the West and 47.88 MW for the East. For more information, please refer to: http://www.wecc.biz/committees/StandingCommittees/OC/OPS/PWG/Shared%20Documents/Annual%20Frequency%20Bias%20Settings/2012%20CPS2%20Bounds%20Report%20Final.pdf

APPENDIX I – STOCHASTIC LOSS OF LOAD STUDY

This appendix contains the Cost and Reliability Analysis of Planning Reserve Margins Final Report received from Ventyx as requested by PacifiCorp to support planning reserve margin modeled in the 2013 Integrated Resource Plan.

Cost and Reliability Analysis of Planning Reserve Margins

Pacificorp

Final Report

27th February 2013 – Version 2.1

Prepared by:

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Ventyx Advisors

1 INTRODUCTION

1.1 Workflow Overview

Figure 1 below shows the general workflow for the analysis of reserve margins. The objective of the study is to measure the costs and benefits of alternative reserve margins. The benefits, in terms of this study, are the increased reliability associated with higher reserve margins as measured by the Planning

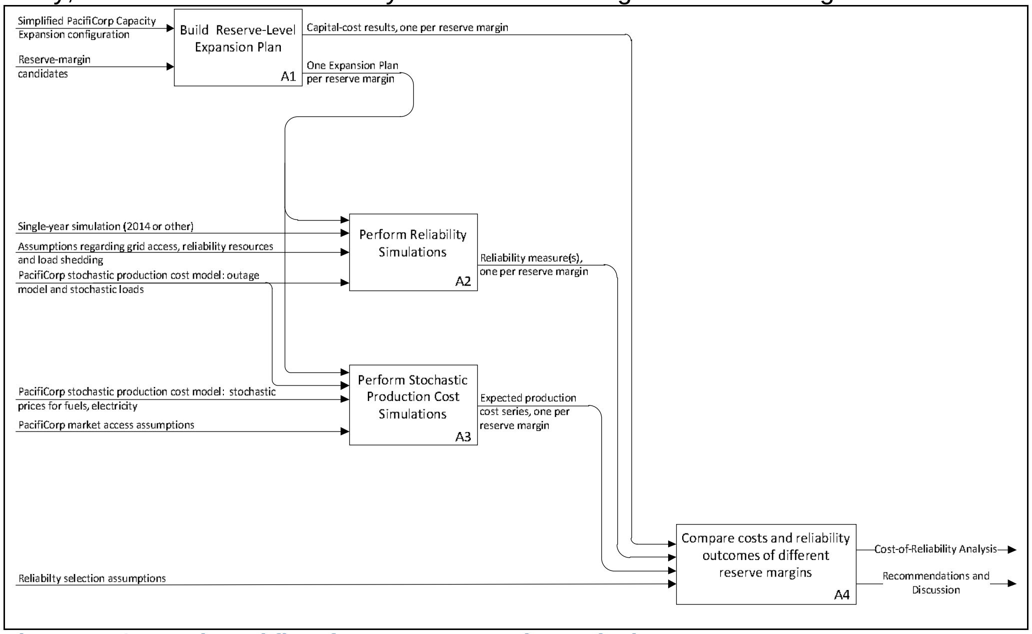

Figure 1. General Workflow for Reserve Margin Analysis

and Risk (PaR) Reliability Model (process A2 in Figure 1). The costs are (1) capital costs reported by the System Optimizer (SO) capacity-expansion model (process A1 in the figure) and (2) expected production costs reported from the PaR stochastic Production Cost model (process A3 in Figure 1). The general workflow includes as well the analytic process A4 where the results of processes A1, A2, and A3 are brought together and analyzed.

The general analysis illustrated in Figure 1 includes two distinct stochastic PaR models. The Reliability Model differs, in general, from the Production Cost model in that the Reliability Model assumes less (or no) access to markets or other grid resources; the intent of the Reliability Model is to measure the ability of a system to maintain reliability without relying on the rest of the grid. The self-reliance assumption is not, in general, appropriate for estimation of production cost; for production cost modeling the expected access to markets, to enable economy purchases or sales of generation, is modeled.

Reliability measures, including expected unserved energy (EUE, typically measured in MWh or GWh), Loss of Load Hours (LOLH), and Loss of Load Probability (LOLP, typically measured in days of outage per ten years) are available from both the Reliability Model and the Production Cost Model. Which measure to use to evaluate the reserve margin choice depends in part upon the reliability policies of the utility and its regulators and stakeholders, and in part upon the uses to which it will be put. For example, in the case of Pacificorp, the company already assumes limited market access, substantially less than the transmission-supported emergency-power facilities offered by the Northwest Power Pool (NWPP) reserve-sharing arrangements. For the Reliability Model there is no market access outside of the firm Front Office Transactions that are parts of the capacity-expansion process. See section 1.3.1 for further discussion of the assumptions regarding different types of external power.

1.2 Major Assumptions

1.2.1 Market Access and Emergency Power in the Reliability and Production Cost Models

This study, along with other elements of Pacificorp's IRP modeling processes, makes a strong distinction between the availability of external power for capacity-planning purposes and for forecasts of the expected costs of operating that capacity. For capacity planning purposes, external purchases are limited to Front Office Transactions (FOT's), which in general require that Pacificorp have the firm capacity to bring that power from an external trading point (such as the MidC hub) into its service territory, and that there be sufficient available generating and transmission capacity to allow counterparties to reliably deliver on those contracts to the trading point. The FOT capacity assumptions are, then, the capacity-model equivalent of conditions for trading capacity in systems where there are formal capacity markets. In contrast, in the stochastic production cost models, it is assumed that reasonably liquid markets exist at various points around the system, and that in actual near-real-time operations (for example day-ahead) sufficient transmission capacity will be available, at a price. To some extent lack of availability of transmission near real time is reflected in the production cost model by energy price volatility. In forecasting the expected costs of operating a portfolio, assumptions regarding the prices that are available to generators are important, but for the purposes of planning, and satisfaction of planning reserve requirements in particular, only the more restrictive assumptions embodied in the FOT assumptions are used.

The restrictive assumptions used in the capacity expansion modeling are relaxed in the reliability modeling specifically to capture the contributions to two measures of reliability---Loss of Load Hours (LOLH) and Expected Unserved Energy (EUE) provided by the reserve-sharing arrangements of the Northwest Power Pool (NWPP). The reliability impacts are one of the contributions of the NWPP arrangements; a major production- cost savings, shared by Pacificorp and other members of the Pool, is associated with sharing the burden of providing operating reserves against the single largest contingency of the full pool, rather than having each participant holding reserves against its own largest contingency; this effect is captured in the current modeling, as in the modeling in support of previous IRPs, through a reduction in the modeled ancillary-services requirements. The reliability contribution is captured in two ways: by approximating the energy delivered by the Pool in the first hour of each simulated loss-of-load episode, and by reducing the number of LOLH by 1 per episode. It should be noted that the traditional LOLP measure, which does not distinguish between episodes, is not effected by this calculation: each time there is a simulated call on NWPP emergency energy counts as a reliability event (but of shorter duration and smaller energy magnitude than otherwise). This allows an estimation of an additional cost savings associated with participation in the NWPP arrangements: this participation allows the same reliability to be achieved (as measured by LOLH or EUE) at a lower reserve margin.

1.2.2 Selection of Reliability Year

The objective of the modeling workflow is to estimate the cost and reliability consequences of different reserve margins, supporting a reserve margin recommendation which can, if adopted, be used as a target for future-year planning. As such it is neither necessary nor desirable to simulate every possible year. It is sufficient to do the analyses for a single year. For this study we selected 2014 as the reliability year, as it is the earliest year when a change in the Reserve Margin could have an effect, and it is the year when a new combined cycle, whose construction is already committed, will come into service in Utah.

1.2.3 Topology

The various simulations used in this study used variants of the current Pacificorp planning topology illustrated in Figure 2 below. The capacity expansion model and the production cost simulations used the full detailed version, while the reliability model used the 5-zone aggregation indicated by the blue-shaded areas in the figure. The reasoning behind this aggregation is discussed in section 3.2 below.

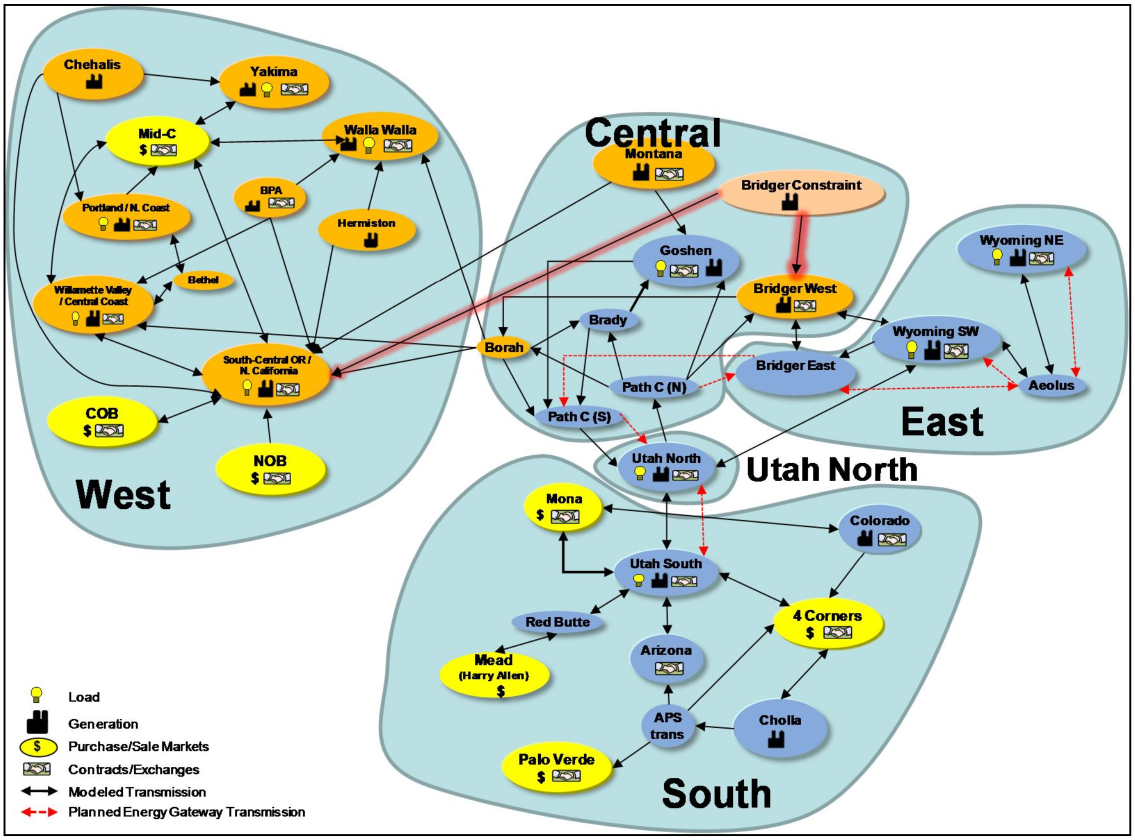

Figure 2. Pacificorp Planning Topology

1.2.4 Load Volatility calibration

Volatility of loads is one of the key drivers of the utility resource planning process and, therefore, of the associated reliability and cost modeling. There are three major sources of fluctuations in demand: the highly predictable hour-to-hour and day-to day shape, the short-term weather effects, also highly predictable to the extent that the weather drivers are predictable, and the longer-term variability in the size and composition of the utility's customer base. In this study the Reliability Year is 2014 (see Section 1.3.2), near enough to eliminate most of the third source of volatility. The modeling therefore uses only the mean-reverting short-term process that is at the core of the PaR stochastic model.

The core of a utility load forecast is a shape that includes an expected peak load. Suppose, for simplicity, that the only source of load volatility is "weather;" in a summer-peaking system this might be the highest daytime high temperature expected during a forecast period, that occurs on a weekday. The load forecaster has good information on the distribution of daily high temperatures at a location; again, for simplicity, assume they obey a normal distribution and the load (or weather) forecaster knows the mean and standard deviation of the distribution. There are about 20 weekdays in a month; the expected high temperature is therefore the expected maximum from 20 draws. The peak load forecast is a forecast of this random variable, with a probability of being exceeded.

The stochastic reliability model performs Monte-Carlo experiments to simulate the ability of the power system to serve loads during occasional high-impact events involving unusually high loads in combination with major outages of generation. The model therefore needs to make draws from the distribution around the expected peak with an appropriate frequency. One approach would be to use a weather-based load model directly, take draws of the weather variables (such as heating-degree-days and cooling-degree-days); this approach would, with a well-estimated load model, produce an appropriate distribution of loads (and of the derived measure peak loads). The alternative approach used here is to compare two peak load forecasts, with different probabilities of exceedence; the expected value of the peak load is the higher-probability-of-exceedence forecast, which is shocked by a stochastic scalar that produces the lower-probability-of-exceedence forecast from the higher-probability forecast with the frequency implied by probabilities.

Pacificorp provided a 1-in-10 exceedence forecast for 2014 of 10,331 MW; this is the expected peak used in this reliability study as well as in the rest of the IRP stochastic simulations. Pacificorp also furnished a 1-in-20 exceedence forecast of 10,712 MW for 2014. We model this by setting up a stochastic scalar, with an expected value of 1, to reach a value of 10712/10331=1.0369. This should occur in 1/20 of the Monte-Carlo scenarios; noting that we are doing daily draws, there are for each Monte-Carlo scenarios about 20 weekday opportunities to reach this level. So we seek a distribution that has a mean of 1 and that reaches the critical value of 1.0369 in 1/20 of the scenarios, where each scenario has 20 weekday opportunities: we seek the distribution that has $1-(1/20^2)$ =99.75% of its values less than 1.0369. The 99.75th percentile of a standard normal distribution (mean of 0 and standard deviation of 1) can be computed with the Excel formula =NORMINV(0.9975,0,1), which returns the value 2.807034. This allows the computation of a target converged volatility $\sigma^{T} = \frac{1.0369-1}{2.807034}$ =0.013148. To check, note that the Excel formula =NORMINV(0.9975,1, 0.013148) returns the value 1.036907.

The stochastic model used for both the Reliability and the Production Cost model uses a mean-reverting model with a mean reversion rate 0.4. The mean reversion rate was not estimated; rather it is an approximate value, similar to other values estimated for power customers in the west, and is consistent with the weather patterns in the region (where both winter and summer weather fluctuations tend to have a duration of several days). It can be shown (Christian 2008a) that a mean reverting process with mean reversion rate α will, on multiple iterations, have a distribution with a standard deviation that converges to a target σ^T if it has a short-term volatility (the standard error of the shocks to the mean reverting process) of

$$\sigma^S = \sigma^T\sqrt{1-(1-\alpha)^2}.$$

Applying the converged target σ^T we compute a short-term volatility σ^S $=0.013148\sqrt{1-(0.6)^2}$ =0.0105183. This value, as well as the mean reversion rate of 0.4 was applied to all of the power customers in the standard Pacificorp stochastic planning and risk model. The existing correlation coefficients estimated for the prior IRP were retained, so as to capture the load diversity between load areas.

2 CAPACITY EXPANSION MODEL

The capacity expansion model used in this study used the assumptions used in other parts of the Pacificorp IRP process, but building to different reserve margins. The primary resource expansion options used to satisfy the requirements for capacity expansion were a series of Front Office Transactions (FOT), that are assumed to be able to reliably deliver power to several points around the Pacificorp system (COB, Goshen, Mead, MidC, Mona, NOB, Portland, Utah, Willamette Valley, Southern Oregon/California, and Yakima), as well as gas-fired CC-GT stations in Utah and in the Southern Oregon/California zone. The FOT transactions are priced at the forward electricity prices forecast at their zones, plus a zone-specific adder. The capacities that may be purchased of these FOTs reflect Pacificorp planning assumptions. FOTs may be either for a fixed amount (determined by the System Optimizer (SO) model) for the full year, or for Third-Quarter High Load Hours (Q3 HLH, the 16 hours beginning at 6 am and ending at 10 pm). SO was then run 11 times, for each of the integer reserve margin levels 10% through 20%.

The results of these runs are summarized in Table 1 below. Overall, the model has a preference for the Q3-HLH variant of the Front Office Transactions, up to the assumed limits on those transactions. This is not surprising, since the driver behind capacity expansion is increasing the reserve margin at the system coincident peak, which in the model occurs in the third quarter, and these resources have no fixed cost and only a small charge above market.

All expansion plans included the addition of one Class F CC-GT in the Southern Oregon-Northern California zone, and one in the Utah-North zone, with a combined capacity of 1,719 MW. At reserve-margin 16%, the model requires more capacity that can be provided by additional FOTs, so an additional CC-GT is added in the Southern Oregon-Northern California zone. The attractiveness of this location can be inferred from the topology map (Figure 2 above): this is a transmission hub on the Pacificorp system with the ability to provide capacity to much of both the western and eastern parts of the system. When the additional CC-GT is added at the 16% level, the solution plans' selections of FOT falls to accommodate the physical plant, then increases again as the reserve margin requirement increases.

Table 1. Expansion Plans as Reserve Margins Increase: 10%--20%

Reserve Margin	Flat FOT	Q3 HLH FOT	*Total FOT*	Physical Plant	*Total*
10	282	386	*669*	1,180	*1,849*
11	283	487	*770*	1,180	*1,950*
12	284	587	*871*	1,180	*2,051*
13	287	685	*972*	1,180	*2,152*
14	293	780	*1,073*	1,180	*2,253*
15	299	875	*1,174*	1,180	*2,355*
16	306	431	*736*	1,719	*2,456*
17	312	525	*838*	1,719	*2,557*
18	319	620	*939*	1,719	*2,658*
19	273	767	*1,040*	1,719	*2,759*
20	280	861	*1,141*	1,719	*2,860*

3 RELIABILITY MODEL

The Reliability Model allows an evaluation of the ability of a utility to serve its own loads with specified resources, in this case a series of expansion plans (as described in the previous section) selected to meet various reserve margins.
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3.1 Reliability Model Description

The Reliability Model is a stochastic implementation of the Planning and Risk (PaR) chronological unit-commitment and dispatch simulator, which finds a weekly dispatch of the Pacificorp portfolio for each of a series of (a) weekly draws of outages of Pacificorp generating units and (b) daily draws of Pacificorp loads. The model includes a proxy “ENS Station” station which is configured to “run” to meet loads after actual generation (including, as appropriate, energy delivered by FOTs) are exhausted, and to “turn off” otherwise. The reported generation of the ENS Station for each Monte Carlo iteration is therefore a measure of the total energy not served by the combination of Pacificorp generation and FOT energy. The number of starts reported for the ENS Station is then the number of episodes when FOT resources are insufficient to meet loads. The number of hours of operation of the ENS Station is the number of hours when FOT resources are insufficient to meet loads.

The configuration of the model to represent stochastic loads is described in more detail in section 1.2.4 above.

Generation outages are simulated through the comparison of each station’s designated forced outage rate to a series of independent random draws, one per week per generating resource per Monte-Carlo iteration, where the random numbers are drawn from a uniform distribution of numbers between 0 and 1. If the drawn number for a station is less than its forced outage rate, then the station is removed from the portfolio for the week.

In most of the Monte-Carlo draws, and in most weeks, Pacificorp has more resources than are required to meet loads. Pacificorp, in common with most utilities, operates a portfolio that, in combination with expected market and emergency power access, contains sufficient resources to meet loads unless there are particularly adverse combinations of high loads and multiple simultaneous outages. A primary challenge in performing this sort of analysis is to perform enough draws of outages (in particular) to appropriately represent the frequency of the severe adverse combinations of station outages and high load draws. It is helpful to think of the probability distribution of several $MarginMW_{zt}$ variables for zone z and time t, computed as the zone's available resources (including the lesser of the neighboring zone's margin and transmission into z), minus the zone's loads. The reliability analysis involves various measurements on the left-hand, negative, tail of this distribution, including in particular the frequency of draws in the tail, which produces loss of load hours and probability, and the frequency-weighted area of the tail, which produces expected unserved energy. To make reasonable estimates of any of these measures requires sufficient draws to adequately represent the tail. In a reasonably reliable system these tail events are rare, and it therefore requires many more draws to get a decent measurement.

To find an appropriate number of Monte-Carlo draws a fast-running highly simplified model was created. The model made all resources must-run, and eliminated chronological constraints (minimum up and down time, ramp rates and start costs were set to zero, and the model was set to run only across the summer peak, at a 16% reserve margin. The model used the simplified Reliability-Model topology, summarized in the next section, and was run using different numbers of draws. It was found that the Expected Unserved Energy measure (the generation of the proxy ENS Stations) changed from run to run when less than 500 draws were performed, but that there was no large difference at higher numbers of draws. We therefore used 500 draws for the subsequent reliability simulations.

3.2 Reliability-Model Topology

In preliminary simulations with the full Pacificorp planning topology, represented by the detailed bubble-and-pipe diagram in Figure 2 above, unserved energy appeared almost entirely in the Utah North zone, with a few instances in Goshen and in Yakima. The Pacificorp transmission system is quite robust within the large blue-shaded regions in the diagram. We therefore rolled up the transmission areas within those regions for the purposes of reliability measurement. While this reliability-model topology is not suitable for production-cost analysis, as it would allow more within-region transmission of less expensive generation and reduce the use of high-cost peaking resources below what would be expected, it does not materially change the incidence and magnitude of simulated loss-of-load events, while making feasible the high number of Monte-Carlo draws that is necessary for reasonably precise estimation of the tails of the $MarginMW_{zt}$ distribution discussed in the previous section.

3.3 NWPP Reserve Pool Arrangements

Pacificorp's participation in the Northwest Power Pool (NWPP) reserve-pool arrangements allow it to receive energy from other participants in the pool for the first hour after a resource outage that would cause a loss of load event. The use of Proxy ENS stations allows simulation of the operation of the pool arrangements. The Reliability Model reports the gross output of the ENS stations, which we designate G. In the absence of the reserve pool, the expected value of G would be the Expected Unserved Energy reliability measure. The number of starts s of the Proxy ENS stations is the expected number of episodes, from which the LOLP measure may be derived. Finally, the model reports the number of hours h of "operation" of the Proxy ENS stations, which in the absence of the Reserve Pool would be Loss of Load Hours (LOLH).

The impact of the Reserve Pool on LOLH is clear: we compute $h^* = h\text{-}s$. To compute the contribution of the pool to EUE, we assume that the outage energy is approximately equal across each episode, so that the hours covered by the pool have the same energy as the residual hours h^*. We can then compute the reserve-pool energy as $R=s/h\ G$, and net EUE as $N=G-R=(h-s)/h\ G=h^*/h\ G$.

3.4 Principal Results

This section reports the principal results of the Reliability Model simulations in section 3.4.1. These raw simulations produce a decrease in reliability when perfectly-reliable FOT are replaced, at the 16% reserve margin level, by an additional thermal station. In general the study is evaluating small magnitudes, so changes such as this can produce seemingly anomalous results. To take advantage of the substantial information within the simulation runs, we performed a series of regression-base post processes, which are described in section 3.4.2. Section 3.4.3 analyzes the contribution of the NWPP Reserve Pool to reliability.

3.4.1 Simulation Results

Table 2 shows the principal raw simulation results of the 11 Reliability-Model simulations, one for each of the reserve-margin expansion plans produced by the capacity expansion runs (see section 2), for reliability year 2014. Note that 2.4 Loss of Load Hours per year is equivalent to one day in ten years: using an hours-based reliability measure the Pacificorp system meets this traditional reliability measure at all reserve margins.

The reliability measures all increase (these are all measures of loss of load, so an increase indicates reduced reliability) between reserve margins 13 and 14 and, more significantly, between reserve margins 15 and 16. A number of factors may account for this, of which the most important is that, between reserve margins 15 and 16 SO adds a combined-cycle station, which has a forced outage rate, and reduces the amount of perfectly-reliable FOT. In addition, this station is in the Southern-Oregon/Northern-California zone, and may be unable to fully respond (due to transmission constraints) to

Table 2. Simulated Reliability and NWPP Reserve Pool Contributions at Reserve Margins 10%--20%

	G:	*h:*	*s:*	$R = \frac{s}{h}G$	*N=G-R*	$LOLH = h - s$
Reserve Margin: %	Gross EUE MWh	Expected Gross Loss of Load Hours	Expected Loss of Load Episodes	NWPP Reserve Pool GWh	Net EUE GWh	Expected Net Loss of Load Hours
10	208.4	1.05	0.25	49.61	158.77	0.80
11	279.2	1.26	0.27	59.83	219.38	0.99
12	221.3	1.06	0.23	48.02	173.28	0.83
13	147.0	0.77	0.18	34.35	112.60	0.59
14	183.4	0.87	0.19	40.04	143.32	0.68
15	117.7	0.65	0.15	27.16	90.54	0.50
16	193.5	0.97	0.22	43.90	149.64	0.75
17	188.0	0.94	0.22	44.00	143.99	0.72
18	152.7	0.74	0.16	33.01	119.65	0.58
19	98.6	0.53	0.11	20.47	78.16	0.42
20	59.6	0.34	0.08	14.02	45.56	0.26

adverse combinations of high loads and multiple station outages in the Northern Utah zone where most of the unserved-energy appears. Above all, this is an issue of changes in a tail measurement that are small in magnitude but large in relative terms. These sorts of noisy observations are found in real-world observations as well as in simulations. In order to draw useful information for such processes we can use regression techniques. This approach is developed in the next section.

3.4.2 Regression Post-Processing

Table 3 shows the principal results from the regressions of several reliability measures against the reserve margin. EUE and Duration-Based LOLP were estimated both with and without the NWPP Reserve Sharing estimates; the episode-based LOLP measure does not reflect these arrangements.

These are simple equations estimated over only 11 observations, so the R^2 goodness-of-fit statistics (which measure the percent of deviations of the reliability measure from their mean, across 11 observations, that are captured by the regression equation) are not particularly high. However, the *t*-statistics on *b1* (the Reserve-Margin coefficient) are all highly significant. Given the small samples, these are useful regression equations.

Table 3. Reliability Smoothing Regression Results

	Reliability = b0 + b1 RM				
	Expected Unserved Energy		Duration-Based LOLP		Episode-Based LOLP
	With Reserve Sharing	Without Reserve Sharing	With Reserve Sharing	Without Reserve Sharing	Without Reserve Sharing
	R	*G*	*h-s*	*h*	*s*
R^2	0.585	0.599	0.628	0.641	0.668
b0	389.219	502.515	0.7459	0.96415	5.23791
se(b0)	73.317	92.086	0.12333	0.15534	0.79850
t(b0)	5.309	5.457	6.048	6.207	6.56
b1	-0.110	-0.142	-0.000202	-0.000262	-0.00143
se(b1)	0.031	0.039	0.0000519	0.0000654	0.00034
t(b1)	-3.548	-3.641	-3.892	-4.006	-4.206

Table 4 shows the fitted values from the equations described in Table 3, next to the simulated results from which the regression equations were computed. The linear reliability curves for each of the three reliability measure are then plotted in Figure 3, Figure 4, and Figure 5. Figure 3 highlights how the regression equation smooths the anomalous discontinuity after the addition of a thermal station at Reserve Margin 16.

Table 4. Simulated and Fitted Reliability, Reserve Margins 10%--20%

	With NWPP Reserve Sharing				Without NWPP Reserve Sharing				Without NWPP Reserve Sharing	
RM	EUE		LOLP Duration		EUE		LOLP Duration Based		LOLP Episode Based	
%	Simulated	Fitted	Simulated	Fitted	Simulated	Fitted	Simulated	Fitted	Simulated	Fitted
10	159	186.0196	0.33333	0.371968	208	239.9342	0.43750	0.480111	2.50000	2.595443
11	219	174.9054	0.41250	0.351515	279	225.5721	0.52500	0.453637	2.70000	2.450911
12	173	163.7890	0.34583	0.331059	221	211.2071	0.44167	0.427157	2.30000	2.30635
13	113	152.6759	0.24583	0.310608	147	196.8464	0.32083	0.400684	1.80000	2.161832
14	143	141.5607	0.28333	0.290153	183	182.4829	0.36250	0.374207	1.90000	2.017285
15	91	130.4454	0.20833	0.269699	118	168.1193	0.27083	0.347729	1.50000	1.872739
16	150	119.3301	0.31250	0.249244	194	153.7558	0.40417	0.321252	2.20000	1.728193
17	144	108.2148	0.30000	0.228789	188	139.3923	0.39167	0.294775	2.20000	1.583646
18	120	97.0985	0.24167	0.208333	153	125.0273	0.30833	0.268294	1.60000	1.439085
19	78	85.9832	0.17500	0.187878	99	110.6638	0.22083	0.241817	1.10000	1.294539
20	46	74.8668	0.10833	0.167421	60	96.29883	0.14167	0.215337	0.80000	1.149978

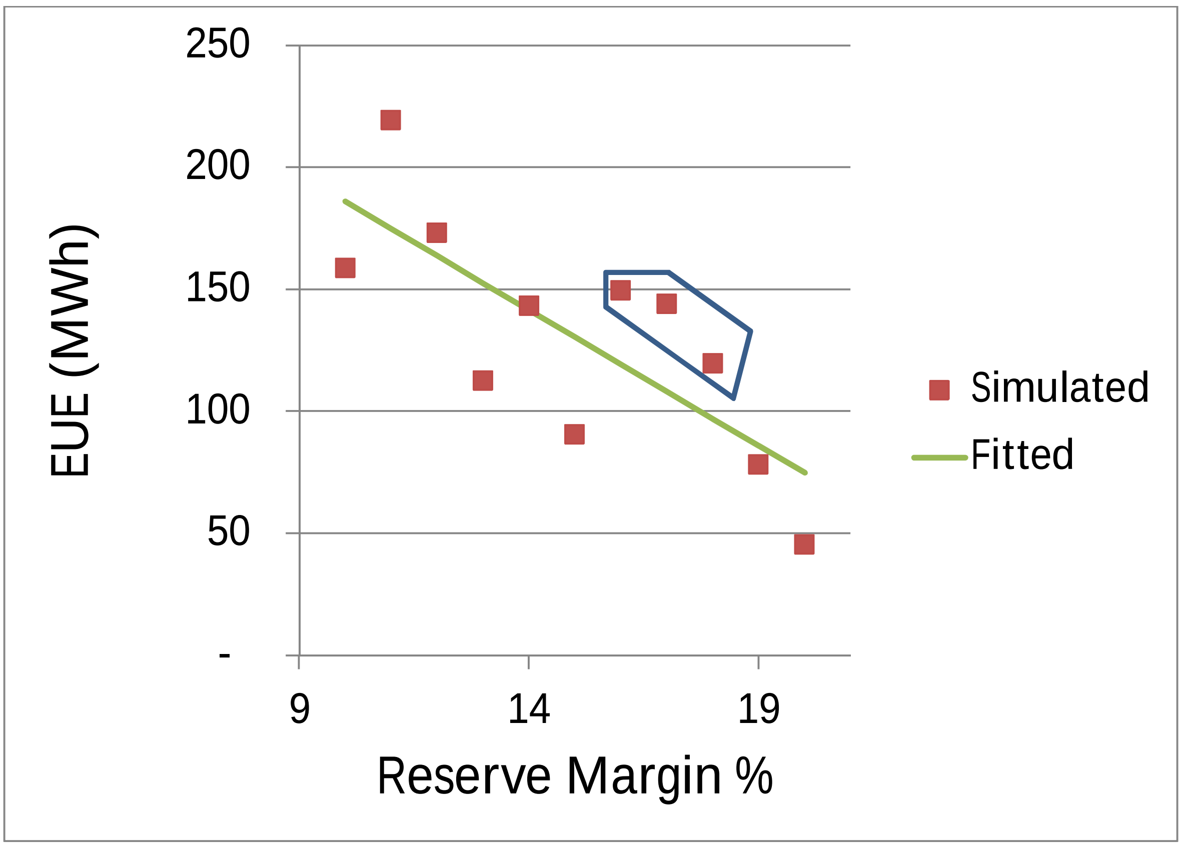

Figure 3. Simulated and Fitted Relationship of EUE to Reserve Margins

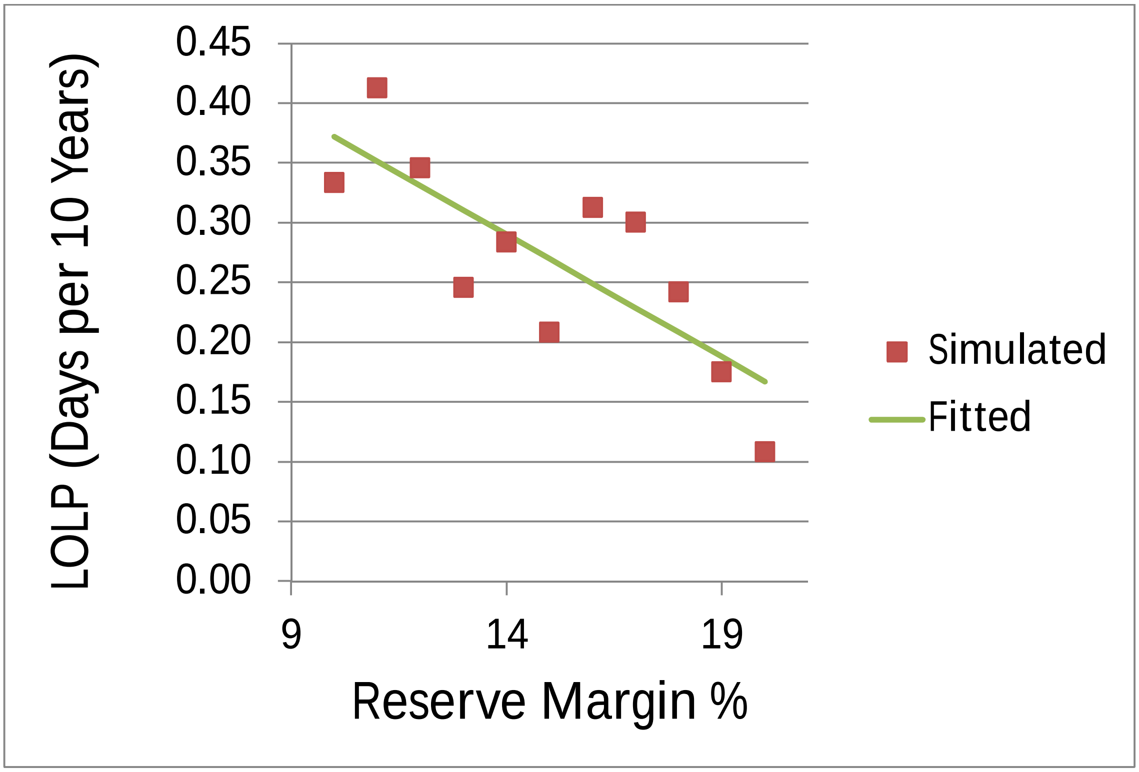

Figure 4. Simulated and Fitted Relationship of Duration-Based LOLP to Reserve Margins

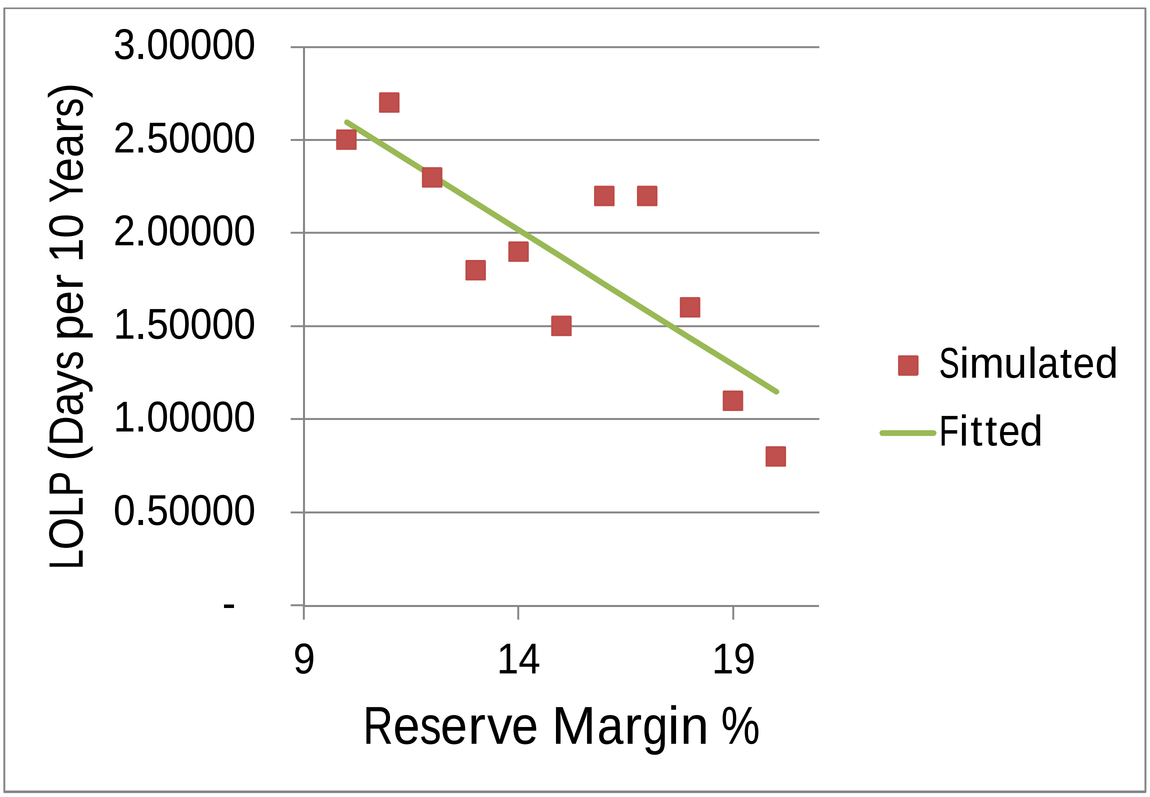

Figure 5. Simulated and Fitted Relationship of Episode-Based LOLP to Reserve Margins

3.4.3 Contribution of Reserve Pool to Reliability

The comparison of the regression equations with and without NWPP Reserve Sharing allows analysis of the reliability contributions of the Reserve Pool. It should be noted that this is only part of the benefit to Pacificorp of the Pool. Reliable operations generally involve maintaining contingency reserves based on the larger of a percentage of load (adjusted for the thermal/hydro mix of the system) and the largest single contingency; the reserve pool arrangement allows the largest-contingency requirement to be shared across multiple members, with each member's share of this requirement less than its own largest contingency. The evaluation here does not include the cost savings associated with carrying lower levels of reserves. Such an evaluation is a straightforward production-cost modeling exercise. Here we are concerned only with identifying the reduction in reserve margins that, holding reliability constant, is possible given participation in the reserve pool. To illustrate the effect, find the EUE measure at Reserve Margin 13% with Reserve Sharing, which from Table 4 is about 152.7 MWh. Comparing to the value without Reserve Sharing, this is a bit more than the 153.8 MWh produced by a 16% reserve margin. It is straightforward to calculate that a 16.1% Reserve Margin in the absence of reserve sharing would produce the same level of reliability as a 13% Reserve Margin: the Pool gives the same reliability benefits as a 3.1% increase in the reserve margin. Similar computations comparing the duration-based LOLP measures produce a 3.4% reserve-margin equivalence.

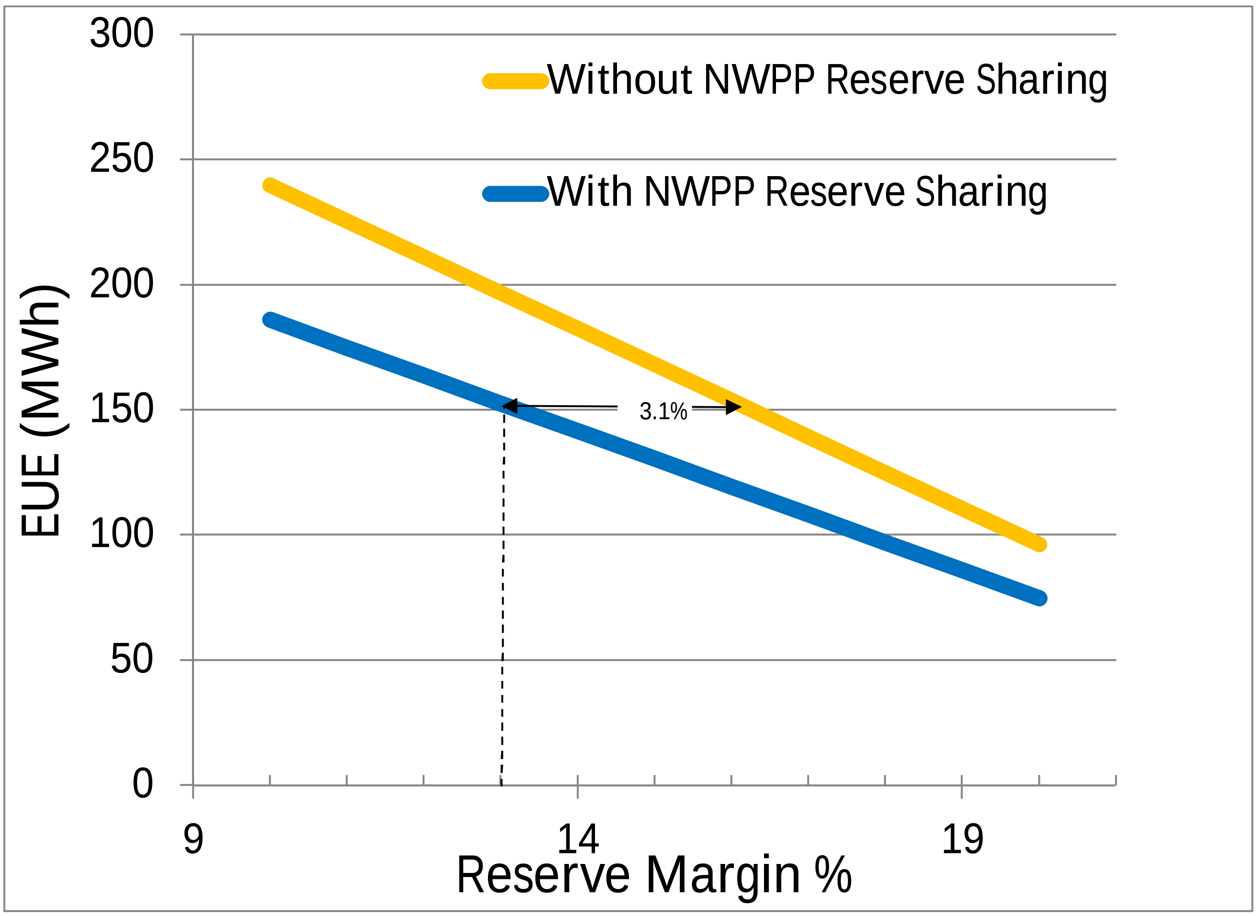

Figure 6. Reliability With and Without Reserve-Pool Arrangements

4 PRODUCTION COST MODEL

Table 5 reports the single-year capital costs and expected production costs of operating the portfolios in 2014 produced by the expansion plans summarized in Table 1 above. The expected production costs is from a stochastic production cost model that, in addition to the plant outage and hydro and load stochastics used for the reliability model, include stochastic natural gas and power prices. This is the same stochastic configuration used elsewhere in Pacificorp's resource planning activities. The model also inherits the market access assumptions that Pacificorp uses elsewhere, allowing, in particular, substantial economy market purchases which are excluded from the Reliability Model, while at the same time not assuming any emergency-power deliveries associated with the NWPP reserve-sharing arrangements, since those are not substitutes for expected commercial transactions.

It is worth noting that, except for the interval from 15 to 16 %, production costs steadily increase as the Reserve Margin increases due to the increased purchases of FOTs which are, by construction, out of the market. The production-cost curve shifts down at 16% when FOT purchases fall to accommodate the additional Southern-Oregon/Northern-California CCGT; this decrease is more than outweighed by the increase in capital costs associated with that station

Table 5. Capital and Production Costs at Different Planning Reserve Margins, 11%-18%

Reserve Margin	Production Cost	Station Capital Costs	Total
%	$ '000		
11	640,918	84,370	725,288
12	644,747	84,370	729,117
13	650,186	84,370	734,556
14	654,651	84,370	739,021
15	660,530	84,370	744,900
16	639,891	136,720	776,611
17	643,345	136,720	780,065
18	761,961	136,720	898,681

5 ANALYSIS

The combination of reliability results from different reserve margins, from section 3.4.2, and of the costs of acquiring and operation those reserve margins, from section 4, provides a basis for a recommendation regarding the reserve margin level. Table 6 contains all the elements necessary to compute both the full additional costs of moving from one reserve margin to the next, and the per-MWh cost of saved unserved energy. Figure 7 shows the per-MWh incremental cost in graphical form; this can be understood as a supply curve for reliability.

Table 6. Incremental Cost of Reliability, Reserve Margins 12-17%

		Expected Unserved Energy (fitted)				Incremental Cost of Reliability	
MWAdded	Reserve Margin	With NWPP Reserve Pool	Without NWPP Reserve Pool	Expected Total Cost With NWPP Reserve Pool	Expected Incremental Cost	With NWPP Reserve Pool	Without NWPP Reserve Pool
	(percent)	*(MWh)*	*(MWh)*	*($ '000)*	*($ '000)*	*($/MWh EUE)*	*($/MWh EUE)*
2,051	12	164	211	729,117	3,828	344	267
2,152	13	153	197	734,556	5,439	489	379
2,253	14	142	182	739,021	4,466	402	311
2,355	15	130	168	744,900	5,879	529	409
2,456	16	119	154	776,611	31,711	2,853	2,208
2,557	17	108	139	780,065	3,455	311	241

The latter information provides, in principal, a strong basis of a reserve-margin recommendation. If we knew the value to consumers of incremental reliability (which is strongly related to the willingness of loads to voluntarily curtail), or some other form of a demand curve for energy, then we could select the reserve margin level where this reliability supply curve crosses a reliability demand curve.

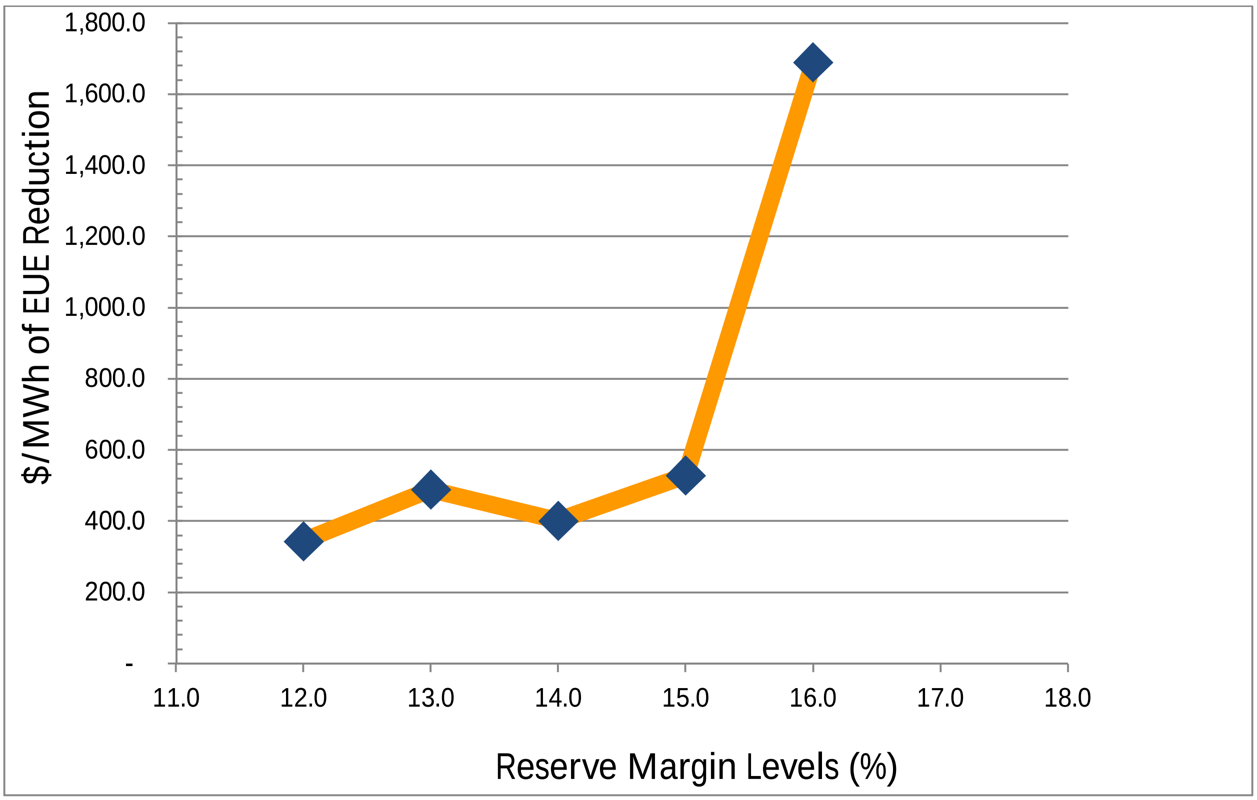

Figure 7. Incremental Cost of Reliability

Such information is not now available. However, as DSM programs are developed, such information will also become available for this sort of analysis, both directly in the case of price-strike dispatchable load reductions, and indirectly through analysis of the costs required to produce other voluntary load reductions.

In the absence of strong information about the incremental value to load of reliability, one cannot make a strong recommendation for a single point solution to the reserve-margin selection problem. However, there is one very strong conclusion from this analysis: increasing the Reserve Margin to 16% involves a substantial increase in cost (as it calls into the plan an additional thermal station), while producing only a moderate gain in reliability. Lacking strong evidence that there is little ability of loads to curtail at prices less than $1000/MWh, we cannot recommend an increase in reserve margins to this level. This is seen in the diagram as the sharp upward jump in the curve in Figure 7, from values in the $400/MWh range that are not inconsistent with the energy prices around the West during the California crisis, to values over three times as high. We cannot recommend a move into that reserve-margin region without serious investigation of other options. In particular, one would want to be sure that at prices above $1,000/MWh there weren't additional demand responses available.

The incremental cost of reliability at lower reserve margins do not differ significantly, making it impossible (even in the presence of information about the value to loads of reliability) to select among the 12%, 13%, 14% and 15% reserve-margin levels. It is important to recognize, however, that across the range of reserve margin levels increasing reserve margin levels are associated with increasing reliability. While the costs of those margins are not changing consistently, their impacts are, and their reliability impacts are felt primarily in a single area, the Utah-North zone. To reduce reserve margins from their current 13% level would be to impose a reliability cost upon loads in that region, while saving the entire system less that 1% of total expected cost. Conversely, we note that Pacificorp is engaged in the reinforcement of transmission into the Utah North zone, which will directly improve reliability in that region, without requiring an increase in reserve margins. The efficiency of transmission reinforcements in improving reliability in that zone, the disparate impact of reductions in the reserve margins below 13%, and the lack of a strong contrary measure of incremental cost of reliability combine to support a finding that it is reasonable for Pacificorp to retain its current practice, and continue to plan to a 13% Reserve Margin level. This is our recommendation.

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Christian, J. 2008b. *Using an Instantaneously-Converged Mean Reverting Index to Simulate a Target Volatility.* Ventyx Knowledge Base Article, Ventyx ABB.

Lauckhart, R. and C. Kulkarni. 2008. *Analysis of "Loss of Load Probability" (LOLP) at various Planning Reserve Margins,* Ventyx Consulting Report, Ventyx ABB.

APPENDIX J – WESTERN RESOURCE ADEQUACY EVALUATION

Introduction

The Utah Commission, in its 2008 IRP acknowledgment order, directed the Company to conduct two analyses pertaining to the Company's ability to support reliance on market purchases:

> *Additionally, we direct the Company to include an analysis of the adequacy of the western power market to support the volumes of purchases on which the Company expects to rely. We concur with the Office [of Consumer Services], the WECC is a reasonable source for this evaluation. We direct the Company to identify whether customers or shareholders will be expected to bear the risks associated with its reliance on the wholesale market. Finally, we direct the Company to discuss methods to augment the Company's stochastic analysis of this issue in an IRP public input meeting for inclusion in the next IRP or IRP update.*[58]

To fulfill the first requirement, PacifiCorp evaluated the Western Electricity Coordinating Council (WECC) Power Supply Assessment reports to glean trends and conclusions from the supporting analysis. This evaluation, along with a discussion on risk allocation associated with reliance on market purchases, is provided below. As part of this evaluation, the Company also reviewed the status of resource adequacy assessments prepared for the Pacific Northwest by the Pacific Northwest Resource Adequacy Forum.

Finally, this appendix describes in the 2011 IRP, the Company conducted a study that involved the development and stochastic simulation of a market "stress" scenario. In developing this study, the Company received input from participants at the June 29, 2010 Utah IRP stakeholder's meeting, and described its proposed study approach at the October 5, 2010, IRP general public input meeting. This Appendix H from the 2011 IRP describes the study methodology and presents results of the stochastic simulations.

Western Electricity Coordinating Council Resource Adequacy Assessment

The Western Electricity Coordinating Council (WECC) 2012 Power Supply Assessment (PSA) shows a planning reserve margin (PRM, as a percentage) calculated as a percentage of resources (generation and transfers) and load, and is the percentage of capacity above demand. The PRM indicates sufficient resources when the PRM is equal to or greater than the target reserve margin. The 2012 PSA shows WECC needing additional resources in 2020 (see Figure 2). Prior to the 2012 PSA report, WECC instead calculated a power supply margin (PSM, in MW amount) measuring ability to meet load requirement with resources and transfers. Since 2007, each subsequent PSA study defers resource need to later years. This deferment is a function of net

[58] Public Service Commission of Utah, PacifiCorp 2008 Integrated Resource Plan, Report and Order, Docket No. 09-2035-01, p. 30.

changes to: load growth expectations, class I capacity entrants, scheduled retirements, resource performance, transfer capabilities and modeling convention.[59]

In WECC Power Supply Assessments, the region and subregion target reserve margins are calculated using a building block methodology created by WECC. As such, they do not reflect a criteria-based margin determination process and do not reflect any balancing authority or load serving entity level requirements that may have been established through other processes (e.g., state regulatory authorities). They are not intended to supplant any of those requirements.

The building block methodology is comprised of four elements:

1. Contingency Reserves – An additional amount of operating reserves sufficient to reduce area control error to zero following loss of generating capacity, which would result from the most severe single contingency.

2. Regulating Reserves – The amount of spinning reserves responsive to automatic generation control that is sufficient to provide normal regulating margin. The regulating component of this guideline was calculated using data provided in WECC's annual loads and resources data request responses.

3. Additional Forced Outages – Reserves for additional forced outages beyond what might be covered by operating reserves in order to cover second contingencies are calculated using the forced outage data supplied to WECC through the loads and resources data request responses. Ten years of data are averaged to calculate both a summer (July) and winter (December) forced outage rate. The same forced outage rate is used for all balancing authorities in WECC when calculating the building block margin.

4. Temperature Adders – Using historic temperature data for up to 20 years, the annual maximum and minimum temperature for each balancing authority's area was identified. That data was used to calculate the average maximum (summer) and minimum (winter) temperature and the associated standard deviation.

As seen in Figure J.1, there were two significant capacity deferments: from 2012 (per 2008 PSA) to 2016 (per 2009 PSA) followed by 2019 as seen in WECC's 2010 PSA. While the forecast power supply margins (PSM) of the studies from 2007 through 2009 are comparable, the 2010 PSA employed a different, and superior, modeling convention. Namely, PROMOD IV, a chronological production cost model, was used beginning with the 2010 PSA to assess WECC resource adequacy[60]. PROMOD IV, unlike WECC's previous model, uses coincident peak demand and employs a more robust optimization of sub-regional transfers.

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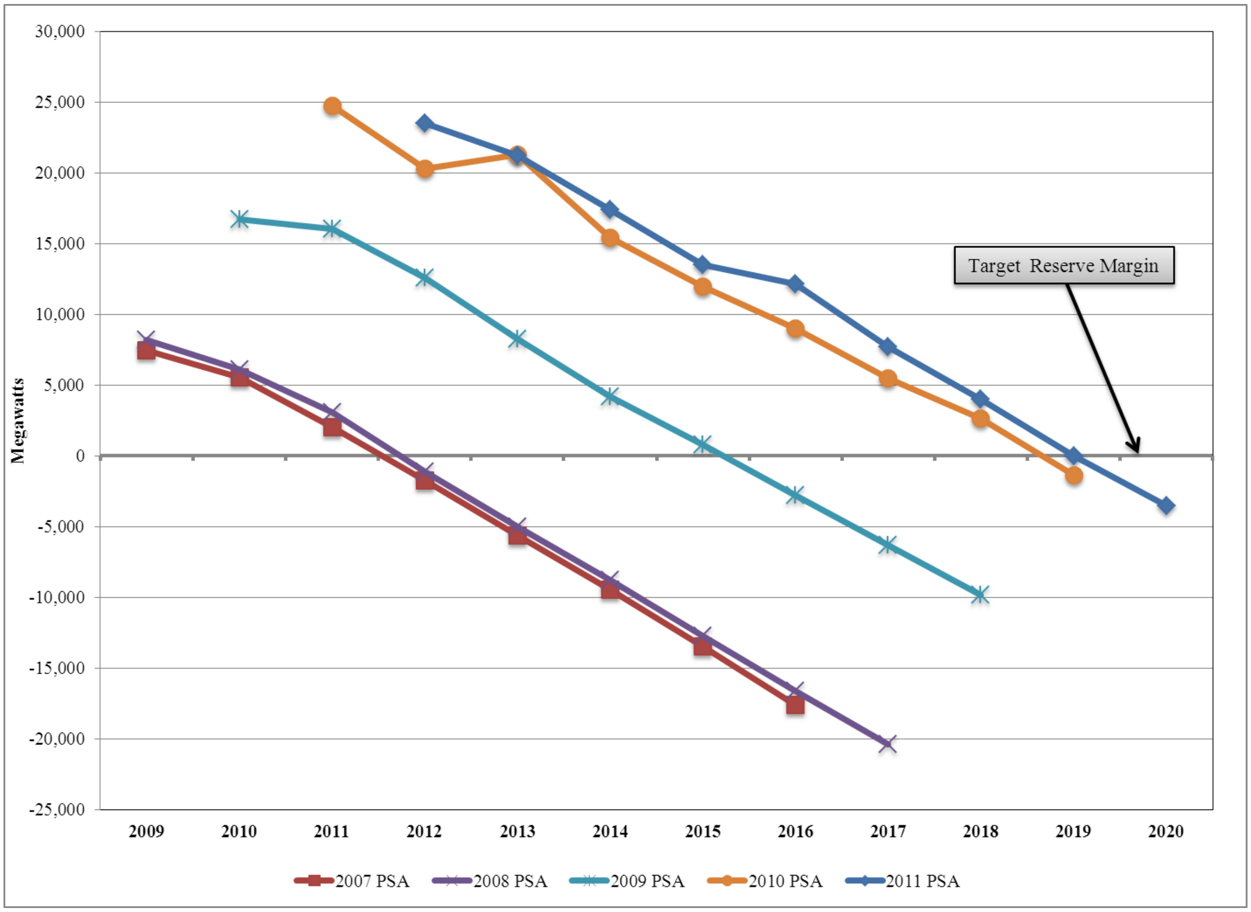
[59] The 2012 PSA defines Class I as existing generation that is available (in-service) as of December 31, 2011, and net generation additions/retirements that were reported to be under active construction as of December 31, 2011 and are projected to be in-service/retired prior to January 2017. The 2011, 2010, 2009 and 2008 PSA defined Class I to included generation online by 2016, 2014, 2013, and 2012, respectively.

[60] PROMOD IV is electricity market simulation software licensed through Ventyx, an ABB Company. http://www.ventyx.com/analytics/promod.asp

Figure J.1 – WECC Forecasted Power Supply Margins, 2007 to 2011



Note: WECC Power Supply Assessments include Class 1 Planned Resources Only

Figure J.2 shows the planning reserve margin calculated in the 2012 WECC Power Supply Assessment report. The 2012 WECC power reserve margin results show that there is not a resource need until 2020, which compares to the 2011 assessment which projects a resource need in 2019.

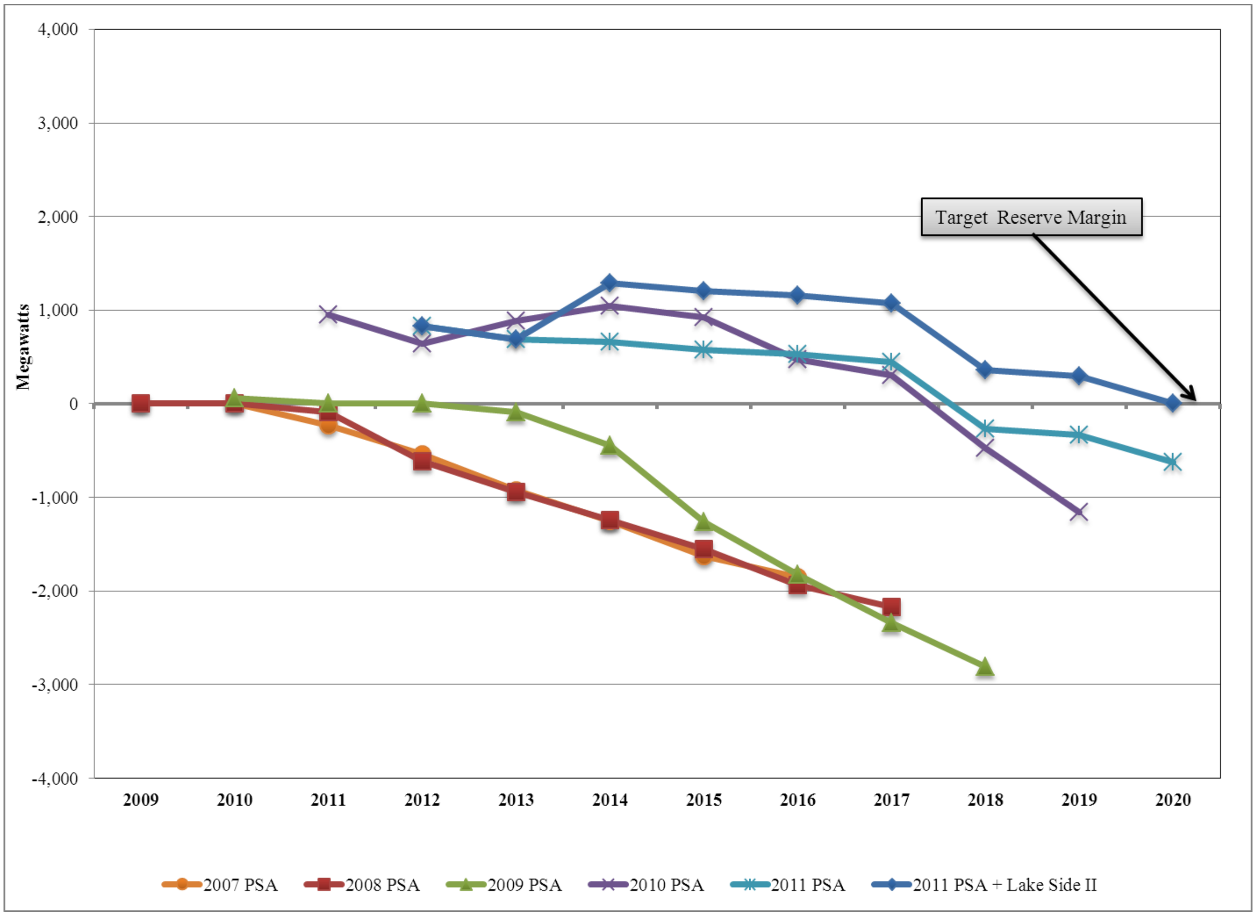
Figure J.2 – 2012 WECC Forecasted Planning Reserve Margins

Planning Reserve Margin		Summer; Existing and Class 1 Resources									
Subregion	Target Reserve Margin	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Northwest	17.9%	20.4%	19.5%	20.5%	24.2%	21.1%	19.3%	19.4%	19.5%	19.5%	19.7%
Basin	12.6%	32.0%	32.5%	29.9%	25.6%	24.7%	20.9%	17.2%	16.2%	14.5%	16.6%
Rockies	14.7%	27.8%	25.7%	21.5%	19.3%	17.4%	15.6%	17.0%	17.1%	16.1%	15.2%
Desert Southwest	13.5%	45.0%	40.9%	42.8%	44.7%	40.6%	40.7%	36.5%	29.8%	26.4%	26.0%
WECC Total	14.6%	25.4%	23.2%	22.1%	19.3%	17.4%	15.7%	15.1%	13.3%	11.5%	9.3%

Note: 2012 WECC Power Supply Assessment, including Class 1 Planned Resources Only

Basin is a summer peaking WECC subregion comprised of Utah, Idaho, and northern Nevada. A review of PSA studies from 2007 through 2011 reveals a similar pattern to that of WECC for the same period. The 2011 WECC Power Supply Assessment shows a resource need in 2018. When including the addition of the Company's Lake Side 2 resource, this resource need would be deferred to 2020. As seen in Figure J.3, the target reserve margin is maintained at the "zero" horizontal axis. The PSA's target reserve margins, as developed by WECC, are not mandated. Instead, they serve as a reasonable proxy for expected target reserve margins in WECC's modeling construct.

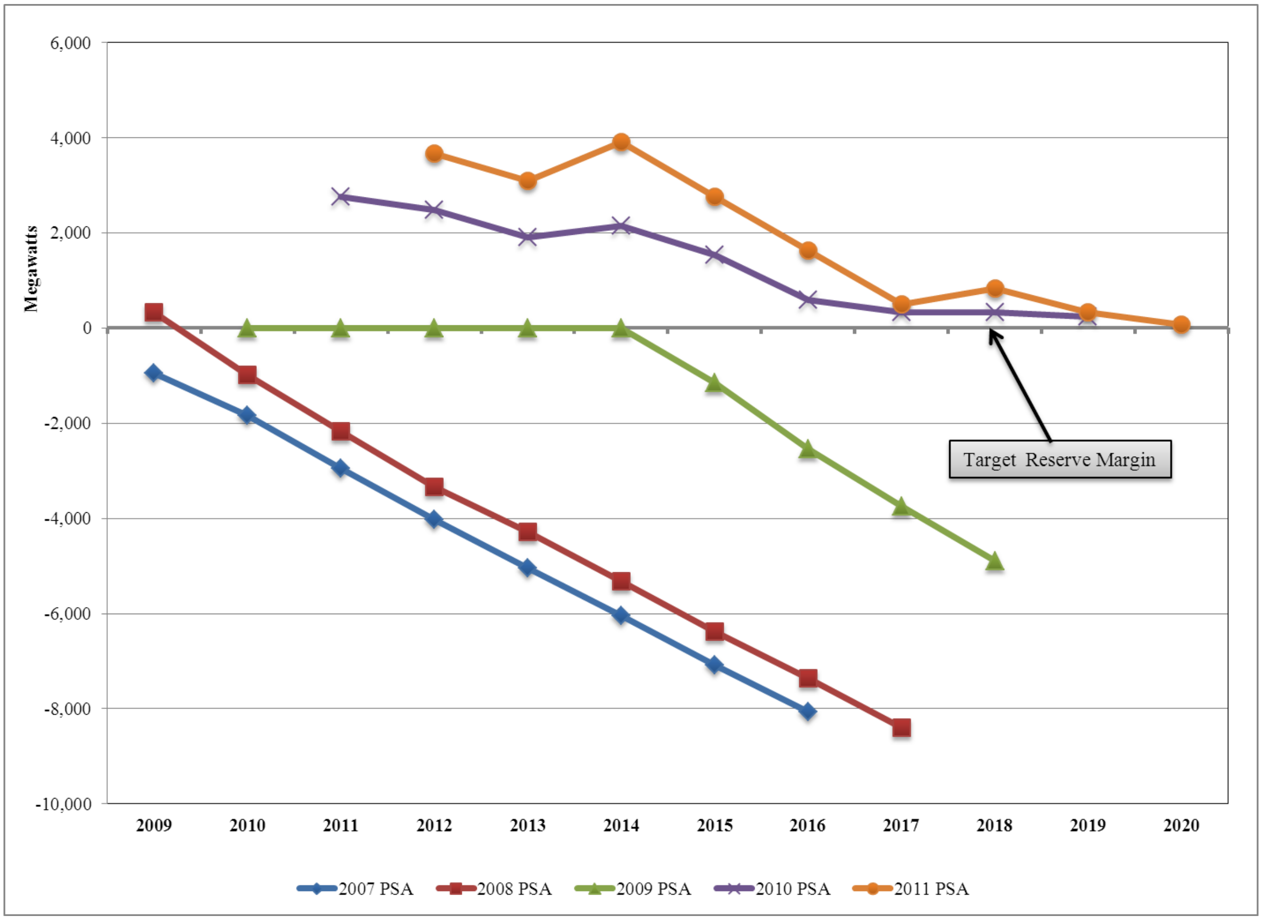
Figure J.3 – Basin Forecasted Power Supply Margins



Note: WECC Power Supply Assessments include Class 1 Planned Resources Only. Lake Side 2 is currently under construction but was not included in the 2011 Power Supply Assessment for Class 1 resources. The chart above shows the 2011 power supply margin with and without Lake Side 2. The 2012 Power Supply Assessment also does not include Lake Side 2 for Class 1, since it was not under construction in time to meet definition of Class 1 for the 2012 WECC report.

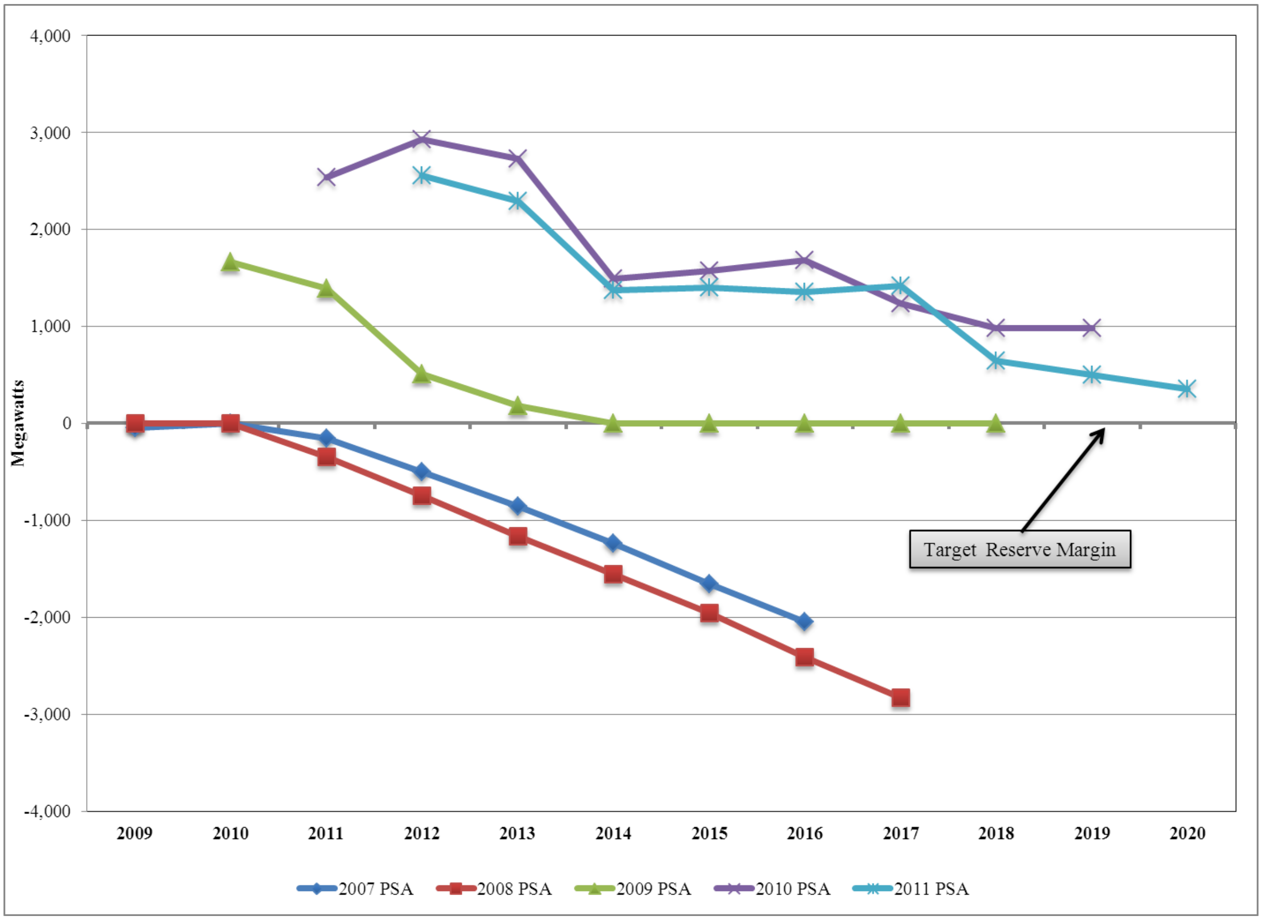
Consistent with the planning reserve margins calculated for Rockies (Colorado and Wyoming) and Desert Southwest (Arizona, New Mexico and southern Nevada) subregions in the 2012 WECC Power Supply Assessment, Figures J.4 and J.5, showing the 2011 WECC report results, also show resource deferment until 2020 for the Desert Southwest subregion and after 2020 for the Rockies subregion.

Figure J.4 – Desert Southwest Forecasted Power Supply Margins



Note: WECC Power Supply Assessments include Class 1 Planned Resources Only.

Figure J.5 – Rockies Forecasted Power Supply Margins



Note: WECC Power Supply Assessments include Class 1 Planned Resources Only.

Market depth refers to a market's ability to accept individual transactions without a perceptible change in market price. While different from market liquidity[61] the two are linked in that a deep market tends to be a liquid market. Market depth in electricity markets is a function of the number of economic agents, market period, generating capacity, transmission capability, transparency, and institutional and/or physical constraints. Based on the 2012 PSA, WECC maintains a positive PSM through 2019. The Basin, Desert Southwest, Northwest[62], and Rockies subregions are forecasted to maintain sufficient planning reserve margins through 2022. In total, known market transactions, generation resources, load requirements, and the optimization of transfers within WECC show adequate market depth to maintain positive target reserve margins for several years.

[61] Market liquidity refers to having ready and willing buyers and sellers for large transactions.
[62] The Northwest is comprised of the Pacific Northwest and Montana.

Pacific Northwest Resource Adequacy Forum's Adequacy Assessment

The Pacific Northwest Resource Adequacy Forum issued resource adequacy standards in April 2008, which were subsequently adopted by the Northwest Power and Conservation Council. The standard calls for assessments three and five years out, conducted every year. In a November 2012 report, the Forum concluded that the likelihood of a shortfall between the region's power supply and forecasted load growth in 5 years out had increased from 5 percent to 6.6 percent.[63] This means that the region will have to acquire additional resources in order to maintain an adequate power supply, a finding that supports acquisition actions currently being taken by regional utilities. Between 2015 and 2017, the region's electricity loads, net of planned energy efficiency savings, are expected to grow by about 300 average megawatts or about a 0.7 percent annual rate. Since the last assessment, 114 megawatts of new thermal capacity and about 1,200 megawatts of new wind capacity have been added along with about 250 megawatts of small hydro and hydro upgrades.

The majority of potential future issues are short-term capacity shortfalls. The most critical months are January and February and, to a lesser extent, August. This is a different result from the 2015 assessment, which indicated that August was the most critical month. The major reason for this shift is the use of an updated stream flow record, which contains 10 more years of historical flows, new irrigation withdrawal amounts and various updates to reservoir operations both in the U.S. and Canada. The net result yields a higher average stream flow in August, thus improving summer adequacy.

Customer versus Shareholder Risk Allocation

Market purchase costs are reflected in rates. Consequently, customers bear the price risk of the Company's reliance on a given level of market purchases. However, customers also bear the cost impact of the Company's decision to build or acquire resources if those resources exceed market alternatives and result in an increase in rates. These offsetting risks stress the need for robust IRP analysis, efficient RFPs and ability to capture opportunistic procurement opportunities when they arise.

[63] Pacific Northwest Power Supply Adequacy Assessment for 2017, at http://www.nwcouncil.org/media/30104/2012_12.pdf

APPENDIX K – DETAILED CAPACITY EXPANSION RESULTS

Portfolio Case Build Tables

This section provides the System Optimizer portfolio build tables for each of the case scenarios as described in the portfolio development section of Chapter 7. There are 19 core cases, and each was run under the five Energy Gateway scenarios. One exception is that Case C-19, on alternative to Segment D of the Energy Gateway, is not applicable to EG1 that does not include segment D, so there is no study required.

Table K.1 – Gateway Scenario Definitions

Scenario	Segments	Description
EG1	C, and G	**Reference** – Mona-Oquirrh-Terminal, Sigurd-Red Butte
EG2	C, D, and G	**System Improvement** – 2013 Business Plan
EG3	C, D, E, G, and H	**West/East Consolidation** – Increase interchange between PACE and PACW
EG4	C, D, G, and F	**Triangle** – East side wind and improved reliability
EG5	C, D, E, G, H, and F	**Full Gateway** – All Energy Gateway segments

Table K.2 – Core Case Definitions

Theme	Case	Gas Price	CO2 Price	Coal Price	RPS	Class 2 DSM	Other
Reference	C01	Medium	Medium	Medium	None	Base	n/a
	C02	Medium	Medium	Medium	State	Base	n/a
	C03	Medium	Medium	Medium	State & Federal	Base	n/a
Environmental	C04	Low	High	High	None	Base	n/a
Policy	C05	Low	High	High	State & Federal	Base	n/a
	C06	High	Zero	Low	None	Base	n/a
	C07	High	Zero	Low	State & Federal	Base	n/a
	C08	Low	High	High	None	Base	n/a
	C09	Low	High	High	State & Federal	Base	n/a
	C10	Medium	Medium	Medium	None	Base	n/a
	C11	Medium	Medium	Medium	State & Federal	Base	n/a
	C12	High	Zero	Low	None	Base	n/a
	C13	High	Zero	Low	State & Federal	Base	n/a
	C14	Medium	Hard Cap (Medium Gas)	Medium	State & Federal	Accelerated	n/a
Targeted	C15	Medium	Medium	Medium	State & Federal	Accelerated	No CCCT
Resources	C16	Medium	Medium	Medium	State & Federal	Base	Geothermal/RPS
	C17	High	Medium	Medium	State & Federal	Base	Market Spike
	C18	Medium	Hard Cap (High Gas)	Medium	None	Accelerated	Clean Energy
Transmission	C19	Medium	Medium	Medium	State & Federal	Base	Alt. to Segment D

Table K.3 – Sensitivity Case Definitions

Theme	Case #	Load	Gas Price	CO2 Price	RPS	PTC/ITC	Coal Investments
Load Sensitivity	S-01	Low	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
	S-02	High	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
	S-03	1 in 20	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
Targeted Resource	S-05	Base	Medium	Medium	None	2019/2019	Optimized
	S-06	Base	Medium	Medium	State & Federal (RPS Floor)	2019/2019	Optimized
	S-07	Base	Medium	Medium	State & Federal (Optimized)	2012/2016	Optimized
	S-09	Base	High	High	State & Federal (RPS Floor)	2019/2019	Optimized
	S-10	Base	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
Environmental Policy	S-04 (Volume III)	Base	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Hypothetical Regional Haze
	S-X (Volume III)	Base	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Next Best Alternative

<u>Notes</u>

1. All sensitivity cases are based on Energy Gateway Scenario 2, consistent with the scenario in the 2013 IRP preferred portfolio.
2. Sensitivity Case S-07 applies state RPS targets as system targets in the System Optimizer model. All other sensitivities either use the RPS Scenario Maker to establish a renewable resource floor or exclude RPS requirements altogether.
3. Case S-08 (simulating PacifiCorp's 2013 Business Plan portfolio in the current input setup) was removed due to incompatibilities in how Class 2 DSM resources are modeled in the 2013 IRP.
4. Sensitivity cases S-04 (Hypothetical Regional Haze Compliance Alternative) and S-X (Emission Control PVRR(d) Analysis) are confidential and summarized in confidential Volume III of the 2013 IRP report.

Table K.4 – Resource Name and Description

Resource List	Detailed Description
East Resources	
CCCT F 2x1	Combine Cycle Combustion Turbine F-Machine 2x1 with Duct Firing
CCCT FD 1x1	Combine Cycle Combustion Turbine FD-Machine 1x1 with Duct Firing
CCCT FD 2x1	Combine Cycle Combustion Turbine FD-Machine 2x1 with Duct Firing
CCCT GH 1x1	Combine Cycle Combustion Turbine GH-Machine 1x1 with Duct Firing
CCCT GH 2x1	Combine Cycle Combustion Turbine GH-Machine 2x1 with Duct Firing
CCCT J 1x1	Combine Cycle Combustion Turbine J-Machine 1x1 with Duct Firing
IC Aero UT	Inter-cooled Simple Cycle Combustion Turbine Aero - Utah
IC Aero WYAE	Inter-cooled Simple Cycle Combustion Turbine Aero - Wyoming
IC Aero WYNE	Inter-cooled Simple Cycle Combustion Turbine Aero - Wyoming
IC Aero WYSW	Inter-cooled Simple Cycle Combustion Turbine Aero - Wyoming
SCCT Aero UT	Simple Cycle Combustion Turbine Aero - Utah
SCCT Aero WYNE	Simple Cycle Combustion Turbine Aero - Wyoming
SCCT Frame ID	Simple Cycle Combustion Turbine Frame - Idaho
SCCT Frame UT	Simple Cycle Combustion Turbine Frame - Utah
SCCT Frame WYAE	Simple Cycle Combustion Turbine Frame - Wyoming
SCCT Frame WYNE	Simple Cycle Combustion Turbine Frame - Wyoming
SCCT Frame WYSW	Simple Cycle Combustion Turbine Frame - Wyoming
Lake Side II	Lake Side II
Nuclear	Nuclear
Geothermal, Greenfield	Geothermal, Greenfield
WY IGCC CCS	Integrated Gasification Combined Cycle with Carbon Capture & Sequestration - Wyoming
Coal Ret_UT - Gas RePower	Coal Plant conversion to Gas Plant - Utah (Cholla, Hunter, or Huntington)
Fly Wheel	Fly Wheel
CAES	Compressed Air Energy Storage
Battery Storage	Battery Storage
Pump Storage	Pump Storage
Utility Solar - PV	Utility Solar - Photovoltaic
Micro Solar - PV	Micro Solar - Photovoltaic
Micro Solar - Water Heating	Micro Solar - Water Heating
Wind, GO, 29	Wind, Goshen Idaho, 29% Capacity Factor
Wind, UT, 29	Wind, Utah, 29% Capacity Factor
Wind, WYAE, 40	Wind, Wyoming, 40% Capacity Factor
CHP - Biomass	Combined Heat and Power - Biomass

Resource List	Detailed Description
CHP - Reciprocating Engine	Combined Heat and Power - Reciprocating Engine
CHP - Other	Combined Heat and Power - Other
DSM, Class 1, ID-Curtail	DSM Class 1, Curtailment - Idaho
DSM, Class 1, ID-DLC-IRR	DSM Class 1, Direct Load Control-Irrigation - Idaho
DSM, Class 1, ID-DLC-RES	DSM Class 1, Direct Load Control-Residential - Idaho
DSM, Class 1, ID-Irrigate	DSM Class 1, Direct Load Control-Irrigation - Idaho
DSM, Class 1, UT-Curtail	DSM Class 1, Curtailment - Utah
DSM, Class 1, UT-DLC-RES	DSM Class 1, Direct Load Control-Residential - Utah
DSM, Class 1, UT-Irrigate	DSM Class 1, Direct Load Control-Irrigation - Utah
DSM, Class 1, WY-Curtail	DSM Class 1, Curtailment - Wyoming
DSM, Class 1, WY-DLC-RES	DSM Class 1, Direct Load Control-Residential - Wyoming
DSM, Class 1, WY-Irrigate	DSM Class 1, Direct Load Control-Irrigation - Wyoming
DSM, Class 3, UT-TOU-RES	DSM, Class 3, Time of Use, Residential - Utah
DSM, Class 3, WY-TOU-IRR	DSM, Class 3, Time of Use, Irrigation - Wyoming
DSM, Class 3, WY-TOU-RES	DSM, Class 3, Time of Use, Residential - Wyoming
DSM, Class 2, ID	DSM, Class 2, Idaho
DSM, Class 2, UT	DSM, Class 2, Utah
DSM, Class 2, WY	DSM, Class 2, Wyoming
FOT Mead Q3	Front Office Transaction - 3rd Quarter HLH Product - Mead
FOT Mona Q3	Front Office Transaction - 3rd Quarter HLH Product - Mona

Resource List	Detailed Description
West Resources	
CCCT F 2x1	Combine Cycle Combustion Turbine F-Machine 2x1 with Duct Firing
CCCT GH 1x1	Combine Cycle Combustion Turbine GH-Machine 1x1 with Duct Firing
CCCT GH 2x1	Combine Cycle Combustion Turbine GH-Machine 2x1 with Duct Firing
CCCT J 1x1	Combine Cycle Combustion Turbine J-Machine 1x1 with Duct Firing
IC Aero WV	Inter-cooled Simple Cycle Combustion Turbine Aero - Willamette Valley
IC Aero WW	Inter-cooled Simple Cycle Combustion Turbine Aero - Walla Walla
IC Aero PO	Inter-cooled Simple Cycle Combustion Turbine Aero - Portland/North Coast
IC Aero SO-CAL	Inter-cooled Simple Cycle Combustion Turbine Aero - Southern Oregon/California
SCCT Aero PO	Simple Cycle Combustion Turbine Aero - Portland/North Coast
SCCT Aero WV	Simple Cycle Combustion Turbine Aero - Willamette Valley

Resource List	Detailed Description
SCCT Aero WW	Simple Cycle Combustion Turbine Aero - Walla Walla
SCCT Frame OR	Simple Cycle Combustion Turbine Frame - Oregon
SCCT Frame WW	Simple Cycle Combustion Turbine Frame - Walla Walla
Coal Ret_Bridger -Gas RePower	Coal Plant conversion to Gas Plant - Jim Bridger
Geothermal, Greenfield	Geothermal, Greenfield
Fly Wheel	Fly Wheel
Battery Storage	Battery Storage
Pump Storage	Pump Storage
Utility Solar - PV	Utility Solar - Photovoltaic
Micro Solar - PV	Micro Solar - Photovoltaic
Micro Solar - Water Heating	Micro Solar - Water Heating
OR Solar (Util Cap Standard & Cust Incentive Prgm)	OR Solar (Util Cap Standard & Cust Incentive Prgm)
Utility Biomass	Utility Biomass
Wind, HM, 29	Wind, Hemmingway, 29% Capacity Factor
Wind, WV, 29	Wind, Willamette Valley, 29% Capacity Factor
CHP - Biomass	Combined Heat and Power - Biomass
CHP - Reciprocating Engine	Combined Heat and Power - Reciprocating Engine
CHP - Other	Combined Heat and Power - Other
DSM, Class 1, CA-Curtail	DSM Class 1, Curtailment - California
DSM, Class 1, CA-DLC-IRR	DSM Class 1, Direct Load Control-Irrigation - California
DSM, Class 1, CA-DLC-RES	DSM Class 1, Direct Load Control-Residential - California
DSM, Class 1, OR-Curtail	DSM Class 1, Curtailment - Oregon
DSM, Class 1, OR-DLC-IRR	DSM Class 1, Direct Load Control-Irrigation - Oregon
DSM, Class 1, OR-DLC-RES	DSM Class 1, Direct Load Control-Residential - Oregon
DSM, Class 1, WA-Curtail	DSM Class 1, Curtailment - Washington
DSM, Class 1, WA-DLC-IRR	DSM Class 1, Direct Load Control-Irrigation - Washington
DSM, Class 1, WA-DLC-RES	DSM Class 1, Direct Load Control-Residential - Washington
DSM, Class 3, CA-TOU-IRR	DSM, Class 3, Time of Use, Irrigation - California
DSM, Class 3, CA-TOU-RES	DSM, Class 3, Time of Use, Residential - California
DSM, Class 3, OR-TOU-IRR	DSM, Class 3, Time of Use, Irrigation - Oregon
DSM, Class 3, OR-TOU-RES	DSM, Class 3, Time of Use, Residential - Oregon
DSM, Class 3, WA-TOU-IRR	DSM, Class 3, Time of Use, Irrigation - Washington
DSM, Class 3, WA-TOU-RES	DSM, Class 3, Time of Use, Residential - Washington
DSM, Class 2, CA	DSM, Class 2, California

Resource List	Detailed Description
DSM, Class 2, OR	DSM, Class 2, Oregon
DSM, Class 2, WA	DSM, Class 2, Washington
FOT COB Flat	Front Office Transaction - 3rd Quarter Flat Product - COB
FOT COB Q3	Front Office Transaction - 3rd Quarter HLH Product - COB
FOT Mid Columbia Flat	Front Office Transaction - 3rd Quarter Flat Product - Mid Columbia
FOT MidColumbia Q3	Front Office Transaction - 3rd Quarter HLH Product - Mid Columbia
FOT MidColumbia Q3 - 2	Front Office Transaction - 3rd Quarter HLH Product - Mid Columbia
FOT NOB Q3	Front Office Transaction - 3rd Quarter HLH Product - Nevada Oregon Border

Table K.5 – Core Case System Optimizer PVRR Results

PVRR for cases under EG2 to EG5 are adjusted for $655 System Operational and Reliability Benefits Tool (SBT) benefit of Segment D ($ millions)

	Study Name	EG-1	EG-2	EG-3	EG-4	EG-5
C-01	Base, No RPS	30,983	31,237	31,885	31,878	32,506
C-02	Base, State RPS	31,504	31,540	32,204	32,171	32,842
C-03	Base, State & Federal RPS	31,605	31,583	32,235	32,208	32,866
C-04	Base Regional Haze, Low Gas, High CO2 & Coal, No RPS	32,516	32,755	33,360	33,344	33,973
C-05	Base Regional Haze, Low Gas, High CO2 & Coal, With RPS	33,136	33,104	33,713	33,675	34,336
C-06	Base Regional Haze, High Gas, No CO2, Low Coal, No RPS	27,011	27,269	27,920	27,896	28,553
C-07	Base Regional Haze, High Gas, No CO2, Low Coal, With RPS	27,568	27,516	28,181	28,145	28,814
C-07a	**Preferred Portfolio**		**27,347**			
C-08	Stringent Regional Haze, Low Gas, High CO2 & Coal, No RPS	32,778	33,039	33,667	33,612	34,266
C-09	Stringent Regional Haze, Low Gas, High CO2 & Coal, With RPS	33,365	33,348	33,959	33,926	34,599
C-10	Stringent Regional Haze, Med Gas, Med CO2 & Coal, No RPS	31,533	31,772	32,459	32,419	33,075
C-11	Stringent Regional Haze, Med Gas, Med CO2 & Coal, With RPS	32,138	32,135	32,760	32,748	33,410
C-12	Stringent Regional Haze, High Gas, No CO2, Low Coal, No RPS	27,563	27,818	28,469	28,450	29,095
C-13	Stringent Regional Haze, High Gas, No CO2, Low Coal, With RPS	28,121	28,073	28,730	28,699	29,370
C-14	Base Regional Haze, Med Gas, U.S. Hard Cap, Med Coal, With RPS	43,141	43,114	43,626	43,653	44,146
C-15	No Thermal Base Load	31,425	31,394	32,050	32,016	32,688
C-16	Geothermal RPS Strategy	31,581	31,644	32,304	32,274	32,937
C-17	Market Price Spike	31,519	31,488	32,239	32,199	32,867
C-18	Clean Energy Bookend	48,406	48,173	48,358	48,563	48,799
C-19	Energy Gateway Segment D Alternative	N/A	31,589	32,281	32,242	32,900

Table K.6 – Sensitivity Case – EG2 System Optimizer PVRR Results

PVRR are adjusted for $655 SBT benefit for Segment D ($ millions)

	Study Name	EG-2
S-01	Low Load Forecast	30,656
S-02	High Load Forecast	33,129
S-03	1 in 20 Load	31,978
S-05	PTC/ITC Ext. (No RPS)	31,237
S-06	PTC/ITC Ext. (With RPS)	31,485
S-07	Endogenous RPS Comp.	31,603
S-09	Targeted Renewables	38,996
S-10	Class 3 DSM	31,586

The next section of Appendix K provides the detail portfolio tables for each of the System Optimizer Case studies and are divided into the following sections:

Table K.7 – Energy Gateway Scenario 1 – Case C-01 to C-18
Table K.8 – Energy Gateway Scenario 2 – Case C-01 to C-19
Table K.9 – Energy Gateway Scenario 3 – Case C-01 to C-19
Table K.10 – Energy Gateway Scenario 4 – Case C-01 to C-19
Table K.11 – Energy Gateway Scenario 5 – Case C-01 to C-19
Table K.12 – Sensitivity Cases under Energy Gateway Scenario 2, excluding S-04 and S-X that are included in Confidential Volume III

Note: Front office transaction amounts reported in the portfolios reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

Table K.7 – Energy Gateway Scenario 1 – Case C-01 to C-18

EG-1 Case C-01		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	7	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	7	-	4	-	15
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	9	-	-	-	6	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	1	-	-	-	10	106	-	7	-	18	-	142
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	31	30	581	937
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	170	263	141	106	221	299	300	40	148	198	299	65	133
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	7	44	1	-	-	-	4	-	55
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	21	23	22	22	22	22	22	22	22	22	23	282	504
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	28	28	27	27	27	28	26	26	26	26	27	360	627
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	83	297	297	297	182	229
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	104	100	95	96	96	85	266	743	88	135	924	736	504	74	96		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,342	1,435	1,313	1,278	1,393	1,471	1,472	998	1,320	1,370	1,471		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,317	1,431	1,523	1,295	1,438	1,520	1,579	2,021	1,481	1,606	2,396	1,734	1,824	1,444	1,567		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-02	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	SCCT Frame WYAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	29	12	-	-	442	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	3	-	-	-	-	-	203
	Total Wind	-	-	-	70	47	29	12	-	-	442	-	200	-	-	-	3	-	-	-	-	600	803
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	7	77	-	-	-	-	3	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	4	-	-	-	3	-	-	-	-	4	-	11
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	0	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	1	-	-	4	-	31	7	81	-	-	-	-	11	1	135
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	67	61	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	504	762
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	56	126
	DSM, Class 2 Total	73	67	61	59	58	57	58	52	52	51	39	42	39	38	37	35	33	32	31	30	590	947
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	28
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	1.1	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	33	147	243	14	152	240	263	181	247	298	249	190	294	186	294	59	152
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	3	8	15	45	1	-	-	-	-	3	-	75
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	29	26	24	21	20	23	23	22	22	22	22	22	22	22	23	23	286	510
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	69	106
	DSM, Class 2 Total	45	49	41	41	38	34	31	28	27	30	28	27	27	28	28	26	26	26	27	27	365	635
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	103	223	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	181	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	146	205	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	332	353
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	188	161	135	116	96	96	540	91	294	790	162	163	997	256	735	256	88		
	Annual Additions, Short Term Resources	646	705	840	978	1,098	1,205	1,319	1,415	1,186	1,324	1,412	1,435	1,353	1,419	1,470	1,421	1,362	1,466	1,358	1,466		
	Total Annual Additions	791	1,482	961	1,166	1,259	1,340	1,435	1,511	1,282	1,864	1,503	1,729	2,143	1,581	1,633	2,418	1,618	2,201	1,614	1,554		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-1 Case C-03		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423	-	-	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	3	-	-	-	-	-	203
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	3	-	-	-	-	600	803
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	-	-	7	4	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	10	77	-	-	-	7	26	32	-	153
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	28	56
	DSM, Class 2, UT	63	56	54	51	49	47	45	40	42	40	30	33	30	28	27	25	23	22	21	20	487	745
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	54	49	52	51	39	42	39	38	37	35	33	32	31	30	570	926
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	44	163	263	35	175	114	141	300	300	278	105	204	300	300	300	68	151
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	6
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	22	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	26	21	-	-	-	-	24	10	-	82
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	20	20	20	20	22	22	22	19	22	22	22	22	26	279	499
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	27	26	27	25	27	27	27	24	26	26	26	26	30	357	622
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	113	233	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	183	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	213	349	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	334	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	772	121	187	160	133	112	90	95	534	262	709	119	407	258	1,164	76	743	124	210		
	Annual Additions, Short Term Resources	650	713	849	988	1,108	1,216	1,335	1,435	1,207	1,347	1,286	1,313	1,472	1,472	1,450	1,277	1,376	1,472	1,472	1,472		
	Total Annual Additions	790	1,485	970	1,175	1,268	1,349	1,447	1,525	1,302	1,881	1,548	2,022	1,591	1,879	1,708	2,441	1,452	2,215	1,596	1,682		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-04	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	-	661	661	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	423	423	846	411	-	411	-	-	-	-	-	-	-	1,692	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	28	56
	DSM, Class 2, UT	63	55	51	48	49	47	44	40	40	40	30	33	30	28	27	25	23	22	21	20	477	735
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	68	62	58	56	57	55	53	49	50	51	39	42	38	38	37	35	33	32	31	30	560	915
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	182	68	177	-	111	176	224	-	12	34	34	119	40	40	48	98	220	105	85
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	20	19	19	19	22	19	22	22	22	23	275	482
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	66	102
	DSM, Class 2 Total	45	49	41	40	38	33	29	26	24	26	25	24	24	24	27	23	26	26	26	27	351	602
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	268	297	297	297	277	297	132	297	297	297	297	297	297	297	249	264
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	59	100	1	100	100	100	100	100	93
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(1,084)	(719)	(682)	8	-	-	-	-	(434)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	117	113	774	103	757	1,175	514	940	492	83	490	78	80	810	75	497	74	74		
	Annual Additions, Short Term Resources	651	714	1,222	1,354	1,240	1,349	1,143	1,283	1,348	1,396	1,152	1,184	1,041	1,165	1,291	1,113	1,212	1,220	1,270	1,392		
	Total Annual Additions	791	1,485	1,339	1,467	2,014	1,452	1,900	2,458	1,862	2,336	1,644	1,267	1,531	1,243	1,371	1,923	1,287	1,717	1,344	1,466		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-05	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	-	661	661	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	423	423	423	834	-	411	-	-	423	-	-	-	-	1,269	2,937
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	200
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	-	-	-	-	-	600	800
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	2	2	28	55
	DSM, Class 2, UT	63	55	51	51	49	47	44	40	40	40	30	33	30	28	27	25	23	22	20	20	480	738
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	7	55	123
	DSM, Class 2 Total	68	62	58	59	57	55	53	49	50	51	39	42	39	38	37	35	33	32	29	29	564	915
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	178	64	172	-	106	-	162	-	-	34	34	81	193	292	300	61	61	79	93
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	20	19	20	19	19	22	22	22	22	22	18	19	277	483
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	66	103
	DSM, Class 2 Total	45	49	41	40	38	33	29	26	26	26	25	24	24	27	27	26	26	26	22	22	353	603
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	263	297	68	297	267	296	119	294	297	297	297	297	-	74	226	225
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	23	100	100	100	100	51	100	100	94
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(1,084)	(269)	(682)	(442)	-	-	-	-	(434)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	117	187	821	133	770	1,175	516	957	915	283	490	308	80	501	76	497	804	71		
	Annual Additions, Short Term Resources	651	714	1,222	1,350	1,236	1,344	1,138	1,278	943	1,334	1,142	1,171	1,028	1,126	1,253	1,365	1,464	1,472	887	1,010		
	Total Annual Additions	791	1,485	1,339	1,537	2,057	1,477	1,908	2,453	1,459	2,291	2,057	1,454	1,518	1,434	1,333	1,866	1,540	1,969	1,691	1,081		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-06	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	411	-	-	423	846	-	-	-	-	-	1,680
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	31
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	31
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	-	47
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	48	-	49
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	56	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	494	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	56	126
	DSM, Class 2 Total	69	63	61	59	59	57	57	52	52	51	39	42	39	38	37	35	33	32	32	31	581	938
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	42	157	254	25	169	263	-	160	282	68	121	220	256	300	298	65	131
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	16
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	73	-	75
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	19	19	22	22	22	22	23	26	26	285	508
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	3	4	3	3	3	71	111
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	25	25	27	28	26	26	27	30	30	365	638
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	134	251	267	297	297	297	297	297	297	297	260	297	297	297	297	297	297	297	297	257	275
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	221	311	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	260	318
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	772	121	118	116	106	103	95	96	95	84	495	80	82	504	924	76	812	112	198		
	Annual Additions, Short Term Resources	650	713	849	988	1,108	1,214	1,329	1,426	1,197	1,341	1,435	1,135	1,332	1,454	1,240	1,293	1,392	1,428	1,472	1,470		
	Total Annual Additions	791	1,485	970	1,106	1,224	1,320	1,432	1,521	1,293	1,436	1,519	1,630	1,412	1,536	1,744	2,217	1,468	2,240	1,584	1,668		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-07	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	423	-	-	-	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	169	-	-	-	-	-	-	31	-	-	200
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	169	-	-	-	-	-	-	31	-	600	800
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	15	-	-	51
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	15	-	-	51
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	2	3	3	3	3	3	3	2	27	52
	DSM, Class 2, UT	63	56	54	51	50	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	492	751
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	56	125
	DSM, Class 2 Total	69	63	61	59	58	56	54	52	51	50	39	41	38	37	37	35	33	32	32	29	574	928
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	247	-	-	-	-	-	-	-	247
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	158	256	28	169	263	-	146	244	40	136	234	290	300	266	65	129
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	8
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	21
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	21	-	-	30
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	19	22	22	22	23	23	26	26	22	285	513
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	111
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	25	28	28	28	28	28	30	30	26	365	643
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	133	250	271	297	297	297	297	297	297	297	248	297	297	287	297	297	297	297	297	257	274
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	216	309	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	260	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	772	121	188	162	136	113	94	95	534	84	675	82	328	504	815	77	785	145	253		
	Annual Additions, Short Term Resources	650	712	848	987	1,106	1,213	1,330	1,428	1,200	1,341	1,435	1,123	1,318	1,416	1,202	1,308	1,406	1,462	1,472	1,438		
	Total Annual Additions	791	1,484	969	1,175	1,268	1,349	1,443	1,522	1,295	1,875	1,519	1,798	1,400	1,744	1,706	2,123	1,483	2,247	1,617	1,691		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-08	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	1,322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	-	-	-	-	736	736
	CCCT J 1x1	-	-	-	-	-	-	423	846	-	-	-	-	411	-	-	423	-	423	-	-	1,269	2,526
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	27	47
	DSM, Class 2, UT	63	55	50	48	45	43	42	39	36	35	27	32	29	27	26	25	23	22	21	20	457	709
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	6	7	7	7	7	7	7	54	120
	DSM, Class 2 Total	68	62	58	56	54	52	51	48	45	45	35	40	37	36	35	33	32	30	30	29	538	876
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	184	73	176	132	263	108	-	147	183	43	169	300	40	78	91	144	270	105	126
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	35	40	33	32	29	26	22	19	17	17	17	17	17	18	18	18	18	19	19	19	271	452
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	64	99
	DSM, Class 2 Total	43	48	41	40	37	33	29	25	24	24	22	22	22	23	23	22	22	23	23	22	344	568
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	38	65	342	297	297	297	297	297	297	112	297	297	297	297	297	232	297	297	297	297	234	262
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	96	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	151	270	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	346
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(1,279)	(205)	(816)	(74)	(220)	(268)	-	-	-	-	(328)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	138	770	116	113	770	1,421	517	936	86	821	74	79	486	76	75	918	71	493	69	68		
	Annual Additions, Short Term Resources	652	716	1,224	1,356	1,245	1,348	1,304	1,435	1,280	983	1,319	1,355	1,215	1,341	1,472	1,147	1,250	1,263	1,316	1,442		
	Total Annual Additions	790	1,486	1,340	1,469	2,015	2,769	1,821	2,371	1,366	1,804	1,393	1,434	1,701	1,417	1,547	2,065	1,321	1,756	1,385	1,510		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-09	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	1,322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	423	846	-	423	411	-	411	-	-	423	-	-	-	-	1,692	2,937
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	200
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	-	-	-	-	-	600	800
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	10
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	10
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	28	56
	DSM, Class 2, UT	63	56	54	51	49	47	44	40	40	40	30	33	30	28	27	25	23	22	21	20	484	742
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	53	49	50	51	39	42	39	38	37	35	33	32	31	30	567	922
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	109	175	59	158	112	242	83	68	61	90	34	46	163	181	280	40	61	167	101	106
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	18
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	20	19	19	22	22	22	22	22	22	23	275	489
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	67	103
	DSM, Class 2 Total	45	49	41	41	38	33	29	26	24	26	25	24	24	27	27	26	26	26	26	27	352	610
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	297	297	297	297	297	297	210	297	297	297	297	297	295	297	252	270
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	55	87	100	100	97
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(1,279)	(205)	(816)	(74)	(220)	(268)	-	-	-	-	(328)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	120	187	821	1,455	532	937	91	957	492	283	490	308	90	501	76	810	74	74		
	Annual Additions, Short Term Resources	651	714	1,219	1,347	1,231	1,330	1,284	1,414	1,255	1,240	1,233	1,262	1,119	1,218	1,335	1,353	1,452	1,167	1,218	1,339		
	Total Annual Additions	791	1,485	1,339	1,534	2,052	2,785	1,816	2,351	1,346	2,197	1,725	1,545	1,609	1,526	1,425	1,854	1,528	1,977	1,292	1,413		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-10	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	1	-	9
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	81	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	4	-	15
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	2	-	12
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	-	2
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	100	-	11	2	11	-	130
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	56	126
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	31	30	581	938
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.7	0.9	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	169	263	142	107	213	293	300	51	144	192	300	65	133
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	0	-	8
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	3	-	46
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	16	45	1	-	-	-	3	-	64
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	19	22	22	22	22	22	22	23	23	284	504
	DSM, Class 2, WA	8	7	7	7	8	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	106
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	24	27	28	28	26	26	26	27	27	361	628
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	105	99	95	96	98	84	264	743	98	134	914	499	746	77	88		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,341	1,435	1,314	1,279	1,385	1,465	1,472	1,223	1,316	1,364	1,472		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,318	1,430	1,523	1,295	1,439	1,519	1,578	2,022	1,483	1,599	2,386	1,722	2,062	1,441	1,560		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-1 Case C-11

		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	200
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	-	-	-	-	-	600	800
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	7	74	4	4	-	-	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	10	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	0.1	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	1	-	-	-	0	9	0	20	95	17	4	-	-	-	1	146
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	2	2	2	30	56
	DSM, Class 2, UT	67	61	54	51	50	51	48	43	42	40	30	33	30	28	27	25	23	21	21	20	507	765
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	7	56	125
	DSM, Class 2 Total	73	67	61	59	58	61	58	52	52	51	39	42	39	38	37	35	33	30	30	29	593	946
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.7	0.9	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	30	143	238	10	147	241	253	217	251	288	221	300	61	115	241	57	138
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	11	-	45	-	1	15	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	29	26	24	23	20	23	23	22	22	22	22	22	22	18	18	18	289	500
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	69	106
	DSM, Class 2 Total	45	49	41	41	38	34	32	30	27	30	28	27	27	28	28	26	26	22	22	22	367	624
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	103	223	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	181	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	146	205	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	332	353
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	188	162	139	119	97	95	538	84	306	743	374	177	1,013	95	1,153	68	68		
	Annual Additions, Short Term Resources	646	705	840	978	1,098	1,202	1,315	1,410	1,182	1,319	1,413	1,425	1,389	1,423	1,460	1,393	1,472	1,233	1,287	1,413		
	Total Annual Additions	791	1,482	961	1,166	1,260	1,341	1,434	1,507	1,277	1,857	1,497	1,731	2,132	1,797	1,637	2,406	1,567	2,386	1,355	1,481		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-12	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	-	-	-	-	661
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	846	-	-	-	1,692
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	9
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	43	-	84
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	2	-	21
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	41	59	-	119
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
	DSM, Class 2, UT	63	56	54	51	50	48	48	43	42	40	30	33	30	28	27	25	24	22	21	20	495	755
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	56	127
	DSM, Class 2 Total	69	63	61	59	59	57	57	52	52	51	39	42	39	38	37	35	34	32	32	31	581	941
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	42	157	253	25	168	263	-	40	40	172	223	300	280	286	300	65	127
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	47	-	48
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	22	22	22	23	23	26	25	26	26	285	522
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	112
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	28	28	28	29	28	30	29	30	30	365	653
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	134	251	267	297	297	297	297	297	297	297	22	177	297	297	297	297	297	297	297	257	257
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	221	311	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	260	318
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	772	121	118	116	106	104	95	96	95	84	748	83	83	83	927	100	924	119	183		
	Annual Additions, Short Term Resources	650	713	849	988	1,108	1,214	1,329	1,425	1,197	1,340	1,435	897	1,092	1,212	1,344	1,395	1,472	1,452	1,458	1,472		
	Total Annual Additions	791	1,485	970	1,106	1,224	1,320	1,433	1,520	1,293	1,435	1,519	1,645	1,175	1,295	1,427	2,322	1,572	2,376	1,577	1,655		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-13	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	423	-	-	-	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	200
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	-	-	-	-	-	600	800
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	4	-	-	40
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	4	-	-	40
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	2	2	3	2	3	3	3	2	27	50
	DSM, Class 2, UT	63	56	54	51	50	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	492	751
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	56	125
	DSM, Class 2 Total	69	63	61	59	58	56	54	52	51	50	39	41	38	36	36	34	33	32	32	29	574	925
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	158	256	28	169	263	-	149	249	40	143	242	300	300	265	65	130
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	8
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	44
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	44	-	-	51
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	19	19	22	22	22	22	23	26	22	285	505
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	111
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	25	25	27	27	27	26	27	30	26	365	634
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	133	250	271	297	297	297	297	297	297	297	248	297	297	293	297	297	297	297	297	257	274
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	216	309	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	260	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	772	121	188	162	136	113	94	95	534	84	706	79	308	503	814	76	781	125	253		
	Annual Additions, Short Term Resources	650	712	848	987	1,106	1,213	1,330	1,428	1,200	1,341	1,435	1,123	1,321	1,421	1,208	1,315	1,414	1,472	1,472	1,437		
	Total Annual Additions	791	1,484	969	1,175	1,268	1,349	1,443	1,522	1,295	1,875	1,519	1,829	1,400	1,729	1,711	2,129	1,490	2,253	1,597	1,690		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-1 Case C-14	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	-	-	-	-	(416)	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	-	368
	CCCT GH 2x1	-	-	-	-	-	-	-	-	736	-	-	-	736	-	-	-	-	-	-	-	736	1,472
	CCCT J 1x1	-	-	-	-	-	-	423	1,269	-	-	423	411	-	-	-	846	-	-	-	-	1,692	3,372
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	3	-	-	-	-	-	203
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	3	-	-	-	-	600	803
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	6	6	6	3	3	3	3	3	1	1	1	2	1	1	1	1	1	1	46	59
	DSM, Class 2, UT	84	76	75	73	73	50	47	41	41	39	14	13	11	11	10	13	11	9	8	7	599	707
	DSM, Class 2, WY	24	24	24	24	25	3	3	3	3	2	2	2	1	2	2	2	2	1	1	1	136	153
	DSM, Class 2 Total	114	106	105	103	104	56	54	47	47	45	17	17	13	14	13	17	14	12	11	10	781	919
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	1.2	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	53	159	-	102	-	68	61	173	40	53	80	150	267	69	138	61	38	74
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	-	362	-	-	-	-	-	-	-	-	-	719	1,081
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	15	20
	DSM, Class 2, OR	37	41	34	33	31	28	24	23	21	21	21	20	21	20	20	20	21	20	20	20	293	498
	DSM, Class 2, WA	13	12	13	14	14	6	6	6	6	6	2	2	2	2	2	2	2	1	1	1	97	114
	DSM, Class 2 Total	52	55	49	49	47	35	31	30	28	28	23	22	23	23	23	23	23	22	22	22	405	632
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	54	23	77	297	297	292	297	220	297	297	297	6	174	297	297	297	297	297	206	185	216
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	107	75	200	236	375	375	309	375	375	375	375	375	375	375	375	375	375	375	375	375	280	328
	Existing Plant Retirements/Conversions	-	-	(164)	8	(378)	-	-	(1,258)	(779)	-	(261)	(450)	-	(459)	-	(760)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	193	822	173	240	216	137	535	1,360	827	529	480	667	789	704	53	906	54	712	50	416		
	Annual Additions, Short Term Resources	607	629	723	813	1,225	1,331	1,101	1,274	1,095	1,240	1,233	1,345	921	1,102	1,252	1,322	1,439	1,241	1,310	1,142		
	Total Annual Additions	800	1,451	896	1,053	1,441	1,468	1,636	2,634	1,922	1,769	1,713	2,012	1,710	1,806	1,305	2,228	1,493	1,953	1,360	1,558		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-1 Case C-15		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero WYAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	-	-	-	-	-	182
	IC Aero WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	362	-	362	-	-	-	905
	SCCT Frame ID	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	-	-	-	-	181	181
	SCCT Frame WYAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	172	-	-	-	172	-	172	-	-	516
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	3	-	-	-	-	-	203
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	3	-	-	-	-	600	803
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	7	41	37	-	-	-	-	4	-	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	14	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	3	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	25	60	37	-	-	-	-	21	-	-	-	142
	DSM, Class 2, ID	6	6	6	6	6	2	2	1	3	3	1	1	1	1	1	1	1	1	1	1	40	52
	DSM, Class 2, UT	81	74	68	65	69	45	43	37	39	37	12	11	9	10	9	11	10	9	7	6	558	652
	DSM, Class 2, WY	23	23	23	24	24	2	2	2	2	2	2	2	1	2	1	2	2	1	1	1	129	145
	DSM, Class 2 Total	111	103	97	95	98	49	46	41	44	42	16	14	12	12	12	14	13	11	10	9	726	849
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.1	1.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	95	208	176	263	45	198	263	263	300	267	265	246	215	300	257	257	99	181
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	-	-	-	-	-	-	197
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	362	-	-	-	362
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	21	-	-	22	-	-	-	-	-	-	-	-	-	21	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1 Total	-	-	-	-	-	-	-	21	-	-	25	-	-	-	-	-	-	-	-	-	21	47
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	13	15
	DSM, Class 2, OR	36	41	33	32	29	26	22	19	17	17	18	17	17	17	17	17	17	17	17	17	274	443
	DSM, Class 2, WA	13	12	12	12	12	5	5	5	5	5	2	1	1	1	1	1	1	1	1	1	86	96
	DSM, Class 2 Total	51	55	47	46	43	32	28	24	23	23	20	19	19	18	18	18	18	18	18	18	373	554
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	-	297	297	297	297	297	297	297	297	297	297	297	297	297	262	229	297	178	232
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	135	160	262	400	400	400	400	400	400	400	400	400	400	387	400	397	400	400	400	400	336	367
	FOT MidColumbia Q3 - 2	375	375	375	345	375	375	375	375	375	375	375	375	375	375	368	375	375	375	375	375	372	373
	Existing Plant Retirements/Conversions	-	-	(164)	-	(387)	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	188	818	163	228	207	126	284	101	83	522	102	310	256	471	227	958	219	791	216	134		
	Annual Additions, Short Term Resources	610	635	737	845	1,267	1,380	1,348	1,435	1,217	1,370	1,435	1,435	1,472	1,426	1,430	1,415	1,387	1,437	1,361	1,429		
	Total Annual Additions	798	1,453	900	1,073	1,474	1,506	1,632	1,536	1,300	1,892	1,537	1,745	1,728	1,897	1,657	2,373	1,606	2,228	1,577	1,563		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-1 Case C-16		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	-	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	-	-	115	-	-	-	-	-	-	-	115
	Wind, GO, 29	-	-	-	-	19	9	56	50	-	466	-	-	-	-	-	-	-	-	-	-	600	600
	Total Wind	-	-	-	-	19	9	56	50	-	466	-	-	-	-	-	-	-	-	-	-	600	600
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	4	-	-	-	3	-	84
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	7	-	-	4	-	26
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	0	-	-	77	41	8	2	-	11	-	140
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	29	57
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	56	54	52	52	51	39	42	39	38	37	35	33	32	31	30	579	936
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.7	0.9	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	18	136	233	5	143	237	263	228	243	253	266	198	142	192	300	54	143
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	25	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	25	30
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	3	-	46
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	8	-	-	46	-	-	-	-	3	-	57
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	22	22	22	23	23	284	507
	DSM, Class 2, WA	8	7	7	7	8	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	106
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	27	28	26	26	26	27	27	361	631
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	87	208	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	178	238
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	142	132	114	154	145	95	563	84	95	743	201	204	965	265	918	75	88		
	Annual Additions, Short Term Resources	650	709	845	962	1,083	1,190	1,308	1,405	1,177	1,315	1,409	1,435	1,400	1,415	1,425	1,438	1,370	1,314	1,364	1,472		
	Total Annual Additions	790	1,485	966	1,104	1,215	1,304	1,462	1,550	1,272	1,878	1,493	1,530	2,143	1,616	1,629	2,403	1,635	2,232	1,439	1,560		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-1 Case C-17		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	423	423	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	440	-	-	-	-	-	-	-	-	-	-	600	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	3	-	-	-	-	-	203
	Total Wind	-	-	-	70	47	30	13	-	-	440	-	200	-	-	-	3	-	-	-	-	600	803
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	84	-	91
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	10	-	2	-	21
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	9	22	7	87	-	128
	DSM, Class 2, ID	3	3	3	4	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	33	61
	DSM, Class 2, UT	68	61	57	55	53	51	48	44	44	42	31	34	31	29	28	27	25	23	22	21	523	793
	DSM, Class 2, WY	4	4	5	5	6	7	7	7	7	8	7	7	7	7	8	7	7	7	8	8	60	133
	DSM, Class 2 Total	74	68	64	64	63	62	59	55	55	53	41	43	40	40	39	37	35	33	32	32	616	987
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	-	-	227
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	70	-	-	44	92	279	53	145	246	53	273	273	300	7	91
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Wind, WV, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	42
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	42
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	44	3	-	55
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	21
	DSM, Class 2, OR	37	41	34	34	33	31	28	24	24	26	26	26	26	26	26	26	26	26	26	26	312	568
	DSM, Class 2, WA	8	8	8	8	8	7	7	7	7	7	5	5	5	5	5	4	4	3	3	3	74	118
	DSM, Class 2 Total	46	50	43	43	42	39	36	32	32	34	32	32	31	32	32	30	30	30	30	30	397	707
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	163	125	239	292	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	260	279
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	383	400	400	400	331	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	391	396
	FOT MidColumbia Q3 - 2	-	79	97	177	-	30	141	165	3	137	183	163	168	141	177	180	112	186	181	183	83	125
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	146	778	125	195	591	145	122	101	103	544	90	292	88	739	87	823	514	534	130	210		
	Annual Additions, Short Term Resources	646	704	836	969	728	827	938	1,032	800	934	1,024	1,052	1,244	991	1,119	1,223	962	1,256	1,251	1,280		
	Total Annual Additions	792	1,482	961	1,164	1,319	972	1,060	1,133	903	1,478	1,114	1,344	1,332	1,730	1,206	2,046	1,476	1,790	1,381	1,490		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-1 Case C-18

		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	(479)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	846	423	423	-	-	423	2,115
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Nuclear	-	-	-	-	-	-	-	-	-	-	-	-	2,236	-	-	-	-	-	-	-	-	2,236
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	-	-	-	-	105
	Wind, GO, 29	-	-	-	-	-	-	-	-	-	211	212	63	65	49	-	-	-	-	-	-	211	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	-	200
	Total Wind	-	-	-	-	-	-	-	-	-	211	412	63	65	49	-	-	-	-	-	-	211	800
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
	DSM, Class 2, ID	6	6	8	8	7	3	3	3	3	3	1	1	1	2	2	2	1	1	1	1	51	65
	DSM, Class 2, UT	88	81	77	81	80	51	49	43	42	40	14	13	11	12	10	14	11	10	9	8	633	744
	DSM, Class 2, WY	25	25	25	26	26	3	3	3	3	3	3	2	2	2	2	2	2	2	1	1	141	159
	DSM, Class 2 Total	120	112	109	115	114	58	55	48	48	46	18	17	13	15	14	17	15	13	12	10	824	967
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	450	-	-	-	-	-	-	-	450
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.4	13.4	13.4	131	263
	Micro Solar - Water Heating	-	-	-	0.4	0.3	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	-	-	-	41	-	-	53	82	212	53	53	77	217	-	39
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	-	-	-	-	-	-	-	362	-	-	-	-	-	-	-	-	-	-	362
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	30
	Wind, WV, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	300
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	300
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	16	22
	DSM, Class 2, OR	41	44	40	38	34	31	28	25	23	23	22	21	21	21	21	21	21	21	21	21	327	536
	DSM, Class 2, WA	14	14	14	14	14	7	7	6	6	6	2	2	2	3	3	3	2	2	2	2	104	126
	DSM, Class 2 Total	57	60	56	55	51	38	36	33	30	30	25	24	24	24	24	24	24	23	23	23	447	684
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	99	33	-	83	113	201	297	83	-	5	297	274	-	174	297	297	226	253	297	297	91	166
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	-	81	201	206	240	255	271	375	233	375	375	375	210	375	375	375	375	375	375	375	224	291
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	(158)	-	-	(261)	-	(1,413)	(416)	-	(834)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	203	832	183	187	183	111	106	519	95	304	471	255	2,355	555	54	1,204	478	476	52	53		
	Annual Additions, Short Term Resources	599	614	701	789	853	956	1,068	958	733	880	1,213	1,149	710	1,102	1,254	1,384	1,154	1,181	1,249	1,389		
	Total Annual Additions	802	1,446	884	976	1,036	1,067	1,174	1,477	828	1,184	1,684	1,404	3,065	1,657	1,308	2,588	1,632	1,657	1,301	1,442		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

Table K.8 – Energy Gateway Scenario 2 – Case C-01 to C-19

	EG-2 Case C-01	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	3.6	7.6
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	4	-	-	43	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	0	-	-	46	-	-	35	-	-	76	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	31	31	581	937
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	169	263	67	262	282	68	242	298	245	295	300	65	149
West	**Expansion Resources**																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	8	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	14
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	57	-	-	8	-	-	37	-	101
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	22	22	22	22	26	284	509
	DSM, Class 2, WA	8	7	7	7	8	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	106
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	27	26	26	26	26	30	361	632
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	104	100	95	96	97	84	747	82	184	504	739	118	916	74	213		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,341	1,435	1,239	1,434	1,454	1,240	1,414	1,470	1,417	1,467	1,472		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,317	1,431	1,523	1,295	1,438	1,519	1,986	1,516	1,638	1,744	2,153	1,588	2,333	1,541	1,685		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case C-02		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	46	29	13	-	-	44	-	-	-	-	-	-	-	-	-	-	202	202
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	544	-	-	-	-	-	-	-	-	544
	Total Wind	-	-	-	70	46	29	13	-	-	44	-	-	544	-	-	-	-	-	-	22	202	768
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	81	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	3	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	131	-	-	7	11	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	31	30	581	938
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	39	157	254	26	169	263	67	258	300	256	299	240	266	299	242	65	157
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	203	-	181	-	-	-	-	384
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	1	-	-	7	9	-	88
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	21	23	22	22	22	22	22	22	22	26	26	281	510
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	106
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	27	28	27	27	28	28	26	26	26	30	30	359	634
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	187	159	133	113	95	96	139	84	747	626	162	284	870	256	826	91	299		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,211	1,329	1,426	1,198	1,341	1,435	1,239	1,430	1,472	1,428	1,471	1,412	1,438	1,471	1,414		
	Total Annual Additions	790	1,485	966	1,171	1,263	1,344	1,442	1,521	1,294	1,480	1,519	1,986	2,056	1,634	1,712	2,341	1,668	2,264	1,562	1,713		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case C-03		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	661	-	-	-	1,983
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	37	-	-	-	-	-	54	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	1	-	-	37	-	-	-	-	31	87	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	47	45	43	42	40	30	33	30	28	27	25	23	22	21	20	494	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	55	55	52	52	51	39	42	39	38	37	35	33	32	31	30	580	936
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	40	158	255	27	170	263	64	258	300	278	105	204	300	297	179	65	145
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	197
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	8	-	0	-	16
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	22	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	-	-	8	22	3	-	75
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	20	23	22	22	22	19	22	22	22	22	26	280	502
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	26	27	28	27	27	28	24	26	26	26	26	30	358	625
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	375	400	399
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	190	147	136	114	95	95	140	90	1,115	364	161	258	1,161	75	743	127	386		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,212	1,330	1,427	1,199	1,342	1,435	1,236	1,430	1,472	1,450	1,277	1,376	1,472	1,469	1,326		
	Total Annual Additions	790	1,485	966	1,174	1,251	1,348	1,444	1,522	1,294	1,482	1,525	2,351	1,794	1,633	1,708	2,438	1,451	2,215	1,596	1,712		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-04	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	-	661	661	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	423	-	846	411	-	-	-	-	423	-	423	-	-	1,269	2,526
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	27	47
	DSM, Class 2, UT	63	55	50	47	45	43	41	36	36	35	27	26	29	27	26	25	23	22	21	20	452	698
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	6	7	7	7	7	7	7	54	121
	DSM, Class 2 Total	68	62	58	55	54	52	49	45	45	45	35	34	37	36	35	33	32	31	30	29	533	865
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	187	76	189	-	131	149	203	17	63	255	38	40	40	91	104	157	282	105	107
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	35	38	33	32	29	26	22	19	17	17	17	17	17	18	18	18	18	18	19	19	268	449
	DSM, Class 2, WA	7	7	7	7	7	5	6	6	6	6	4	4	4	4	4	3	3	3	3	3	62	98
	DSM, Class 2 Total	43	46	40	40	37	32	28	25	24	24	22	22	22	23	23	22	22	22	22	22	340	564
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	38	66	342	297	297	297	284	297	297	297	297	292	297	-	206	245	297	297	297	297	251	252
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	23	100	100	100	100	100	100	96
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	152	272	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	346
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(1,084)	(269)	(682)	(442)	-	-	-	-	(434)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	138	768	116	112	770	98	753	1,171	86	931	908	72	75	812	75	495	71	492	69	68		
	Annual Additions, Short Term Resources	652	718	1,226	1,359	1,248	1,361	1,159	1,303	1,321	1,375	1,189	1,230	1,427	913	1,044	1,160	1,263	1,276	1,329	1,454		
	Total Annual Additions	790	1,486	1,342	1,471	2,018	1,459	1,912	2,474	1,407	2,306	2,097	1,302	1,502	1,725	1,119	1,655	1,334	1,768	1,398	1,522		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case C-05		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	-	661	661	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	423	-	846	822	-	-	-	-	423	-	-	-	-	1,269	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	14	-	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	14	-	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	27	47
	DSM, Class 2, UT	63	55	50	47	45	43	41	36	36	35	26	26	23	27	26	25	23	22	21	20	452	691
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	6	7	7	7	7	7	7	54	121
	DSM, Class 2 Total	68	62	58	55	54	52	49	45	45	45	34	34	31	36	35	33	31	30	30	29	533	858
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	186	75	188	-	130	147	202	25	63	40	43	175	40	45	114	167	293	104	102
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	35	38	33	32	29	26	22	19	17	17	17	17	17	16	18	18	18	18	19	19	268	447
	DSM, Class 2, WA	7	7	7	7	7	5	6	6	6	6	4	4	4	4	4	3	3	3	3	3	62	98
	DSM, Class 2 Total	43	46	40	40	37	32	28	25	24	24	22	22	22	21	23	22	22	22	22	22	340	561
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	38	66	342	297	297	297	283	297	297	297	297	297	174	297	297	-	7	297	297	297	251	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	8	100	100	100	100	100	95
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	152	272	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	346
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(1,084)	(269)	(682)	(442)	-	-	-	-	(434)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	138	768	116	185	805	132	767	1,171	86	977	901	504	710	74	75	1,231	70	69	69	68		
	Annual Additions, Short Term Resources	652	718	1,226	1,358	1,247	1,360	1,158	1,302	1,319	1,374	1,197	1,235	1,089	1,215	1,347	823	927	1,286	1,339	1,465		
	Total Annual Additions	790	1,486	1,342	1,543	2,052	1,492	1,925	2,473	1,405	2,351	2,098	1,739	1,799	1,289	1,422	2,054	997	1,355	1,408	1,533		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case C-06	Capacity (MW)																				Resource Totals 1/	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	-	-	-	-	661
CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	834	-	-	-	1,680
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1	-	9
DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	47	-	91
DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0
DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	2	-	12
DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	63	50	-	114
DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	31	59
DSM, Class 2, UT	67	61	54	52	50	48	48	43	42	40	30	33	30	28	27	26	24	22	21	20	505	765
DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	8	56	128
DSM, Class 2 Total	73	67	61	60	59	57	58	53	52	51	39	43	39	38	37	36	34	32	32	31	592	953
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	-	-	-	33	147	243	13	154	249	-	40	40	155	204	300	292	276	299	59	122
West																						
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	46
DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	47	-	49
DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
DSM, Class 2, OR	37	41	33	32	29	28	24	21	23	23	23	22	23	23	23	23	26	23	26	26	291	529
DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	113
DSM, Class 2 Total	45	49	42	41	38	35	32	28	30	30	29	28	29	29	29	28	30	27	30	30	372	660
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	127	126	243	258	297	297	297	297	297	297	297	7	160	280	297	297	297	297	297	297	254	253
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOT MidColumbia Q3 - 2	19	79	98	221	302	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
Annual Additions, Long Term Resources	145	777	121	119	116	107	105	96	99	98	85	748	86	84	83	929	80	910	141	174		
Annual Additions, Short Term Resources	646	705	841	979	1,099	1,205	1,319	1,415	1,185	1,326	1,421	882	1,075	1,195	1,327	1,376	1,472	1,464	1,448	1,471		
Total Annual Additions	791	1,482	962	1,098	1,215	1,312	1,424	1,511	1,284	1,424	1,506	1,630	1,161	1,279	1,410	2,305	1,552	2,374	1,589	1,645		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-07	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	423	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	14	-	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	14	-	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	77	-	-	-	-	-	88
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	108	-	-	-	-	-	121
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	31	59
	DSM, Class 2, UT	63	61	54	52	50	48	48	43	42	40	30	33	30	28	27	25	24	22	21	20	500	759
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	7	56	126
	DSM, Class 2 Total	69	67	61	60	59	57	58	52	52	51	39	42	39	38	37	35	34	32	31	30	587	944
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	36	150	246	18	159	253	-	131	252	299	204	300	59	109	74	61	115
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	23	23	22	22	23	23	26	26	19	22	22	288	516
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	112
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	30	28	28	28	29	29	30	30	23	26	26	368	646
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	130	247	268	297	297	297	297	297	297	297	235	297	297	297	297	297	297	297	297	256	273
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	214	305	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	777	121	191	151	140	118	95	96	144	90	942	301	84	168	1,032	80	1,155	73	254		
	Annual Additions, Short Term Resources	650	709	845	982	1,102	1,208	1,322	1,418	1,190	1,331	1,425	1,110	1,303	1,424	1,471	1,376	1,472	1,231	1,281	1,246		
	Total Annual Additions	791	1,486	966	1,173	1,253	1,348	1,440	1,513	1,286	1,475	1,515	2,052	1,604	1,508	1,639	2,408	1,552	2,386	1,354	1,500		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	Preferred Portfolio (EG-2 Case-07a)	Capacity (MW)																				**Resource Totals 1/**	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	**10-year**	**20-year**
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	423	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88	-	-	-	-	88
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	19	-	-	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	19	88	-	-	-	-	121
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	31	59
	DSM, Class 2, UT	63	61	54	52	50	48	48	43	42	40	30	33	30	28	27	26	24	22	21	20	500	760
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	7	56	127
	DSM, Class 2 Total	69	67	61	60	59	57	58	52	52	51	39	42	39	38	37	36	34	32	31	30	587	946
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	37	151	248	19	161	255	-	132	253	297	292	300	59	109	74	62	119
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	23	23	22	22	23	26	26	24	19	22	22	288	517
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	112
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	30	28	28	28	29	32	30	29	23	26	26	368	647
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	130	247	262	297	297	297	297	297	297	297	237	297	297	297	297	297	297	297	297	255	273
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	221	305	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	260	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	777	121	119	116	106	104	95	96	98	84	942	302	84	171	944	167	1,155	73	254		
	Annual Additions, Short Term Resources	650	709	845	983	1,102	1,209	1,323	1,420	1,191	1,333	1,427	1,112	1,304	1,425	1,469	1,464	1,472	1,231	1,281	1,246		
	Total Annual Additions	791	1,486	966	1,102	1,218	1,315	1,427	1,515	1,287	1,431	1,511	2,054	1,606	1,509	1,640	2,408	1,639	2,386	1,354	1,500		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-08	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT F 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	634	-	-	-	-	-	-	-	634
	CCCT FD 2x1	-	-	-	-	661	1,322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT J 1x1	-	-	-	-	-	-	423	846	411	411	-	-	-	-	-	423	-	423	-	-	2,091	2,937
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	28	56
	DSM, Class 2, UT	63	56	54	51	49	47	44	40	40	40	30	33	30	28	27	25	23	22	21	20	484	742
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	53	49	50	51	39	42	39	38	37	35	33	32	31	30	567	922
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	109	175	60	65	85	215	-	-	-	13	207	34	33	40	119	127	177	299	71	88
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	18
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	20	19	20	19	19	19	22	22	22	22	22	23	277	488
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	67	103
	DSM, Class 2 Total	45	49	41	41	38	33	29	26	26	26	25	24	24	24	27	26	26	26	26	27	354	609
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	297	297	144	48	278	297	297	145	272	297	297	297	297	297	212	245
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	-	100	100	100	-	-	80	100	100	100	100	90	84
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(1,173)	(279)	(816)	(220)	-	(268)	-	-	-	-	(434)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	120	117	774	1,425	519	937	504	505	81	83	79	712	80	501	76	497	74	74		
	Annual Additions, Short Term Resources	651	714	1,219	1,347	1,232	1,237	1,257	1,387	1,019	823	1,153	1,185	1,379	954	1,080	1,192	1,291	1,299	1,349	1,471		
	Total Annual Additions	791	1,485	1,339	1,464	2,006	2,662	1,776	2,324	1,523	1,328	1,234	1,268	1,458	1,666	1,160	1,693	1,367	1,796	1,423	1,545		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-09	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_UT - Gas RePower	-	-	-	-	-	-	468	-	-	-	-	-	-	-	-	-	-	-	-	-	468	468
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	661	661	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	834	411	-	423	-	423	-	-	423	-	-	-	-	1,245	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	14	-	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	14	-	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	28	56
	DSM, Class 2, UT	63	56	54	51	49	47	44	40	40	39	30	33	30	28	27	25	23	22	21	20	482	741
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	53	49	50	50	39	42	39	38	37	35	33	32	31	30	566	921
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	109	175	60	231	17	157	80	221	205	234	79	40	40	40	45	40	61	61	105	95
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	18
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	18	19	20	19	19	19	22	19	22	22	22	23	276	483
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	67	103
	DSM, Class 2 Total	45	49	41	41	38	33	29	26	24	26	25	24	24	24	27	23	26	26	26	27	352	604
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	297	297	297	297	297	297	297	114	240	64	158	-	-	29	252	201
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-	7	100	100	90
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	354	375	375	316	344
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(714)	(270)	(816)	(548)	-	(268)	-	-	-	-	(106)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	120	190	809	798	771	925	502	139	509	515	720	501	80	497	76	810	74	74		
	Annual Additions, Short Term Resources	651	714	1,219	1,347	1,232	1,403	1,189	1,329	1,252	1,393	1,377	1,406	1,251	1,029	1,155	979	1,078	794	843	965		
	Total Annual Additions	791	1,485	1,339	1,537	2,041	2,201	1,960	2,254	1,754	1,532	1,886	1,921	1,971	1,530	1,235	1,476	1,154	1,604	917	1,039		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case C-10		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	-	368
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	ICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	-	-	-	-	103
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	-	-	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	-	-	-	-	-	172
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.7	0.4	0.4	0.7	2.6	0.7	0.4	3.6	10.3
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	4	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	3	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	13	10	-	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	102	32	-	-	-	7	-	10	-	152
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	3	3	3	3	3	3	3	2	31	58
	DSM, Class 2, UT	67	61	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	504	763
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	7	7	8	7	7	7	7	8	56	128
	DSM, Class 2 Total	73	67	61	59	58	57	58	52	52	51	40	43	39	38	37	35	33	32	31	30	591	950
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	34	148	244	14	155	249	263	296	298	273	298	298	232	279	300	60	169
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	0.3
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	8	8	-	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	6	-	-	-	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	19	53	7	-	-	6	-	-	3	-	87
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	26	24	22	23	23	23	22	24	26	22	22	26	26	26	26	290	532
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	4	5	5	4	3	4	3	3	3	69	109
	DSM, Class 2 Total	45	49	41	41	38	34	31	29	30	30	28	27	30	32	28	26	30	30	30	30	368	659
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	104	224	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	181	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	146	205	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	332	353
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	118	115	105	105	96	99	98	85	107	664	217	263	911	189	930	78	457		
	Annual Additions, Short Term Resources	646	705	840	979	1,099	1,206	1,320	1,416	1,186	1,327	1,421	1,435	1,468	1,470	1,445	1,470	1,470	1,404	1,451	1,472		
	Total Annual Additions	791	1,482	961	1,097	1,214	1,311	1,425	1,512	1,285	1,425	1,506	1,542	2,132	1,687	1,708	2,381	1,659	2,334	1,529	1,929		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-11	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	661	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	14	-	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	14	-	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	4	74	-	-	-	-	-	-	-	77
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	10
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	20	4	74	-	-	-	-	-	-	-	97
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	2	2	2	3	2	2	30	54
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	26	25	23	22	21	20	495	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	55	123
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	35	34	32	32	30	29	581	930
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	39	157	254	26	168	261	263	296	300	40	42	144	251	147	273	64	133
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	1	10	-	44	-	-	-	-	-	-	-	55
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	17
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	21	23	22	22	22	18	18	19	19	18	18	282	483
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	104
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	28	28	27	27	28	23	22	23	23	22	22	359	604
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	122	297	297	297	297	297	182	231
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	190	148	138	114	95	96	142	91	548	485	199	736	733	71	732	249	68		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,211	1,329	1,426	1,198	1,340	1,433	1,435	1,468	1,472	1,037	1,214	1,316	1,423	1,319	1,445		
	Total Annual Additions	790	1,485	966	1,174	1,252	1,349	1,443	1,521	1,294	1,482	1,524	1,983	1,953	1,671	1,773	1,947	1,387	2,155	1,568	1,513		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-12	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	-	-	-	-	661
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	834	-	-	-	1,680
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	47	-	84
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	2	-	21
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	65	50	-	116
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	31	59
	DSM, Class 2, UT	67	61	54	52	50	48	48	43	42	40	30	33	30	28	27	26	24	22	21	20	505	765
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	8	56	128
	DSM, Class 2 Total	73	67	61	60	59	57	58	53	52	51	39	43	39	38	37	36	34	32	32	31	592	953
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	33	147	243	13	154	249	-	40	40	155	204	300	292	274	297	59	122
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	46	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	47	-	49
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	23	23	23	22	23	23	23	23	26	23	26	26	291	529
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	113
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	30	30	29	28	29	29	29	28	30	27	30	30	372	660
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	127	126	243	258	297	297	297	297	297	297	297	6	160	280	297	297	297	297	297	297	254	253
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	221	302	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	119	116	107	105	96	99	98	85	749	85	84	83	929	80	910	143	174		
	Annual Additions, Short Term Resources	646	705	841	979	1,099	1,205	1,319	1,415	1,185	1,326	1,421	881	1,075	1,195	1,327	1,376	1,472	1,464	1,446	1,469		
	Total Annual Additions	791	1,482	962	1,098	1,215	1,312	1,424	1,511	1,284	1,424	1,506	1,630	1,160	1,279	1,410	2,305	1,552	2,374	1,589	1,643		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-13	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	-	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	14	-	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	14	-	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	4	-	-	15
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	42	25	-	-	69
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	32	60
	DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	28	27	25	23	22	22	20	508	768
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	6	7	8	7	7	7	8	7	56	127
	DSM, Class 2 Total	73	67	61	60	59	61	58	53	52	51	40	43	39	38	37	35	33	32	32	30	597	956
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	25	139	234	4	145	238	263	40	40	137	190	288	300	300	265	55	130
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	21	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	46	21	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	31	28	24	23	23	23	23	22	22	22	22	23	24	26	26	22	295	526
	DSM, Class 2, WA	8	8	8	8	8	7	7	6	7	7	5	5	5	5	5	4	4	3	3	3	71	113
	DSM, Class 2 Total	45	49	42	41	40	35	32	31	30	30	29	28	28	28	28	28	28	30	30	26	376	659
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	127	126	242	263	297	297	297	297	297	297	297	297	141	263	297	297	297	297	297	297	254	266
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	97	214	298	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	258	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	192	153	145	119	98	99	144	91	526	962	82	82	925	78	828	125	254		
	Annual Additions, Short Term Resources	646	705	839	977	1,095	1,197	1,311	1,406	1,176	1,317	1,410	1,435	1,056	1,178	1,309	1,362	1,460	1,472	1,472	1,437		
	Total Annual Additions	791	1,482	960	1,169	1,248	1,342	1,430	1,504	1,275	1,461	1,501	1,961	2,018	1,260	1,391	2,287	1,538	2,300	1,597	1,691		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-14	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	-	-	-	-	(416)	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	661	-	-	-	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	423	1,257	423	423	411	-	-	-	423	-	-	-	-	-	2,526	3,360
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	6	6	7	3	3	3	3	3	1	1	1	2	1	1	1	1	1	1	47	60
	DSM, Class 2, UT	84	76	75	73	79	50	47	41	41	39	14	13	11	11	10	13	11	9	8	7	605	713
	DSM, Class 2, WY	24	24	24	25	25	3	3	3	3	2	2	2	1	2	2	2	2	1	1	1	137	154
	DSM, Class 2 Total	114	106	105	104	111	57	54	47	47	45	17	17	13	14	13	16	14	12	11	10	789	928
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	1.2	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	47	152	-	104	219	20	23	-	47	40	40	40	136	40	40	149	54	55
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	-	362	-	-	-	-	-	-	-	-	-	719	1,081
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	15	20
	DSM, Class 2, OR	37	41	34	33	31	28	24	23	21	21	21	20	20	20	20	20	20	20	20	21	293	497
	DSM, Class 2, WA	13	13	13	14	14	6	6	6	6	6	2	2	2	2	2	2	2	2	2	2	97	115
	DSM, Class 2 Total	52	55	49	49	47	35	31	30	28	28	23	22	22	23	23	23	23	23	23	23	405	633
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	54	23	77	297	297	285	297	297	297	297	130	297	282	85	277	297	195	264	297	192	217
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	107	75	200	236	375	375	309	375	375	375	375	375	375	375	375	375	375	375	375	375	280	328
	Existing Plant Retirements/Conversions	-	-	(164)	8	(378)	-	-	(1,258)	(779)	-	(261)	(450)	-	(459)	-	(760)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	193	822	173	243	211	140	537	1,348	514	557	473	1,160	334	715	475	717	54	713	50	71		
	Annual Additions, Short Term Resources	607	629	723	813	1,219	1,324	1,094	1,276	1,391	1,192	1,195	1,005	1,219	1,197	1,000	1,192	1,308	1,110	1,179	1,321		
	Total Annual Additions	800	1,451	896	1,056	1,430	1,464	1,631	2,624	1,905	1,749	1,668	2,165	1,553	1,912	1,475	1,909	1,362	1,823	1,229	1,392		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-15	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	362	-	362	-	-	-	905
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	181	-	-	362
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	343	172	-	-	-	-	515
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	2.7	2.7	2.7	0.4	0.4	3.6	14.7
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	4	-	-	-	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	19	3	-	-	-	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	3	19	-	-	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	1	-	92	37	3	4	-	4	-	-	-	142
	DSM, Class 2, ID	6	6	6	6	6	2	2	2	2	3	1	1	1	2	1	1	1	1	1	1	39	52
	DSM, Class 2, UT	81	74	68	65	63	39	37	37	37	37	12	11	9	10	9	12	11	9	7	6	537	634
	DSM, Class 2, WY	23	23	23	23	24	2	2	2	2	2	2	2	1	2	2	2	2	1	1	1	128	144
	DSM, Class 2 Total	111	103	97	94	92	43	41	41	41	42	16	14	11	13	12	15	14	12	10	9	704	830
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	6	115	-	56	170	230	184	294	292	269	237	300	215	283	18	133
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	-	-	-	-	197
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	15
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	16
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	12	16
	DSM, Class 2, OR	36	41	33	32	29	26	22	19	17	17	18	17	18	17	17	19	19	19	17	17	274	451
	DSM, Class 2, WA	12	12	12	12	12	5	5	5	5	5	2	1	1	1	1	2	1	1	1	1	86	98
	DSM, Class 2 Total	51	55	47	46	43	32	28	24	23	23	20	19	19	19	19	21	21	20	18	18	372	566
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	-	56	175	297	297	197	297	297	297	297	297	297	297	297	297	297	297	132	214
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	135	160	262	371	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	333	366
	FOT MidColumbia Q3 - 2	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	188	818	163	231	188	122	98	80	80	126	58	418	619	86	233	961	225	779	225	156		
	Annual Additions, Short Term Resources	610	635	737	846	931	1,050	1,178	1,287	1,072	1,228	1,342	1,402	1,356	1,466	1,464	1,441	1,409	1,472	1,387	1,455		
	Total Annual Additions	798	1,453	900	1,077	1,119	1,172	1,276	1,367	1,152	1,354	1,400	1,820	1,975	1,552	1,697	2,402	1,634	2,251	1,612	1,611		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case C-16		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	-	-	115	-	-	-	-	-	-	-	115
	Wind, GO, 29	-	-	-	-	63	-	-	-	-	63	-	-	-	-	-	-	-	-	-	-	126	126
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	446	-	-	-	-	-	-	-	-	446
	Total Wind	-	-	-	-	63	-	-	-	-	63	-	-	446	-	-	-	-	-	-	-	126	572
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	-	-	81	-	-	-	-	-	-	85
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	4	0	-	89	-	-	-	-	-	-	93
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	3	3	3	2	2	2	2	2	31	55
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	56	124
	DSM, Class 2 Total	69	67	61	59	57	57	55	52	52	51	39	42	39	38	37	33	31	30	30	29	582	932
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	16	135	232	3	144	236	263	293	300	300	40	40	116	170	296	53	129
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	25	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	25	30
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	3	4	4	8	44	-	-	-	-	-	-	63
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	18	18	18	18	18	283	487
	DSM, Class 2, WA	8	7	7	7	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	28	22	22	22	22	22	361	610
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	87	207	297	297	297	297	297	297	297	297	297	297	163	266	297	297	297	178	229
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	142	177	105	100	95	96	161	87	94	714	210	214	1,394	70	730	68	68		
	Annual Additions, Short Term Resources	650	709	845	962	1,082	1,188	1,307	1,404	1,175	1,316	1,408	1,435	1,465	1,472	1,472	1,078	1,181	1,288	1,342	1,468		
	Total Annual Additions	790	1,485	966	1,104	1,259	1,293	1,407	1,499	1,271	1,477	1,495	1,529	2,179	1,682	1,686	2,472	1,251	2,018	1,410	1,536		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-17	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	846	-	-	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	4	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	33	62
	DSM, Class 2, UT	68	61	57	55	53	51	48	44	44	42	31	34	30	29	27	26	24	22	21	20	523	788
	DSM, Class 2, WY	4	4	5	5	6	6	7	7	7	8	7	7	7	7	8	7	7	7	7	8	59	132
	DSM, Class 2 Total	74	68	64	64	63	61	59	55	55	53	41	43	40	39	38	36	34	32	32	31	615	981
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	70	-	-	53	103	288	54	180	228	300	53	53	53	7	72
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	20
	DSM, Class 2, OR	37	41	34	34	33	31	27	24	24	24	24	23	25	26	26	26	26	23	26	26	308	558
	DSM, Class 2, WA	8	8	8	8	8	7	7	7	7	7	5	5	5	5	5	4	4	3	3	3	74	118
	DSM, Class 2 Total	46	50	43	43	42	39	35	32	32	32	30	29	31	32	32	30	30	28	30	30	393	695
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	163	125	239	291	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	260	279
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	383	400	400	400	331	400	400	400	400	400	400	400	400	400	400	400	400	379	400	400	391	395
	FOT MidColumbia Q3 - 2	-	79	97	178	-	31	143	166	4	143	183	163	168	174	177	180	202	-	26	145	84	113
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	146	778	125	198	578	147	122	101	103	147	92	457	369	510	86	929	81	1,399	78	99		
	Annual Additions, Short Term Resources	646	704	836	969	728	828	940	1,033	801	940	1,033	1,063	1,253	1,025	1,154	1,205	1,299	829	876	995		
	Total Annual Additions	792	1,482	961	1,167	1,306	975	1,062	1,134	904	1,087	1,125	1,520	1,622	1,535	1,240	2,134	1,380	2,228	954	1,094		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case C-18	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	(479)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	WY IGCC CCS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	456	-	456
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	846	411	-	-	2,103
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Nuclear	-	-	-	-	-	-	-	-	-	-	-	-	2,236	-	-	-	-	-	-	-	-	2,236
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	-	-	-	-	105
	Wind, GO, 29	-	-	-	-	-	-	-	-	-	-	393	63	84	59	-	-	-	-	-	-	-	599
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	-	200
	Wind, Wyoming, 40	-	-	-	-	-	-	-	650	-	-	-	-	-	-	-	-	-	-	-	-	650	650
	Total Wind	-	-	-	-	-	-	-	650	-	-	593	63	84	59	-	-	-	-	-	-	650	1,449
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	8	8	7	3	3	3	3	3	1	1	1	2	2	2	1	1	1	1	51	65
	DSM, Class 2, UT	88	81	77	81	80	51	49	43	42	40	14	13	11	12	10	14	11	10	9	8	633	743
	DSM, Class 2, WY	25	25	25	26	26	3	3	3	3	3	3	2	2	2	2	2	2	2	1	1	141	159
	DSM, Class 2 Total	120	112	109	115	114	58	55	48	48	46	18	17	13	15	14	17	15	13	12	10	824	967
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	450	-	-	-	-	-	-	-	450
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.4	13.4	13.4	131	263
	Micro Solar - Water Heating	-	-	-	0.4	0.3	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	-	-	-	6	180	-	53	103	168	284	285	82	53	-	61
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	-	-	-	-	-	-	-	362	-	-	-	-	-	-	-	-	-	-	362
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	30
	Wind, WV, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	300
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	300
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	16	22
	DSM, Class 2, OR	41	44	40	38	34	31	28	25	23	23	22	21	21	21	21	21	21	21	21	21	327	535
	DSM, Class 2, WA	14	14	14	14	14	7	7	6	6	6	2	2	2	3	3	3	2	2	2	2	104	127
	DSM, Class 2 Total	57	60	56	55	51	38	36	33	30	30	25	24	24	24	24	24	24	23	23	23	447	684
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	99	33	-	83	113	201	297	286	60	210	297	297	-	195	297	297	297	297	297	65	138	186
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	-	81	201	206	240	255	271	375	375	375	375	375	210	375	375	375	375	375	375	375	238	298
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	8	(269)	(1,208)	(416)	-	(760)	-	(701)	(148)	-		
	Annual Additions, Long Term Resources	203	832	183	187	183	111	106	746	95	93	652	255	2,374	565	54	1,204	55	899	462	506		
	Annual Additions, Short Term Resources	599	614	701	789	853	956	1,068	1,161	935	1,085	1,178	1,352	710	1,123	1,275	1,340	1,456	1,457	1,254	993		
	Total Annual Additions	802	1,446	884	976	1,036	1,067	1,174	1,907	1,030	1,178	1,830	1,607	3,084	1,688	1,329	2,544	1,511	2,356	1,716	1,499		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case C-19	Capacity (MW)																				Resource Totals 1/	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	736
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	181	-	-	-	362
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	22	-	38
Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	16	-	-	-	-	22	199	892
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1
DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	7	77	-	-	-	-	3	-	88
DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	4	-	8
DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	0	0
DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	10	-	3	9	-	-	-	-	2	-	25
DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0	-	0
DSM, Class 1 Total	-	-	-	-	-	-	-	1	-	-	0	10	-	11	99	-	-	-	-	11	1	131
DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	32	60
DSM, Class 2, UT	67	61	54	51	50	51	48	43	42	40	30	33	30	28	27	25	23	22	21	20	507	766
DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	56	126
DSM, Class 2 Total	73	67	61	59	59	61	58	52	52	51	39	42	39	38	37	35	33	32	31	30	595	952
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	-	1.1	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	-	-	-	29	143	237	8	149	241	255	217	268	300	253	196	142	192	300	57	147
West																						
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	0	-	16
DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	0	-	2
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	3	8	-	60	1	-	-	-	-	3	-	75
DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
DSM, Class 2, OR	37	41	33	32	29	26	24	23	20	23	23	22	22	22	22	19	20	22	22	23	289	506
DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	69	106
DSM, Class 2 Total	45	49	41	41	38	34	32	30	27	30	28	27	27	28	28	23	24	26	26	27	367	630
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	-	-	-	103	223	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	181	239
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOT MidColumbia Q3 - 2	146	205	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	332	353
Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
Annual Additions, Long Term Resources	145	777	121	191	149	143	118	99	96	143	92	472	1,025	153	197	991	254	916	74	110		
Annual Additions, Short Term Resources	646	705	840	978	1,098	1,201	1,315	1,409	1,180	1,321	1,413	1,427	1,389	1,440	1,472	1,425	1,368	1,314	1,364	1,472		
Total Annual Additions	791	1,482	961	1,169	1,247	1,344	1,433	1,508	1,276	1,464	1,505	1,899	2,414	1,593	1,669	2,416	1,622	2,230	1,438	1,582		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

Table K.9 – Energy Gateway Scenario 3 – Case C-01 to C-19

EG-3 Case C-01		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	-	-	-	91
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	-	-	-	-	-	172
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	7.9	7.9	7.9	7.9	-	39.5
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.8	2.7	2.7	2.7	2.7	2.7	2.7	3.7	3.7	3.6	28.4
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	4	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	15	3	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	13	10	-	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	106	13	-	-	23	3	1	11	-	158
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	33	61
	DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	29	28	27	25	23	23	21	508	777
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	8	7	7	7	7	8	7	7	8	8	8	57	131
	DSM, Class 2 Total	73	67	61	61	59	61	58	53	52	52	40	43	40	39	38	37	35	34	33	32	597	969
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	27	140	235	4	145	239	263	298	300	269	279	300	300	300	300	55	170
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	IC Aero WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	-	99	-	198
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	5	-	40
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	2.3	2.3	2.3	2.3	-	11.6
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	-	2.7
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	21	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	2	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	6	44	22	-	-	39	-	1	5	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	20
	DSM, Class 2, OR	37	41	33	32	29	28	27	23	23	23	23	26	26	26	26	26	26	26	26	26	296	549
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	5	5	5	5	4	4	4	4	3	69	112
	DSM, Class 2 Total	46	49	41	41	38	35	34	30	30	30	28	32	31	32	32	31	30	30	31	30	375	682
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	102	222	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	181	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	146	204	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	332	353
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	119	115	111	108	98	99	98	85	98	664	217	270	930	156	857	132	290		
	Annual Additions, Short Term Resources	646	704	840	977	1,097	1,199	1,312	1,407	1,176	1,317	1,411	1,435	1,470	1,472	1,441	1,451	1,472	1,472	1,472	1,472		
	Total Annual Additions	791	1,481	961	1,096	1,212	1,310	1,420	1,505	1,275	1,415	1,496	1,533	2,134	1,689	1,711	2,381	1,628	2,329	1,604	1,762		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-02	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	661	-	-	-	1,983
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	-	-	-	-	-	368
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	22	15	-	-	48	-	-	-	-	-	-	-	-	-	-	202	202
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	540	-	-	-	-	-	-	-	-	540
	Total Wind	-	-	-	70	47	22	15	-	-	48	-	-	540	-	-	-	-	-	-	-	202	742
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	4	-	-	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	-	-	85
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	6	111	-	24	-	-	-	-	-	-	141
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	2	2	2	2	2	30	53
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	21	21	20	495	752
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	55	123
	DSM, Class 2 Total	69	67	61	59	57	56	54	52	52	51	39	42	39	38	37	33	31	30	30	29	580	928
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	39	158	255	27	168	262	263	300	191	300	172	273	40	61	167	65	134
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	5	-	40
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	28	44	-	-	-	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	17
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	22	23	22	22	22	22	18	18	18	18	18	283	486
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	104
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	29	28	27	26	27	27	22	22	22	22	22	361	608
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	297	297	290	297	297	182	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	(387)	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	187	160	126	114	95	96	145	84	120	777	742	104	1,101	70	1,153	103	151		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,211	1,330	1,427	1,199	1,340	1,434	1,435	1,472	1,363	1,472	1,344	1,445	1,205	1,233	1,339		
	Total Annual Additions	790	1,485	966	1,171	1,264	1,337	1,444	1,522	1,295	1,485	1,518	1,555	2,249	2,105	1,576	2,445	1,515	2,358	1,336	1,490		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-03	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	1,322	-	-	-	-	-	1,983
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	74	35	33	12	-	-	44	4	-	-	-	-	-	-	-	-	-	198	202
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	398	236	-	-	-	-	-	-	-	-	634
	Total Wind	-	-	-	74	35	33	12	-	-	44	4	398	236	-	-	-	-	-	-	-	198	836
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	77	-	-	-	-	7	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	10	-	-	13	-	-	-	-	2	-	25
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	11	-	16	111	-	-	-	-	14	-	153
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	2	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	34	33	32	31	30	581	935
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	39	157	254	26	168	262	263	226	300	300	40	40	181	200	300	64	138
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	78	-	92
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	78	-	92
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	5	-	40
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	8	-	8	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	22	21	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	20	-	31	21	-	-	-	-	3	-	75
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	22	23	22	22	22	22	18	19	19	22	22	283	494
	DSM, Class 2, WA	8	7	7	7	8	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	29	28	27	27	28	28	22	22	23	26	26	361	617
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	162	264	297	297	297	182	231
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	191	148	137	112	95	96	141	88	515	979	143	214	1,395	72	675	108	173		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,211	1,329	1,426	1,198	1,340	1,434	1,435	1,398	1,472	1,472	1,077	1,179	1,353	1,372	1,472		
	Total Annual Additions	790	1,485	966	1,175	1,252	1,348	1,441	1,521	1,294	1,481	1,522	1,950	2,377	1,615	1,686	2,472	1,251	2,028	1,480	1,645		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-04	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	-	-	1,322	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	736	-	-	-	-	-	-	-	-	-	-	736	-	-	736	1,472
	CCCT J 1x1	-	-	-	-	-	-	-	-	846	834	-	-	-	423	-	-	-	-	-	-	1,680	2,103
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	4
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	4	-	-	-	-	-	41
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	3
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	8	-	40	4	-	-	-	-	-	52
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	2	2	2	29	54
	DSM, Class 2, UT	63	55	51	48	49	47	44	40	41	40	30	33	30	28	27	26	25	22	21	20	477	739
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	7	55	123
	DSM, Class 2 Total	68	62	58	56	57	55	53	49	51	51	39	42	39	38	37	36	34	31	30	29	561	916
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	182	68	177	-	-	-	-	67	97	281	54	137	205	300	40	73	199	54	100
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	18
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	20	20	23	22	22	22	26	26	26	18	19	19	277	500
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	66	103
	DSM, Class 2 Total	45	48	41	40	38	33	29	26	26	27	28	27	27	27	31	30	30	22	23	22	353	620
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	202	116	122	273	297	297	297	297	297	297	297	277	297	297	205	250
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(1,084)	(1,047)	(788)	8	-	-	-	-	-	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	117	113	774	103	832	1,413	940	928	84	86	90	507	124	86	81	805	69	68		
	Annual Additions, Short Term Resources	651	714	1,222	1,354	1,240	1,349	1,077	991	997	1,148	1,239	1,269	1,453	1,226	1,309	1,377	1,472	1,192	1,245	1,371		
	Total Annual Additions	791	1,485	1,339	1,467	2,014	1,452	1,909	2,404	1,937	2,076	1,323	1,355	1,543	1,733	1,433	1,463	1,553	1,997	1,314	1,439		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-05	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	661	1,322	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	736	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	736	1,472
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	846	822	-	423	-	-	-	-	-	-	-	846	2,091
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4	-	-	-	-	-	7
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	4	-	-	-	3	-	-	-	-	-	-	7
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	3
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	4	8	3	-	3	4	-	-	-	-	-	22
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	55	54	51	49	47	45	43	42	40	30	33	30	28	28	28	25	22	21	20	489	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	54	52	52	51	39	42	39	38	38	37	35	32	31	30	574	935
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	109	175	-	102	-	-	199	244	55	74	40	40	141	206	300	61	71	196	83	101
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2	2	-	-	-	-	-	12
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	19
	DSM, Class 2, OR	36	40	33	32	29	26	22	21	20	23	23	22	23	26	26	26	26	18	19	19	283	510
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	5	5	4	4	3	3	3	67	107
	DSM, Class 2 Total	45	49	41	41	38	33	29	28	27	30	28	27	28	32	32	31	30	22	23	22	359	635
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	291	297	192	102	297	297	297	297	170	281	297	297	297	255	297	297	222	250
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(1,084)	(703)	(682)	(442)	-	-	-	-	-	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	120	190	884	137	772	1,419	96	989	916	526	727	94	92	90	82	806	70	70		
	Annual Additions, Short Term Resources	651	714	1,219	1,347	1,166	1,274	1,067	977	1,371	1,416	1,227	1,246	1,085	1,196	1,313	1,378	1,472	1,191	1,243	1,368		
	Total Annual Additions	791	1,485	1,339	1,537	2,050	1,411	1,839	2,396	1,467	2,405	2,143	1,772	1,812	1,290	1,405	1,468	1,554	1,997	1,313	1,438		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-3 Case C-06		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	423	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	2	3	3	3	3	3	3	3	32	59
	DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	28	27	25	23	22	21	20	508	767
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	6	7	7	7	7	7	7	7	56	126
	DSM, Class 2 Total	73	67	61	60	59	61	58	53	52	51	40	43	38	38	37	35	33	32	31	30	596	952
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	28	142	237	6	148	241	263	40	40	147	201	300	59	109	232	56	110
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	11
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	31	28	24	23	23	23	23	22	19	19	19	22	22	19	22	22	295	504
	DSM, Class 2, WA	8	8	8	8	8	7	7	6	7	7	5	5	5	5	5	3	3	3	3	3	71	110
	DSM, Class 2 Total	45	49	42	41	40	35	32	31	30	30	29	28	25	24	24	26	26	23	26	26	376	632
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	127	126	243	258	297	297	297	297	297	297	297	297	145	269	297	297	297	297	297	297	254	266
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	220	300	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	119	117	111	105	98	99	98	85	100	740	79	78	923	76	1,155	73	73		
	Annual Additions, Short Term Resources	646	705	841	978	1,097	1,200	1,314	1,409	1,178	1,320	1,413	1,435	1,060	1,184	1,319	1,373	1,472	1,231	1,281	1,404		
	Total Annual Additions	791	1,482	962	1,097	1,214	1,311	1,419	1,507	1,277	1,418	1,498	1,535	1,800	1,263	1,397	2,296	1,548	2,386	1,354	1,477		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-07	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	-	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	423	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	14	-	-	664
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	14	-	202	872
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	40	-	-	51
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	27	44	-	-	87
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
	DSM, Class 2, UT	63	61	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	499	759
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	7	56	127
	DSM, Class 2 Total	69	67	61	59	59	57	57	52	52	51	39	42	39	38	37	35	33	32	32	30	586	945
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	36	151	248	19	162	257	-	134	255	298	40	40	297	300	277	62	126
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	22	22	22	23	22	23	26	26	22	285	516
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	112
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	28	28	28	29	27	28	30	30	26	365	646
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	130	247	268	297	297	297	297	297	297	297	238	297	297	297	156	254	297	297	297	256	264
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	215	305	375	375	375	375	375	375	375	375	375	375	375	375	375	375	166	259	307
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	777	121	191	151	140	117	96	96	141	90	942	302	83	172	1,400	77	528	136	493		
	Annual Additions, Short Term Resources	650	709	845	983	1,102	1,208	1,323	1,420	1,191	1,334	1,429	1,113	1,306	1,427	1,470	1,071	1,169	1,469	1,472	1,240		
	Total Annual Additions	791	1,486	966	1,174	1,253	1,348	1,440	1,516	1,287	1,475	1,519	2,055	1,608	1,510	1,642	2,471	1,246	1,997	1,608	1,733		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-08	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	1,322	661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	736	-	-	-	1,472
	CCCT J 1x1	-	-	-	-	-	-	423	846	411	-	-	-	-	-	411	-	-	-	-	-	1,680	2,091
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	27	54
	DSM, Class 2, UT	63	55	50	48	45	43	41	38	39	39	30	32	30	28	27	25	23	22	21	20	462	719
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	8	55	123
	DSM, Class 2 Total	68	62	58	56	54	52	49	47	49	49	38	41	38	38	37	35	33	32	31	30	543	896
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	185	-	176	18	150	75	219	-	-	142	265	57	132	231	129	178	300	94	118
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	35	40	33	32	29	26	22	19	17	17	17	19	19	19	19	22	22	22	22	23	271	475
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	63	100
	DSM, Class 2 Total	43	48	40	40	37	33	29	25	24	24	22	24	24	24	24	26	26	26	26	27	343	592
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	38	65	342	297	196	297	297	297	297	297	211	245	297	297	297	297	297	297	297	297	242	263
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	151	270	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	346
	Existing Plant Retirements/Conversions	-	-	(582)	8	(828)	(829)	(74)	(816)	(548)	-	(268)	-	-	-	-	-	-	(543)	(74)	-		
	Annual Additions, Long Term Resources	138	770	116	113	1,431	760	516	934	500	90	813	81	79	78	488	78	76	810	74	74		
	Annual Additions, Short Term Resources	652	716	1,224	1,357	1,071	1,348	1,190	1,322	1,247	1,391	1,086	1,120	1,314	1,437	1,229	1,304	1,403	1,301	1,350	1,472		
	Total Annual Additions	790	1,486	1,340	1,470	2,502	2,108	1,706	2,256	1,747	1,481	1,899	1,201	1,393	1,515	1,717	1,382	1,479	2,111	1,424	1,546		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-09	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_UT - Gas RePower	-	-	-	-	-	-	468	-	-	-	-	-	-	-	-	-	-	-	-	-	468	468
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT F 2x1	-	-	-	-	-	-	634	-	-	-	-	-	-	-	-	-	-	-	-	-	634	634
	CCCT FD 2x1	-	-	-	-	661	661	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	846	423	411	411	-	423	-	-	-	-	-	-	-	1,680	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	28	56
	DSM, Class 2, UT	63	56	54	51	49	47	44	40	40	40	30	33	30	28	27	25	23	22	21	20	484	742
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	7	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	53	49	50	51	39	42	39	38	37	35	33	32	31	30	567	922
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	109	175	60	231	41	171	85	-	-	4	40	40	102	177	40	40	61	164	87	77
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	18
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	19	19	19	19	19	22	22	22	22	22	275	481
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	66	103
	DSM, Class 2 Total	45	49	41	41	38	33	29	25	24	26	25	24	24	24	24	26	26	26	26	26	351	602
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	297	297	297	279	273	297	107	231	297	297	-	249	278	297	250	242
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-	100	100	100	100	95
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	369	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(714)	(270)	(816)	(548)	(106)	(268)	-	-	-	-	-	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	120	190	809	798	743	938	514	551	497	515	720	78	77	78	812	74	74	73		
	Annual Additions, Short Term Resources	651	714	1,219	1,347	1,232	1,403	1,213	1,343	1,257	1,154	1,148	1,176	1,022	1,146	1,274	1,349	809	1,164	1,214	1,336		
	Total Annual Additions	791	1,485	1,339	1,537	2,041	2,201	1,956	2,281	1,771	1,705	1,645	1,691	1,742	1,224	1,351	1,427	1,621	1,238	1,288	1,409		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-10	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	-	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	-	-	-	-	-	172
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	77	-	-	-	-	81
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	1	-	-	13	-	-	99	-	-	-	-	113
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	2	2	2	30	56
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	21	21	20	495	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	55	124
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	30	30	29	581	933
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	170	263	67	262	300	276	300	299	40	47	174	65	134
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	1	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	21	23	22	22	22	22	22	22	18	18	18	282	493
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	28	28	27	27	28	27	26	26	22	22	22	359	615
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	251	297	297	182	237
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	104	100	95	96	96	85	747	82	174	262	912	175	1,228	68	68		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,342	1,435	1,239	1,434	1,472	1,448	1,472	1,471	1,166	1,219	1,346		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,317	1,431	1,523	1,295	1,438	1,520	1,986	1,516	1,646	1,710	2,384	1,646	2,394	1,287	1,414		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-3 Case C-11		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	661	-	-	-	1,983
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	-	368
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	33	13	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	684	-	-	-	-	-	-	-	-	684
	Total Wind	-	-	-	73	35	33	13	-	-	45	5	-	684	-	-	-	-	-	-	-	199	888
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	4	-	-	-	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	81	-	-	4	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	7	11	-	-	3	-	-	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	16	120	-	-	11	-	-	-	10	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	8	55	126
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	31	30	581	938
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	39	157	254	26	167	261	258	300	190	294	300	241	203	258	208	64	158
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	-	-	-	197
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	-	6
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	-	21	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	22	28	-	28	-	-	-	-	3	-	82
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	22	19	22	22	23	284	503
	DSM, Class 2, WA	8	7	7	7	8	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	106
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	28	26	23	26	26	27	361	627
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	369	400	398
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	364	348	343	375	333	350
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	(387)	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	190	148	137	113	95	96	142	89	124	915	751	110	931	269	916	73	455		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,211	1,329	1,426	1,198	1,339	1,433	1,430	1,472	1,362	1,466	1,472	1,402	1,348	1,398	1,349		
	Total Annual Additions	790	1,485	966	1,174	1,252	1,348	1,442	1,521	1,294	1,481	1,522	1,554	2,387	2,113	1,576	2,403	1,671	2,264	1,471	1,804		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-12	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	423	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	2	3	3	3	3	3	3	3	32	59
	DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	28	27	25	23	22	21	20	508	767
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	6	7	7	7	7	7	7	7	56	126
	DSM, Class 2 Total	73	67	61	60	59	61	58	53	52	51	40	43	38	38	37	35	33	32	31	30	596	952
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	28	142	237	6	148	241	263	40	40	147	201	300	59	109	232	56	110
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	11
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	31	28	24	23	23	23	23	22	19	19	19	22	22	19	22	22	295	504
	DSM, Class 2, WA	8	8	8	8	8	7	7	6	7	7	5	5	5	5	5	3	3	3	3	3	71	110
	DSM, Class 2 Total	45	49	42	41	40	35	32	31	30	30	29	28	25	24	24	26	26	23	26	26	376	632
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	127	126	243	258	297	297	297	297	297	297	297	297	145	269	297	297	297	297	297	297	254	266
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	220	300	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	119	117	111	105	98	99	98	85	100	740	79	78	923	76	1,155	73	73		
	Annual Additions, Short Term Resources	646	705	841	978	1,097	1,200	1,314	1,409	1,178	1,320	1,413	1,435	1,060	1,184	1,319	1,373	1,472	1,231	1,281	1,404		
	Total Annual Additions	791	1,482	962	1,097	1,214	1,311	1,419	1,507	1,277	1,418	1,498	1,535	1,800	1,263	1,397	2,296	1,548	2,386	1,354	1,477		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-13	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	-	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	423	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	40	-	-	51
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	4
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	27	44	-	-	88
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
	DSM, Class 2, UT	63	61	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	499	759
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	7	56	127
	DSM, Class 2 Total	69	67	61	59	59	57	57	52	52	51	39	42	39	38	37	35	33	32	32	30	586	945
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	36	151	248	19	162	257	-	134	255	298	40	40	297	300	277	62	126
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	22	22	22	23	22	23	26	26	22	285	516
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	112
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	28	28	28	29	27	28	30	30	26	365	646
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	130	247	268	297	297	297	297	297	297	297	238	297	297	297	156	254	297	297	297	256	264
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	215	305	375	375	375	375	375	375	375	375	375	375	375	375	375	375	166	259	307
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	777	121	191	151	140	117	96	96	141	90	942	302	83	172	1,400	77	528	122	493		
	Annual Additions, Short Term Resources	650	709	845	983	1,102	1,208	1,323	1,420	1,191	1,334	1,429	1,113	1,306	1,427	1,470	1,071	1,169	1,469	1,472	1,240		
	Total Annual Additions	791	1,486	966	1,174	1,253	1,348	1,440	1,516	1,287	1,475	1,519	2,055	1,608	1,510	1,642	2,471	1,246	1,997	1,594	1,733		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-14	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	-	-	-	-	(416)	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	-	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	736	-	736	-	-	-	-	-	736	-	2,208
	CCCT J 1x1	-	-	-	-	-	-	411	1,269	834	-	423	-	-	-	-	-	-	-	-	-	2,514	2,937
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	74	35	33	12	-	-	44	4	-	-	-	-	-	-	-	-	-	198	202
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	566	-	-	398	236	-	-	-	-	-	-	-	566	1,200
	Total Wind	-	-	-	74	35	33	12	-	566	44	4	398	236	-	-	-	-	-	-	-	764	1,402
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	6	6	6	2	3	3	3	3	1	1	1	2	1	1	1	1	1	1	45	58
	DSM, Class 2, UT	84	76	70	73	71	44	42	41	41	39	13	13	10	11	10	13	11	9	8	7	580	687
	DSM, Class 2, WY	24	24	24	24	25	3	3	2	3	2	2	2	1	2	2	2	2	1	1	1	136	153
	DSM, Class 2 Total	114	106	101	103	102	50	48	47	46	44	17	16	13	14	13	16	14	12	11	10	761	898
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	1.2	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	60	171	-	131	-	56	49	-	73	53	136	40	40	249	287	72	42	71
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	-	362	-	-	-	-	-	-	-	-	-	719	1,081
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	5	-	40
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	1	0	0	0	15	19
	DSM, Class 2, OR	37	41	34	33	30	28	24	21	19	19	21	20	20	20	20	20	20	20	20	20	285	484
	DSM, Class 2, WA	13	12	13	14	14	6	6	6	6	6	2	2	2	2	2	2	2	1	1	1	96	112
	DSM, Class 2 Total	52	55	49	49	46	35	31	28	26	26	23	22	22	22	22	22	22	21	22	22	395	615
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	54	28	82	297	297	297	297	203	297	297	156	297	229	297	13	131	297	297	10	185	194
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	107	75	200	236	375	375	331	375	375	375	375	375	375	375	375	375	375	375	375	375	282	329
	Existing Plant Retirements/Conversions	-	-	(164)	8	(378)	-	-	(1,258)	(779)	-	(261)	(450)	-	(459)	-	(760)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	192	822	167	244	201	133	516	1,358	1,488	131	484	1,189	288	789	52	1,377	52	50	85	867		
	Annual Additions, Short Term Resources	607	629	728	818	1,232	1,343	1,128	1,303	1,078	1,228	1,221	1,031	1,245	1,157	1,308	928	1,046	1,421	1,459	957		
	Total Annual Additions	799	1,451	895	1,062	1,433	1,476	1,644	2,661	2,566	1,359	1,705	2,220	1,533	1,946	1,360	2,305	1,098	1,471	1,544	1,824		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-3 Case C-15		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	362	-	362	-	-	-	905
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	SCCT Frame WYAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	515	-	-	-	-	-	515
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	74	35	33	12	-	-	44	4	-	-	-	-	-	-	-	-	-	198	202
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	398	236	-	-	-	-	-	-	-	-	634
	Total Wind	-	-	-	74	35	33	12	-	-	44	4	398	236	-	-	-	-	-	-	-	198	836
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.8	2.7	2.7	2.7	0.4	3.6	14.8
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	9
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	37	40	-	4	-	-	-	-	-	81
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	19	3	-	-	-	-	-	-	22
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	37	90	3	4	-	4	-	-	-	138
	DSM, Class 2, ID	6	6	6	6	6	2	2	2	2	3	1	1	1	2	1	1	1	1	1	1	39	52
	DSM, Class 2, UT	81	74	68	65	63	39	37	37	37	37	12	11	9	10	9	12	10	9	8	6	537	634
	DSM, Class 2, WY	23	23	23	23	24	2	2	2	2	2	2	2	1	2	2	2	2	1	1	1	128	144
	DSM, Class 2 Total	111	103	97	94	92	43	41	41	41	42	16	14	11	13	12	15	13	12	11	9	704	831
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	6	115	-	56	171	231	215	272	269	270	230	272	300	283	18	135
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	384	-	-	-	565
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	5	-	50
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	-	-	0.5
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	-	22
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	42	1	-	-	-	1	-	-	-	44
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	13	17
	DSM, Class 2, OR	36	41	33	32	29	26	22	19	17	17	18	17	18	17	19	19	19	19	19	17	274	455
	DSM, Class 2, WA	12	12	12	12	12	5	5	5	5	5	2	1	1	1	1	2	1	1	1	1	86	99
	DSM, Class 2 Total	51	55	47	46	43	32	28	24	23	23	20	19	19	19	20	21	21	21	21	18	373	571
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	-	56	174	297	297	196	297	297	297	297	297	297	297	297	297	297	297	132	214
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	135	160	262	370	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	333	366
	FOT MidColumbia Q3 - 2	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	188	818	163	232	189	122	96	80	80	126	56	448	543	140	234	934	234	803	95	307		
	Annual Additions, Short Term Resources	610	635	737	845	931	1,049	1,178	1,287	1,071	1,228	1,343	1,403	1,387	1,444	1,441	1,442	1,402	1,444	1,472	1,455		
	Total Annual Additions	798	1,453	900	1,077	1,120	1,171	1,274	1,367	1,151	1,354	1,399	1,851	1,930	1,584	1,675	2,376	1,636	2,247	1,567	1,762		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-3 Case C-16		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	-	-	115	-	-	-	-	-	-	-	115
	Wind, GO, 29	-	-	-	-	63	-	-	-	-	63	-	-	-	-	-	-	-	-	-	-	126	126
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	446	-	-	-	-	-	-	-	-	446
	Total Wind	-	-	-	-	63	-	-	-	-	63	-	-	446	-	-	-	-	-	-	-	126	572
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	85
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	13
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	0	-	-	102	-	-	-	-	-	-	102
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	2	2	2	2	2	30	54
	DSM, Class 2, UT	63	59	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	493	751
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	55	123
	DSM, Class 2 Total	69	65	61	59	57	56	54	52	52	51	39	42	39	38	37	33	31	30	30	29	578	927
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	20	138	235	7	150	244	263	298	291	300	40	40	116	170	296	55	130
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	25	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	25	30
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	8
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	22	21	-	-	-	-	-	-	44
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	16	-	22	22	-	-	-	-	-	-	61
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	17
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	20	23	22	22	22	22	18	18	18	18	18	280	484
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	104
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	27	28	27	27	27	28	22	22	22	22	22	358	605
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	89	209	297	297	297	297	297	297	297	297	297	297	163	266	297	297	297	178	229
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	211	347	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	354
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	774	121	142	176	104	99	95	95	157	84	102	709	224	205	1,394	70	730	68	68		
	Annual Additions, Short Term Resources	650	711	847	964	1,084	1,192	1,310	1,407	1,179	1,322	1,416	1,435	1,470	1,463	1,472	1,078	1,181	1,288	1,342	1,468		
	Total Annual Additions	790	1,485	968	1,106	1,260	1,296	1,409	1,502	1,274	1,479	1,500	1,537	2,179	1,687	1,677	2,472	1,251	2,018	1,410	1,536		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-17	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	-	-	661
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	846	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	74	35	33	12	-	-	44	4	-	-	-	-	-	-	-	-	-	198	202
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	398	236	566	-	-	-	-	-	-	-	1,200
	Total Wind	-	-	-	74	35	33	12	-	-	44	4	398	236	566	-	-	-	-	-	-	198	1,402
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	37	-	-	-	74
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	13
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	0	50	37	-	-	-	88
	DSM, Class 2, ID	3	3	3	4	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	34	62
	DSM, Class 2, UT	68	61	57	55	53	51	48	44	44	42	31	34	31	29	28	27	25	22	21	20	523	791
	DSM, Class 2, WY	4	4	5	5	6	7	7	7	7	8	7	7	7	7	8	7	7	7	8	8	60	133
	DSM, Class 2 Total	74	68	65	64	63	62	59	55	55	53	41	44	40	40	39	37	35	32	32	31	616	987
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	49	-	-	46	94	278	53	53	300	300	259	298	253	5	99
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	9	-	-	78	-	147
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	9	-	-	78	-	147
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	5	-	40
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	21	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	27	22	-	-	-	-	52
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	21
	DSM, Class 2, OR	37	41	34	36	33	31	28	24	24	26	26	26	26	26	26	26	26	26	26	26	314	570
	DSM, Class 2, WA	8	8	8	8	8	7	7	7	7	7	5	5	5	5	5	4	4	3	3	3	74	118
	DSM, Class 2 Total	46	50	43	45	42	39	36	32	32	34	32	32	31	32	32	30	30	30	30	30	399	709
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	163	125	238	289	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	260	278
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	383	400	400	400	329	400	400	400	400	400	400	400	400	333	400	400	400	400	400	400	391	392
	FOT MidColumbia Q3 - 2	-	79	97	179	-	29	139	184	-	138	183	163	168	-	59	180	202	186	164	165	85	116
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	146	778	126	201	579	148	121	102	103	148	94	490	324	1,316	90	594	163	962	113	341		
	Annual Additions, Short Term Resources	646	704	835	968	726	826	936	1,030	797	935	1,026	1,054	1,243	783	909	1,277	1,299	1,242	1,259	1,215		
	Total Annual Additions	792	1,482	961	1,169	1,305	974	1,057	1,132	900	1,083	1,120	1,544	1,567	2,099	999	1,871	1,462	2,204	1,372	1,556		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-3 Case C-18	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	(479)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	WY IGCC CCS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	456	-	456
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	423	834	411	-	-	-	2,091
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Nuclear	-	-	-	-	-	-	-	-	-	-	-	-	2,236	-	-	-	-	-	-	-	-	2,236
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	-	-	-	-	105
	Wind, GO, 29	-	-	-	-	-	-	-	-	-	346	47	63	76	68	-	-	-	-	-	-	346	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	-	200
	Wind, Wyoming, 40	-	-	-	-	-	-	-	1,200	-	-	-	-	-	-	-	-	-	-	-	-	1,200	1,200
	Total Wind	-	-	-	-	-	-	-	1,200	-	346	247	63	76	68	-	-	-	-	-	-	1,546	2,000
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	8	8	7	3	3	3	3	3	1	1	1	2	2	2	1	1	1	1	51	65
	DSM, Class 2, UT	88	81	83	81	80	51	49	43	42	40	14	13	11	12	11	14	11	10	9	8	639	750
	DSM, Class 2, WY	25	25	25	26	26	3	3	3	3	3	3	2	2	2	2	2	2	2	1	1	141	159
	DSM, Class 2 Total	120	112	115	115	114	58	55	48	48	46	18	17	13	15	14	17	15	13	11	10	830	973
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	450	-	-	-	-	-	-	-	450
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.4	13.4	13.4	131	263
	Micro Solar - Water Heating	-	-	-	0.4	0.3	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	118	-	40	-	-	-	53	53	293	53	53	78	53	16	40
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	-	-	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	360	722
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	30
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	360	240	-	-	-	-	-	-	-	-	-	600
	Total Wind	-	-	-	-	-	-	-	-	-	-	360	240	-	-	-	-	-	-	-	-	-	600
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	16	22
	DSM, Class 2, OR	41	44	40	38	34	31	28	25	23	23	22	21	21	21	21	21	21	21	21	21	327	535
	DSM, Class 2, WA	14	14	14	14	14	7	7	6	6	6	2	2	2	3	3	3	2	2	2	2	104	127
	DSM, Class 2 Total	57	60	56	55	51	38	36	33	30	30	25	24	24	24	24	24	24	23	23	23	447	684
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	99	33	-	78	108	196	297	297	190	297	81	250	-	-	120	297	-	188	297	61	160	144
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	-	81	196	206	240	255	266	375	375	375	375	375	4	343	375	375	345	375	375	375	237	284
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	(158)	-	(3)	8	(269)	(1,208)	(416)	-	(760)	-	(543)	(148)	-		
	Annual Additions, Long Term Resources	203	832	189	187	183	111	106	1,296	95	439	1,089	495	2,366	574	54	481	889	464	51	506		
	Annual Additions, Short Term Resources	599	614	696	784	848	951	1,063	1,290	1,065	1,212	956	1,125	504	896	1,048	1,465	898	1,116	1,250	989		
	Total Annual Additions	802	1,446	885	971	1,031	1,062	1,169	2,586	1,160	1,651	2,045	1,620	2,870	1,470	1,102	1,946	1,787	1,580	1,301	1,495		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-3 Case C-19	Capacity (MW)																				Resource Totals 1/	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	-	-	-	-	846
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	181
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Wind, GO, 29	-	-	-	74	35	33	12	-	-	44	4	-	-	-	-	-	-	-	-	-	198	202
Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	398	236	-	-	-	-	-	-	-	-	634
Total Wind	-	-	-	74	35	33	12	-	-	44	4	398	236	-	-	-	-	-	-	-	198	836
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	9
DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	4	77	-	-	-	-	-	-	-	85
DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	22
DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	13	-	9	-	-	-	-	-	-	22
DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	5	17	77	40	-	-	-	-	-	-	139
DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	2	3	2	2	2	30	55
DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	21	21	20	495	753
DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	7	55	123
DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	34	33	30	30	29	581	932
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	-	-	-	39	157	254	26	167	261	262	207	49	142	199	300	250	273	265	64	143
West																						
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	197
Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	78
Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	5	-	40
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	15
DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	2
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	26	1	45	-	-	-	-	-	-	-	72
DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	17
DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	18	19	18	18	18	283	487
DSM, Class 2, WA	8	7	7	7	8	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	28	22	23	22	22	22	361	610
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	-	-	-	108	229	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	333	333	352
Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
Annual Additions, Long Term Resources	140	776	121	191	148	137	112	95	96	141	88	515	997	385	121	919	72	911	103	348		
Annual Additions, Short Term Resources	650	709	845	983	1,104	1,211	1,329	1,426	1,198	1,339	1,433	1,434	1,379	1,221	1,314	1,371	1,472	1,422	1,445	1,395		
Total Annual Additions	790	1,485	966	1,174	1,252	1,348	1,441	1,521	1,294	1,480	1,521	1,949	2,376	1,606	1,435	2,290	1,544	2,333	1,548	1,743		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

Table K.10 – Energy Gateway Scenario 4 – Case C-01 to C-19

	EG-4 Case C-01	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	IC Aero WYAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	91
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	13
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	13
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	3.6	7.6
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	41	4	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	0	-	-	45	-	-	-	63	34	14	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	56	125
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	31	31	581	938
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	169	263	67	262	300	88	262	283	300	299	300	65	154
West	**Expansion Resources**																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	8	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	21	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	2	-	15
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	39	-	-	-	24	14	26	-	103
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	19	22	22	22	26	26	283	509
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	24	26	26	26	30	30	361	632
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	378	389
	FOT MidColumbia Q3 - 2	375	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	355	365
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	104	100	95	96	98	84	747	82	166	500	738	167	835	126	209		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,341	1,435	1,239	1,434	1,472	1,260	1,434	1,455	1,472	1,471	1,472		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,317	1,431	1,523	1,295	1,439	1,519	1,986	1,516	1,638	1,760	2,172	1,622	2,307	1,597	1,681		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-02	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	661	661	-	-	-	-	1,983
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	46	29	13	-	-	44	-	-	-	-	-	-	-	-	-	-	202	202
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	13
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	544	-	-	-	-	-	-	-	-	544
	Total Wind	-	-	-	70	46	29	13	-	-	44	-	-	544	-	-	-	-	13	-	-	202	759
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	48	-	41	-	-	-	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	8	7	-	7	-	-	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	10	13	-	-	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	0	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	19	72	-	54	-	-	-	-	-	144
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	2	2	2	2	30	55
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	21	21	20	495	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	55	124
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	31	30	30	29	581	931
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	39	157	254	26	169	263	140	300	300	202	300	40	164	218	208	65	139
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	197
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	8	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	13	49	-	22	-	-	-	-	-	84
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	21	23	22	22	22	22	22	18	18	18	18	282	489
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	28	28	27	27	27	28	26	22	22	22	22	359	611
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	297	87	297	297	297	182	229
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	234	370	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	365	358	377
	FOT MidColumbia Q3 - 2	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	(387)	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	187	159	133	113	95	96	140	84	267	658	203	742	815	731	505	68	265		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,211	1,329	1,426	1,198	1,341	1,435	1,312	1,472	1,472	1,374	1,472	1,002	1,336	1,390	1,345		
	Total Annual Additions	790	1,485	966	1,171	1,263	1,344	1,442	1,521	1,294	1,481	1,519	1,579	2,130	1,675	2,116	2,287	1,733	1,841	1,458	1,610		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-03	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT F 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	634	-	-	-	-	634
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	661
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	713	-	-	-	-	-	-	-	-	713
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	34	13	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	12	-	25
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	684	-	-	-	-	-	-	-	-	684
	Total Wind	-	-	-	73	34	34	13	-	-	45	5	-	684	-	-	-	-	13	-	12	199	913
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	5	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	4	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	23	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	10	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	-	102	17	-	-	-	37	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	47	45	43	42	40	30	33	30	28	27	25	23	22	21	20	494	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	67	61	59	57	55	55	52	52	51	39	42	39	38	37	35	33	32	31	30	580	935
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	40	158	255	27	169	263	255	168	290	298	298	40	182	232	300	65	149
West	**Expansion Resources**																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	6
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	22	-	-	21	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	41	-	-	23	-	-	-	-	16	-	80
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	22	23	22	22	22	22	22	19	19	22	24	282	499
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	26	29	28	27	27	27	28	26	23	23	26	28	360	622
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	297	108	297	297	297	182	230
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	234	370	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	358	379
	FOT MidColumbia Q3 - 2	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	190	147	137	113	95	95	141	89	129	1,479	81	206	936	706	507	73	140		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,212	1,330	1,427	1,199	1,341	1,435	1,427	1,340	1,462	1,470	1,470	1,023	1,354	1,404	1,472		
	Total Annual Additions	790	1,485	966	1,174	1,251	1,349	1,443	1,522	1,294	1,482	1,524	1,556	2,819	1,543	1,676	2,406	1,729	1,861	1,477	1,612		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-4 Case C-04		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	-	-	661	-	-	-	-	-	-	-	-	-	-	-	-	1,322	1,322
	CCCT GH 2x1	-	-	-	-	-	-	736	-	-	736	-	-	-	-	-	-	-	736	-	-	1,472	2,208
	CCCT J 1x1	-	-	-	-	-	-	-	-	846	423	-	411	-	-	423	-	-	-	-	-	1,269	2,103
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	27	47
	DSM, Class 2, UT	63	55	51	48	49	47	44	40	40	35	27	32	29	27	26	25	23	22	21	20	471	723
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	6	7	7	7	7	7	7	55	122
	DSM, Class 2 Total	68	62	58	56	57	55	53	49	50	45	35	40	37	36	35	33	32	31	30	29	553	892
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	182	68	177	-	253	261	117	216	-	112	238	40	101	204	62	116	241	117	125
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	17	17	17	17	18	18	18	18	19	19	19	273	454
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	65	101
	DSM, Class 2 Total	45	48	41	40	38	33	29	25	24	24	22	22	22	23	23	22	22	23	22	22	347	572
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	202	297	297	297	297	212	297	297	297	297	297	297	297	297	243	266
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	82	100	100	100	100	100	100	99
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	269	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(927)	(1,047)	(788)	8	-	-	-	-	-	-	(495)	(74)	-		
	Annual Additions, Long Term Resources	140	770	117	113	774	103	832	752	937	1,244	74	490	75	76	498	72	71	806	69	68		
	Annual Additions, Short Term Resources	651	714	1,223	1,354	1,240	1,349	1,077	1,425	1,433	1,289	1,388	1,087	1,284	1,410	1,194	1,273	1,376	1,234	1,288	1,413		
	Total Annual Additions	791	1,484	1,340	1,467	2,014	1,452	1,909	2,177	2,370	2,533	1,462	1,577	1,359	1,486	1,692	1,345	1,447	2,040	1,357	1,481		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-4 Case C-05

		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	661	661	661	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	736	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	736	1,472
	CCCT J 1x1	-	-	-	-	-	-	-	411	423	423	411	-	-	-	-	-	-	423	-	-	1,257	2,091
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	2	2	2	2	2	2	2	28	50
	DSM, Class 2, UT	63	55	51	48	49	47	44	40	40	40	30	33	30	27	26	25	23	22	21	20	477	734
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	6	7	7	7	7	7	7	55	122
	DSM, Class 2 Total	68	62	58	56	57	55	53	49	50	51	39	42	39	36	35	33	32	30	30	29	560	906
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	181	-	108	140	225	175	128	79	108	300	34	40	40	99	112	165	291	107	117
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	20	19	19	18	18	18	18	18	19	19	275	463
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	66	102
	DSM, Class 2 Total	45	49	41	40	38	33	29	26	24	26	25	24	24	23	23	22	22	22	22	22	350	582
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	297	297	297	297	297	297	297	83	275	254	297	297	297	297	252	261
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	67	-	100	100	100	100	100	100	93
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(548)	(1,010)	(1,237)	(183)	(212)	-	-	-	-	-	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	117	187	884	137	770	1,164	1,175	563	498	515	297	812	75	72	71	492	69	68		
	Annual Additions, Short Term Resources	651	714	1,222	1,353	1,172	1,280	1,312	1,397	1,347	1,300	1,251	1,280	1,472	959	1,090	1,169	1,271	1,284	1,337	1,463		
	Total Annual Additions	791	1,485	1,339	1,540	2,056	1,417	2,082	2,561	2,522	1,863	1,749	1,795	1,769	1,771	1,165	1,241	1,342	1,776	1,406	1,531		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-4 Case C-06	Capacity (MW)																				Resource Totals 1/	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	423	-	-	-	1,269
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	2	3	3	3	3	3	3	3	32	59
DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	28	27	25	23	22	21	20	508	767
DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	6	7	7	7	7	7	7	7	56	126
DSM, Class 2 Total	73	67	61	60	59	61	58	53	52	51	40	43	38	38	37	35	33	32	31	30	596	952
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	-	-	-	28	142	237	6	148	241	263	40	40	147	201	300	57	107	230	56	109
West																						
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	11
DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
DSM, Class 2, OR	37	41	33	32	31	28	24	23	23	23	23	22	19	19	19	22	22	22	22	22	295	507
DSM, Class 2, WA	8	8	8	8	8	7	7	6	7	7	5	5	5	5	5	3	3	3	3	3	71	110
DSM, Class 2 Total	45	49	42	41	40	35	32	31	30	30	29	28	25	24	24	26	26	26	26	26	376	635
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	127	126	243	258	297	297	297	297	297	297	297	297	145	269	297	297	297	297	297	297	254	266
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOT MidColumbia Q3 - 2	19	79	98	220	300	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
Annual Additions, Long Term Resources	145	777	121	119	117	111	105	98	99	98	85	100	740	79	78	923	75	1,158	73	73		
Annual Additions, Short Term Resources	646	705	841	978	1,097	1,200	1,314	1,409	1,178	1,320	1,413	1,435	1,060	1,184	1,319	1,373	1,472	1,229	1,279	1,402		
Total Annual Additions	791	1,482	962	1,097	1,214	1,311	1,419	1,507	1,277	1,418	1,498	1,535	1,800	1,263	1,397	2,296	1,547	2,387	1,352	1,475		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-07	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	661
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	846	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	436	218	-	-	-	-	-	-	-	-	654
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	436	218	-	-	-	-	-	-	-	202	862
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	81	-	-	-	-	-	-	-	81
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	81	-	-	-	-	2	0	-	84
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	32	61
	DSM, Class 2, UT	67	61	55	52	50	51	48	43	42	40	30	33	30	28	27	25	24	22	22	20	510	770
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	7	7	8	7	7	7	8	8	56	129
	DSM, Class 2 Total	73	67	62	60	60	61	58	53	52	51	40	43	39	38	37	35	34	32	32	31	598	960
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	24	138	233	3	144	237	263	298	291	266	90	176	156	205	166	54	135
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	-	-	-	-	-	197
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	3	-	45	-	-	-	4	1	-	-	53
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	31	28	24	23	23	23	23	23	23	26	22	23	23	26	26	26	295	536
	DSM, Class 2, WA	8	8	8	8	8	7	7	6	7	7	5	5	5	5	5	4	4	3	3	3	71	114
	DSM, Class 2 Total	45	49	42	41	40	36	32	31	30	30	29	29	29	32	28	28	28	30	30	29	377	668
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	127	126	242	263	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	254	276
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	97	214	297	375	375	375	375	375	375	375	375	375	361	364	375	370	365	366	258	314
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	122	192	153	145	118	99	99	144	91	529	484	212	279	1,163	78	929	81	258		
	Annual Additions, Short Term Resources	646	705	839	977	1,094	1,196	1,310	1,405	1,175	1,316	1,409	1,435	1,470	1,463	1,424	1,251	1,348	1,323	1,367	1,329		
	Total Annual Additions	791	1,482	961	1,169	1,247	1,341	1,428	1,504	1,274	1,460	1,500	1,964	1,954	1,675	1,703	2,414	1,426	2,252	1,448	1,587		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-08	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	1,322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	736	-	-	-	-	-	-	736	-	-	-	-	-	-	736	1,472
	CCCT J 1x1	-	-	-	-	-	-	-	846	423	-	411	-	-	-	-	-	-	411	423	-	1,269	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	28	56
	DSM, Class 2, UT	63	55	54	51	49	47	44	40	40	40	30	33	30	28	27	25	23	22	21	20	483	742
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	7	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	53	49	50	51	39	42	39	38	37	35	33	32	31	30	567	922
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	109	176	61	160	-	16	-	71	64	96	290	34	33	40	75	93	61	61	59	72
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	18
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	19	19	19	19	22	22	22	22	22	22	275	485
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	67	103
	DSM, Class 2 Total	45	49	41	41	38	33	29	26	24	26	25	24	24	24	27	26	26	26	26	26	352	606
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	184	297	227	297	297	297	297	138	265	297	297	297	32	155	234	236
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	36	100	100	100	100	100	87
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(1,279)	(279)	(816)	(548)	-	(268)	-	-	-	-	-	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	120	117	774	1,425	832	937	514	94	491	83	79	814	80	78	76	485	497	73		
	Annual Additions, Short Term Resources	651	714	1,219	1,348	1,233	1,332	1,059	1,188	1,102	1,243	1,236	1,268	1,462	947	1,073	1,148	1,247	1,265	968	1,091		
	Total Annual Additions	791	1,485	1,339	1,465	2,007	2,757	1,891	2,125	1,616	1,337	1,727	1,351	1,541	1,761	1,153	1,226	1,323	1,750	1,465	1,164		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-09	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_UT - Gas RePower	-	-	-	-	-	-	468	-	-	-	-	-	-	-	-	-	-	-	-	-	468	468
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	661	661	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	-	846	423	411	411	-	-	-	423	-	-	-	-	-	1,680	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	83	-	-	-	-	-	-	-	83
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	83	-	-	-	-	-	-	202	941
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	27	55
	DSM, Class 2, UT	63	55	51	51	49	47	44	40	40	39	30	33	30	28	27	25	23	22	21	20	479	737
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	62	58	59	57	55	53	49	50	49	39	42	39	38	37	35	33	32	31	30	561	917
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	178	64	235	21	150	64	-	-	-	177	300	82	159	258	40	61	145	82	102
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	19	19	19	19	19	19	22	22	22	23	275	479
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	66	103
	DSM, Class 2 Total	45	49	41	40	38	33	29	26	24	26	25	24	24	24	24	23	26	26	26	27	351	599
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	297	297	297	260	254	283	297	297	297	297	297	231	260	297	249	265
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(714)	(270)	(816)	(548)	(106)	(268)	-	-	-	-	-	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	771	117	190	809	798	770	938	514	549	497	515	297	161	500	74	75	810	74	74		
	Annual Additions, Short Term Resources	651	714	1,222	1,350	1,236	1,407	1,193	1,322	1,236	1,135	1,129	1,158	1,349	1,472	1,254	1,331	1,430	1,146	1,196	1,317		
	Total Annual Additions	791	1,485	1,339	1,540	2,045	2,205	1,963	2,260	1,750	1,684	1,626	1,673	1,646	1,633	1,754	1,405	1,505	1,956	1,270	1,391		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-4 Case C-10		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	661	-	-	-	1,983
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	411	-	-	-	-	-	-	411
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	48	-	37	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	15	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	19	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	1	-	-	16	-	-	67	0	48	25	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	31	30	581	937
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	170	263	67	262	298	94	268	299	299	299	300	65	155
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	ICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	-	-	-	117
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	-	1	1	-	16	-	88
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	22	23	22	22	22	22	22	22	22	25	26	282	511
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	106
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	29	28	27	27	28	27	26	26	26	30	30	360	635
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	378	389
	FOT MidColumbia Q3 - 2	375	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	355	365
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	104	100	95	96	96	85	747	82	168	492	739	144	853	125	208		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,342	1,435	1,239	1,434	1,470	1,266	1,440	1,471	1,471	1,471	1,472		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,317	1,431	1,523	1,295	1,438	1,520	1,986	1,516	1,638	1,758	2,179	1,615	2,324	1,596	1,680		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-11	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	6.6	6.6	7.9	7.9	7.9	-	44.8
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	2.7	2.7	2.7	2.7	2.7	2.7	3.7	3.7	3.6	28.3
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	40	4	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	45	97	4	-	-	0	11	-	158
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	33	61
	DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	29	28	27	24	23	22	22	508	776
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	8	7	7	7	7	8	7	7	7	8	8	57	131
	DSM, Class 2 Total	73	67	61	61	59	61	58	53	52	52	40	43	39	39	39	37	34	33	33	33	597	967
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	26	138	233	3	143	237	263	294	293	300	300	295	298	300	300	54	171
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	IC Aero WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	-	99	-	198
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	5	-	25
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	1.1	0.9	2.3	2.3	2.3	-	11.3
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.4	-	2.7
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	13	2	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	71	13	-	14	-	13	5	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	20
	DSM, Class 2, OR	37	41	33	32	29	28	27	23	23	23	23	26	26	26	26	26	26	26	26	26	296	550
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	5	5	5	5	4	4	4	4	4	69	112
	DSM, Class 2 Total	46	49	41	41	38	35	34	30	30	30	29	32	31	32	32	31	30	30	30	31	375	683
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	102	221	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	181	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	171	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	377	389
	FOT MidColumbia Q3 - 2	375	204	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	354	365
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	192	150	144	121	99	99	144	91	525	489	206	210	940	196	853	128	214		
	Annual Additions, Short Term Resources	646	704	840	977	1,096	1,198	1,310	1,405	1,175	1,315	1,409	1,435	1,466	1,465	1,472	1,472	1,467	1,470	1,472	1,472		
	Total Annual Additions	791	1,481	961	1,169	1,246	1,342	1,431	1,504	1,274	1,459	1,500	1,960	1,955	1,671	1,682	2,412	1,663	2,323	1,600	1,686		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-12	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	423	-	423	-	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	2	2	3	3	3	3	3	3	3	30	57
	DSM, Class 2, UT	63	56	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	494	752
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	56	125
	DSM, Class 2 Total	69	63	61	59	59	57	57	52	52	51	39	42	38	38	37	35	33	32	31	30	580	934
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	42	157	254	25	169	263	-	152	276	64	240	40	98	149	271	65	110
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	19	19	19	19	19	19	22	22	22	285	488
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	3	3	3	3	3	71	109
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	25	24	24	24	23	23	26	26	26	365	615
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	134	251	267	297	297	297	297	297	297	297	251	297	297	297	297	252	297	297	297	257	272
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	221	311	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	260	318
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	772	121	118	116	106	103	95	96	95	84	506	79	79	501	735	495	735	73	73		
	Annual Additions, Short Term Resources	650	713	849	988	1,108	1,214	1,329	1,426	1,197	1,341	1,435	1,126	1,324	1,448	1,236	1,412	1,167	1,270	1,321	1,443		
	Total Annual Additions	791	1,485	970	1,106	1,224	1,320	1,432	1,521	1,293	1,436	1,519	1,632	1,403	1,527	1,737	2,147	1,662	2,005	1,394	1,516		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-4 Case C-13		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	43	-	-	-	-	-	693
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	43	-	-	-	-	202	901
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	2.7	0.4	0.5	2.7	0.4	3.6	12.5
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88	-	-	-	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	145	-	-	-	-	-	146
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	32	61
	DSM, Class 2, UT	67	61	55	52	53	51	48	43	42	40	30	33	30	29	28	27	24	22	22	20	513	777
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	8	7	7	7	7	8	7	7	7	8	7	57	130
	DSM, Class 2 Total	73	67	62	60	63	61	58	53	52	52	40	43	39	39	39	37	34	33	32	31	602	968
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	22	135	230	-	140	234	262	106	224	300	300	240	256	300	295	53	152
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	IC Aero SO-CAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	182	-	-	-	-	182
	IC Aero WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	-	-	-	99
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	0.3
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	22	-	-	-	-	-	73
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	20
	DSM, Class 2, OR	37	41	33	32	31	28	24	23	23	23	23	26	26	26	26	26	26	26	26	22	295	545
	DSM, Class 2, WA	8	8	8	8	8	7	7	6	7	7	5	5	5	5	5	4	4	3	3	3	71	114
	DSM, Class 2 Total	45	50	42	41	40	36	32	31	30	30	29	32	31	32	32	31	30	30	30	26	377	679
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	127	126	242	262	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	254	275
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	97	214	294	375	375	375	375	375	375	375	375	375	375	375	375	375	375	147	258	305
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	122	192	156	145	118	99	99	145	91	523	728	87	140	958	262	839	82	493		
	Annual Additions, Short Term Resources	646	705	839	976	1,091	1,194	1,307	1,402	1,172	1,312	1,406	1,434	1,278	1,396	1,472	1,472	1,412	1,428	1,472	1,239		
	Total Annual Additions	791	1,482	961	1,168	1,247	1,339	1,425	1,501	1,271	1,457	1,497	1,957	2,006	1,483	1,612	2,430	1,674	2,267	1,554	1,732		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-4 Case C-14	Capacity (MW) 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Resource Totals 1/ 10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	-	-	-	-	-	(416)	(416)
Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	(269)
Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	(459)
Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	(450)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT F 2x1	-	-	-	-	-	-	-	-	-	-	-	634	-	-	-	-	-	-	-	-	-	634
CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	1,322	-	-	-	-	-	1,983
CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	736
CCCT J 1x1	-	-	-	-	-	-	423	1,680	-	423	411	-	-	-	-	-	-	-	-	-	2,526	2,937
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Wind, GO, 29	-	-	-	73	34	34	13	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	13
Wind, Wyoming, 40	-	-	-	-	-	-	-	-	316	-	-	-	684	-	-	-	-	-	-	-	316	1,000
Total Wind	-	-	-	73	34	34	13	-	316	45	5	-	684	-	-	-	-	13	-	-	515	1,217
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 2, ID	6	6	6	6	6	2	3	3	3	3	1	1	1	2	1	1	1	1	1	1	45	58
DSM, Class 2, UT	84	76	70	73	71	44	42	35	41	39	13	13	10	11	10	13	11	9	8	7	575	681
DSM, Class 2, WY	24	24	24	24	25	3	3	2	3	2	2	2	1	2	2	2	2	1	1	1	136	153
DSM, Class 2 Total	114	106	101	103	102	50	48	41	46	44	17	16	13	14	13	16	14	12	11	10	755	891
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	-	1.2	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	-	-	60	171	-	157	249	52	55	-	169	148	299	40	40	2	53	61	69	78
West																						
Existing Plant Retirements/Conversions																						
JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	-	362	-	-	-	-	-	-	-	-	-	719	1,081
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	15	19
DSM, Class 2, OR	37	41	34	33	30	28	24	21	19	20	21	20	20	20	20	20	20	20	20	20	285	485
DSM, Class 2, WA	13	12	13	14	14	6	6	6	6	6	2	2	2	2	2	2	2	1	1	1	96	112
DSM, Class 2 Total	52	55	49	49	46	35	31	28	26	26	23	22	22	22	22	22	22	21	22	22	396	616
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	-	54	28	82	297	297	297	297	297	297	297	256	297	297	297	176	294	68	86	221	195	212
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOT MidColumbia Q3 - 2	107	75	200	236	375	375	321	375	375	375	375	375	375	375	375	375	375	375	375	375	281	328
Existing Plant Retirements/Conversions	-	-	(164)	8	(378)	-	-	(1,674)	(363)	-	(261)	(450)	-	(459)	-	(760)	-	(338)	(74)	-		
Annual Additions, Long Term Resources	192	822	167	243	200	134	529	1,763	404	555	473	689	736	714	51	1,376	52	799	50	48		
Annual Additions, Short Term Resources	607	629	728	818	1,232	1,343	1,118	1,329	1,421	1,224	1,227	1,131	1,341	1,320	1,471	1,091	1,209	945	1,014	1,157		
Total Annual Additions	799	1,451	895	1,061	1,432	1,477	1,647	3,092	1,825	1,779	1,700	1,820	2,077	2,034	1,522	2,467	1,261	1,744	1,064	1,205		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-15	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	362	-	362	-	-	-	905
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	SCCT Frame WYAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	515	-	-	-	-	-	515
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	34	13	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	13
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	684	-	-	-	-	-	-	-	-	684
	Total Wind	-	-	-	73	34	34	13	-	-	45	5	-	684	-	-	-	-	13	-	-	199	901
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	2.7	2.7	2.7	0.4	0.4	3.6	14.4
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	9
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	4	-	-	-	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	19	3	-	-	-	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	3	19	-	-	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	0	-	97	37	3	4	-	4	-	-	-	145
	DSM, Class 2, ID	6	6	6	6	6	2	2	2	2	3	1	1	1	2	1	1	1	1	1	1	39	52
	DSM, Class 2, UT	81	74	68	65	63	39	37	37	37	37	12	11	9	10	9	12	11	9	7	6	537	634
	DSM, Class 2, WY	23	23	23	23	23	2	2	2	2	2	2	2	1	2	2	2	2	1	1	1	128	144
	DSM, Class 2 Total	111	103	97	94	92	43	41	41	41	42	16	14	11	13	12	15	14	12	10	9	704	830
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	7	115	-	56	171	235	190	300	298	297	257	300	215	284	18	136
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	203	-	-	-	384
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	8
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	1	-	-	-	8
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	12	16
	DSM, Class 2, OR	36	41	33	32	29	26	22	19	17	17	18	17	18	17	17	19	19	19	17	17	274	451
	DSM, Class 2, WA	12	12	12	12	12	5	5	5	5	5	2	1	1	1	1	2	1	1	1	1	86	98
	DSM, Class 2 Total	51	55	47	46	43	32	28	24	23	23	20	19	19	19	19	21	21	20	18	18	372	565
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	-	57	175	297	297	197	297	297	297	297	297	297	297	297	297	297	297	132	215
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	135	160	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	350	375
	FOT MidColumbia Q3 - 2	375	375	237	346	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	358	367
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	188	818	163	231	187	123	97	80	80	126	57	50	1,016	86	232	936	234	815	225	134		
	Annual Additions, Short Term Resources	610	635	737	846	932	1,050	1,179	1,287	1,072	1,228	1,343	1,407	1,362	1,472	1,470	1,469	1,429	1,472	1,387	1,456		
	Total Annual Additions	798	1,453	900	1,077	1,119	1,173	1,276	1,367	1,152	1,354	1,400	1,457	2,378	1,558	1,702	2,405	1,663	2,287	1,612	1,590		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-4 Case C-16		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	-	-	115	-	-	-	-	-	-	-	115
	Wind, GO, 29	-	-	-	-	63	-	-	-	-	63	-	-	-	-	-	-	-	-	-	-	126	126
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	446	-	-	-	-	-	-	-	-	446
	Total Wind	-	-	-	-	63	-	-	-	-	63	-	-	446	-	-	-	-	-	-	-	126	572
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	9
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	85
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	0	-	-	116	-	-	-	-	-	-	116
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	2	2	2	2	2	30	54
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	56	123
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	33	31	30	30	29	581	930
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	18	136	233	4	145	237	263	298	284	300	40	40	116	170	296	54	129
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	25	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	25	30
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	8
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	21
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	3	8	-	29	1	-	-	-	-	-	-	41
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	17
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	18	18	18	18	18	284	487
	DSM, Class 2, WA	8	7	7	7	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	104
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	27	28	22	22	22	22	22	361	609
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	87	207	297	297	297	297	297	297	297	297	297	297	163	266	297	297	297	178	229
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	234	370	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	358	379
	FOT MidColumbia Q3 - 2	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	142	176	104	100	95	96	161	87	95	709	231	198	1,394	70	730	68	68		
	Annual Additions, Short Term Resources	650	709	845	962	1,082	1,190	1,308	1,405	1,176	1,317	1,409	1,435	1,470	1,456	1,472	1,078	1,181	1,288	1,342	1,468		
	Total Annual Additions	790	1,485	966	1,104	1,258	1,294	1,408	1,500	1,272	1,478	1,496	1,530	2,179	1,687	1,670	2,472	1,251	2,018	1,410	1,536		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-17	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	846	-	-	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	34	13	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	13
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	684	316	-	-	-	-	-	-	-	1,000
	Total Wind	-	-	-	73	34	34	13	-	-	45	5	-	684	316	-	-	-	13	-	-	199	1,217
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	81	-	-	-	88
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	10	-	-	-	-	13
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	17	90	-	-	-	111
	DSM, Class 2, ID	3	3	3	4	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	34	62
	DSM, Class 2, UT	68	61	57	55	53	51	48	44	44	42	31	34	30	29	28	27	25	23	22	20	523	792
	DSM, Class 2, WY	4	4	5	5	6	6	7	7	7	8	7	7	7	7	8	7	7	7	8	8	59	132
	DSM, Class 2 Total	74	68	65	64	63	61	59	55	55	53	41	43	40	40	39	37	35	33	32	31	616	987
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	70	-	-	50	102	283	53	170	189	245	249	300	261	7	99
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	21	-	-	-	44
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	21	-	-	-	46
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	21
	DSM, Class 2, OR	37	41	34	34	33	31	27	24	24	24	26	26	26	26	26	26	26	26	26	26	308	565
	DSM, Class 2, WA	8	8	8	8	8	7	7	7	7	7	5	5	5	5	5	4	4	3	3	3	74	118
	DSM, Class 2 Total	46	50	43	43	42	39	35	32	32	32	32	32	31	32	32	30	30	30	30	30	393	703
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	163	125	239	291	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	260	279
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	383	400	400	400	330	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	391	396
	FOT MidColumbia Q3 - 2	-	79	97	178	-	31	142	166	3	143	183	163	168	166	177	180	202	186	181	183	84	131
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	146	778	125	198	578	148	121	101	103	147	94	92	772	828	87	957	99	865	79	258		
	Annual Additions, Short Term Resources	646	704	836	969	727	828	939	1,033	800	940	1,030	1,062	1,248	1,016	1,144	1,166	1,244	1,232	1,278	1,241		
	Total Annual Additions	792	1,482	961	1,167	1,305	976	1,060	1,134	903	1,087	1,124	1,154	2,020	1,844	1,231	2,123	1,343	2,097	1,357	1,499		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-18	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	(416)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	(479)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	WY IGCC CCS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	456	-	456
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	834	-	-	-	1,680
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Nuclear	-	-	-	-	-	-	-	-	-	-	-	-	2,236	-	-	-	-	-	-	-	-	2,236
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	-	-	-	-	105
	Wind, GO, 29	-	-	-	-	-	-	-	-	-	-	373	62	60	105	-	-	-	-	-	-	-	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	-	200
	Wind, Wyoming, 40	-	-	-	-	-	-	-	650	350	-	-	-	-	-	-	-	-	-	-	-	1,000	1,000
	Total Wind	-	-	-	-	-	-	-	650	350	-	573	62	60	105	-	-	-	-	-	-	1,000	1,800
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	8	8	7	3	3	3	3	3	1	1	1	2	2	2	1	1	1	1	51	65
	DSM, Class 2, UT	88	81	77	81	80	51	49	43	42	40	14	13	11	12	10	14	11	10	9	8	633	743
	DSM, Class 2, WY	25	25	25	26	26	3	3	3	3	3	3	2	2	2	2	2	2	2	1	1	141	159
	DSM, Class 2 Total	120	112	109	115	114	58	55	48	48	46	18	17	13	15	14	17	15	13	12	10	824	967
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	450	-	-	-	-	-	-	-	450
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.4	13.4	13.4	131	263
	Micro Solar - Water Heating	-	-	-	0.4	0.3	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	128	-	49	143	80	-	53	53	134	250	122	190	53	18	63
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	-	-	-	-	-	-	-	362	-	-	-	-	-	-	-	-	-	-	362
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	30
	Wind, WV, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	300
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	300
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	16	22
	DSM, Class 2, OR	41	44	40	38	34	31	28	25	23	23	22	21	21	21	21	21	21	21	21	21	327	535
	DSM, Class 2, WA	14	14	14	14	14	7	7	6	6	6	2	2	2	3	3	3	2	2	2	2	104	126
	DSM, Class 2 Total	57	60	56	55	51	38	36	33	30	30	25	24	24	24	24	24	24	23	23	23	447	684
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	99	33	-	83	113	201	297	297	197	297	297	297	-	95	248	297	297	297	297	173	162	196
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	-	81	201	206	240	255	271	375	375	375	375	375	210	375	375	375	375	375	375	375	238	298
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	(158)	-	-	8	-	(1,208)	(416)	-	(834)	-	(543)	(74)	-		
	Annual Additions, Long Term Resources	203	832	183	187	183	111	106	746	445	93	632	254	2,350	611	54	1,204	55	887	51	506		
	Annual Additions, Short Term Resources	599	614	701	789	853	956	1,068	1,300	1,072	1,221	1,315	1,252	710	1,023	1,176	1,306	1,422	1,294	1,362	1,101		
	Total Annual Additions	802	1,446	884	976	1,036	1,067	1,174	2,046	1,517	1,314	1,947	1,506	3,060	1,634	1,230	2,510	1,477	2,181	1,413	1,607		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-4 Case C-19	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	-	-	736
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	34	13	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	13	-	-	-	23
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	684	-	-	-	-	-	-	-	-	684
	Total Wind	-	-	-	73	34	34	13	-	-	45	15	-	684	-	-	-	-	13	-	-	199	911
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	3.6	7.6
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	4	-	-	-	47	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	7	-	-	-	15	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	0	1	-	-	79	11	-	-	-	65	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	60	54	51	49	47	45	43	42	40	30	33	30	28	27	25	23	22	21	20	494	753
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	55	55	52	52	51	39	42	39	38	37	35	33	32	31	31	580	936
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	169	263	263	156	277	300	300	244	196	251	300	65	160
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	-	-	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	181
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	8	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	22	-	-	21	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	34	-	-	31	8	-	-	-	3	-	76
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	22	23	22	22	22	22	20	19	22	22	26	283	502
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	104
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	29	28	27	27	27	27	24	22	26	26	29	360	624
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	192	400	378	378
	FOT MidColumbia Q3 - 2	375	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	171	375	168	355	345
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	190	147	137	113	95	96	141	99	121	1,502	81	191	936	253	1,168	74	146		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,341	1,435	1,435	1,328	1,449	1,472	1,472	1,416	1,164	1,215	1,265		
	Total Annual Additions	790	1,485	966	1,174	1,252	1,350	1,444	1,523	1,295	1,482	1,534	1,556	2,830	1,530	1,663	2,408	1,669	2,332	1,289	1,411		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

Table K.11 – Energy Gateway Scenario 5 – Case C-01 to C-19

	EG-5 Case C-01	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	661	-	661	-	-	-	1,983
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	-	368
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	343	-	-	-	-	-	343
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	37	-	48	4	-	-	-	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-	19
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	37	19	79	4	-	-	-	-	-	139
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	2	2	2	31	56
	DSM, Class 2, UT	66	61	54	51	49	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	502	761
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	7	56	126
	DSM, Class 2 Total	72	67	61	59	57	57	58	52	52	51	39	43	39	38	37	35	33	31	30	29	588	943
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	37	152	249	21	162	257	263	168	270	299	172	270	220	273	237	62	153
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	-	21	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	26	22	1	23	-	-	-	-	-	-	73
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	22	22	19	19	18	284	495
	DSM, Class 2, WA	8	7	7	7	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	28	26	26	23	23	22	361	619
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	106	227	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	172	231	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	360	380
	FOT MidColumbia Q3 - 2	375	375	342	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	372	373
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	144	776	121	117	113	104	103	95	96	98	84	114	803	102	184	1,086	76	912	69	436		
	Annual Additions, Short Term Resources	647	706	842	981	1,102	1,209	1,324	1,421	1,193	1,334	1,429	1,435	1,340	1,442	1,471	1,344	1,442	1,392	1,445	1,409		
	Total Annual Additions	791	1,482	963	1,098	1,215	1,313	1,427	1,516	1,289	1,432	1,513	1,549	2,143	1,544	1,655	2,430	1,518	2,304	1,514	1,845		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-02		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	846	-	-	-	-	-	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	ICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	103	-	-	-	103
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	70	47	30	13	-	-	44	-	-	-	-	-	-	-	-	-	-	204	204
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	546	-	-	-	-	-	-	-	-	546
	Total Wind	-	-	-	70	47	30	13	-	-	44	-	-	546	-	-	-	-	-	-	-	204	750
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.6	7.9	-	14.5
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.8	2.7	2.7	3.6	12.5
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	-	-	7	-	77	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	11	7	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	10	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	5	-	-	12	13	95	11	11	12	-	158
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	31	59
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	22	21	495	756
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	8	8	56	127
	DSM, Class 2 Total	69	67	61	59	57	57	55	52	52	51	39	42	39	38	37	35	33	33	32	32	581	942
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	38	156	253	25	166	260	262	101	223	299	300	300	299	299	299	64	164
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	22	-	-	-	-	77
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	22	-	-	-	-	77
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	1.8	-	3.2
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	0.4	-	0.8
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	15	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	28	-	-	44	-	-	-	26	18	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	26	26	26	26	26	284	523
	DSM, Class 2, WA	8	7	7	7	8	7	6	6	6	6	4	4	4	4	4	4	4	3	3	3	68	108
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	28	30	30	30	30	30	361	649
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	108	229	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	234	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	361	380
	FOT MidColumbia Q3 - 2	375	375	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	372	374
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	187	160	134	113	95	96	142	84	120	1,474	82	137	992	197	854	127	212		
	Annual Additions, Short Term Resources	650	709	845	983	1,104	1,210	1,328	1,425	1,197	1,338	1,432	1,434	1,273	1,395	1,471	1,472	1,472	1,471	1,471	1,471		
	Total Annual Additions	790	1,485	966	1,170	1,264	1,344	1,441	1,520	1,293	1,480	1,516	1,554	2,747	1,477	1,608	2,464	1,669	2,325	1,598	1,683		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-03		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	1,322	-	-	-	-	-	1,983
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	3.6	7.3
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	4	4	-	-	-	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	7	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	4	-	-	18	-	-	-	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	1	8	111	-	20	-	-	-	-	16	-	157
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	61	54	51	49	47	45	42	42	40	30	33	30	28	27	25	23	22	21	20	494	752
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	55	125
	DSM, Class 2 Total	69	67	61	59	57	55	54	52	52	51	39	42	39	38	37	35	33	32	31	30	579	935
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	40	159	256	28	170	263	263	299	190	300	40	40	178	228	300	65	138
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	15
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	24	46	-	2	-	-	-	-	31	-	103
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	22	23	22	22	22	22	18	19	22	22	26	282	500
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	26	29	28	27	27	27	28	22	23	26	26	30	359	623
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	229	297	297	297	297	297	297	297	297	297	297	161	262	297	297	297	182	231
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	234	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	361	380
	FOT MidColumbia Q3 - 2	375	375	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	372	374
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	(387)	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	190	148	137	112	95	95	142	91	550	457	743	104	1,396	72	678	73	124		
	Annual Additions, Short Term Resources	650	709	845	984	1,104	1,212	1,331	1,428	1,200	1,342	1,435	1,435	1,471	1,362	1,472	1,076	1,177	1,350	1,400	1,472		
	Total Annual Additions	790	1,485	966	1,174	1,252	1,349	1,443	1,523	1,295	1,484	1,526	1,985	1,928	2,105	1,576	2,472	1,249	2,028	1,473	1,596		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-04

		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT F 2x1	-	-	-	-	-	-	-	-	-	-	634	-	-	-	-	-	-	-	-	-	-	634
	CCCT FD 2x1	-	-	-	-	661	-	-	1,322	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	736	-	-	-	-	736	-	-	-	-	-	736	1,472
	CCCT J 1x1	-	-	-	-	-	-	423	-	423	423	-	-	-	-	-	-	-	-	-	411	1,269	1,680
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	2	27	53
	DSM, Class 2, UT	63	55	50	48	45	43	41	39	39	39	30	33	30	28	27	25	23	22	21	20	463	721
	DSM, Class 2, WY	3	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	7	54	123
	DSM, Class 2 Total	68	62	58	56	54	52	49	48	49	49	38	41	38	38	37	35	33	32	31	29	545	897
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	112	185	74	186	209	125	83	-	-	-	109	232	33	40	40	250	300	88	97	103
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
	DSM, Class 2, OR	35	40	33	32	29	26	22	19	17	17	17	19	19	19	20	22	22	22	22	19	270	471
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	64	101
	DSM, Class 2 Total	43	48	41	40	37	33	29	25	24	24	22	24	24	24	25	26	26	26	26	22	344	589
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	38	65	342	297	297	297	297	297	297	233	179	212	297	297	99	153	211	297	297	297	246	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	41	100	100	100	100	87
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	151	270	375	375	375	375	375	375	375	375	375	375	375	361	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	-	(279)	(1,084)	(597)	(788)	(442)	-	-	-	-	-	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	138	770	116	113	770	99	516	1,412	512	1,249	711	82	79	78	814	78	76	74	74	479		
	Annual Additions, Short Term Resources	652	716	1,224	1,357	1,246	1,358	1,381	1,297	1,255	1,108	1,054	1,087	1,281	1,404	893	968	1,067	1,422	1,472	1,260		
	Total Annual Additions	790	1,486	1,340	1,470	2,016	1,457	1,897	2,709	1,767	2,357	1,765	1,169	1,360	1,482	1,707	1,046	1,143	1,496	1,546	1,739		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-05	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	-	-	-	-	(416)	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	661	661	-	-	-	-	-	-	-	-	-	-	-	1,322	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	-	-	-	-	736	736
	CCCT J 1x1	-	-	-	-	-	423	423	423	-	423	-	-	-	-	-	411	-	411	-	-	1,692	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	15	-	-	-	-	665
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	15	-	-	-	202	873
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.5	7.9	7.9	7.9	7.9	-	39.1
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3.7	3.6	27.3
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	15	37	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	3	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	1	68	15	59	3	1	11	-	158
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	56	54	51	49	47	45	43	42	40	30	33	30	28	27	26	25	23	22	21	490	756
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	8	8	55	128
	DSM, Class 2 Total	69	63	61	59	57	55	54	52	52	51	39	43	39	38	38	36	35	33	33	32	575	942
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	263	164	248	181	232	-	-	-	187	299	282	282	300	300	300	299	109	167

EG-5 Case C-05, cont.		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	-	-	-	-	-	423	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Fly Wheel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	10
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	5
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	2.3	2.3	2.3	2.3	-	9.4
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	-	2.7
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	6	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	2	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	3	69	-	6	-	33	5	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	19
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	20	23	23	22	22	26	26	26	26	26	26	26	281	527
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	5	5	4	4	3	3	3	67	108
	DSM, Class 2 Total	45	49	41	41	38	33	29	26	27	30	28	27	27	32	32	31	30	30	30	30	358	655
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	143	124	297	297	297	297	297	181	272	297	297	297	297	297	297	297	297	297	203	249
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	149	207	353	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	307	341
	Existing Plant Retirements/Conversions	-	-	(164)	8	(378)	(158)	(353)	(853)	(1,355)	(568)	8	-	-	-	-	(328)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	140	772	120	190	148	560	534	1,180	1,180	1,302	90	519	303	93	226	520	175	507	127	214		
	Annual Additions, Short Term Resources	651	713	850	977	1,435	1,336	1,420	1,353	1,404	1,056	1,147	1,172	1,359	1,471	1,454	1,454	1,472	1,472	1,472	1,471		
	Total Annual Additions	791	1,485	970	1,167	1,583	1,896	1,954	2,533	2,584	2,358	1,237	1,691	1,662	1,564	1,680	1,974	1,647	1,979	1,599	1,685		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-06		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	423	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	2	3	3	3	3	3	3	3	32	59
	DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	28	27	25	23	22	21	20	508	767
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	6	7	7	7	7	7	7	7	56	126
	DSM, Class 2 Total	73	67	61	60	59	61	58	53	52	51	40	43	38	38	37	35	33	32	31	30	596	952
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	28	142	237	6	148	241	263	40	40	147	201	300	59	109	232	56	110
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	11
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	31	28	24	23	23	23	23	22	19	19	19	22	22	19	22	22	295	504
	DSM, Class 2, WA	8	8	8	8	8	7	7	6	7	7	5	5	5	5	5	3	3	3	3	3	71	110
	DSM, Class 2 Total	45	49	42	41	40	35	32	31	30	30	29	28	25	24	24	26	26	23	26	26	376	632
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	127	126	243	258	297	297	297	297	297	297	297	297	145	269	297	297	297	297	297	297	254	266
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	220	300	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	119	117	111	105	98	99	98	85	100	740	79	78	923	76	1,155	73	73		
	Annual Additions, Short Term Resources	646	705	841	978	1,097	1,200	1,314	1,409	1,178	1,320	1,413	1,435	1,060	1,184	1,319	1,373	1,472	1,231	1,281	1,404		
	Total Annual Additions	791	1,482	962	1,097	1,214	1,311	1,419	1,507	1,277	1,418	1,498	1,535	1,800	1,263	1,397	2,296	1,548	2,386	1,354	1,477		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-07	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	-	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	423	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	3	-	-	653
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	3	-	202	861
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	4	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	40	-	-	51
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	27	44	-	-	87
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
	DSM, Class 2, UT	63	61	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	499	759
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	7	7	56	127
	DSM, Class 2 Total	69	67	61	59	59	57	57	52	52	51	39	42	39	38	37	35	33	32	32	30	586	945
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	36	151	248	19	162	257	-	134	255	298	40	40	297	300	277	62	126
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	22	22	22	23	22	23	26	26	22	285	516
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	112
	DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	28	28	28	29	27	28	30	30	26	365	646
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	130	247	268	297	297	297	297	297	297	297	238	297	297	297	156	254	297	297	297	256	264
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	215	305	375	375	375	375	375	375	375	375	375	375	375	375	375	375	166	259	307
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	777	121	191	151	140	117	96	96	141	90	942	302	83	172	1,400	77	528	125	493		
	Annual Additions, Short Term Resources	650	709	845	983	1,102	1,208	1,323	1,420	1,191	1,334	1,429	1,113	1,306	1,427	1,470	1,071	1,169	1,469	1,472	1,240		
	Total Annual Additions	791	1,486	966	1,174	1,253	1,348	1,440	1,516	1,287	1,475	1,519	2,055	1,608	1,510	1,642	2,471	1,246	1,997	1,597	1,733		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-08	Capacity (MW)																				Resource Totals 1/	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT FD 2x1	-	-	-	-	-	1,322	661	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
CCCT GH 2x1	-	-	-	-	736	-	-	736	-	-	-	-	-	-	-	736	-	-	-	-	1,472	2,208
CCCT J 1x1	-	-	-	-	-	-	-	-	423	-	423	-	423	-	-	-	-	-	-	-	423	1,269
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	509	-	509
Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	509	-	509
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	28	56
DSM, Class 2, UT	63	56	54	51	49	47	44	40	40	40	30	33	30	28	27	25	23	22	21	20	484	742
DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	7	55	124
DSM, Class 2 Total	69	62	61	59	57	55	53	49	50	51	39	42	39	38	37	35	33	32	31	30	567	922
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	109	175	-	93	-	70	-	124	108	140	40	111	240	40	40	129	179	300	57	95
West																						
Existing Plant Retirements/Conversions																						
JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	17
DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	19	19	19	19	19	22	22	22	22	19	275	478
DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	67	103
DSM, Class 2 Total	45	49	41	41	38	33	29	26	24	26	25	24	24	24	24	26	26	26	26	22	352	599
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	37	64	342	297	291	297	184	297	281	297	297	297	245	297	297	33	123	297	297	297	239	243
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	-	9	100	100	100	100	90
FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(1,279)	(279)	(816)	(548)	-	(268)	-	-	-	-	-	-	(338)	(74)	-		
Annual Additions, Long Term Resources	140	771	120	117	849	1,425	757	827	514	94	503	83	502	78	77	814	76	74	74	578		
Annual Additions, Short Term Resources	651	714	1,219	1,347	1,166	1,265	1,059	1,242	1,156	1,296	1,280	1,312	1,160	1,283	1,412	848	947	1,301	1,351	1,472		
Total Annual Additions	791	1,485	1,339	1,464	2,015	2,690	1,816	2,069	1,670	1,390	1,783	1,395	1,662	1,361	1,489	1,662	1,023	1,375	1,425	2,050		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-09		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	(418)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(418)	(418)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(269)	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	(459)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(450)	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	-	-	-	-	-	(106)	(106)
	Johnston3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	-	-	-	-	-	-	(220)	(220)
	Johnston4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	-	-	-	-	-	-	(328)	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	661	1,322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,983	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	736	-	-	-	-	736	-	-	-	-	736	-	-	736	2,208
	CCCT J 1x1	-	-	-	-	-	-	-	423	423	-	423	-	-	-	-	-	-	-	-	-	846	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	33	14	-	-	49	-	-	-	-	-	-	-	-	-	-	204	204
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	42	-	439	-	-	-	-	-	-	-	509	42	990
	Total Wind	-	-	-	73	35	33	14	-	-	91	-	439	-	-	-	-	-	-	-	509	246	1,194
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	3	4	3	3	2	3	3	3	3	3	3	3	28	55
	DSM, Class 2, UT	63	56	54	51	49	47	44	40	40	40	30	33	30	28	27	25	23	22	21	20	484	742
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	6	7	7	7	7	7	8	55	124
	DSM, Class 2 Total	69	62	61	59	57	55	53	49	50	51	39	42	38	37	37	35	33	32	31	30	567	921
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	-	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	109	175	60	64	249	86	-	233	217	246	40	40	54	129	228	125	175	293	98	126
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(354)	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,441	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	18
	DSM, Class 2, OR	36	40	33	32	29	26	22	19	17	19	19	19	19	19	19	22	22	22	22	23	275	482
	DSM, Class 2, WA	7	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	67	103
	DSM, Class 2 Total	45	49	41	41	38	33	29	26	24	26	25	24	24	24	24	26	26	26	26	27	352	603
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	37	64	342	297	297	297	297	297	297	297	297	297	59	183	297	297	297	297	297	297	252	257
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	114	150	268	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	316	345
	Existing Plant Retirements/Conversions	-	-	(582)	8	(378)	(1,173)	(74)	(816)	(548)	(106)	(268)	-	-	-	-	-	-	(543)	(74)	-		
	Annual Additions, Long Term Resources	140	771	120	190	809	1,458	110	1,250	514	185	503	522	814	78	77	78	76	810	74	583		
	Annual Additions, Short Term Resources	651	714	1,219	1,347	1,232	1,236	1,421	1,258	1,172	1,405	1,389	1,418	974	1,098	1,226	1,301	1,400	1,297	1,347	1,465		
	Total Annual Additions	791	1,485	1,339	1,537	2,041	2,694	1,531	2,508	1,686	1,590	1,892	1,940	1,788	1,176	1,303	1,379	1,476	2,107	1,421	2,048		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-10	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	-	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	7.9	-	15.8
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	2.7	0.8	2.7	2.7	3.6	14.7
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	37	-	-	15	-	-	40	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	11	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	38	-	-	57	-	13	51	-	158
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	24	22	22	21	495	757
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	8	8	56	128
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	34	32	32	32	581	943
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	256	27	169	263	67	262	297	272	286	298	278	300	298	65	164
West	**Expansion Resources**																						
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	15
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	2.3	-	4.6
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	0.4	-	0.8
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	22	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	48	-	-	24	-	-	44	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	26	26	26	26	26	284	523
	DSM, Class 2, WA	8	7	7	7	8	6	6	6	6	6	4	4	4	4	4	4	4	3	3	3	68	107
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	28	30	30	30	30	30	361	649
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	175	234	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	361	380
	FOT MidColumbia Q3 - 2	375	375	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	372	374
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	104	100	95	96	98	84	747	83	168	263	924	164	925	104	202		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,428	1,199	1,341	1,435	1,239	1,434	1,469	1,444	1,458	1,470	1,450	1,472	1,470		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,317	1,431	1,523	1,295	1,439	1,519	1,986	1,517	1,637	1,707	2,382	1,634	2,375	1,576	1,672		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-11

		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	7.9	7.9	-	16.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.8	0.8	0.8	2.7	2.7	2.7	3.6	15.7
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	4	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	3	-	7	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	1	127	11	-	7	1	11	-	158
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	31	60
	DSM, Class 2, UT	65	61	54	51	49	48	45	43	42	40	30	33	30	28	27	26	24	23	22	21	497	762
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	7	7	8	7	7	7	8	8	56	128
	DSM, Class 2 Total	71	67	61	59	57	57	55	52	52	51	39	43	39	38	38	36	34	33	33	32	584	950
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	36	154	251	23	164	258	58	251	298	299	300	217	300	300	300	63	160
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	203	-	-	-	-	203
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	11	-	17
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	11	-	17
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	15
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	2.3	2.3	-	6.1
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.4	0.4	0.4	-	1.5
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	2	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	70	2	1	-	6	33	5	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	26	26	26	26	26	26	26	284	530
	DSM, Class 2, WA	8	7	7	7	8	7	6	6	6	6	4	4	4	5	5	4	4	4	3	3	68	109
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	32	32	31	30	30	30	30	362	659
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	106	227	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	173	232	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	361	380
	FOT MidColumbia Q3 - 2	375	375	343	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	372	373
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	142	776	121	190	148	139	113	96	96	144	90	1,180	301	158	215	937	285	759	133	225		
	Annual Additions, Short Term Resources	648	707	843	981	1,102	1,208	1,326	1,423	1,195	1,336	1,430	1,230	1,423	1,470	1,471	1,472	1,389	1,472	1,472	1,472		
	Total Annual Additions	790	1,483	964	1,171	1,250	1,347	1,439	1,519	1,291	1,480	1,520	2,410	1,724	1,628	1,686	2,409	1,674	2,231	1,605	1,697		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-12	Capacity (MW)																				Resource Totals 1/	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	661
CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	411	-	-	423	-	423	423	-	-	-	1,680
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93	-	-	93
Total Wind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93	-	-	93
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88	-	88
DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	0
DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	12	-	25
DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	-	0
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13	100	-	114
DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
DSM, Class 2, UT	63	56	54	51	50	48	48	43	42	40	30	33	30	28	27	25	23	22	21	20	494	754
DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	8	56	126
DSM, Class 2 Total	69	63	61	59	59	57	57	52	52	51	39	42	39	38	37	35	33	32	32	31	581	938
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	-	-	-	42	157	254	25	169	263	-	158	280	66	240	40	299	300	294	65	129
West																						
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	0	-	16
DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	25	-	46
DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3
DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	4
DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	-	2
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	33	25	-	75
DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
DSM, Class 2, OR	37	41	33	32	29	28	24	21	20	20	23	19	22	22	22	22	23	26	26	26	285	515
DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	7	5	5	5	5	5	4	4	3	3	3	71	111
DSM, Class 2 Total	45	49	42	41	38	35	32	28	27	27	28	25	28	28	28	27	28	30	30	30	365	645
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	131	134	251	267	297	297	297	297	297	297	297	260	297	297	297	297	248	297	297	297	257	272
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOT MidColumbia Q3 - 2	19	79	98	221	311	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	260	318
Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
Annual Additions, Long Term Resources	141	772	121	118	116	106	103	95	96	95	84	495	83	82	504	739	500	520	217	202		
Annual Additions, Short Term Resources	650	713	849	988	1,108	1,214	1,329	1,426	1,197	1,341	1,435	1,135	1,330	1,452	1,238	1,412	1,163	1,471	1,472	1,466		
Total Annual Additions	791	1,485	970	1,106	1,224	1,320	1,432	1,521	1,293	1,436	1,519	1,630	1,413	1,534	1,742	2,151	1,663	1,991	1,689	1,668		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-13	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	423	-	-	423	-	-	423	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	36	33	12	-	-	45	4	-	-	-	-	-	-	-	-	-	199	203
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	13
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	379	234	-	-	-	-	-	93	-	-	706
	Total Wind	-	-	-	73	36	33	12	-	-	45	4	379	234	-	-	-	-	13	93	-	199	922
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	3	3	3	3	3	30	58
	DSM, Class 2, UT	63	58	54	51	50	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	494	752
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	56	124
	DSM, Class 2 Total	69	65	61	59	59	57	54	52	52	51	39	42	39	38	37	35	33	32	31	30	580	935
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	40	157	254	26	169	263	-	146	269	57	231	300	59	110	233	65	116
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	8
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	22
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	30
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	29	26	24	21	20	20	23	19	19	19	20	22	22	19	19	22	283	487
	DSM, Class 2, WA	8	7	8	8	8	7	7	6	6	6	5	5	5	5	5	3	4	3	3	3	70	110
	DSM, Class 2 Total	45	49	42	41	38	34	32	28	27	27	28	25	25	24	26	26	26	23	23	26	363	614
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	131	132	249	270	297	297	297	297	297	297	297	247	297	297	297	297	297	297	297	297	256	274
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	19	79	98	215	308	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	259	317
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	774	121	191	152	138	112	95	96	140	88	885	314	79	502	739	106	1,168	163	72		
	Annual Additions, Short Term Resources	650	711	847	985	1,105	1,212	1,329	1,426	1,198	1,341	1,435	1,122	1,318	1,441	1,229	1,403	1,472	1,231	1,282	1,405		
	Total Annual Additions	791	1,485	968	1,176	1,257	1,350	1,441	1,521	1,294	1,481	1,523	2,007	1,632	1,520	1,731	2,142	1,578	2,399	1,445	1,477		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-14	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	-	-	-	-	-	(416)	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	-	(459)
	Huntington2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(450)	-	-	-	-	-	-	-	-	-	(450)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(205)	-	-	-	-	-	-	-	-	-	-	-	-	(205)	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	661	-	661	-	-	-	1,983
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	-	-	-	-	-	736
	CCCT J 1x1	-	-	-	-	-	-	423	1,680	-	423	-	411	-	-	-	-	-	-	-	-	2,526	2,937
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	850	-	-	432	218	-	-	-	-	-	-	-	850	1,500
	Total Wind	-	-	-	73	35	34	13	1	850	46	6	432	218	-	-	-	-	-	-	-	1,052	1,708
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	6	6	7	3	3	3	3	3	1	1	1	2	1	1	1	1	1	1	47	60
	DSM, Class 2, UT	84	76	75	73	73	50	47	41	41	39	14	13	11	11	10	13	11	10	8	7	599	707
	DSM, Class 2, WY	24	24	24	25	25	3	3	3	3	2	2	2	1	2	2	2	2	1	1	1	137	154
	DSM, Class 2 Total	114	106	105	104	105	56	54	47	47	45	17	17	13	14	13	17	14	12	11	10	783	922
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	1.2	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	52	157	-	131	-	-	50	162	40	288	40	56	173	40	44	186	34	71
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	JBridger3 (Early Retirement/Conversion)	-	-	-	(349)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(349)	(349)
	JBridger4 (Early Retirement/Conversion)	-	-	-	-	(353)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(353)	(353)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Colstrip4 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	-	-	-	-	-	(74)	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	357	362	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	1,079	1,441
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	15	20
	DSM, Class 2, OR	37	41	34	33	31	28	24	23	21	21	21	20	20	20	20	20	20	20	21	21	293	498
	DSM, Class 2, WA	13	13	13	14	14	6	6	6	6	6	2	2	2	2	2	2	2	2	2	2	97	114
	DSM, Class 2 Total	52	55	49	49	47	35	31	30	28	28	23	22	22	23	23	23	23	23	23	23	405	632
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	54	23	77	297	297	291	297	199	-	297	297	-	297	122	297	297	232	297	297	154	198
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	107	75	200	236	375	375	309	375	375	375	375	375	369	375	375	375	375	375	375	375	280	327
	Existing Plant Retirements/Conversions	-	-	(164)	8	(378)	-	-	(1,674)	-	(3)	(261)	(450)	-	(459)	-	(760)	-	(338)	(74)	-		
	Annual Additions, Long Term Resources	193	822	173	243	206	141	535	1,772	941	558	63	898	1,006	54	713	717	53	712	50	49		
	Annual Additions, Short Term Resources	607	629	723	813	1,224	1,329	1,100	1,303	1,074	875	1,222	1,334	909	1,460	1,037	1,228	1,345	1,147	1,216	1,358		
	Total Annual Additions	800	1,451	896	1,056	1,430	1,470	1,635	3,075	2,015	1,433	1,285	2,232	1,915	1,514	1,750	1,945	1,398	1,859	1,266	1,407		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-15		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	362	-	362	-	-	-	905
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	SCCT Frame WYAE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181
	SCCT Frame WYNE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	515	-	-	-	-	-	515
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.8	2.7	2.7	0.4	0.4	3.6	12.5
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	74	-	-	4	-	-	-	-	-	77
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	19	3	-	-	-	-	-	-	22
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	74	45	3	4	-	4	-	-	-	129
	DSM, Class 2, ID	6	6	6	6	6	2	2	2	2	3	1	1	1	2	1	1	1	1	1	1	39	52
	DSM, Class 2, UT	81	74	68	65	63	39	37	37	37	37	12	11	9	10	9	12	10	9	7	6	537	634
	DSM, Class 2, WY	23	23	23	23	24	2	2	2	2	2	2	2	1	2	2	2	2	1	1	1	128	144
	DSM, Class 2 Total	111	103	97	94	92	43	41	41	41	42	16	14	12	13	12	15	13	12	10	9	704	830
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	6	114	-	55	171	230	198	300	297	298	258	300	215	204	18	132
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame OR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	384	-	-	-	565
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	0.3
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	21
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	1	-	-	-	24
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0	13	16
	DSM, Class 2, OR	36	41	33	32	29	26	22	19	17	17	18	17	18	17	19	19	19	19	17	17	274	453
	DSM, Class 2, WA	12	12	12	12	12	5	5	5	5	5	2	1	1	1	1	2	1	1	1	1	86	98
	DSM, Class 2 Total	51	55	47	46	43	32	28	24	23	23	20	19	19	19	20	21	21	21	18	18	373	568
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	-	56	174	297	297	196	297	297	297	297	297	297	297	297	297	297	297	132	214
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	135	160	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	350	375
	FOT MidColumbia Q3 - 2	375	375	237	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	358	367
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	188	818	163	231	189	123	97	81	80	128	58	482	542	94	234	934	234	803	225	224		
	Annual Additions, Short Term Resources	610	635	737	845	931	1,049	1,178	1,286	1,071	1,227	1,343	1,402	1,370	1,472	1,469	1,470	1,430	1,472	1,387	1,376		
	Total Annual Additions	798	1,453	900	1,076	1,120	1,172	1,275	1,367	1,151	1,355	1,401	1,884	1,912	1,566	1,703	2,404	1,664	2,275	1,612	1,600		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-5 Case C-16	Capacity (MW)																				Resource Totals 1/	
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East																						
Existing Plant Retirements/Conversions																						
Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
Expansion Resources																						
CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,322	-	661	-	-	-	1,983
Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	-	-	115	-	-	-	-	-	-	-	115
Wind, GO, 29	-	-	-	-	63	-	-	-	-	63	-	-	-	-	-	-	-	-	-	-	126	126
Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	-	446	-	-	-	-	-	-	-	-	446
Total Wind	-	-	-	-	63	-	-	-	-	63	-	-	446	-	-	-	-	-	-	-	126	572
CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	9
DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	85
DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	13
DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	0	-	-	106	-	-	-	-	-	-	106
DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	2	2	2	2	2	30	54
DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	753
DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	7	56	124
DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	33	31	30	30	29	581	931
Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
FOT Mona Q3	-	-	-	-	-	17	136	233	4	145	237	263	290	297	300	40	40	116	170	296	54	129
West																						
Expansion Resources																						
Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
Geothermal, Greenfield	-	-	-	25	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	25	30
CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	8	8	-	-	-	-	-	-	-	15
DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	21
DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	3	8	8	8	23	-	-	-	-	-	-	50
DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	18	18	18	18	18	284	487
DSM, Class 2, WA	8	7	7	7	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	105
DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	30	28	27	27	28	28	22	22	22	22	22	361	610
OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
FOT COB Q3	-	-	-	87	207	297	297	297	297	297	297	297	297	297	297	163	266	297	297	297	178	229
FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
FOT MidColumbia Q3	175	234	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	361	380
FOT MidColumbia Q3 - 2	375	375	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	372	374
Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
Annual Additions, Long Term Resources	140	776	121	142	176	104	100	95	96	161	87	95	717	210	211	1,394	70	730	68	68		
Annual Additions, Short Term Resources	650	709	845	962	1,082	1,189	1,308	1,405	1,176	1,317	1,409	1,435	1,462	1,469	1,472	1,078	1,181	1,288	1,342	1,468		
Total Annual Additions	790	1,485	966	1,104	1,258	1,293	1,408	1,500	1,272	1,478	1,496	1,530	2,179	1,679	1,683	2,472	1,251	2,018	1,410	1,536		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-17	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	661
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	423	-	423	-	-	-	1,269
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	181
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	686	-	-	-	164	-	-	-	1,500
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	686	-	-	-	164	-	-	202	1,708
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	44	-	-	3	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	2	-	25
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	63	53	-	22	10	-	149
	DSM, Class 2, ID	3	3	3	4	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	34	62
	DSM, Class 2, UT	68	61	57	55	53	51	48	44	44	42	31	34	30	29	28	27	25	23	22	21	523	793
	DSM, Class 2, WY	4	4	5	5	6	6	7	7	7	8	7	7	7	7	8	7	7	7	8	8	59	132
	DSM, Class 2 Total	74	68	65	64	63	61	59	55	55	53	41	43	40	40	39	37	35	33	32	32	616	987
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	0.8	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	52	-	-	52	100	285	53	169	53	53	129	159	264	5	68
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	21
	DSM, Class 2, OR	37	41	34	34	33	31	27	24	24	24	24	26	26	26	26	26	26	26	26	26	308	563
	DSM, Class 2, WA	8	8	8	8	8	7	7	7	7	7	5	5	5	5	5	4	4	3	3	3	75	119
	DSM, Class 2 Total	46	50	43	43	42	39	35	32	32	32	30	32	31	32	32	30	30	30	30	30	395	702
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	163	125	239	291	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	260	279
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	383	400	400	400	330	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	391	396
	FOT MidColumbia Q3 - 2	-	79	97	178	-	31	142	183	3	142	183	163	168	164	177	54	95	186	181	182	86	120
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	146	778	126	198	579	148	122	103	103	148	93	524	306	1,198	87	1,231	135	848	101	91		
	Annual Additions, Short Term Resources	646	704	836	969	727	828	939	1,032	800	939	1,032	1,060	1,250	1,014	1,143	904	945	1,112	1,137	1,243		
	Total Annual Additions	792	1,482	962	1,167	1,306	976	1,061	1,135	903	1,087	1,125	1,584	1,556	2,212	1,230	2,135	1,080	1,960	1,238	1,334		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-18	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Hunter1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(416)	-	-	-	-	-	-	-	(416)
	Hunter2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(269)	-	-	-	-	-	-	-	-	-	(269)
	Hunter3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(479)	-	-	-	-	-	-	-	-	(479)
	Huntington1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(459)	-	-	-	-	-	-	(459)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	(158)	-	-	-	-	-	-	-	-	-	-	-	-	(158)	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Wyodak1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(268)	-	-	-	-	-	-	-	-	(268)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	WY IGCC CCS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	456	-	456
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	1,245	-	846	-	-	-	2,514
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Nuclear	-	-	-	-	-	-	-	-	-	-	-	-	2,236	-	-	-	-	-	-	-	-	2,236
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	-	-	-	-	105
	Wind, GO, 29	-	-	-	-	-	-	-	-	-	263	122	50	11	154	-	-	-	-	-	-	263	600
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	-	200
	Wind, Wyoming, 40	-	-	-	-	-	-	-	650	850	-	-	-	-	-	-	-	-	-	-	-	1,500	1,500
	Total Wind	-	-	-	-	-	-	-	650	850	263	322	50	11	154	-	-	-	-	-	-	1,763	2,300
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	6	6	8	8	7	3	3	3	3	3	1	1	1	2	2	2	1	1	1	1	51	65
	DSM, Class 2, UT	88	81	83	81	80	52	49	43	42	40	14	13	11	12	11	14	11	10	9	8	640	751
	DSM, Class 2, WY	25	25	25	26	26	3	3	3	3	3	3	2	2	2	2	2	2	2	1	1	141	159
	DSM, Class 2 Total	120	112	115	115	114	58	55	49	48	46	18	17	13	15	14	17	15	13	12	10	831	974
	Utility Solar - PV	-	-	-	-	-	-	-	-	-	-	-	-	-	450	-	-	-	-	-	-	-	450
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.4	13.4	13.4	131	263
	Micro Solar - Water Heating	-	-	-	0.4	0.3	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	-	-	122	-	38	-	-	-	53	276	53	135	53	65	53	16	42
West	**Existing Plant Retirements/Conversions**																						
	JBridger1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	(354)	-	-	-	-	-	-	-	-	-	-	(354)
	JBridger2 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	(363)	-	-	-	-	-	-	-	-	-	-	(363)	(363)
	Colstrip3 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	-	(74)	-	-	-	-	-	-	-	(74)
	Coal Ret_Bridger -Gas RePower	-	-	-	-	-	-	-	-	-	360	362	-	-	-	-	-	-	-	-	-	360	722
	Expansion Resources																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	30
	Wind, HM, 29	-	-	-	-	-	-	-	-	-	-	-	600	-	-	-	-	-	-	-	-	-	600
	Total Wind	-	-	-	-	-	-	-	-	-	-	-	600	-	-	-	-	-	-	-	-	-	600
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	2	2	2	2	2	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	16	22
	DSM, Class 2, OR	41	44	40	38	34	31	28	25	23	23	22	21	21	21	21	21	21	21	21	21	327	535
	DSM, Class 2, WA	14	14	14	14	14	7	7	6	6	6	2	2	2	3	3	3	2	2	2	2	104	127
	DSM, Class 2 Total	57	60	56	55	51	38	36	33	30	30	25	24	24	24	24	24	24	23	23	23	447	684
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	99	33	-	78	108	196	297	297	187	297	84	248	-	-	297	263	297	241	297	49	159	168
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	-	81	196	206	240	255	265	375	375	375	375	375	4	340	375	375	375	375	375	375	237	286
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	(158)	-	(3)	8	(269)	(1,134)	(490)	(459)	(760)	-	(543)	(74)	-		
	Annual Additions, Long Term Resources	203	832	189	187	183	111	106	746	945	356	804	842	2,301	660	54	1,303	55	899	51	506		
	Annual Additions, Short Term Resources	599	614	696	784	848	951	1,062	1,294	1,062	1,210	959	1,123	504	893	1,448	1,191	1,307	1,169	1,237	977		
	Total Annual Additions	802	1,446	885	971	1,031	1,062	1,168	2,040	2,007	1,566	1,763	1,965	2,805	1,553	1,502	2,494	1,362	2,068	1,288	1,483		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-5 Case C-19	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	-	-	-	-	-	661
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	368	-	-	-	-	-	368
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	736	-	-	-	1,472
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	35	34	13	1	-	46	6	-	-	-	-	-	-	-	-	-	202	208
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	432	218	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	35	34	13	1	-	46	6	432	218	-	-	-	-	-	-	-	202	858
	CHP - Biomass	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	7	77	-	-	-	-	-	-	85
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	0	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	22
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	1	-	-	4	0	-	7	108	-	-	-	-	-	1	121
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	3	3	3	2	2	2	2	2	31	55
	DSM, Class 2, UT	67	61	54	51	50	51	48	43	42	40	30	33	30	28	27	25	23	22	21	20	507	766
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	7	56	125
	DSM, Class 2 Total	73	67	61	59	59	61	58	52	52	51	39	42	39	38	37	34	32	31	30	29	595	946
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	1.1	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	29	143	237	9	150	237	245	208	277	300	106	206	244	300	65	57	138
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	3	24	-	45	1	-	-	-	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	29	26	24	23	20	23	23	22	22	22	22	18	19	20	22	18	289	498
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	69	106
	DSM, Class 2 Total	45	49	41	41	38	34	32	30	27	30	28	27	27	28	28	22	23	24	26	22	367	622
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	103	223	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	181	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	171	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	377	389
	FOT MidColumbia Q3 - 2	375	205	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	355	365
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	191	150	144	117	100	96	144	97	542	961	134	191	1,177	71	807	72	491		
	Annual Additions, Short Term Resources	646	705	840	978	1,098	1,201	1,315	1,409	1,181	1,322	1,409	1,417	1,380	1,449	1,472	1,278	1,378	1,416	1,472	1,237		
	Total Annual Additions	791	1,482	961	1,169	1,248	1,345	1,432	1,509	1,277	1,466	1,506	1,959	2,341	1,583	1,663	2,455	1,449	2,223	1,544	1,728		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

Table K.12 – Sensitivity Cases under Energy Gateway Scenario 2, excluding S-04 and S-X that are included in Confidential Volume III

EG-2 Case S-01		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(387)	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	181	-	-	-	-	362
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.4	2.7	2.7	2.7	3.6	14.7
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	1	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	74	-	-	-	-	-	-	-	15	-	-	-	3	74	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	3	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	10	9	-	-	-	-	-	-	-	3	-	-	-	2	19	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0
	DSM, Class 1 Total	-	-	-	-	-	-	11	83	-	-	-	-	-	-	-	45	-	3	4	11	94	157
	DSM, Class 2, ID	3	3	3	4	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	33	61
	DSM, Class 2, UT	67	61	54	52	53	51	48	43	42	40	30	33	30	28	27	26	23	23	22	21	512	774
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	8	8	56	128
	DSM, Class 2 Total	73	67	62	61	63	61	58	52	52	51	39	43	39	38	37	36	33	33	32	32	601	964
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.1	1.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	140	228	256	255	21	158	243	263	291	226	188	300	222	300	300	300	106	185
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	-	-	-	-	-	-	197
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	0.9	-	1.8
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.4	0.3	-	0.9
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	0	15	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	44	-	-	-	-	-	-	-	-	-	-	-	-	3	44	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	15	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	70	-	-	-	-	-	-	-	-	3	-	6	19	18	70	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	37	41	33	32	29	28	27	21	20	23	23	22	22	22	24	26	23	26	26	26	291	530
	DSM, Class 2, WA	8	7	8	8	8	7	6	6	6	6	4	4	4	4	5	4	4	3	3	3	69	109
	DSM, Class 2 Total	46	49	42	41	38	36	34	28	27	30	28	27	27	28	30	30	28	30	30	30	370	658
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	-	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	178	238
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	109	141	400	386	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	344	372
	FOT MidColumbia Q3 - 2	375	375	237	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	361	368
	Existing Plant Retirements/Conversions	-	-	(164)	-	(387)	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	122	192	153	144	203	178	96	143	89	455	545	279	265	793	259	752	106	224		
	Annual Additions, Short Term Resources	584	616	737	861	1,312	1,400	1,428	1,427	1,193	1,330	1,415	1,435	1,463	1,398	1,360	1,472	1,394	1,472	1,472	1,472		
	Total Annual Additions	729	1,393	859	1,053	1,465	1,544	1,631	1,605	1,289	1,473	1,504	1,890	2,008	1,677	1,625	2,265	1,653	2,224	1,578	1,696		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case S-02	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	661	-	661	-	-	-	1,983
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	181	-	-	362
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.4	0.4	0.4	3.6	7.6
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	37	-	-	-	-	-	37	-	11	4	-	-	3	37	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	22
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	0	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	22
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0	-	-	0	0	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	38	-	-	-	-	-	37	-	13	58	-	-	3	38	149
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	32	60
	DSM, Class 2, UT	67	61	54	51	50	51	48	43	42	40	30	33	30	28	27	25	23	22	21	20	507	766
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	7	8	56	126
	DSM, Class 2 Total	73	67	61	59	59	61	58	52	52	51	39	42	39	38	37	35	33	32	31	30	595	952
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.4	1.2	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	37	143	263	214	257	46	203	162	217	187	289	84	254	298	256	159	298	116	168
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame OR	-	-	-	-	-	-	203	-	-	-	-	-	-	-	-	-	-	-	-	-	203	203
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
	DSM, Class 1, OR-Curtail	-	-	-	-	21	-	-	22	-	-	-	-	-	-	-	-	-	-	-	3	44	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	14
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	3	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	DSM, Class 1 Total	-	-	-	-	21	-	-	30	-	-	-	-	-	-	-	-	14	-	-	4	51	69
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	18
	DSM, Class 2, OR	37	41	33	32	29	26	24	23	20	19	20	19	22	22	22	22	22	19	22	22	285	498
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	4	4	4	4	3	3	3	3	3	69	105
	DSM, Class 2 Total	45	49	41	41	38	34	32	30	26	26	25	24	27	27	27	26	26	23	26	26	364	621
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	7	190	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	228	262
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	270	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	365	370
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	191	171	142	322	165	95	139	267	451	1,025	119	504	752	148	913	254	102		
	Annual Additions, Short Term Resources	770	882	1,065	1,209	1,315	1,435	1,386	1,429	1,218	1,375	1,334	1,389	1,359	1,461	1,256	1,426	1,470	1,428	1,331	1,470		
	Total Annual Additions	915	1,659	1,186	1,400	1,486	1,577	1,708	1,594	1,313	1,514	1,601	1,840	2,384	1,580	1,760	2,178	1,618	2,341	1,585	1,572		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case S-03		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	661	-	661	-	-	-	1,983
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	362	-	181	-	-	-	543
	SCCT Frame ID	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	-	-	-	-	181	181
	SCCT Frame WYSW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	172	-	-	-	-	172	-	344
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	37	-	-	-	-	-	-	48	-	-	-	-	-	-	37	85
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
	DSM, Class 1 Total	-	-	-	-	-	9	38	-	-	-	-	-	-	48	-	-	-	-	-	-	47	95
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	3	4	3	3	3	3	2	2	2	2	3	2	32	56
	DSM, Class 2, UT	67	61	54	52	50	51	48	40	40	40	30	33	30	28	26	25	23	22	21	20	504	761
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	6	6	7	7	7	7	7	7	7	56	123
	DSM, Class 2 Total	73	67	61	61	59	61	58	49	50	51	39	42	39	38	35	33	32	31	31	29	591	940
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	10	154	261	207	249	200	-	127	227	261	231	300	292	159	270	216	271	251	121	184
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	197	197
	Utility Biomass	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	8	-	-	-	-	-	-	8	-	-	-	-	-	-	8	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	DSM, Class 1, OR-Curtail	-	-	-	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	44
	DSM, Class 1, OR-DLC-RES	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	13
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	44	13	-	19	-	-	-	-	-	-	9	-	-	-	-	-	-	76	85
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	16
	DSM, Class 2, OR	33	37	30	29	27	26	22	17	20	20	20	22	22	22	19	19	19	19	17	19	260	457
	DSM, Class 2, WA	7	7	7	7	7	6	6	5	5	5	4	4	4	4	4	3	3	3	3	3	63	94
	DSM, Class 2 Total	42	45	38	37	35	32	29	23	26	26	24	27	26	26	23	22	22	22	21	22	332	567
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	142	210	342	297	297	297	297	297	276	297	297	297	297	297	297	297	297	297	297	297	275	286
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	375	375	375	375	375	360	375	375	375	375	375	375	375	375	375	375	375	375	375	375	374	374
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	141	772	118	232	164	346	174	268	93	138	85	453	1,024	138	247	1,095	70	911	68	262		
	Annual Additions, Short Term Resources	1,017	1,085	1,227	1,326	1,433	1,364	1,421	1,372	1,151	1,299	1,399	1,433	1,403	1,472	1,464	1,331	1,442	1,388	1,443	1,423		
	Total Annual Additions	1,158	1,857	1,345	1,558	1,597	1,710	1,595	1,640	1,244	1,437	1,484	1,886	2,427	1,610	1,711	2,426	1,512	2,299	1,511	1,685		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case S-05	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	1,322	-	-	-	-	-	1,983
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	423	-	-	-	423
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, Wyoming, 40	-	-	-	-	-	-	144	-	-	-	-	-	-	-	-	-	-	-	-	-	144	144
	Total Wind	-	-	-	-	-	-	144	-	-	-	-	-	-	-	-	-	-	-	-	-	144	144
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	9
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	4	74	-	-	88
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	7	74	-	-	106
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	2	2	30	57
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	21	20	495	754
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	7	7	7	7	7	7	55	124
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	33	32	30	29	581	934
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	0.2	1.4	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	158	255	26	169	263	260	226	297	275	40	40	292	272	251	65	143
West	**Expansion Resources**																						
	CCCT GH 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	420
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	8	-	-	-	15
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	-	-	44
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	13	-	51	-	-	-	8	-	-	-	72
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	17
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	22	23	22	19	22	19	19	22	22	18	18	282	487
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	68	104
	DSM, Class 2 Total	45	49	41	41	38	34	29	28	27	29	28	27	24	27	24	23	26	26	22	22	360	609
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	136	234	297	297	297	182	229
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	167	333	344
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	117	113	104	244	95	96	96	84	124	740	133	258	1,396	75	512	142	488		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,330	1,427	1,198	1,341	1,435	1,432	1,398	1,469	1,447	1,051	1,149	1,464	1,444	1,215		
	Total Annual Additions	790	1,485	966	1,101	1,218	1,317	1,574	1,522	1,294	1,437	1,519	1,556	2,138	1,602	1,705	2,447	1,224	1,976	1,586	1,703		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG-2 Case S-06	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	846	-	-	-	-	-	846
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	91
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	69	51	45	109	-	-	-	-	-	-	-	-	-	-	-	-	-	274	274
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	31	-	52
	Wind, Wyoming, 40	-	-	-	-	-	-	400	-	-	-	-	250	-	-	-	-	-	-	-	-	400	650
	Total Wind	-	-	-	69	51	45	509	-	-	-	-	250	21	-	-	-	-	-	-	31	674	976
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	7.9	7.9	7.9	7.9	7.9	7.9	-	55.3
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	2.7	2.7	2.7	2.7	2.7	2.7	3.7	3.7	3.6	28.3
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	37	48	4	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	38	105	4	-	-	1	11	-	158
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	33	61
	DSM, Class 2, UT	67	61	54	52	50	51	48	43	42	40	30	33	30	29	28	27	25	23	23	22	508	778
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	8	7	7	7	7	8	7	7	8	8	8	57	131
	DSM, Class 2 Total	73	67	61	60	59	61	58	53	52	52	40	43	40	39	39	37	35	34	33	33	597	970
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	26	134	229	-	140	232	261	292	300	300	300	300	285	300	300	53	170
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	ICE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	-	-	-	117
	IC Aero WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	-	99
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	5	-	25
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	2.3	2.3	2.3	2.3	2.3	2.3	-	16.2
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-	3.3
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	6	-	-	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	2	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	60	12	33	6	-	-	5	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	21
	DSM, Class 2, OR	37	41	33	32	29	28	27	23	23	23	25	26	26	26	26	26	26	26	26	26	296	552
	DSM, Class 2, WA	8	7	8	8	8	7	6	6	6	6	4	5	5	5	5	4	4	4	4	4	69	112
	DSM, Class 2 Total	46	49	42	41	38	35	34	30	30	30	30	32	32	32	32	31	30	30	30	31	375	685
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	102	221	297	297	297	296	297	297	297	297	297	297	297	297	297	297	297	181	239
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	146	204	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	332	353
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	188	166	155	617	98	99	98	87	342	293	199	218	981	191	871	115	245		
	Annual Additions, Short Term Resources	646	704	840	977	1,096	1,198	1,306	1,401	1,171	1,312	1,404	1,433	1,464	1,472	1,472	1,472	1,472	1,457	1,472	1,472		
	Total Annual Additions	791	1,481	961	1,165	1,262	1,353	1,923	1,499	1,270	1,410	1,491	1,775	1,757	1,671	1,690	2,453	1,663	2,328	1,587	1,717		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case S-07		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	91
	SCCT Frame UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, UT, 29	-	-	-	-	18	12	-	-	-	-	-	16	-	74	-	-	-	-	7	72	30	199
	Wind, Wyoming, 40	-	-	-	-	-	-	1	74	-	-	-	-	-	539	26	-	-	9	-	-	75	649
	Total Wind	-	-	-	-	18	12	1	74	-	-	-	16	-	613	26	-	-	9	7	72	105	848
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	7.9	7.9	7.9	-	31.6
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.8	2.7	2.7	2.7	2.7	2.7	2.7	3.6	21.7
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	7	77	4	-	-	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	4	-	-	-	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	1	-	8	126	11	-	-	1	11	-	158
	DSM, Class 2, ID	3	3	3	3	3	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	32	60
	DSM, Class 2, UT	67	61	54	51	50	48	48	43	42	40	30	33	30	28	28	26	25	23	22	21	504	770
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	7	7	7	7	8	7	7	7	8	8	56	129
	DSM, Class 2 Total	73	67	61	59	59	57	58	52	52	51	40	43	39	38	38	36	35	33	33	32	591	960
	Utility Solar - PV	-	-	-	100	-	-	-	-	-	-	-	-	-	100	-	-	-	100	-	-	100	300
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	23	137	232	-	143	236	263	299	300	300	299	298	298	299	300	54	171
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	IC Aero SO-CAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	91
	IC Aero WW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	-	99
	Geothermal, Greenfield	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	30
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	5
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	2.3	2.3	2.3	-	9.3
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	0.3	0.4	0.4	0.4	-	2.0
	DSM, Class 1, WA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	0	-	16
	DSM, Class 1, WA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	6	0	-	11
	DSM, Class 1, WA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	4
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	2	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	5	-	67	-	-	7	-	33	5	-	116
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	20
	DSM, Class 2, OR	37	41	33	32	29	26	24	23	23	23	23	24	24	26	26	26	26	26	26	26	292	542
	DSM, Class 2, WA	8	7	7	8	8	7	6	6	6	6	4	4	4	5	5	4	4	4	3	3	69	110
	DSM, Class 2 Total	45	49	41	41	38	34	31	30	30	30	28	29	30	32	32	31	30	30	30	30	370	671
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	94	213	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	179	238
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	FOT MidColumbia Q3 - 2	146	205	340	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	332	353
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	145	777	121	218	133	117	106	172	99	98	85	110	266	905	242	940	193	954	133	284		
	Annual Additions, Short Term Resources	646	705	840	969	1,088	1,195	1,309	1,404	1,172	1,315	1,408	1,435	1,471	1,472	1,472	1,471	1,470	1,470	1,471	1,472		
	Total Annual Additions	791	1,482	961	1,187	1,221	1,312	1,415	1,576	1,271	1,413	1,493	1,545	1,737	2,377	1,714	2,411	1,663	2,424	1,604	1,756		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

	EG 2 - Case S09	Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	661	-	661	-	-	-	1,322
	CCCT J 1x1	-	-	-	-	-	-	-	-	-	-	-	-	846	-	423	-	-	411	-	-	-	1,680
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	69	51	45	109	-	-	-	-	-	-	-	-	-	-	-	-	-	274	274
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	31	-	52
	Wind, Wyoming, 40	-	-	-	-	-	-	400	-	-	-	-	250	-	-	-	-	-	-	-	-	400	650
	Total Wind	-	-	-	69	51	45	509	-	-	-	-	250	21	-	-	-	-	-	-	31	674	976
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6	7.2
	DSM, Class 2, ID	3	3	3	3	4	4	4	3	4	4	3	3	3	3	3	3	3	3	3	3	33	61
	DSM, Class 2, UT	68	61	57	55	53	53	50	44	44	42	31	34	31	29	28	27	25	23	22	21	526	796
	DSM, Class 2, WY	4	4	5	5	6	6	7	7	7	8	7	7	7	7	8	7	7	8	8	8	59	133
	DSM, Class 2 Total	74	68	64	63	63	62	60	55	55	54	41	44	40	40	39	37	35	33	32	32	618	991
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	0.4	0.3	0.4	0.5	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	12	118	212	-	117	208	236	76	194	53	146	240	53	53	163	46	94
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	Utility Biomass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	5
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	21
	DSM, Class 2, OR	37	41	34	34	31	32	28	24	24	26	26	26	26	26	26	26	26	26	26	26	311	568
	DSM, Class 2, WA	8	8	8	8	8	7	7	7	7	7	5	5	5	5	5	4	4	4	4	4	76	120
	DSM, Class 2 Total	46	50	43	43	40	40	36	33	32	34	33	32	32	32	32	31	30	30	30	30	398	710
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	95	210	297	297	297	277	297	297	297	297	297	220	297	297	247	293	297	177	230
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	170	229	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	360	380
	FOT MidColumbia Q3 - 2	375	375	337	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	371	373
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	-	(387)	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	146	778	125	193	173	162	620	102	103	105	90	342	956	88	510	745	82	1,152	79	115		
	Annual Additions, Short Term Resources	645	704	837	970	1,085	1,184	1,290	1,384	1,152	1,289	1,380	1,408	1,248	1,366	1,148	1,318	1,412	1,175	1,221	1,335		
	Total Annual Additions	791	1,482	962	1,163	1,258	1,346	1,910	1,486	1,255	1,394	1,470	1,750	2,204	1,454	1,658	2,063	1,494	2,327	1,300	1,450		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

EG-2 Case S-10		Capacity (MW)																				Resource Totals 1/	
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	10-year	20-year
East	**Existing Plant Retirements/Conversions**																						
	Hayden1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(43)	-	-	(43)
	Hayden2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(30)	-	-	(30)
	Carbon1 (Early Retirement/Conversion)	-	-	(67)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(67)	(67)
	Carbon2 (Early Retirement/Conversion)	-	-	(105)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(105)	(105)
	Cholla1 (Early Retirement/Conversion)	-	-	-	-	-	-	-	-	-	-	-	(387)	-	-	-	-	-	-	-	-	-	(387)
	Johnston1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(106)	-	-	-	-	-	(106)
	Johnston3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(220)	-	-	-	-	-	(220)
	Johnston4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(328)	-	-	-	-	-	(328)
	Naughton1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(158)	-	-	-	(158)
	Naughton2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(205)	-	-	-	(205)
	Naughton3 (Early Retirement/Conversion)	-	-	(330)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(330)	(330)
	Coal Ret_WY - Gas RePower	-	-	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(338)	-	-	338	-
	Expansion Resources																						
	CCCT FD 2x1	-	-	-	-	-	-	-	-	-	-	-	661	-	-	-	661	-	-	-	-	-	1,322
	CCCT GH 2x1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	736	-	-	-	736
	Lake Side II	-	645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	645	645
	IC Aero UT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	91
	SCCT Frame ID	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	-	-	-	-	-	181
	Coal Plant Turbine Upgrades	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Wind, GO, 29	-	-	-	73	34	33	14	-	-	45	5	-	-	-	-	-	-	-	-	-	199	204
	Wind, UT, 29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	22
	Wind, Wyoming, 40	-	-	-	-	-	-	-	-	-	-	-	368	282	-	-	-	-	-	-	-	-	650
	Total Wind	-	-	-	73	34	33	14	-	-	45	5	368	282	-	-	-	-	-	-	22	199	876
	CHP - Biomass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.2
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.0	6.6	-	13.6
	CHP - Other	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.7	2.4	2.7	2.7	2.7	3.6	16.6
	DSM, Class 1, ID-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	1	-	9
	DSM, Class 1, ID-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, ID-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 1, UT-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	44	37	-	3	-	91
	DSM, Class 1, UT-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	14	4	-	26
	DSM, Class 1, UT-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	0
	DSM, Class 1, WY-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	13	-	-	2	-	25
	DSM, Class 1, WY-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0	-	4
	DSM, Class 1, WY-Irrigate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	-	-	0	-	0
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	10	64	37	19	11	-	158
	DSM, Class 2, ID	3	3	3	3	3	3	4	3	4	4	3	3	3	3	3	3	3	3	3	3	30	59
	DSM, Class 2, UT	63	61	54	51	49	48	45	43	42	40	30	33	30	28	27	25	23	22	22	21	495	756
	DSM, Class 2, WY	4	4	5	5	6	6	6	6	7	7	6	7	6	7	8	7	7	7	8	8	55	127
	DSM, Class 2 Total	69	67	61	59	57	56	55	52	52	51	39	42	39	38	37	35	34	32	32	32	581	942
	DSM, Class 3, UT Res TOU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	6
	DSM, Class 3, WY IRR TOU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	-	0
	DSM, Class 3 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	6
	Micro Solar - PV	7.11	11.0	14.2	16.4	17.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	131	262
	Micro Solar - Water Heating	-	-	-	-	-	-	1.6	0.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	7.0	30.6
	FOT Mona Q3	-	-	-	-	-	41	159	257	28	169	263	64	258	220	300	300	300	295	300	300	65	163
West	**Expansion Resources**																						
	Coal Plant Turbine Upgrades	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12
	SCCT Frame WW	-	-	-	-	-	-	-	-	-	-	-	-	-	197	-	-	-	-	-	-	-	197
	CHP - Biomass	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	5.5	11.0
	CHP - Reciprocating Engine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	0.2	-	1.6
	CHP - Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	-	0.5
	DSM, Class 1, OR-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	22	-	-	3	-	46
	DSM, Class 1, OR-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	15	-	29
	DSM, Class 1, OR-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
	DSM, Class 1, CA-DLC-IRR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
	DSM, Class 1, CA-DLC-RES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0	-	1
	DSM, Class 1, CA-Curtail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	0	-	2
	DSM, Class 1 Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	1	22	-	15	18	-	86
	DSM, Class 2, CA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	19
	DSM, Class 2, OR	36	41	33	32	29	26	22	21	20	23	23	22	22	22	22	26	26	26	26	26	284	523
	DSM, Class 2, WA	8	7	7	7	7	6	6	6	6	6	4	4	4	4	4	3	3	3	3	3	67	104
	DSM, Class 2 Total	45	49	41	41	38	33	29	28	27	30	28	27	27	27	27	30	30	30	30	30	360	646
	DSM, Class 3, CA IRR TOU	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1
	DSM, Class 3, OR IRR TOU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	2
	DSM, Class 3 Total	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	1	-	-	-	-	-	4
	OR Solar (Util Cap Standard & Cust Incentive Prgm)	4.45	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10
	FOT COB Q3	-	-	-	109	230	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	182	240
	FOT NOB Q3	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
	FOT MidColumbia Q3	400	400	400	400	400	400	400	400	400	400	400	400	400	387	400	393	400	400	400	397	400	399
	FOT MidColumbia Q3 - 2	150	209	345	375	375	375	375	375	375	375	375	375	375	375	366	375	375	375	371	375	333	353
	Existing Plant Retirements/Conversions	-	-	(164)	-	-	-	-	-	-	-	-	(387)	-	-	-	(760)	-	(701)	(74)	-		
	Annual Additions, Long Term Resources	140	776	121	190	147	137	114	95	96	143	90	1,115	364	279	132	937	169	853	130	235		
	Annual Additions, Short Term Resources	650	709	845	984	1,105	1,213	1,331	1,429	1,200	1,341	1,435	1,236	1,430	1,379	1,463	1,465	1,472	1,467	1,468	1,469		
	Total Annual Additions	790	1,485	966	1,174	1,252	1,350	1,445	1,524	1,296	1,484	1,525	2,351	1,794	1,658	1,595	2,402	1,641	2,320	1,598	1,704		

1/ Front office transaction amounts reflect one-year transaction periods, are not additive, and are reported as a 10/20-year annual average.

APPENDIX L – STOCHASTIC PRODUCTION COST SIMULATION RESULTS

This appendix reports additional results for the Monte Carlo production cost simulations conducted with PacifiCorp's Planning and Risk (PaR) model, including Energy Gateway scenarios 1 and 2 for all core cases. These results supplement the data presented in Chapter 8 of the main IRP document. The results presented include the following:

- Stochastic mean present value of revenue requirements (PVRR) versus upper-tail mean less stochastic mean PVRR scatter-plot diagrams that include all carbon dioxide (CO_2) hard cap portfolios
- The full complement of stochastic risk and other portfolio performance measures for the portfolios simulated using PaR.
- Stochastic mean PVRR component cost details for the portfolios.
- EG2 - Case C07a is the preferred portfolio.

Core Case Study Stochastic Results

Mean versus Upper-tail Mean PVRR Scatter-plot Charts

The following set of scatter plot charts (Figures L.1 through L.6) incorporates all core cases for zero, medium, and high, CO_2 tax scenarios and for Energy Gateway (EG) scenarios 1 and 2 as applicable[64].

Stochastic Risk and Other Portfolio Performance Measures

The following set of tables (Tables L.1 through L.8) show the stochastic risk and other portfolio performance measures as follows:

- Table L.1 - Stochastic Mean PVRR by CO_2 Tax Level, Core Case Portfolios
- Table L.2 - Stochastic Risk Results by CO_2 Tax Level, Core Case Portfolios
- Table L.3 - Stochastic Risk Adjusted PVRR by CO_2 Tax Level, Core Case Portfolios
- Table L.4 - Carbon Dioxide Emissions by CO2 Tax Level, Core Case Portfolios
- Table L.5 - 10-Year Average Incremental Customer Rate Impact, Final Screen Portfolios
- Table L.6 - Average Annual Energy Not served (2013 – 2032), Medium CO_2 Initial Screen Portfolios
- Table L.7 - Loss of Load Probability for Major (25,000 MWh) July Event
- Table L.8 - Average Loss of Load Probability during Summer Peak

Tables L.9 through L.11 report the breakdown of each portfolio's stochastic mean PVRR by variable and fixed cost components. These costs reflect the medium, zero, and high ton CO_2 cost scenario.

[64] Core case 19 is not applicable to Energy Gateway scenario 1.

Figure L.1 – Stochastic Risk Profile, Zero CO_2 Scenario, Energy Gateway Scenario 1

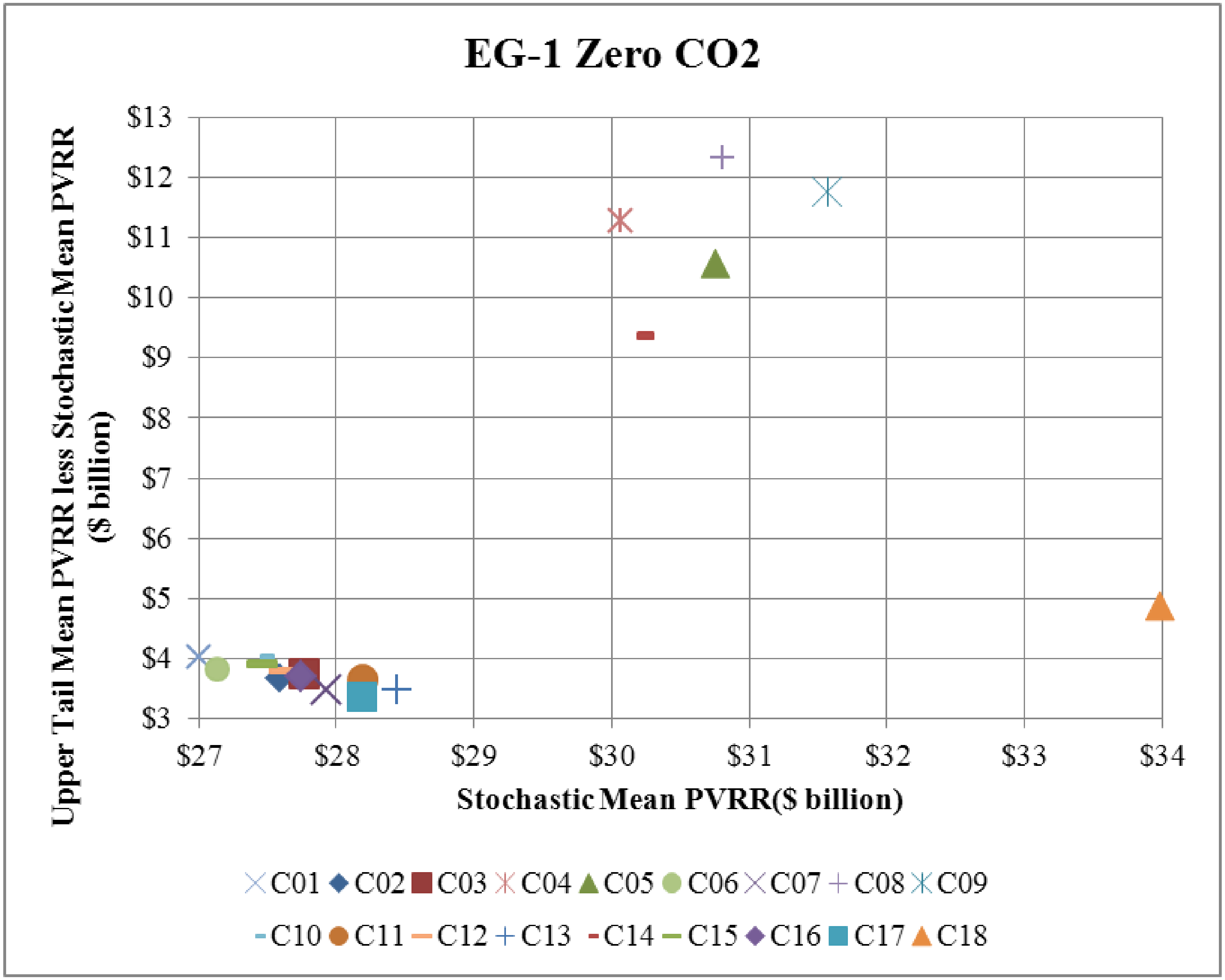


Figure L.2 – Stochastic Risk Profile, Medium CO_2 Scenario, Energy Gateway Scenario 1

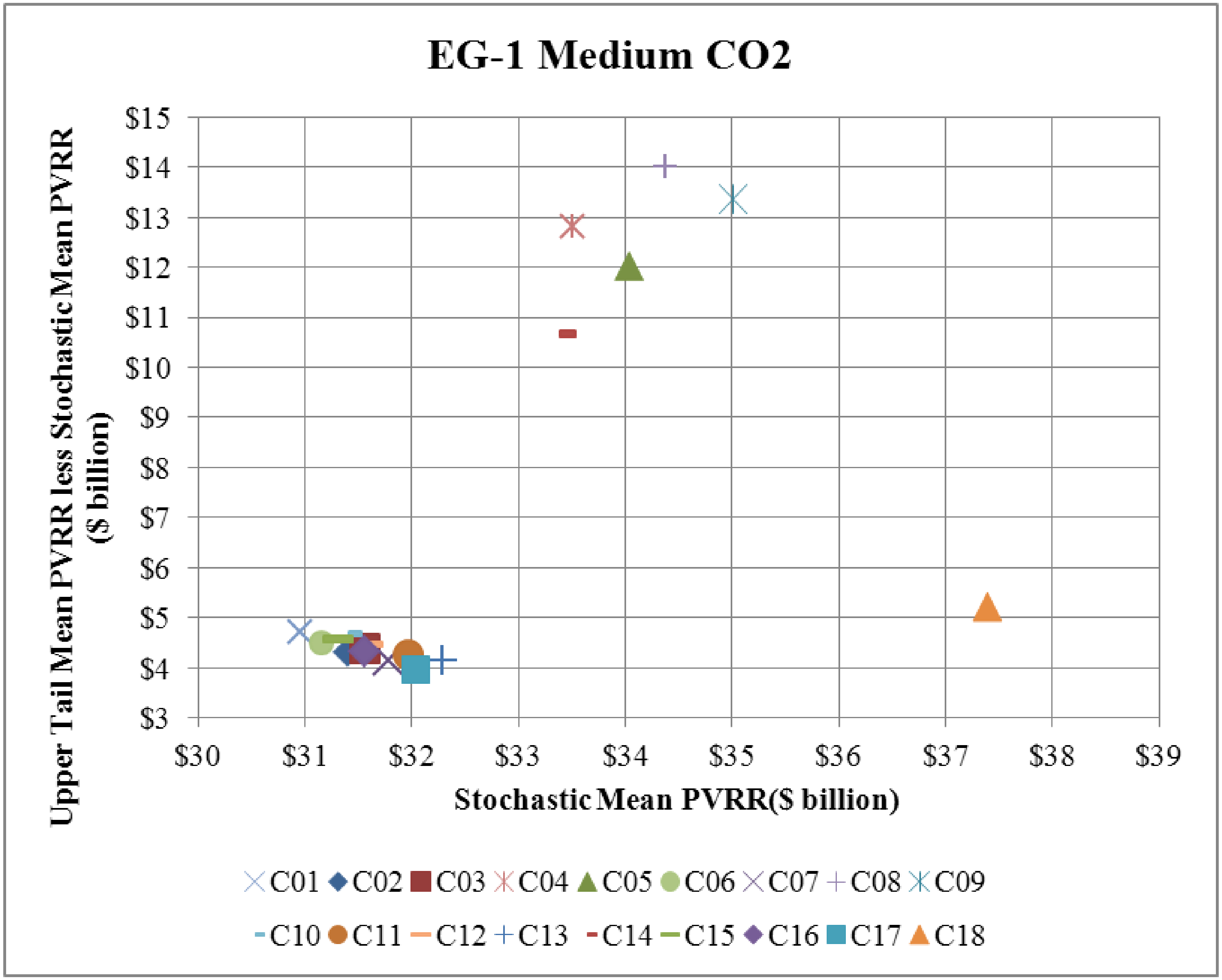


Figure L.3 – Stochastic Risk Profile, High CO_2 Scenario, Energy Gateway Scenario 1

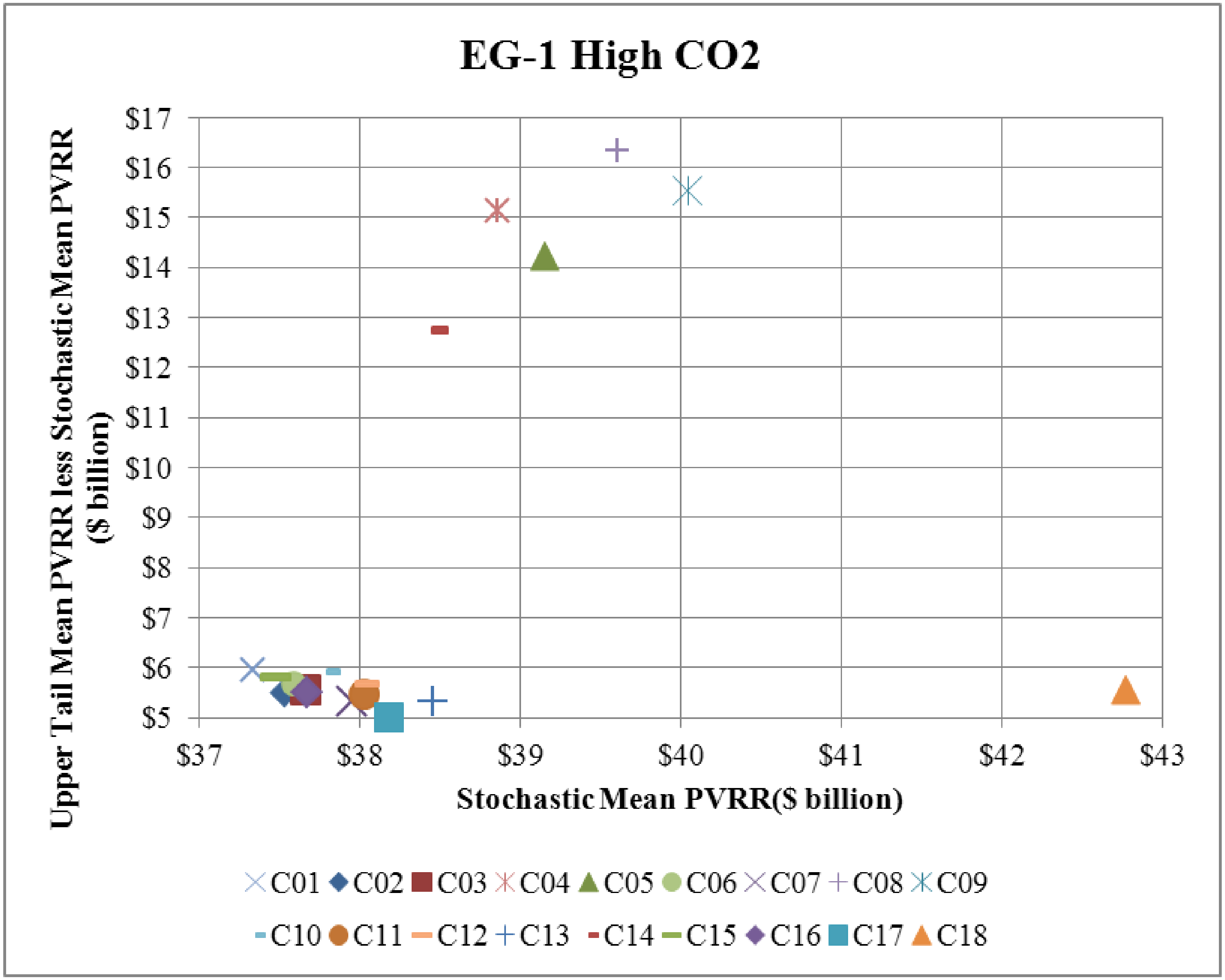


Figure L.4 – Stochastic Risk Profile, Zero CO_2 Scenario, Energy Gateway Scenario 2

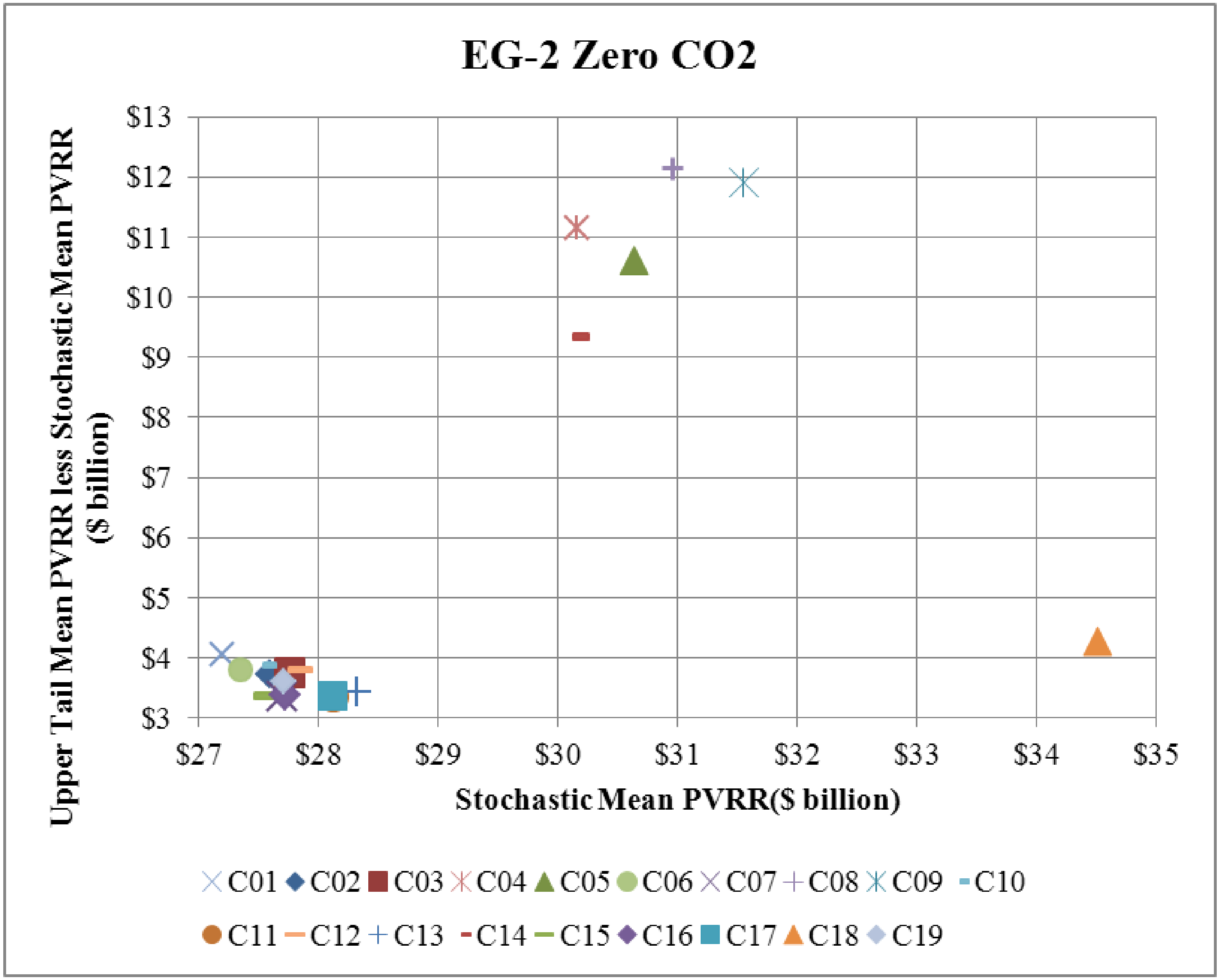


Figure L.5 – Stochastic Risk Profile, Medium CO_2 Scenario, Energy Gateway Scenario 2

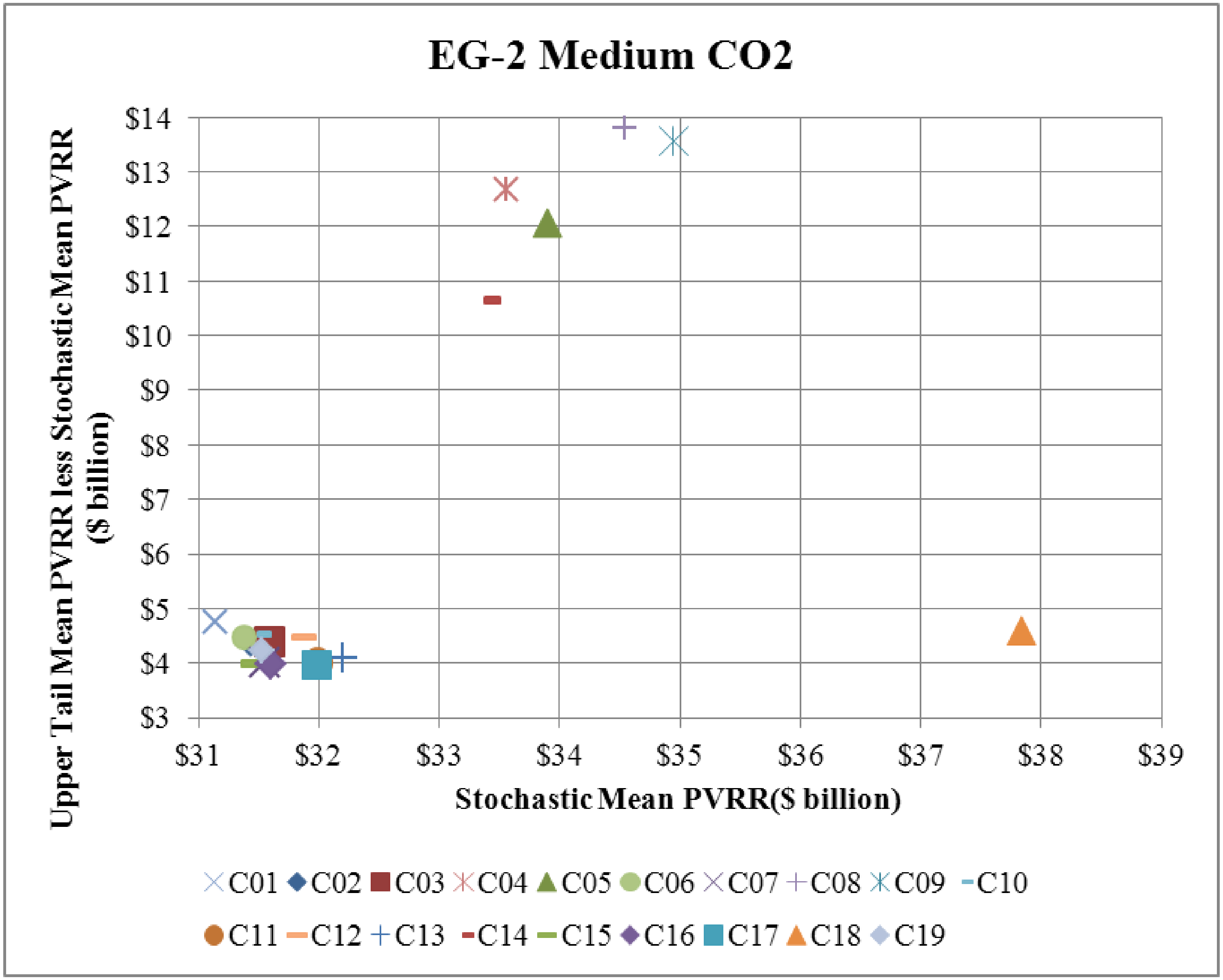

EG-2 Medium CO2
Upper Tail Mean PVRR less Stochastic Mean PVRR ($ billion)
$14
$13
$12
$11
$10
$9
$8
$7
$6
$5
$4
$3
$31
$32
$33
$34
$35
$36
$37
$38
$39
Stochastic Mean PVRR($ billion)
C01 C02 C03 C04 C05 C06 C07 C08 C09 C10
C11 C12 C13 C14 C15 C16 C17 C18 C19

Figure L.6 – Stochastic Risk Profile, High CO_2 Scenario, Energy Gateway Scenario 2

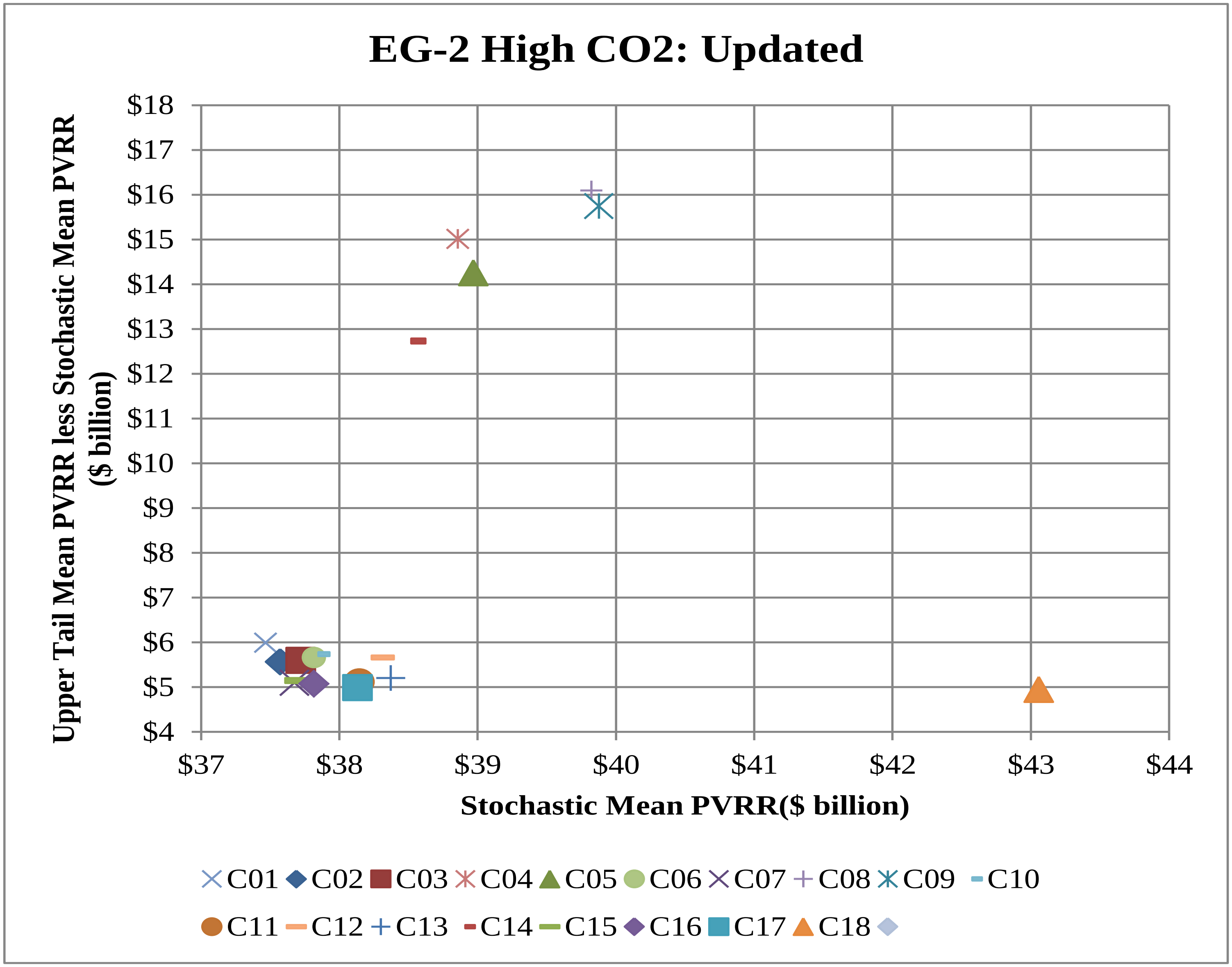


Table L.1– Stochastic Mean PVRR by CO_2 Tax Level, Core Case Portfolios

EG1	CO_2 tax level Million Dollars (2013$)			
Case	Zero	Medium	High	Average
C01	27,004	30,964	37,337	31,768
C02	27,586	31,397	37,534	32,172
C03	27,766	31,557	37,668	32,330
C04	30,071	33,507	38,860	34,146
C05	30,754	34,035	39,155	34,648
C06	27,132	31,159	37,593	31,961
C07	27,935	31,789	37,953	32,559
C08	30,810	34,378	39,613	34,934
C09	31,570	35,009	40,046	35,542
C10	27,461	31,425	37,803	32,230
C11	28,190	31,966	38,027	32,728
C12	27,603	31,615	38,046	32,421
C13	28,439	32,293	38,460	33,064
C14	30,203	33,401	38,461	34,022
C15	27,457	31,308	37,483	32,083
C16	27,748	31,556	37,677	32,327
C17	28,186	32,036	38,184	32,802
C18	33,984	37,390	42,774	38,049

EG2	CO_2 tax level Million Dollars (2013$)			
Case	Zero	Medium	High	Average
C01	27,202	31,138	37,468	31,936
C02	27,593	31,432	37,571	32,199
C03	27,770	31,596	37,722	32,363
C04	30,162	33,554	38,858	34,191
C05	30,640	33,898	38,968	34,502
C06	27,359	31,376	37,816	32,184
C07	27,708	31,556	37,677	32,314
C07a	27,466	31,357	37,546	32,123
C08	30,965	34,548	39,822	35,112
C09	31,554	34,944	39,877	35,458
C10	27,559	31,501	37,849	32,303
C11	28,132	31,986	38,146	32,755
C12	27,855	31,874	38,315	32,681
C13	28,333	32,202	38,373	32,969
C14	30,142	33,384	38,520	34,015
C15	27,588	31,480	37,716	32,261
C16	27,729	31,607	37,817	32,384
C17	28,118	31,985	38,132	32,745
C18	34,509	37,836	43,058	38,468
C19	27,715	31,528	37,630	32,291

Table L.2 – Stochastic Risk Results by CO_2 Tax Level, Core Case Portfolios

EG1	CO_2 tax level: Zero Million Dollars (2013$)			
Case	**Standard Deviation**	**5th percentile**	**95th percentile**	**Upper Tail (mean of 5 Highest)**
C01	1,567	24,589	29,880	31,038
C02	1,446	25,322	30,146	31,270
C03	1,462	25,611	30,307	31,508
C04	4,211	24,301	38,116	41,336
C05	3,963	25,458	38,431	41,326
C06	1,518	24,793	29,839	30,946
C07	1,416	25,697	30,485	31,424
C08	4,617	24,521	39,449	43,124
C09	4,412	25,624	39,789	43,323
C10	1,568	25,029	30,197	31,481
C11	1,430	25,970	30,697	31,833
C12	1,512	25,262	30,294	31,407
C13	1,397	26,290	30,898	31,928
C14	3,493	25,360	36,960	39,557
C15	1,477	25,182	30,021	31,364
C16	1,449	25,538	30,285	31,451
C17	1,372	26,122	30,812	31,561
C18	1,852	31,113	37,170	38,863

EG2	CO_2 tax level: Zero Million Dollars (2013$)			
Case	**Standard Deviation**	**5th percentile**	**95th percentile**	**Upper Tail (mean of 5 Highest)**
C01	1,559	24,792	29,910	31,255
C02	1,453	25,367	30,162	31,328
C03	1,470	25,498	30,356	31,516
C04	4,155	24,420	38,070	41,313
C05	3,972	25,108	38,247	41,255
C06	1,503	25,041	30,018	31,153
C07	1,357	25,577	30,159	31,060
C07a	1,387	25,282	29,991	30,913
C08	4,544	24,781	39,379	43,102
C09	4,473	25,384	39,770	43,469
C10	1,507	25,222	30,253	31,447
C11	1,353	26,035	30,614	31,496
C12	1,502	25,550	30,557	31,647
C13	1,380	26,182	30,780	31,770
C14	3,499	25,313	36,956	39,472
C15	1,292	25,571	29,902	30,937
C16	1,352	25,609	30,198	31,101
C17	1,371	26,050	30,785	31,485
C18	1,616	32,156	37,444	38,786
C19	1,420	25,516	30,228	31,311

Table L.2 – Stochastic Risk Results by CO_2 Tax Level, Core Case Portfolios (Continued)

EG1	CO_2 tax level: Medium Million Dollars (2013$)			
Case	Standard Deviation	5th percentile	95th percentile	Upper Tail (mean of 5 Highest)
C01	1,901	28,000	34,234	35,666
C02	1,774	28,654	34,284	35,714
C03	1,788	28,787	34,439	35,937
C04	4,758	27,007	42,624	46,307
C05	4,481	27,979	42,725	46,056
C06	1,867	28,211	34,301	35,648
C07	1,768	29,012	34,644	35,937
C08	5,225	27,268	44,142	48,397
C09	4,992	28,290	44,318	48,382
C10	1,902	28,465	34,569	36,108
C11	1,762	29,253	34,840	36,237
C12	1,858	28,692	34,688	36,096
C13	1,749	29,537	35,105	36,444
C14	3,951	27,921	41,046	44,056
C15	1,793	28,480	34,160	35,883
C16	1,774	28,805	34,417	35,885
C17	1,698	29,135	34,973	36,001
C18	2,067	34,007	40,788	42,609

EG2	CO_2 tax level: Medium Million Dollars (2013$)			
Case	Standard Deviation	5th percentile	95th percentile	Upper Tail (mean of 5 Highest)
C01	1,882	28,213	34,172	35,876
C02	1,778	28,697	34,303	35,817
C03	1,802	28,830	34,518	35,999
C04	4,697	27,082	42,534	46,234
C05	4,489	27,676	42,521	45,965
C06	1,848	28,484	34,467	35,856
C07	1,693	28,925	34,363	35,552
C07a	1,723	28,646	34,208	35,452
C08	5,145	27,579	44,113	48,357
C09	5,055	27,995	44,226	48,502
C10	1,822	28,658	34,480	36,044
C11	1,686	29,350	34,774	35,988
C12	1,844	28,978	34,912	36,352
C13	1,718	29,513	35,048	36,287
C14	3,968	27,898	41,145	44,013
C15	1,602	28,945	34,077	35,460
C16	1,672	28,990	34,399	35,598
C17	1,691	29,119	34,961	35,960
C18	1,822	34,875	41,003	42,433
C19	1,745	28,822	34,374	35,766

Table L.2 – Stochastic Risk Results by CO_2 Tax Level, Core Case Portfolios

EG1	CO_2 tax level: High Million Dollars (2013$)			
Case	Standard Deviation	5th percentile	95th percentile	Upper Tail (mean of 5 Highest)
C01	2,536	33,038	41,380	43,283
C02	2,395	33,440	41,234	43,034
C03	2,415	33,497	41,370	43,236
C04	5,574	31,116	49,612	53,982
C05	5,251	31,847	49,331	53,383
C06	2,495	33,323	41,547	43,281
C07	2,396	33,794	41,757	43,258
C08	6,028	31,282	51,008	55,959
C09	5,744	32,107	50,881	55,590
C10	2,536	33,521	41,777	43,722
C11	2,388	33,916	41,745	43,489
C12	2,485	33,848	41,924	43,718
C13	2,373	34,416	42,156	43,767
C14	4,681	31,997	47,553	51,186
C15	2,405	33,371	41,144	43,271
C16	2,391	33,537	41,360	43,180
C17	2,287	34,167	41,832	43,196
C18	2,421	38,585	46,646	48,335

EG2	CO_2 tax level: High Million Dollars (2013$)			
Case	Standard Deviation	5th percentile	95th percentile	Upper Tail (mean of 5 Highest)
C01	2,494	33,153	41,348	43,454
C02	2,391	33,436	41,277	43,136
C03	2,423	33,614	41,468	43,314
C04	5,509	31,249	49,342	53,868
C05	5,254	31,712	49,030	53,226
C06	2,462	33,582	41,692	43,471
C07	2,291	33,660	41,316	42,769
C07a	2,321	33,521	41,244	42,744
C08	5,943	31,775	51,014	55,919
C09	5,815	31,862	50,747	55,625
C10	2,430	33,753	41,629	43,582
C11	2,285	34,181	41,782	43,257
C12	2,460	34,091	42,146	43,973
C13	2,314	34,368	42,039	43,575
C14	4,715	32,045	47,750	51,243
C15	2,205	33,865	41,187	42,852
C16	2,253	33,897	41,392	42,888
C17	2,262	34,147	41,776	43,123
C18	2,171	39,278	46,455	48,006
C19	2,356	33,570	41,308	43,024

Table L.3– Stochastic Risk Adjusted PVRR by CO_2 Tax Level

		Risk-adjusted PVRR [Mean + .05 * 95th]			
		CO2 Tax Scenario $/Ton			
EG Scenario	Case	Zero	Medium	High	Average
EG1	C01	27,997	32,175	38,905	33,026
EG1	C02	28,542	32,560	39,044	33,382
EG1	C03	28,719	32,717	39,175	33,537
EG1	C04	31,485	35,146	40,848	35,826
EG1	C05	32,122	35,618	41,068	36,269
EG1	C06	28,119	32,368	39,165	33,217
EG1	C07	28,894	32,956	39,476	33,775
EG1	C08	32,285	36,088	41,666	36,680
EG1	C09	33,002	36,668	42,033	37,234
EG1	C10	28,446	32,628	39,366	33,480
EG1	C11	29,140	33,123	39,529	33,931
EG1	C12	28,588	32,820	39,612	33,673
EG1	C13	29,393	33,458	39,978	34,277
EG1	C14	31,500	34,902	40,288	35,563
EG1	C15	28,413	32,471	38,996	33,293
EG1	C16	28,703	32,718	39,186	33,536
EG1	C17	29,146	33,203	39,694	34,014
EG1	C18	35,026	38,613	44,290	39,310

		Risk-adjusted PVRR [Mean + .05 * 95th]			
		CO2 Tax Scenario $/Ton			
EG Scenario	Case	Zero	Medium	High	Average
EG2	C01	28,151	32,300	38,989	33,147
EG2	C02	28,517	32,563	39,050	33,376
EG2	C03	28,695	32,729	39,203	33,542
EG2	C04	31,529	35,145	40,789	35,821
EG2	C05	31,967	35,439	40,835	36,080
EG2	C06	28,310	32,549	39,350	33,403
EG2	C07	28,621	32,679	39,149	33,483
EG2	C07a	28,639	32,663	39,116	33,473
EG2	C08	32,389	36,208	41,827	36,808
EG2	C09	32,957	36,571	41,830	37,119
EG2	C10	28,505	32,658	39,363	33,508
EG2	C11	29,045	33,108	39,618	33,924
EG2	C12	28,808	33,045	39,847	33,900
EG2	C13	29,253	33,334	39,856	34,148
EG2	C14	31,407	34,859	40,325	35,530
EG2	C15	28,494	32,595	39,186	33,425
EG2	C16	28,646	32,735	39,295	33,558
EG2	C17	29,044	33,120	39,607	33,924
EG2	C18	35,477	38,982	44,476	39,645
EG2	C19	28,633	32,654	39,102	33,463

Table L.4 – Carbon Dioxide Emissions

EG1	Cummulative Carbon Dioxide Emissions for 2013 - 2032 (Short Tons) CO2 tax level											
Case	Zero	Cost Spread Relative to Lowest Case	Rank	Medium	Cost Spread Relative to Lowest Case	Rank	High	Cost Spread Relative to Lowest Case	Rank	Average	Cost Spread Relative to Lowest Case	Rank
C01	887,205	293,696	14	851,682	272,976	14	820,408	249,166	14	853,098	271,946	14
C02	874,178	280,669	11	837,578	258,873	11	805,381	234,139	11	839,046	257,894	11
C03	871,984	278,475	9	836,154	257,448	9	803,958	232,717	9	837,365	256,213	9
C04	634,787	41,278	4	620,712	42,006	4	610,174	38,932	4	621,891	40,739	4
C05	628,979	35,470	3	615,020	36,315	3	604,101	32,859	3	616,033	34,881	3
C06	898,540	305,031	18	860,125	281,419	17	828,295	257,054	17	862,320	281,168	17
C07	884,725	291,216	13	845,061	266,356	12	811,879	240,638	12	847,222	266,070	12
C08	604,917	11,408	2	589,900	11,194	2	582,215	10,973	2	592,344	11,192	2
C09	593,509	0	1	578,705	0	1	571,242	0	1	581,152	0	1
C10	887,337	293,828	15	851,922	273,216	15	820,869	249,628	15	853,376	272,224	15
C11	871,047	277,538	8	833,753	255,048	8	801,042	229,800	7	835,280	254,128	8
C12	898,486	304,977	17	860,758	282,053	18	829,118	257,876	18	862,787	281,635	18
C13	884,686	291,177	12	845,088	266,382	13	811,937	240,695	13	847,237	266,085	13
C14	656,665	63,156	5	642,532	63,827	5	630,718	59,476	5	643,305	62,153	5
C15	862,764	269,254	7	831,381	252,676	7	802,982	231,740	8	832,375	251,223	7
C16	873,506	279,997	10	836,778	258,073	10	804,491	233,249	10	838,258	257,106	10
C17	896,136	302,627	16	857,056	278,350	16	824,668	253,426	16	859,286	278,134	16
C18	784,248	190,739	6	757,244	178,539	6	727,457	156,216	6	756,317	175,164	6

EG2	Cummulative Carbon Dioxide Emissions for 2013 - 2032 (Short Tons) CO2 tax level											
Case	Zero	Cost Spread Relative to Lowest Case	Rank	Medium	Cost Spread Relative to Lowest Case	Rank	High	Cost Spread Relative to Lowest Case	Rank	Average	Cost Spread Relative to Lowest Case	Rank
C01	889,148	296,180	15	855,657	276,602	17	825,416	253,892	17	856,740	275,558	17
C02	876,193	283,225	9	841,021	261,966	9	809,731	238,207	9	842,315	261,133	9
C03	873,964	280,996	7	837,300	258,245	8	804,480	232,956	7	838,581	257,399	7
C04	642,874	49,907	4	629,200	50,145	4	618,391	46,867	4	630,155	48,973	4
C05	632,540	39,573	3	619,210	40,155	3	608,417	36,893	3	620,056	38,874	3
C06	899,552	306,584	20	862,337	283,281	19	830,971	259,447	19	864,286	283,104	19
C07	884,841	291,873	10	845,998	266,942	10	813,184	241,660	10	848,008	266,825	10
C07a	889,291	296,324	16	851,000	271,945	13	818,735	247,211	13	853,009	271,827	13
C08	608,294	15,327	2	593,165	14,110	2	584,787	13,263	2	595,416	14,233	2
C09	592,968	0	1	579,055	0	1	571,524	0	1	581,182	0	1
C10	887,424	294,456	13	854,002	274,947	15	823,761	252,237	15	855,062	273,880	15
C11	886,356	293,389	12	848,108	269,053	12	815,771	244,247	12	850,079	268,896	12
C12	899,509	306,541	19	862,425	283,370	20	830,975	259,450	20	864,303	283,120	20
C13	886,118	293,150	11	847,343	268,288	11	814,289	242,765	11	849,250	268,068	11
C14	655,509	62,542	5	639,325	60,270	5	625,810	54,285	5	640,215	59,032	5
C15	889,384	296,417	17	855,418	276,363	16	824,930	253,406	16	856,578	275,395	16
C16	888,635	295,667	14	851,427	272,372	14	820,124	248,600	14	853,395	272,213	14
C17	897,356	304,388	18	858,353	279,298	18	825,533	254,009	18	860,414	279,232	18
C18	785,096	192,128	6	755,983	176,928	6	724,551	153,026	6	755,210	174,028	6
C19	874,360	281,392	8	837,127	258,072	7	804,536	233,011	8	838,674	257,492	8

Table L.5 –10-year Average Incremental Customer Rate Impact, Final Screen Portfolios

	10-year Average Incremental Customer Rate Impact (2013 - 2022)									
	Zero		Medium		High					
$ Millions	Difference from C07	Rank	Difference from C07	Rank	Difference from C07	Rank	Total	Average	Difference from C07	Rank
EG1										
C03	0.0	3	0.2	3	0.2	3	0.3	0.1	0.1	3
C07	0.0	2	0.0	2	0.0	2	0.0	0.0	0.0	2
C15	(7.3)	1	(9.4)	1	(10.1)	1	(26.9)	(9.0)	(9.0)	1
C16	2.9	4	2.7	4	2.4	4	8.0	2.7	2.7	4
C17	5.8	5	5.2	5	4.6	5	15.7	5.2	5.2	5
	Difference from C07a	Rank	Difference from C07a	Rank	Difference from C07a	Rank	Total	Average	Difference from C07a	Rank
EG2										
C03	5.4	4	4.9	4	4.3	4	14.6	4.9	4.9	4
C07	5.5	5	4.7	3	4.2	3	14.4	4.8	4.8	3
C07a	0.0	1	0.0	1	0.0	2	0.0	0.0	0.0	1
C15	1.8	2	0.1	2	(1.6)	1	0.3	0.1	0.1	2
C16	5.4	3	4.9	5	4.6	5	14.9	5.0	5.0	5
C17	10.8	6	9.6	6	8.4	6	28.8	9.6	9.6	6

Table L.6 – Average Annual Energy Not Served (2013 – 2032), Medium CO_2 Initial Screen Portfolios

EG1	Averaged Annual Energy Not Served (GWh) CO2 tax level: Medium					
Preferred Case	Average Annual Energy Not Served, 2013-2032 (GWh)	Cost Spread Relative to Lowest Case	Rank	Upper Tail Mean Energy Not Served Cumulative Total, 2013-2032	Cost Spread Relative to Lowest Case	Rank
C01	52.6	17.6	7	90.0	33.9	11
C02	41.7	6.7	2	65.6	9.5	2
C03	46.0	11.1	6	70.9	14.8	3
C04	54.2	19.3	9	83.0	26.9	7
C05	56.9	22.0	12	87.3	31.3	10
C06	57.0	22.0	13	117.9	61.9	18
C07	58.8	23.8	14	104.2	48.2	15
C08	53.7	18.7	8	85.8	29.7	9
C09	59.4	24.4	15	91.9	35.8	12
C10	45.7	10.7	5	77.4	21.3	6
C11	42.3	7.3	3	73.0	17.0	4
C12	54.9	19.9	10	100.8	44.8	13
C13	61.1	26.2	16	103.8	47.8	14
C14	56.6	21.6	11	85.1	29.0	8
C15	35.0	0.0	1	56.1	0.0	1
C16	44.3	9.3	4	77.3	21.2	5
C17	63.6	28.6	17	105.1	49.0	16
C18	65.1	30.1	18	116.3	60.3	17

Table L.6 – Average Annual Energy Not Served (2013 – 2032), Medium CO_2 Initial Screen Portfolios (Continued)

EG2	Averaged Annual Energy Not Served (GWh) CO2 tax level: Medium					
Preferred Case	Average Annual Energy Not Served, 2013-2032 (GWh)	Cost Spread Relative to Lowest Case	Rank	Upper Tail Mean Energy Not Served Cumulative Total, 2013-2032	Cost Spread Relative to Lowest Case	Rank
C01	44.5	5.8	5	83.2	17.1	11
C02	38.8	0.0	1	79.4	13.4	10
C03	45.6	6.9	7	75.4	9.3	8
C04	49.6	10.9	14	71.8	5.8	5
C05	48.3	9.6	13	66.2	0.2	2
C06	53.3	14.5	16	98.4	32.4	17
C07	46.6	7.8	8	89.3	23.3	15
C07a	46.8	8.1	9	89.0	23.0	14
C08	47.5	8.7	11	67.9	1.9	3
C09	48.3	9.6	12	70.8	4.8	4
C10	41.2	2.5	2	73.8	7.8	6
C11	43.3	4.5	4	74.5	8.5	7
C12	54.3	15.6	19	103.0	37.0	19
C13	50.5	11.7	15	91.3	25.3	16
C14	46.9	8.1	10	66.0	0.0	1
C15	53.6	14.9	17	86.3	20.3	13
C16	45.6	6.9	6	84.3	18.3	12
C17	55.8	17.1	20	99.2	33.2	18
C18	54.0	15.2	18	104.7	38.7	20
C19	42.0	3.2	3	75.9	9.9	9

Table L.7 – Loss of Load Probability for a Major (> 25,000 MWh) July Event

EG1						
Year	C03	C07	C11	C15	C16	C17
2013	1%	1%	1%	1%	1%	1%
2014	0%	0%	1%	0%	0%	0%
2015	1%	1%	1%	2%	1%	1%
2016	2%	3%	2%	2%	3%	2%
2017	5%	5%	5%	5%	5%	5%
2018	37%	37%	37%	37%	37%	37%
2019	19%	19%	20%	19%	19%	20%
2020	5%	5%	6%	5%	5%	6%
2021	2%	2%	3%	2%	3%	4%
2022	11%	11%	12%	6%	11%	10%
2023	11%	13%	12%	6%	12%	12%
2024	17%	17%	21%	7%	22%	20%
2025	3%	4%	3%	2%	2%	7%
2026	2%	6%	2%	4%	6%	4%
2027	3%	3%	3%	4%	3%	6%
2028	3%	10%	7%	3%	4%	11%
2029	10%	18%	11%	6%	8%	19%
2030	13%	25%	8%	10%	10%	21%
2031	3%	12%	0%	5%	2%	13%
2032	5%	9%	4%	8%	5%	13%

EG2							
Year	C03	C07	C07a	C11	C15	C16	C17
2013	1%	1%	1%	1%	1%	1%	1%
2014	0%	0%	0%	0%	0%	0%	0%
2015	1%	2%	1%	1%	1%	1%	1%
2016	2%	3%	2%	3%	2%	2%	2%
2017	5%	5%	6%	5%	4%	5%	5%
2018	37%	37%	37%	37%	35%	38%	38%
2019	19%	19%	21%	19%	18%	19%	19%
2020	5%	5%	5%	5%	5%	6%	5%
2021	2%	2%	3%	2%	3%	3%	2%
2022	11%	11%	12%	11%	10%	12%	11%
2023	11%	14%	12%	12%	12%	14%	13%
2024	17%	17%	20%	22%	22%	25%	20%
2025	3%	4%	4%	6%	6%	8%	10%
2026	5%	8%	10%	6%	9%	9%	8%
2027	5%	10%	13%	3%	13%	14%	14%
2028	2%	3%	3%	2%	7%	2%	7%
2029	11%	7%	11%	5%	13%	5%	18%
2030	14%	12%	12%	14%	19%	11%	18%
2031	2%	5%	4%	4%	11%	6%	4%
2032	5%	5%	3%	4%	7%	4%	6%

Table L.8 – Average Loss of Load Probability during Summer Peak

EG1						
Average for operating years 2013 through 2022						
Event Size (MWh)	C03	C07	C11	C15	C16	C17
> 0	92%	92%	92%	91%	92%	92%
> 1,000	75%	75%	75%	71%	75%	74%
> 10,000	25%	25%	25%	21%	24%	25%
> 25,000	8%	8%	9%	8%	9%	9%
> 50,000	1%	1%	1%	1%	1%	1%
> 100,000	0%	0%	0%	0%	0%	0%
> 500,000	0%	0%	0%	0%	0%	0%
> 1,000,000	0%	0%	0%	0%	0%	0%
Average for operating years 2013 through 2032						
Event Size (MWh)	C03	C07	C11	C15	C16	C17
> 0	91%	92%	90%	90%	90%	93%
> 1,000	74%	78%	72%	69%	73%	78%
> 10,000	23%	28%	22%	18%	23%	29%
> 25,000	8%	10%	8%	7%	8%	11%
> 50,000	1%	3%	2%	1%	2%	4%
> 100,000	0%	1%	0%	0%	0%	1%
> 500,000	0%	0%	0%	0%	0%	0%
> 1,000,000	0%	0%	0%	0%	0%	0%

EG2							
Average for operating years 2013 through 2022							
Event Size (MWh)	C03	C07	C07a	C11	C15	C16	C17
> 0	92%	92%	92%	92%	92%	92%	92%
> 1,000	75%	75%	75%	75%	74%	75%	74%
> 10,000	24%	24%	24%	25%	24%	25%	25%
> 25,000	8%	9%	9%	8%	8%	9%	8%
> 50,000	1%	1%	1%	1%	1%	1%	1%
> 100,000	0%	0%	0%	0%	0%	0%	0%
> 500,000	0%	0%	0%	0%	0%	0%	0%
> 1,000,000	0%	0%	0%	0%	0%	0%	0%
Average for operating years 2013 through 2032							
Event Size (MWh)	C03	C07	C07a	C11	C15	C16	C17
> 0	90%	91%	91%	90%	93%	91%	94%
> 1,000	73%	74%	74%	73%	78%	73%	78%
> 10,000	24%	24%	24%	23%	28%	24%	29%
> 25,000	8%	9%	9%	8%	10%	9%	10%
> 50,000	2%	2%	2%	2%	3%	2%	3%
> 100,000	0%	1%	1%	1%	1%	1%	1%
> 500,000	0%	0%	0%	0%	0%	0%	0%
> 1,000,000	0%	0%	0%	0%	0%	0%	0%

Table L.9 – Core Cases 1 through 19, Portfolio PVRR Cost Components (Zero CO_2 Tax Level)

		Stochastic PVRR ($ millions)											
EG Scenario	Study ID	Thermal Fuel	Variable O&M inlcudes FOT	Emission Cost	Long Term Contracts	Renewables	DSM	System Balancing (System Sales)	System Balancing (System Purchases)	Transmission Wheeling	SBT	Capital and Fixed O&M Cost	Total PVRR
EG1	C01	13,263	1,989	0	1,376	1,273	616	(3,703)	2,165	11	-	10,015	27,004
EG1	C02	12,961	1,988	0	1,375	1,302	645	(3,750)	2,021	11	-	11,031	27,586
EG1	C03	12,939	1,991	0	1,376	1,304	588	(3,734)	2,053	11	-	11,237	27,766
EG1	C04	15,261	2,286	0	1,378	1,272	548	(3,193)	2,665	11	-	9,844	30,071
EG1	C05	14,871	2,226	0	1,378	1,304	559	(3,270)	2,601	11	-	11,075	30,754
EG1	C06	13,390	1,999	0	1,376	1,273	630	(3,808)	2,157	11	-	10,104	27,132
EG1	C07	13,106	1,976	0	1,376	1,303	621	(3,860)	2,100	11	-	11,303	27,935
EG1	C08	15,686	2,395	0	1,378	1,272	482	(3,121)	2,760	10	-	9,947	30,810
EG1	C09	15,280	2,353	0	1,378	1,304	566	(3,202)	2,739	11	-	11,140	31,570
EG1	C10	13,249	1,994	0	1,376	1,272	617	(3,696)	2,133	11	-	10,505	27,461
EG1	C11	12,910	1,974	0	1,376	1,304	656	(3,761)	2,019	11	-	11,701	28,190
EG1	C12	13,381	1,971	0	1,376	1,272	644	(3,804)	2,157	11	-	10,594	27,603
EG1	C13	13,105	1,978	0	1,376	1,304	613	(3,862)	2,111	11	-	11,803	28,439
EG1	C14	14,385	2,120	0	1,377	1,304	979	(3,402)	2,406	11	-	11,023	30,203
EG1	C15	12,599	1,985	0	1,374	1,303	645	(3,451)	2,090	11	-	10,900	27,457
EG1	C16	12,946	1,975	0	1,376	1,347	615	(3,745)	2,050	11	-	11,174	27,748
EG1	C17	13,426	1,757	0	1,377	1,304	751	(4,036)	1,972	11	-	11,623	28,186
EG1	C18	12,994	1,743	0	1,378	1,349	1,278	(3,527)	2,432	11	-	16,327	33,984
EG1	C19												

		Stochastic PVRR ($ millions)											
EG Scenario	Study ID	Thermal Fuel	Variable O&M inlcudes FOT	Emission Cost	Long Term Contracts	Renewables	DSM	System Balancing (System Sales)	System Balancing (System Purchases)	Transmission Wheeling	SBT	Capital and Fixed O&M Cost	Total PVRR
EG2	C01	13,267	2,002	0	1,376	1,273	618	(3,693)	2,085	11	(655)	10,919	27,202
EG2	C02	12,970	1,992	0	1,376	1,306	617	(3,724)	2,005	11	(655)	11,697	27,593
EG2	C03	12,973	1,985	0	1,376	1,312	609	(3,740)	2,042	11	(655)	11,856	27,770
EG2	C04	15,319	2,293	0	1,378	1,272	462	(3,214)	2,564	11	(655)	10,732	30,162
EG2	C05	14,965	2,260	0	1,378	1,313	456	(3,274)	2,481	11	(655)	11,704	30,640
EG2	C06	13,377	1,960	0	1,376	1,272	677	(3,810)	2,139	11	(655)	11,010	27,359
EG2	C07	13,002	1,951	0	1,376	1,313	658	(3,857)	2,014	11	(655)	11,894	27,708
EG2	C07a	13,094	1,961	0	1,376	1,302	661	(3,839)	2,042	11	(654)	11,512	27,466
EG2	C08	15,644	2,319	0	1,378	1,272	568	(3,159)	2,670	11	(655)	10,916	30,965
EG2	C09	15,440	2,275	0	1,377	1,313	560	(3,135)	2,670	10	(655)	11,698	31,554
EG2	C10	13,136	2,013	0	1,376	1,272	670	(3,695)	2,084	11	(655)	11,348	27,559
EG2	C11	12,993	1,958	0	1,375	1,313	606	(3,844)	2,022	11	(655)	12,353	28,132
EG2	C12	13,377	1,960	0	1,376	1,272	677	(3,809)	2,143	11	(655)	11,502	27,855
EG2	C13	13,056	1,957	0	1,376	1,313	693	(3,855)	2,041	11	(655)	12,397	28,333
EG2	C14	14,385	2,105	0	1,377	1,312	992	(3,384)	2,334	11	(655)	11,664	30,142
EG2	C15	12,856	1,899	0	1,377	1,312	626	(3,779)	2,154	11	(655)	11,786	27,588
EG2	C16	13,018	1,950	0	1,376	1,349	615	(3,835)	2,047	11	(655)	11,853	27,729
EG2	C17	13,425	1,757	0	1,377	1,312	763	(4,042)	1,905	11	(655)	12,264	28,118
EG2	C18	12,587	1,753	0	1,377	1,397	1,278	(3,591)	2,257	11	(655)	18,095	34,509
EG2	C19	12,908	1,980	0	1,376	1,313	661	(3,755)	2,009	11	(655)	11,868	27,715

Table L.10 – Core Cases 1 through 19, Portfolio PVRR Cost Components (Medium CO_2 Tax Level)

		Stochastic PVRR ($ millions)											
EG Scenario	Study ID	Thermal Fuel	Variable O&M inlcudes FOT	Emission Cost	Long Term Contracts	Renewables	DSM	System Balancing (System Sales)	System Balancing (System Purchases)	Transmission Wheeling	SBT	Capital and Fixed O&M Cost	Total PVRR
EG1	C01	13,620	2,148	3,236	1,392	1,273	616	(4,071)	2,726	10	-	10,015	30,964
EG1	C02	13,282	2,154	3,137	1,391	1,302	645	(4,123)	2,567	10	-	11,031	31,397
EG1	C03	13,261	2,156	3,125	1,392	1,304	588	(4,109)	2,592	10	-	11,237	31,557
EG1	C04	16,441	2,424	1,883	1,394	1,272	548	(3,506)	3,198	10	-	9,844	33,507
EG1	C05	16,003	2,359	1,834	1,394	1,304	559	(3,609)	3,106	10	-	11,075	34,035
EG1	C06	13,731	2,164	3,297	1,392	1,273	630	(4,178)	2,736	10	-	10,104	31,159
EG1	C07	13,407	2,140	3,192	1,392	1,303	621	(4,237)	2,658	10	-	11,303	31,789
EG1	C08	16,997	2,544	1,843	1,394	1,272	482	(3,418)	3,307	10	-	9,947	34,378
EG1	C09	16,536	2,499	1,807	1,394	1,304	566	(3,521)	3,274	10	-	11,140	35,009
EG1	C10	13,604	2,156	3,237	1,392	1,272	617	(4,062)	2,694	10	-	10,505	31,425
EG1	C11	13,227	2,137	3,111	1,391	1,304	656	(4,134)	2,563	10	-	11,701	31,966
EG1	C12	13,711	2,130	3,302	1,392	1,272	644	(4,174)	2,733	10	-	10,594	31,615
EG1	C13	13,408	2,142	3,192	1,392	1,304	613	(4,240)	2,669	10	-	11,803	32,293
EG1	C14	15,419	2,257	1,935	1,393	1,304	979	(3,778)	2,857	11	-	11,023	33,401
EG1	C15	12,904	2,174	3,135	1,390	1,303	645	(3,795)	2,643	10	-	10,900	31,308
EG1	C16	13,268	2,138	3,131	1,391	1,347	615	(4,116)	2,598	10	-	11,174	31,556
EG1	C17	13,763	1,883	3,258	1,394	1,304	751	(4,442)	2,491	10	-	11,623	32,036
EG1	C18	13,594	1,869	2,579	1,394	1,349	1,278	(3,943)	2,932	10	-	16,327	37,390
EG1	C19												

		Stochastic PVRR ($ millions)											
EG Scenario	Study ID	Thermal Fuel	Variable O&M inlcudes FOT	Emission Cost	Long Term Contracts	Renewables	DSM	System Balancing (System Sales)	System Balancing (System Purchases)	Transmission Wheeling	SBT	Capital and Fixed O&M Cost	Total PVRR
EG2	C01	13,652	2,166	3,214	1,392	1,273	618	(4,072)	2,621	10	(655)	10,919	31,138
EG2	C02	13,316	2,162	3,142	1,392	1,306	617	(4,102)	2,548	10	(655)	11,697	31,432
EG2	C03	13,313	2,149	3,132	1,392	1,312	609	(4,116)	2,592	10	(655)	11,856	31,596
EG2	C04	16,509	2,435	1,870	1,394	1,272	462	(3,540)	3,064	10	(655)	10,732	33,554
EG2	C05	16,123	2,398	1,821	1,394	1,313	456	(3,621)	2,955	10	(655)	11,704	33,898
EG2	C06	13,704	2,118	3,311	1,392	1,272	677	(4,182)	2,718	10	(655)	11,010	31,376
EG2	C07	13,289	2,114	3,196	1,392	1,313	658	(4,236)	2,581	10	(655)	11,894	31,556
EG2	C07a	13,387	2,125	3,226	1,392	1,302	661	(4,216)	2,612	10	(654)	11,512	31,357
EG2	C08	16,934	2,454	1,906	1,394	1,273	568	(3,467)	3,215	10	(655)	10,916	34,548
EG2	C09	16,720	2,406	1,733	1,393	1,313	560	(3,436)	3,202	10	(655)	11,698	34,944
EG2	C10	13,468	2,185	3,238	1,391	1,272	670	(4,066)	2,639	10	(655)	11,348	31,501
EG2	C11	13,269	2,118	3,209	1,391	1,313	606	(4,218)	2,590	10	(655)	12,353	31,986
EG2	C12	13,704	2,117	3,312	1,392	1,272	677	(4,183)	2,724	10	(655)	11,502	31,874
EG2	C13	13,351	2,120	3,208	1,391	1,313	693	(4,234)	2,608	10	(655)	12,397	32,202
EG2	C14	15,408	2,237	1,965	1,393	1,312	992	(3,745)	2,803	11	(655)	11,664	33,384
EG2	C15	13,118	2,079	3,243	1,392	1,312	626	(4,152)	2,720	10	(655)	11,786	31,480
EG2	C16	13,290	2,108	3,237	1,391	1,350	615	(4,208)	2,617	10	(655)	11,853	31,607
EG2	C17	13,767	1,881	3,267	1,394	1,312	763	(4,452)	2,434	10	(655)	12,264	31,985
EG2	C18	13,104	1,892	2,577	1,394	1,397	1,278	(4,012)	2,755	10	(655)	18,095	37,836
EG2	C19	13,228	2,145	3,132	1,391	1,313	661	(4,128)	2,564	10	(655)	11,868	31,528

Table L.11 – Core Cases 1 through 19, Portfolio PVRR Cost Components (High CO2 Tax Level)

		Stochastic PVRR ($ millions)											
EG Scenario	Study ID	Thermal Fuel	Variable O&M inlcudes FOT	Emission Cost	Long Term Contracts	Renewables	DSM	System Balancing (System Sales)	System Balancing (System Purchases)	Transmission Wheeling	SBT	Capital and Fixed O&M Cost	Total PVRR
EG1	C01	14,471	2,449	8,255	1,405	1,273	616	(4,698)	3,541	10	-	10,015	37,337
EG1	C02	14,075	2,466	7,992	1,404	1,302	645	(4,758)	3,365	10	-	11,031	37,534
EG1	C03	14,055	2,470	7,964	1,405	1,304	588	(4,746)	3,382	10	-	11,237	37,668
EG1	C04	18,264	2,686	5,045	1,407	1,273	548	(4,127)	3,911	10	-	9,844	38,860
EG1	C05	17,758	2,616	4,921	1,407	1,304	559	(4,267)	3,772	10	-	11,075	39,155
EG1	C06	14,577	2,461	8,414	1,405	1,273	630	(4,843)	3,561	10	-	10,104	37,593
EG1	C07	14,203	2,436	8,120	1,405	1,303	621	(4,913)	3,466	10	-	11,303	37,953
EG1	C08	18,824	2,818	4,873	1,407	1,273	482	(4,032)	4,012	9	-	9,947	39,613
EG1	C09	18,277	2,767	4,794	1,407	1,304	566	(4,176)	3,958	10	-	11,140	40,046
EG1	C10	14,453	2,461	8,264	1,405	1,273	617	(4,690)	3,505	10	-	10,505	37,803
EG1	C11	14,021	2,444	7,907	1,404	1,304	656	(4,775)	3,355	10	-	11,701	38,027
EG1	C12	14,547	2,421	8,431	1,405	1,273	644	(4,838)	3,560	10	-	10,594	38,046
EG1	C13	14,201	2,439	8,121	1,405	1,304	613	(4,914)	3,478	10	-	11,803	38,460
EG1	C14	17,117	2,522	5,130	1,406	1,304	979	(4,489)	3,459	10	-	11,023	38,461
EG1	C15	13,708	2,518	7,969	1,403	1,303	645	(4,420)	3,447	10	-	10,900	37,483
EG1	C16	14,061	2,448	7,970	1,404	1,347	615	(4,752)	3,400	10	-	11,174	37,677
EG1	C17	14,614	2,122	8,316	1,407	1,304	751	(5,175)	3,212	10	-	11,623	38,184
EG1	C18	14,844	2,128	6,561	1,407	1,349	1,278	(4,695)	3,565	10	-	16,327	42,774
EG1	C19												

		Stochastic PVRR ($ millions)											
EG Scenario	Study ID	Thermal Fuel	Variable O&M inlcudes FOT	Emission Cost	Long Term Contracts	Renewables	DSM	System Balancing (System Sales)	System Balancing (System Purchases)	Transmission Wheeling	SBT	Capital and Fixed O&M Cost	Total PVRR
EG2	C01	14,520	2,476	8,219	1,405	1,273	618	(4,714)	3,397	10	(655)	10,919	37,468
EG2	C02	14,149	2,482	7,976	1,405	1,306	617	(4,747)	3,332	10	(655)	11,697	37,571
EG2	C03	14,122	2,458	7,963	1,405	1,312	609	(4,755)	3,397	10	(655)	11,856	37,722
EG2	C04	18,354	2,702	5,014	1,407	1,273	462	(4,176)	3,736	10	(655)	10,732	38,858
EG2	C05	17,905	2,657	4,876	1,407	1,313	456	(4,289)	3,585	10	(655)	11,704	38,968
EG2	C06	14,531	2,406	8,463	1,405	1,273	677	(4,853)	3,549	10	(655)	11,010	37,816
EG2	C07	14,045	2,407	8,125	1,405	1,313	658	(4,917)	3,392	10	(655)	11,894	37,677
EG2	C07a	14,150	2,419	8,212	1,405	1,302	661	(4,893)	3,422	10	(654)	11,512	37,546
EG2	C08	18,744	2,710	5,026	1,407	1,273	568	(4,095)	3,919	10	(655)	10,916	39,822
EG2	C09	18,503	2,638	4,588	1,406	1,313	560	(4,063)	3,881	9	(655)	11,698	39,877
EG2	C10	14,278	2,510	8,267	1,404	1,273	670	(4,701)	3,445	10	(655)	11,348	37,849
EG2	C11	14,014	2,422	8,162	1,404	1,313	606	(4,892)	3,408	10	(655)	12,353	38,146
EG2	C12	14,532	2,406	8,464	1,405	1,273	677	(4,853)	3,553	10	(655)	11,502	38,315
EG2	C13	14,122	2,415	8,157	1,404	1,313	693	(4,913)	3,430	10	(655)	12,397	38,373
EG2	C14	17,098	2,494	5,194	1,406	1,312	992	(4,435)	3,439	10	(655)	11,664	38,520
EG2	C15	13,860	2,417	8,233	1,406	1,312	626	(4,815)	3,536	10	(655)	11,786	37,716
EG2	C16	14,018	2,408	8,264	1,405	1,350	615	(4,881)	3,432	10	(655)	11,853	37,817
EG2	C17	14,622	2,116	8,321	1,407	1,312	763	(5,193)	3,165	10	(655)	12,264	38,132
EG2	C18	14,221	2,165	6,516	1,407	1,398	1,278	(4,765)	3,388	10	(655)	18,095	43,058
EG2	C19	14,007	2,456	7,963	1,404	1,313	661	(4,766)	3,369	10	(655)	11,868	37,630

APPENDIX M – CASE STUDY FACT SHEETS

Introduction

This appendix documents the 2013 Integrated Resource Plan modeling assumptions used for the Core Case studies and the Sensitivity Case studies in a 2-page format handout given to participants to identify key assumptions used. These aided in the discussion during the public process and gave details beyond the high level summary tables. The Core Case Fact sheets were provided to the public on December 19, 2012 and the Sensitivity Case Fact Sheets were provided on February 27, 2013.

Case Fact Sheets Summary Tables

Table M.1 – Core Case Definitions

Theme	Case	Gas Price	CO2 Price	Coal Price	RPS	Class 2 DSM	Other
Reference	C01	Medium	Medium	Medium	None	Base	n/a
	C02	Medium	Medium	Medium	State	Base	n/a
	C03	Medium	Medium	Medium	State & Federal	Base	n/a
Environmental	C04	Low	High	High	None	Base	n/a
Policy	C05	Low	High	High	State & Federal	Base	n/a
	C06	High	Zero	Low	None	Base	n/a
	C07	High	Zero	Low	State & Federal	Base	n/a
	C08	Low	High	High	None	Base	n/a
	C09	Low	High	High	State & Federal	Base	n/a
	C10	Medium	Medium	Medium	None	Base	n/a
	C11	Medium	Medium	Medium	State & Federal	Base	n/a
	C12	High	Zero	Low	None	Base	n/a
	C13	High	Zero	Low	State & Federal	Base	n/a
	C14	Medium	Hard Cap (Medium Gas)	Medium	State & Federal	Accelerated	n/a
Targeted	C15	Medium	Medium	Medium	State & Federal	Accelerated	No CCCT
Resources	C16	Medium	Medium	Medium	State & Federal	Base	Geothermal/RPS
	C17	High	Medium	Medium	State & Federal	Base	Market Spike
	C18	Medium	Hard Cap (High Gas)	Medium	None	Accelerated	Clean Energy
Transmission	C19	Medium	Medium	Medium	State & Federal	Base	Alt. to Segment D

Table M.2 – Sensitivity Case Definitions

Theme	Case #	Load	Gas Price	CO2 Price	RPS	PTC/ITC	Coal Investments
Load Sensitivity	S-01	Low	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
	S-02	High	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
	S-03	1 in 20	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
Targeted Resource	S-05	Base	Medium	Medium	None	2019/2019	Optimized
	S-06	Base	Medium	Medium	State & Federal (RPS Floor)	2019/2019	Optimized
	S-07	Base	Medium	Medium	State & Federal (Optimized)	2012/2016	Optimized
	S-09	Base	High	High	State & Federal (RPS Floor)	2019/2019	Optimized
	S-10	Base	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Optimized
Environmental Policy	S-04 (Volume 3)	Base	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Hypothetical Regional Haze
	S-X (Volume 3)	Base	Medium	Medium	State & Federal (RPS Floor)	2012/2016	Next Best Alternative

Notes

1. All sensitivity cases are based on Energy Gateway Scenario 2, consistent with the scenario in the 2013 IRP preferred portfolio.
2. Sensitivity Case S-07 applies state RPS targets as system targets in the System Optimizer model. All other sensitivities either use the RPS Scenario Maker to establish a renewable resource floor or exclude RPS requirements altogether.
3. Case S-08 (simulating PacifiCorp's 2013 Business Plan portfolio in the current input setup) was removed due to incompatibilities in how Class 2 DSM resources are modeled in the 2013 IRP.
4. Sensitivity cases S-04 (Hypothetical Regional Haze Compliance Alternative) and S-X (Emission Control PVRR(d) Analysis) are confidential and summarized in confidential Volume III of the 2013 IRP report.

Sensitivity cases S-04 (Hypothetical Regional Haze Compliance Alternative) and S-X (Emission Control PVRR(d) Analysis) are confidential and summarized in confidential Volume III to this report.

Core Case Fact Sheets

Core Case Fact Sheets – C-01 to C-19

Theme: Reference
Case: C-1 (Base, No RPS)

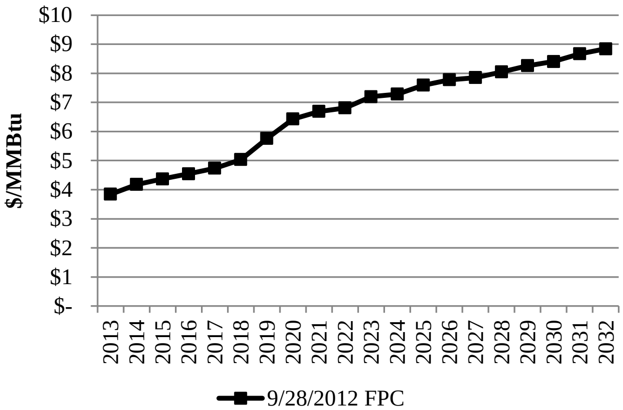
Description

Case C-1 is one of three core cases in the "Reference" theme (Cases C-1 through C-3). These cases are characterized by base/medium assumptions and varying degrees of RPS assumptions. This structure will enable reporting on how RPS requirements, whether state or federal, influence resource portfolios, costs and stochastic risk.

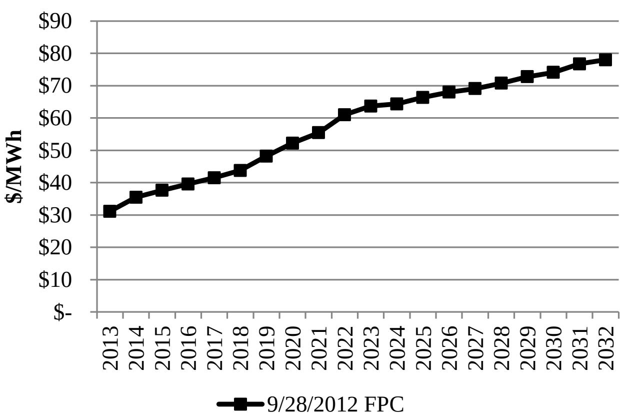
Forward Price Curve

Case C-1 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



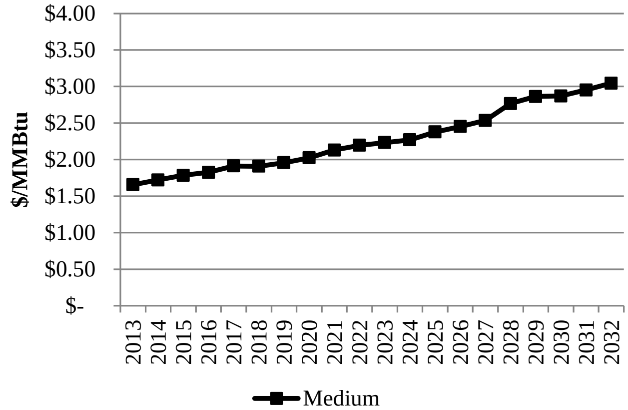
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

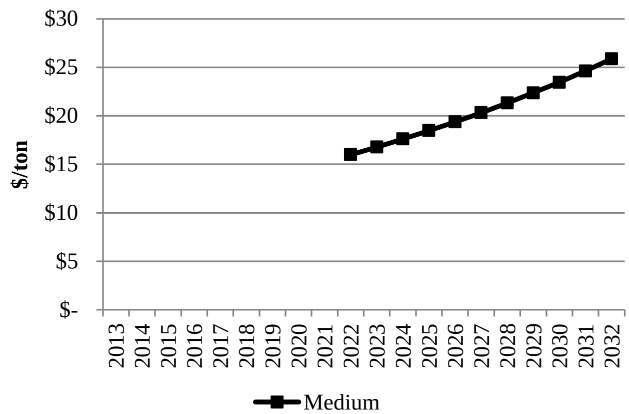
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-1 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Case C-1 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

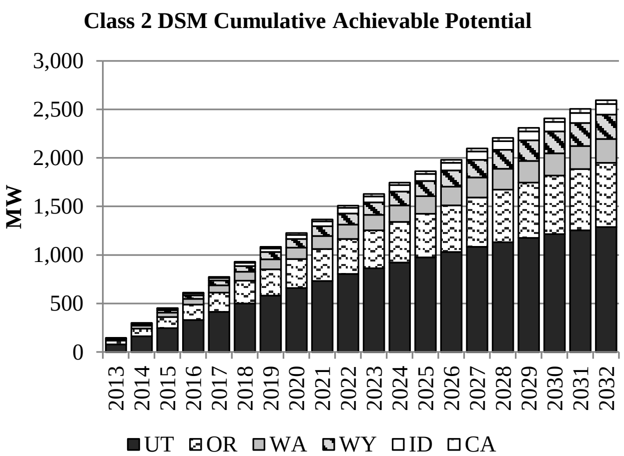
Other Non-CO_2 Environmental Policy Assumptions
Case C-1 will include estimated costs to achieve compliance with the following:
- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS
Case C-1 does not include any federal RPS requirements.

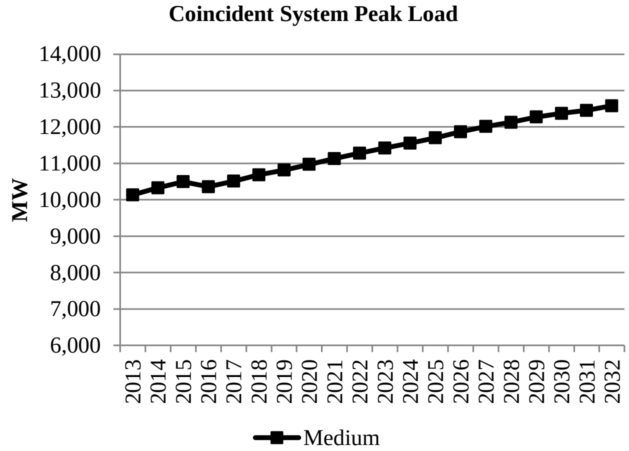
State RPS
Case C-1 does not include any state RPS requirements.

Federal Tax Incentives
- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast
The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific
There are no other specific resource constraints that will be applied to this case.

Theme: Reference
Case: C-2 (Base, State RPS)

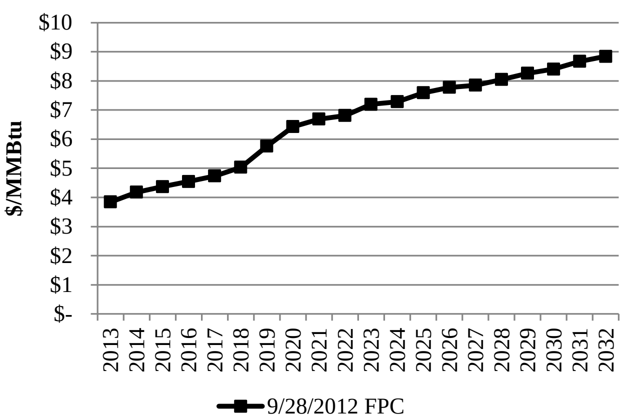
Description

Case C-2 is one of three core cases in the "Reference" theme (Cases C-1 through C-3). These cases are characterized by base/medium assumptions and varying degrees of RPS assumptions. This structure will enable reporting on how RPS requirements, whether state or federal, influence resource portfolios, costs and stochastic risk.

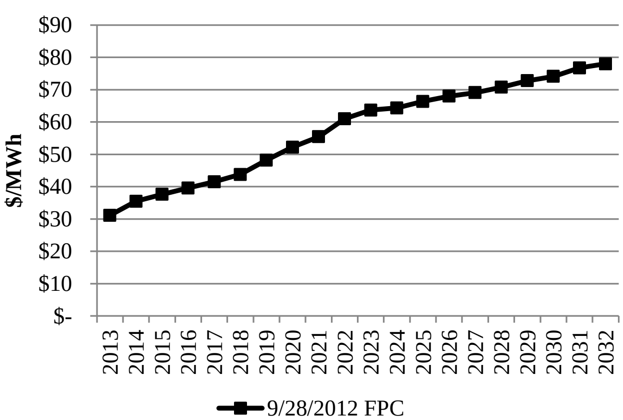
Forward Price Curve

Case C-2 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



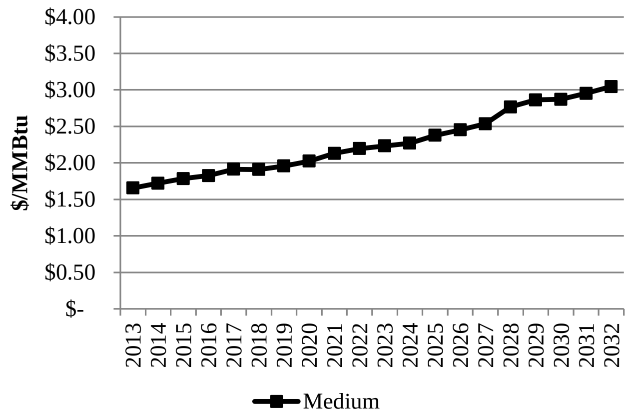
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

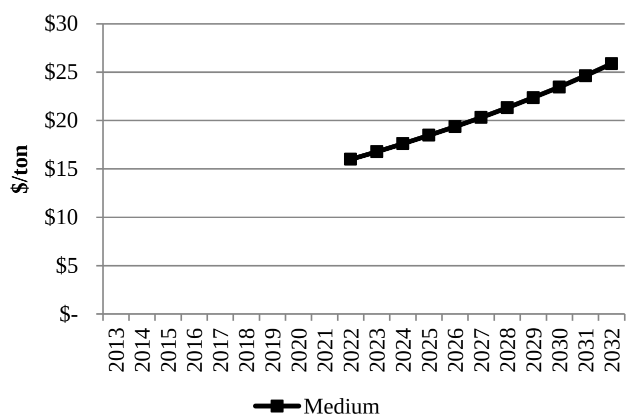
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-2 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Case C-2 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-2 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-2 does not include any federal RPS requirements.

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

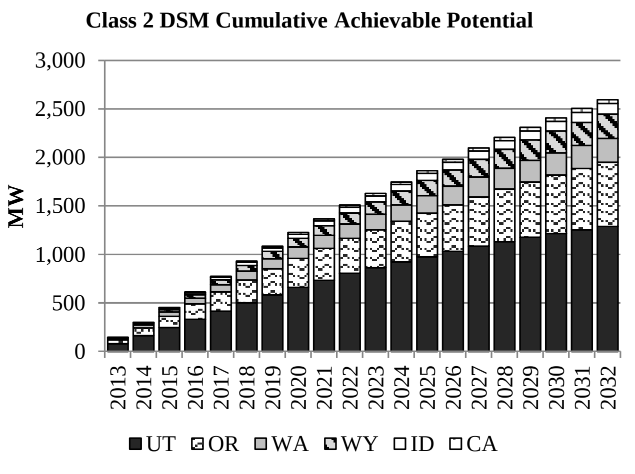
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

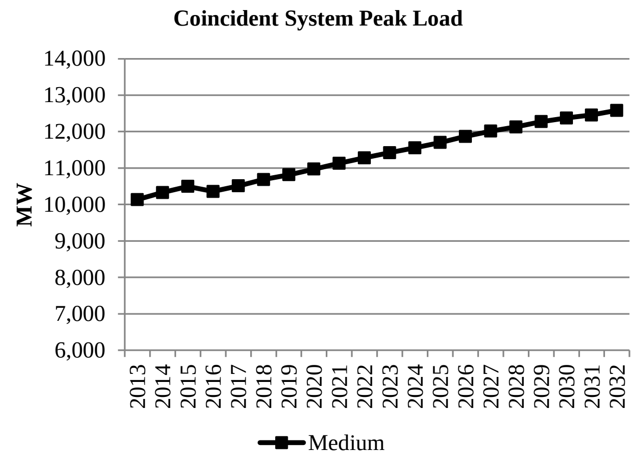
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

Theme: Reference
Case: C-3 (Base, State & Federal RPS)

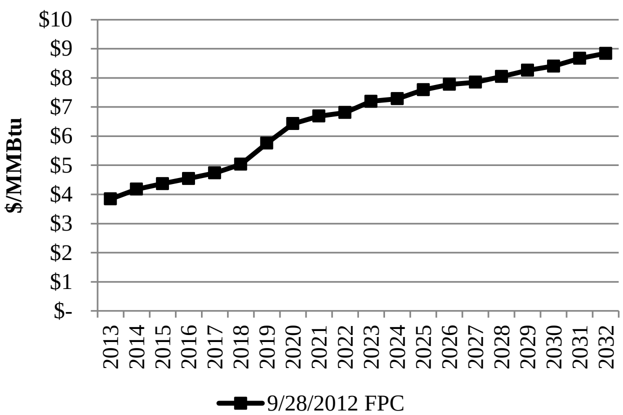
Description

Case C-3 is one of three core cases in the “Reference” theme (Cases C-1 through C-3). These cases are characterized by base/medium assumptions and varying degrees of RPS assumptions. This structure will enable reporting on how RPS requirements, whether state or federal, influence resource portfolios, costs and stochastic risk.

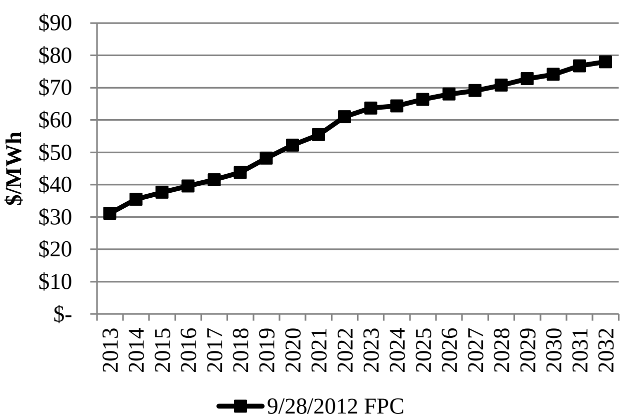
Forward Price Curve

Case C-3 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company’s September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



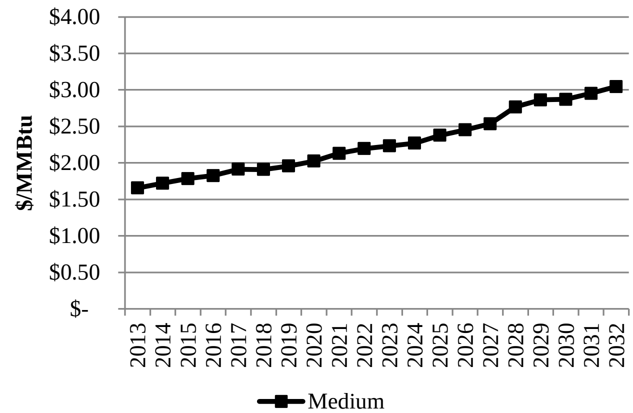
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

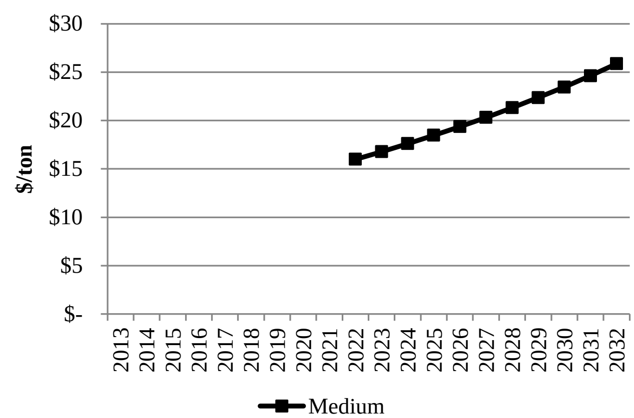
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-3 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Case C-3 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-3 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-3 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

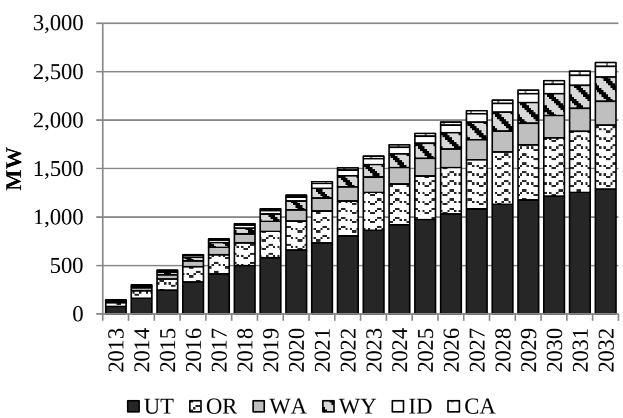
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.

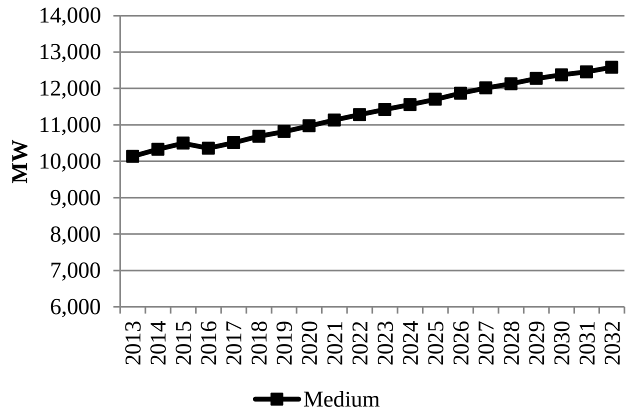
Class 2 DSM Cumulative Achievable Potential



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.

Coincident System Peak Load



Resource Specific

There are no other specific resource constraints that will be applied to this case.

Theme: Environmental Policy
Case: C-4 (Base Regional Haze, Low Gas, High CO_2 & Coal, No RPS)

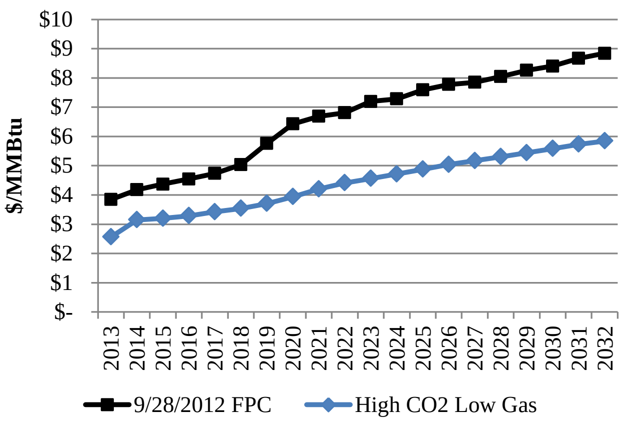
Description

Case C-4 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

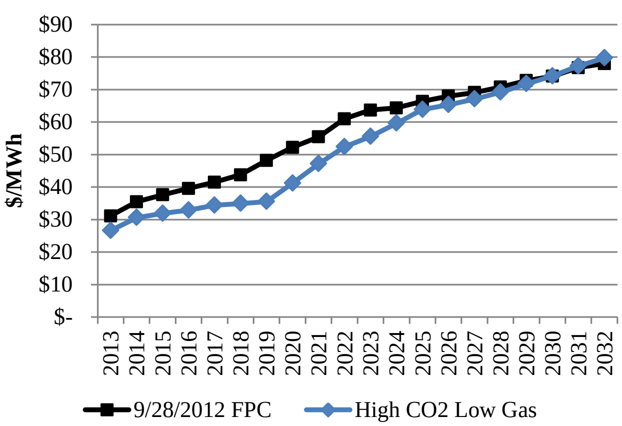
Forward Price Curve

Case C-4 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.

Nominal Average Annual Henry Hub Gas Prices



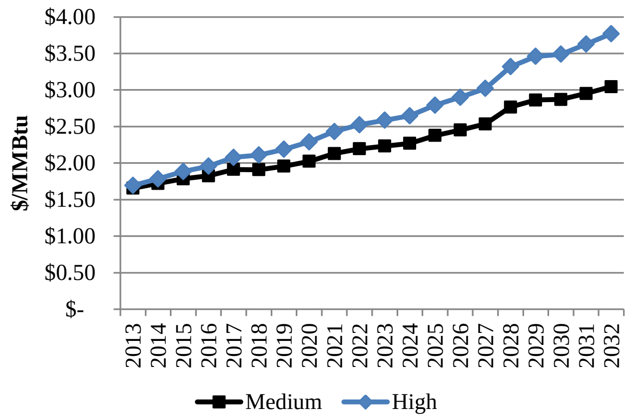
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Case C-4 high coal costs are shown alongside the medium coal costs in the figure below.

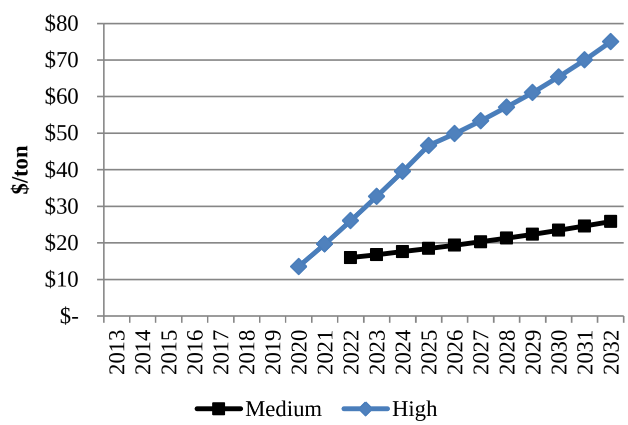
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-4 includes high CO_2 prices starting 2020 at approximately $14/ton rising to approximately $75/ton by 2032. These high CO_2 prices are shown alongside the medium CO_2 price assumptions in the figure below.

Nominal Federal CO2 Prices



Regional Haze

Case C-4 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016

Theme: Environmental Policy
Case: C-4 (Base Regional Haze, Low Gas, High CO_2 & Coal, No RPS)

Coal Unit	State	Technology*	Year
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-4 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-4 does not include any federal RPS requirements.

State RPS

Case C-4 does not include any state RPS requirements.

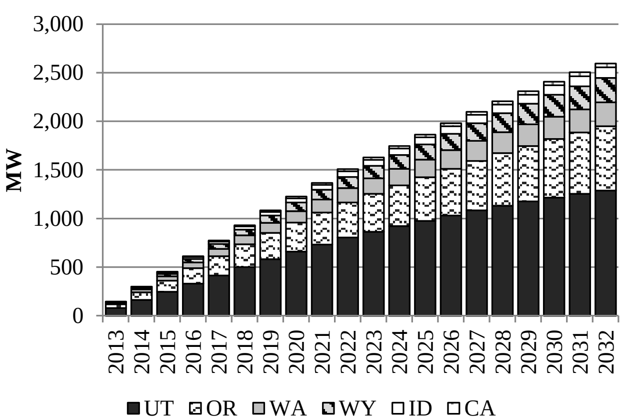
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.

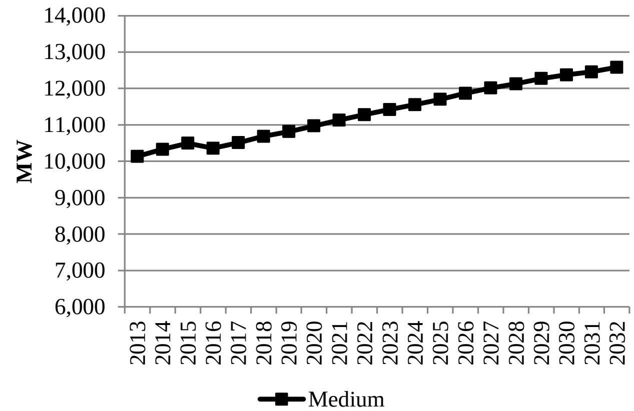
Class 2 DSM Cumulative Achievable Potential



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.

Coincident System Peak Load



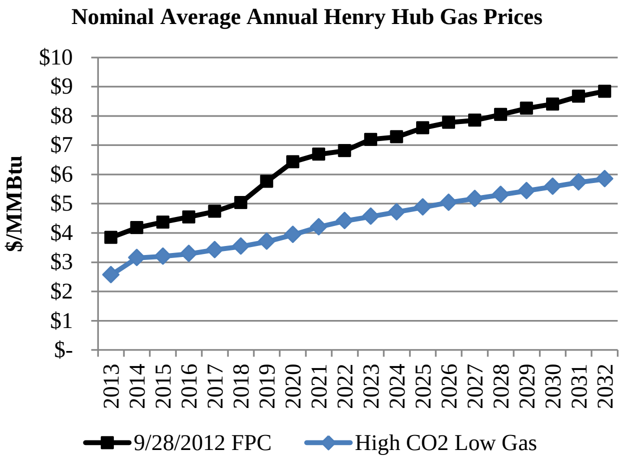
Resource Specific

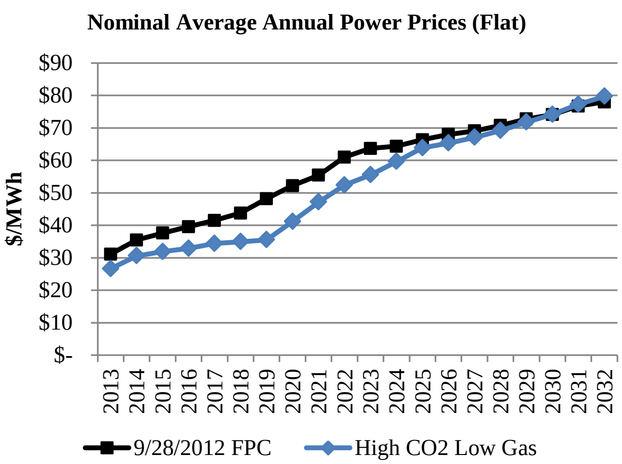
There are no other specific resource constraints that will be applied to this case.

Theme: Environmental Policy
Case: C-5 (Base Regional Haze, Low Gas, High CO_2 & Coal, With RPS)

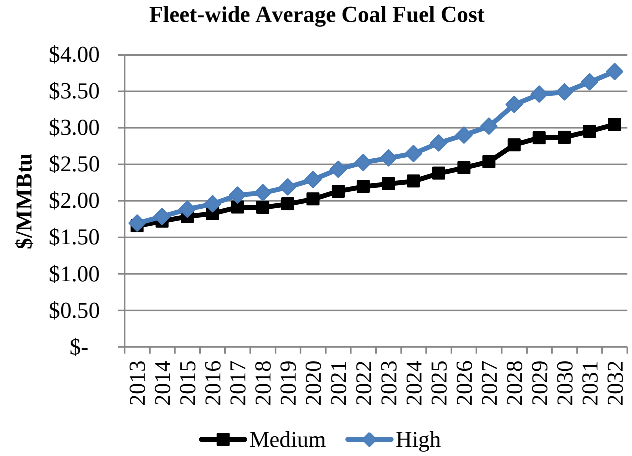
Description
Case C-5 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve
Case C-5 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.

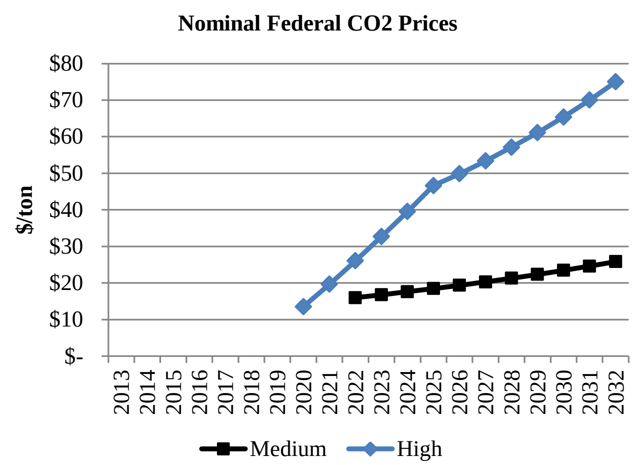




Coal Fuel Costs
Case C-5 high coal costs are shown alongside the medium coal costs in the figure below.



Federal CO_2 Policy/Price Signal
Case C-5 includes high CO_2 prices starting 2020 at approximately $14/ton rising to approximately $75/ton by 2032. These high CO_2 prices are shown alongside the medium CO_2 price assumptions in the figure below.



Regional Haze
Case C-5 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016

Theme: Environmental Policy
Case: C-5 (Base Regional Haze, Low Gas, High CO_2 & Coal, With RPS)

Coal Unit	State	Technology*	Year
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-5 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-5 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

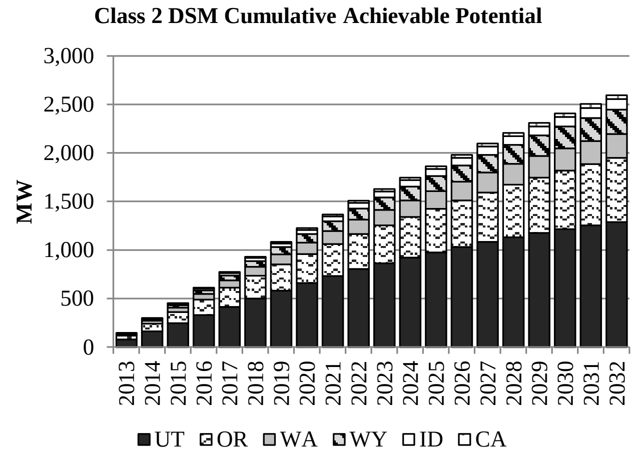
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

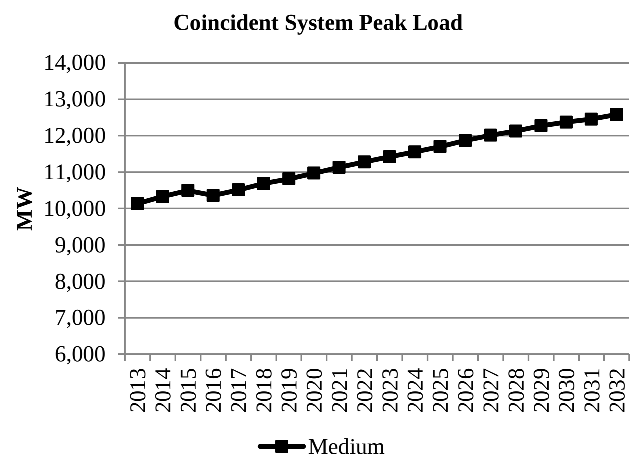
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

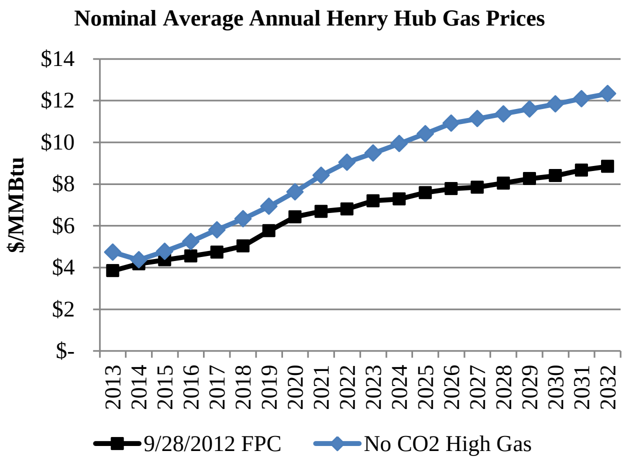
Theme: Environmental Policy
Case: C-6 (Base Regional Haze, High Gas, No CO_2, Low Coal, No RPS)

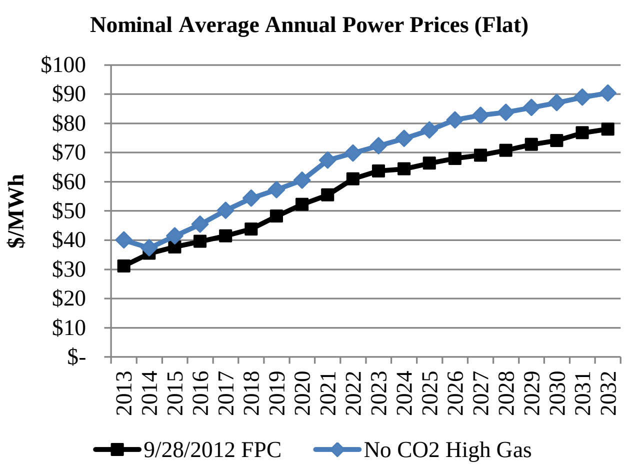
Description

Case C-6 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve

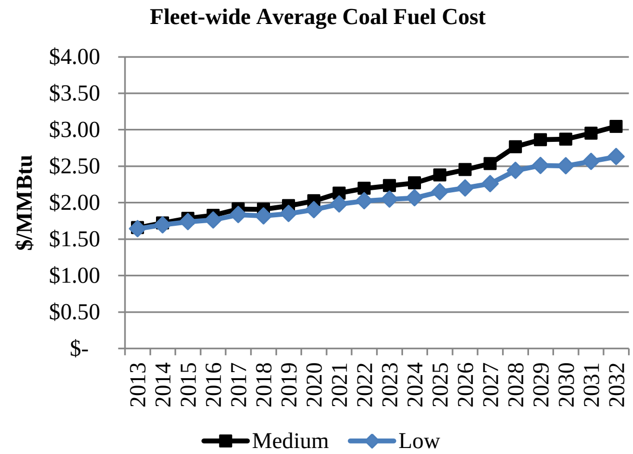
Case C-6 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.





Coal Fuel Costs

Case C-6 low coal costs are shown alongside the medium coal costs in the figure below.



Federal CO_2 Policy/Price Signal

Case C-6 does not have a federal CO_2 price assumption.

Regional Haze

Case C-6 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-6 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-6 does not include any federal RPS requirements.

Theme: Environmental Policy
Case: C-6 (Base Regional Haze, High Gas, No CO_2, Low Coal, No RPS)

State RPS

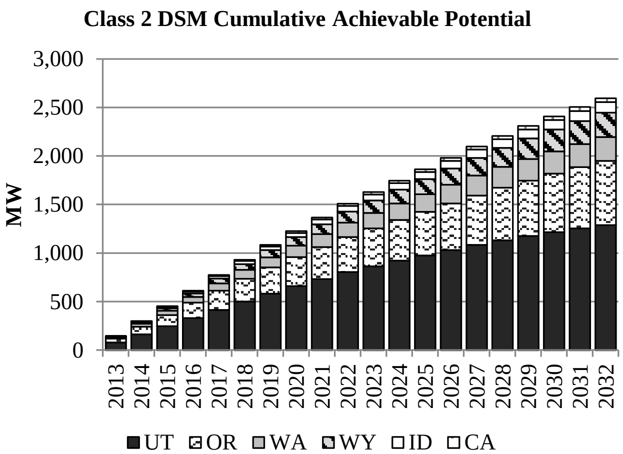
Case C-6 does not include any state RPS requirements.

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

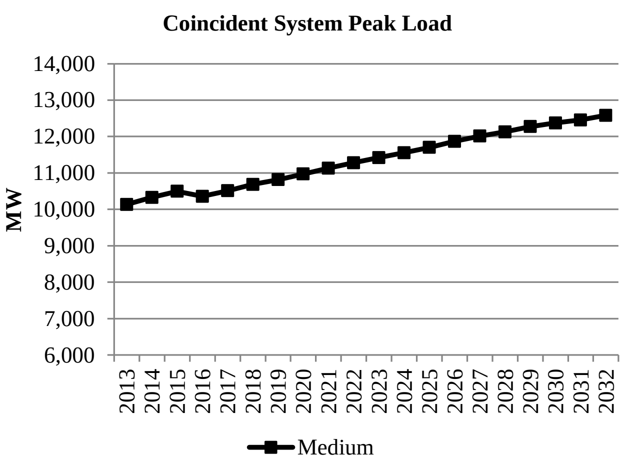
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

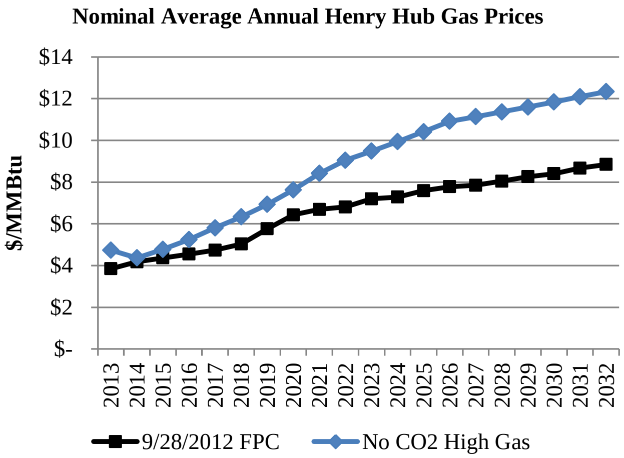
Theme: Environmental Policy
Case: C-7 (Base Regional Haze, High Gas, No CO_2, Low Coal, With RPS)

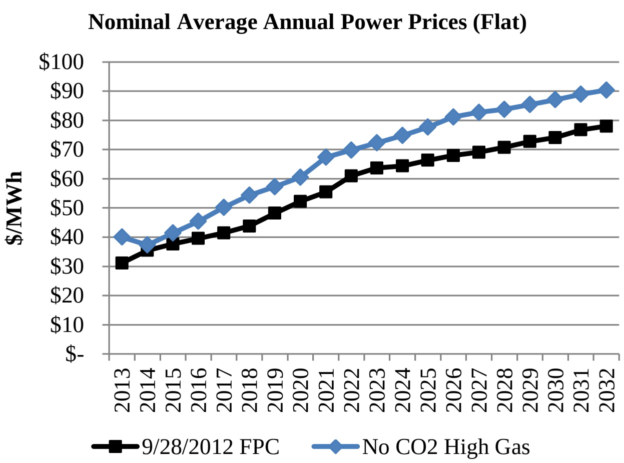
Description

Case C-7 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve

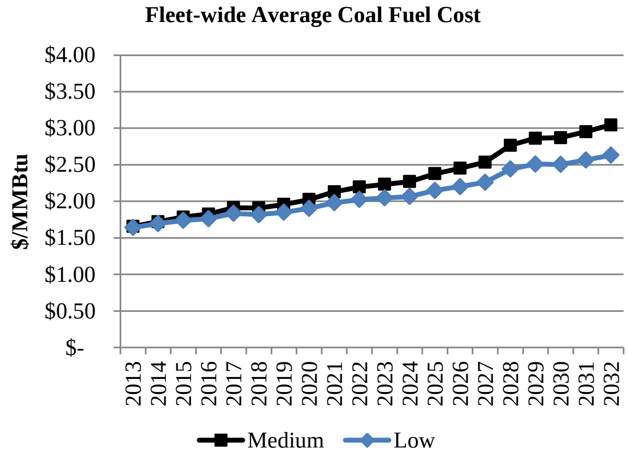
Case C-7 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.





Coal Fuel Costs

Case C-7 low coal costs are shown alongside the medium coal costs in the figure below.



Federal CO_2 Policy/Price Signal

Case C-7 does not have a federal CO_2 price assumption.

Regional Haze

Case C-7 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-7 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-7 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)

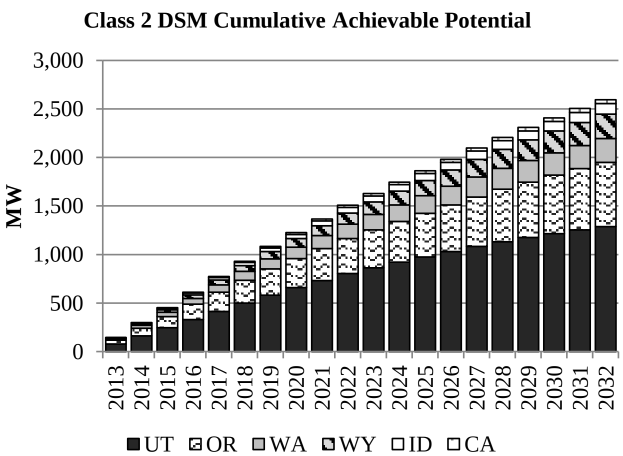
Theme: Environmental Policy
Case: C-7 (Base Regional Haze, High Gas, No CO_2, Low Coal, With RPS)

- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

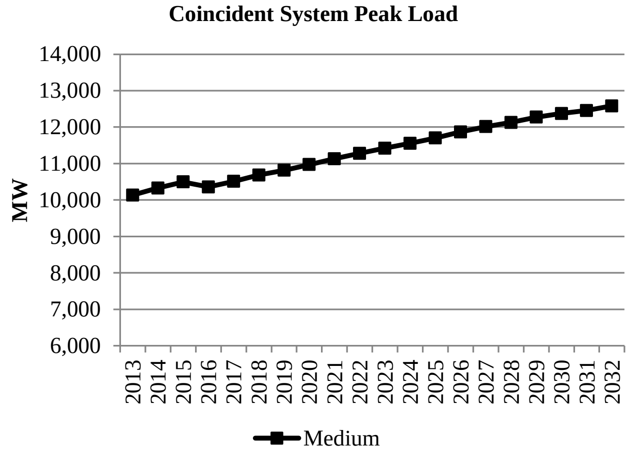
State RPS
Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives
- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast
The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific
There are no other specific resource constraints that will be applied to this case.

Theme: Environmental Policy
Case: C-8 (Stringent Regional Haze, Low Gas, High CO_2 & Coal, No RPS)

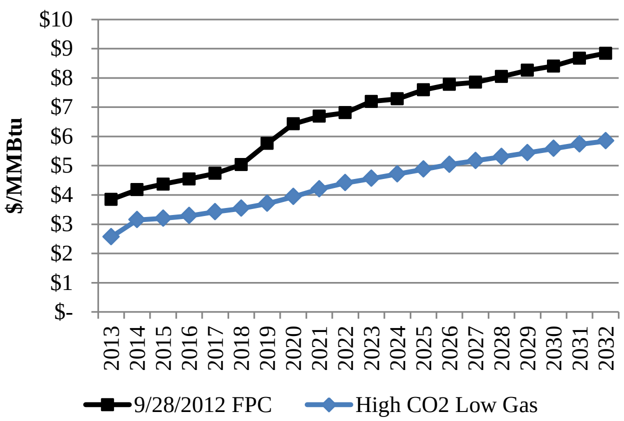
Description

Case C-8 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

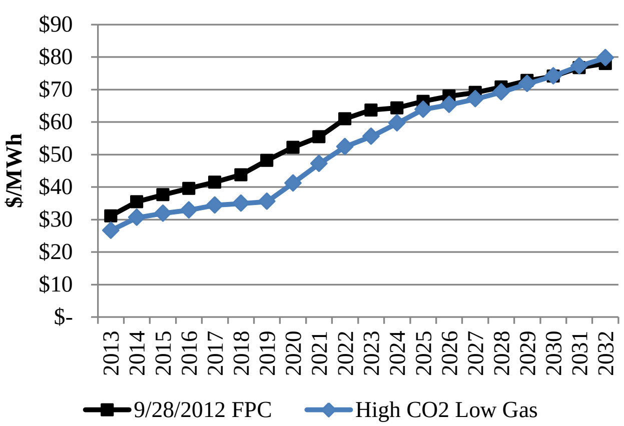
Forward Price Curve

Case C-8 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.

Nominal Average Annual Henry Hub Gas Prices



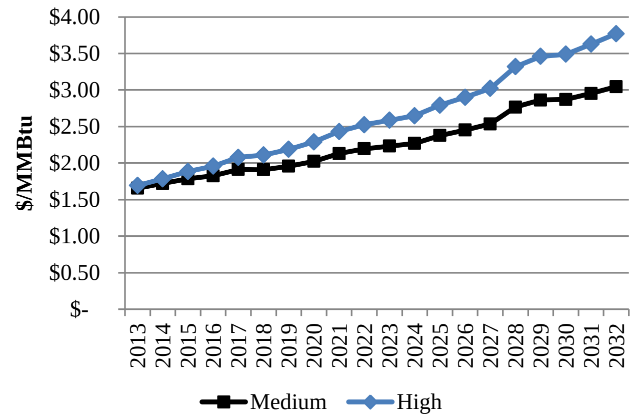
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Case C-8 high coal costs are shown alongside the medium coal costs in the figure below.

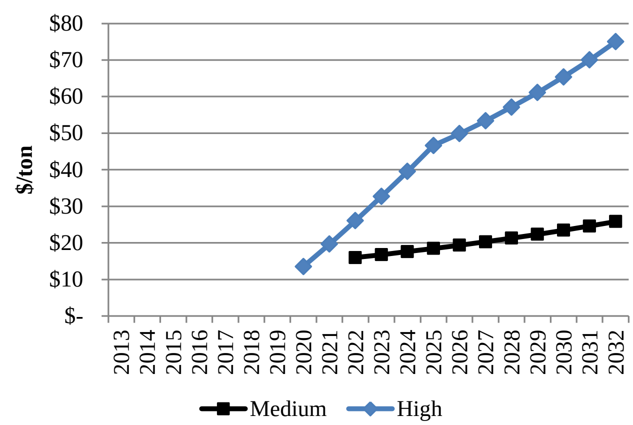
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-8 includes high CO_2 prices starting 2020 at approximately $14/ton rising to approximately $75/ton by 2032. These high CO_2 prices are shown alongside the medium CO_2 price assumptions in the figure below.

Nominal Federal CO2 Prices



Regional Haze

Case C-8 will apply stringent case Regional Haze investments patterned after prospective federal implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
DJ 1	WY	LNB	2016
DJ 2	WY	LNB	2018
DJ 3	WY	SNCR	2017
J. Bridger 1	WY	SCR	2017
J. Bridger 2	WY	SCR	2017
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Wyodak	WY	SNCR	2017
Wyodak	WY	SCR	2025
Hunter 1	UT	BH, LNB	2014
Hunter 1	UT	SCR	2018

Theme: Environmental Policy
Case: C-8 (Stringent Regional Haze, Low Gas, High CO_2 & Coal, No RPS)

Coal Unit	State	Technology*	Year
Hunter 2	UT	SCR	2017
Hunter 3	UT	SCR	2020
Huntington 1	UT	SCR	2018
Huntington 2	UT	SCR	2017
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 1	CO	SCR	2024
Craig 2	CO	SCR	2016
Colstrip 3	MT	SCR	2023
Colstrip 4	MT	SCR	2024
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions
Case C-8 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

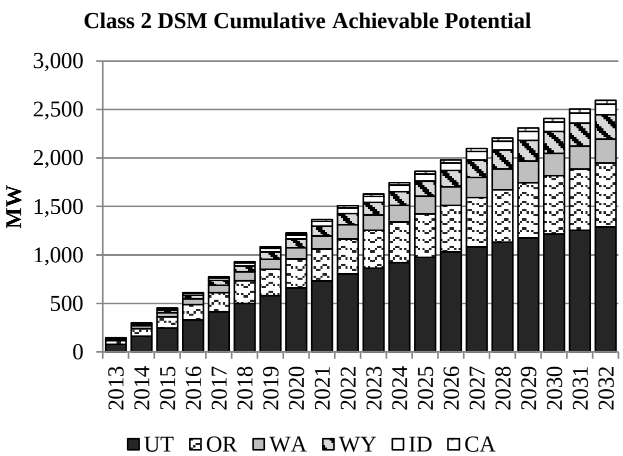
Federal RPS
Case C-8 does not include any federal RPS requirements.

State RPS
Case C-8 does not include any state RPS requirements.

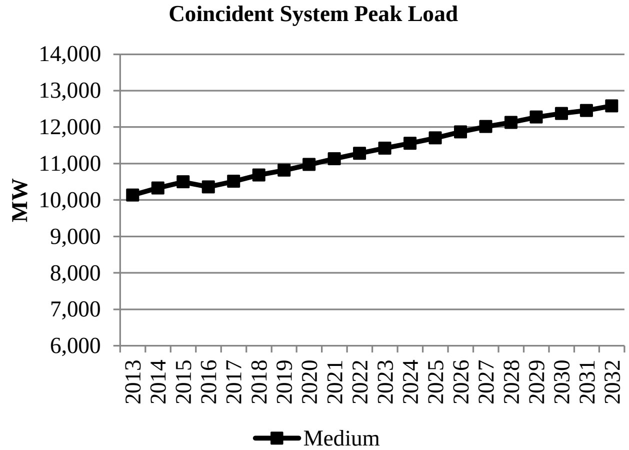
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast
The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific
There are no other specific resource constraints that will be applied to this case.

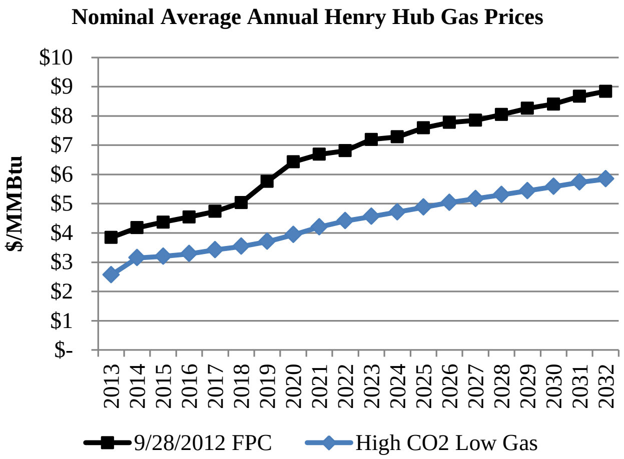
Theme: Environmental Policy
Case: C-9 (Stringent Regional Haze, Low Gas, High CO_2 & Coal, With RPS)

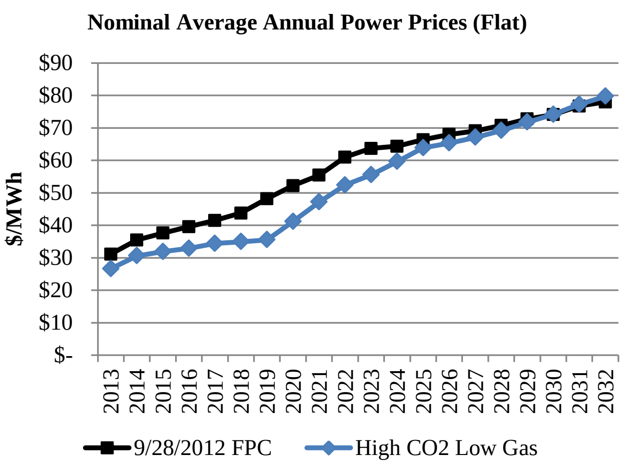
Description

Case C-9 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve

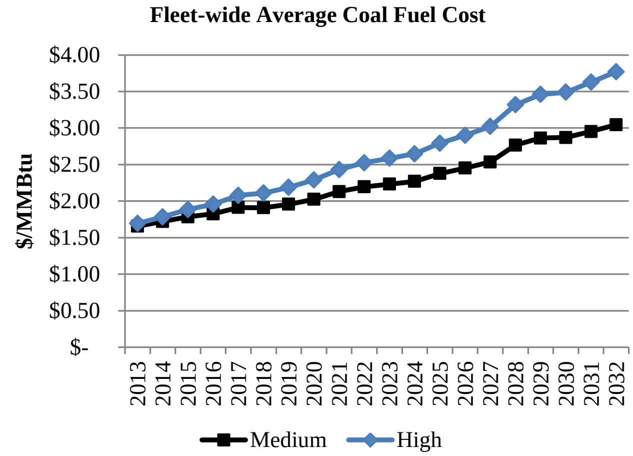
Case C-9 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.





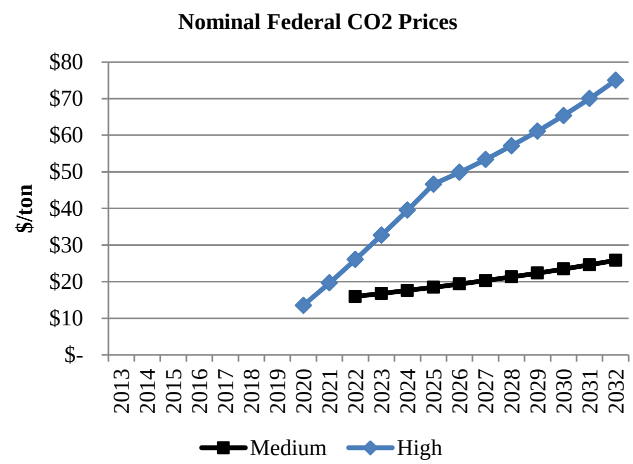
Coal Fuel Costs

Case C-9 high coal costs are shown alongside the medium coal costs in the figure below.



Federal CO_2 Policy/Price Signal

Case C-9 includes high CO_2 prices starting 2020 at approximately $14/ton rising to approximately $75/ton by 2032. These high CO_2 prices are shown alongside the medium CO_2 price assumptions in the figure below.



Regional Haze

Case C-9 will apply stringent case Regional Haze investments patterned after prospective federal implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
DJ 1	WY	LNB	2016
DJ 2	WY	LNB	2018
DJ 3	WY	SNCR	2017
J. Bridger 1	WY	SCR	2017
J. Bridger 2	WY	SCR	2017
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Wyodak	WY	SNCR	2017
Wyodak	WY	SCR	2025
Hunter 1	UT	BH, LNB	2014
Hunter 1	UT	SCR	2018

Theme: Environmental Policy
Case: C-9 (Stringent Regional Haze, Low Gas, High CO_2 & Coal, With RPS)

Coal Unit	State	Technology*	Year
Hunter 2	UT	SCR	2017
Hunter 3	UT	SCR	2020
Huntington 1	UT	SCR	2018
Huntington 2	UT	SCR	2017
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 1	CO	SCR	2024
Craig 2	CO	SCR	2016
Colstrip 3	MT	SCR	2023
Colstrip 4	MT	SCR	2024
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-9 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-9 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

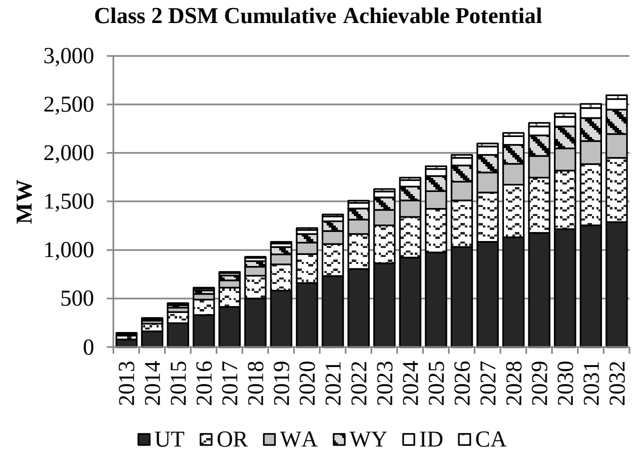
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

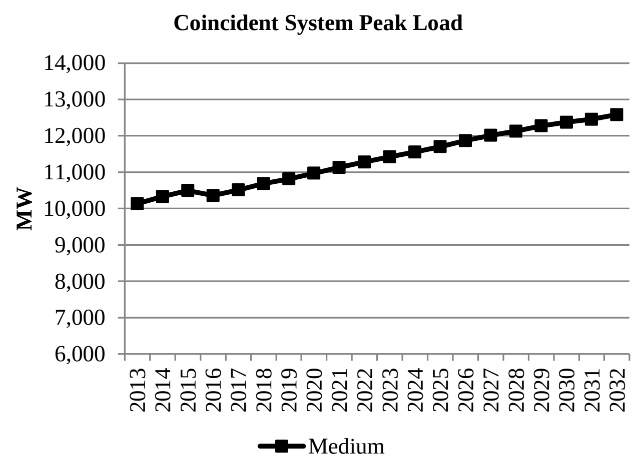
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

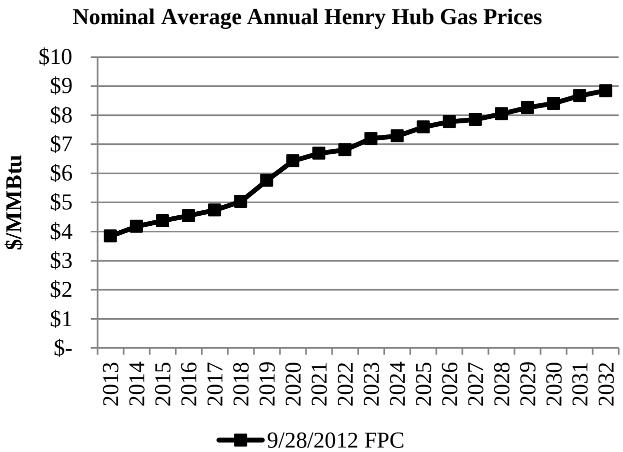
Theme: Environmental Policy
Case: C-10 (Stringent Regional Haze, Med Gas, Med CO_2 & Coal, No RPS)

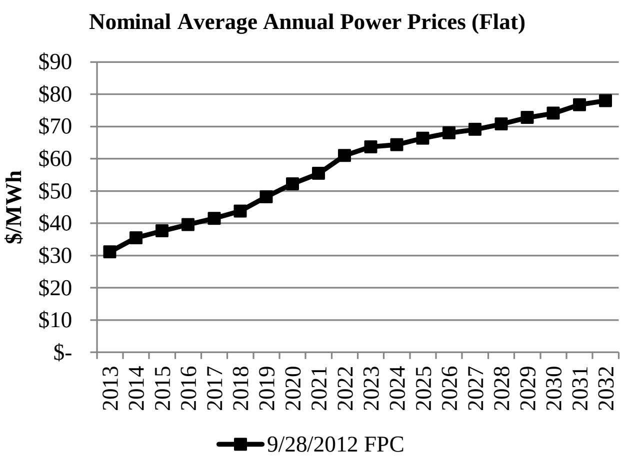
Description

Case C-10 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve

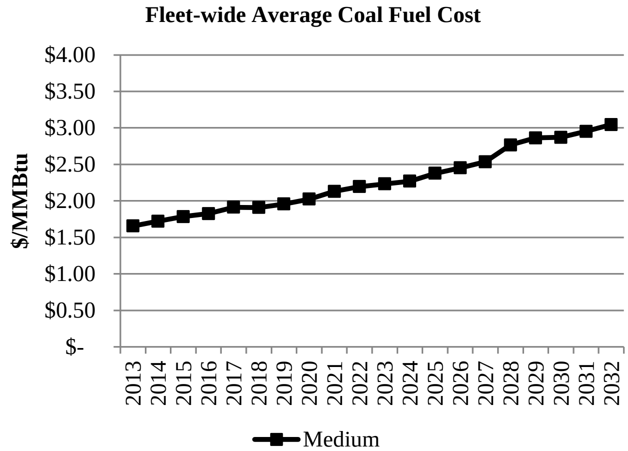
Case C-10 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.





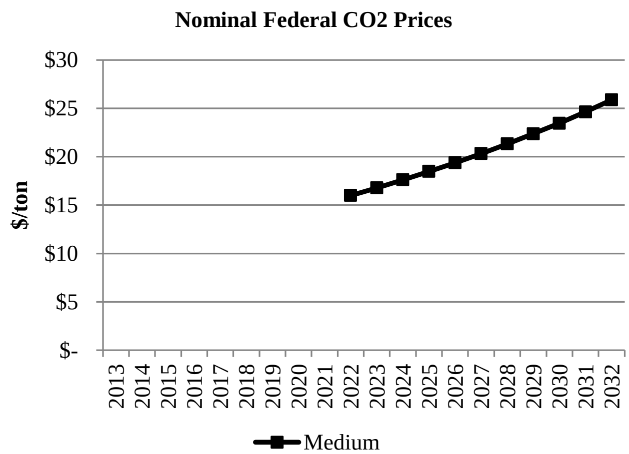
Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.



Federal CO_2 Policy/Price Signal

Case C-10 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.



Regional Haze

Case C-10 will apply stringent case Regional Haze investments patterned after prospective federal implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
DJ 1	WY	LNB	2016
DJ 2	WY	LNB	2018
DJ 3	WY	SNCR	2017
J. Bridger 1	WY	SCR	2017
J. Bridger 2	WY	SCR	2017
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Wyodak	WY	SNCR	2017
Wyodak	WY	SCR	2025
Hunter 1	UT	BH, LNB	2014
Hunter 1	UT	SCR	2018
Hunter 2	UT	SCR	2017
Hunter 3	UT	SCR	2020

Theme: Environmental Policy
Case: C-10 (Stringent Regional Haze, Med Gas, Med CO_2 & Coal, No RPS)

Coal Unit	State	Technology*	Year
Huntington 1	UT	SCR	2018
Huntington 2	UT	SCR	2017
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 1	CO	SCR	2024
Craig 2	CO	SCR	2016
Colstrip 3	MT	SCR	2023
Colstrip 4	MT	SCR	2024
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-10 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-10 does not include any federal RPS requirements.

State RPS

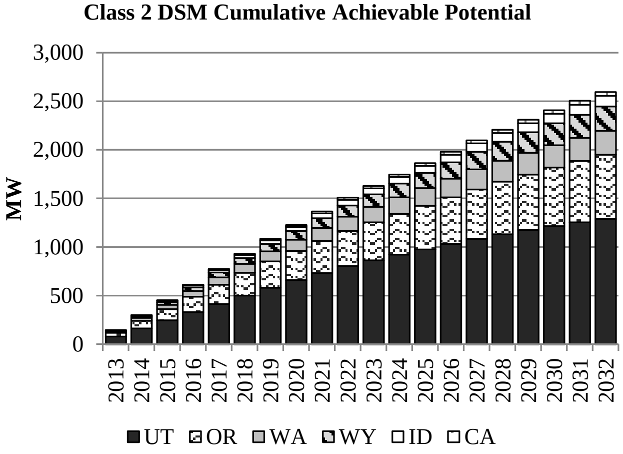
Case C-10 does not include any state RPS requirements.

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

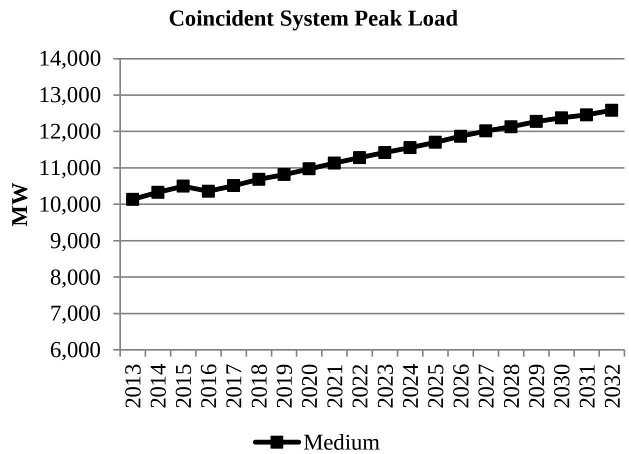
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

Theme: Environmental Policy
Case: C-11 (Stringent Regional Haze, Med Gas, Med CO_2 & Coal, With RPS)

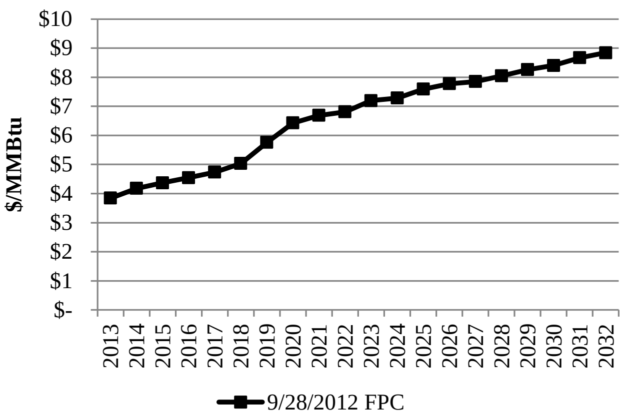
Description

Case C-11 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

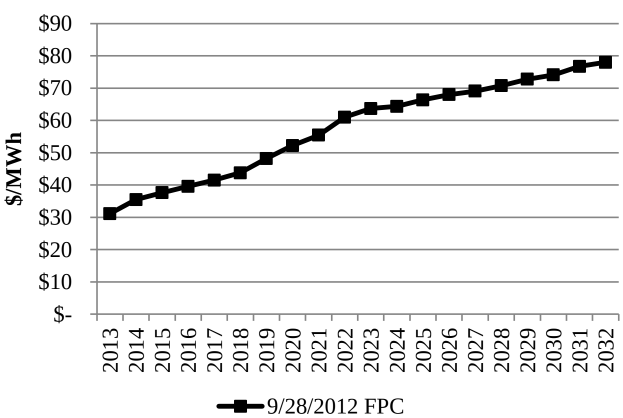
Forward Price Curve

Case C-11 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



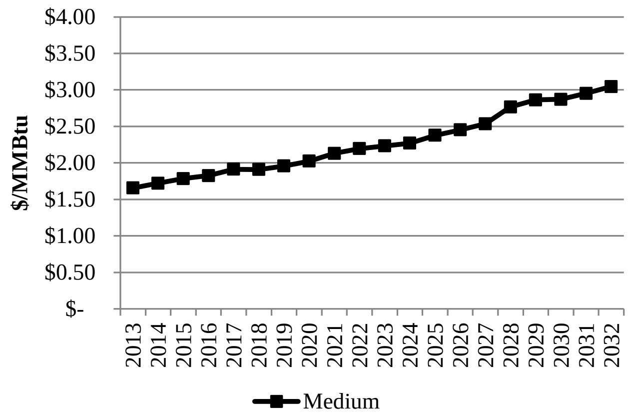
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

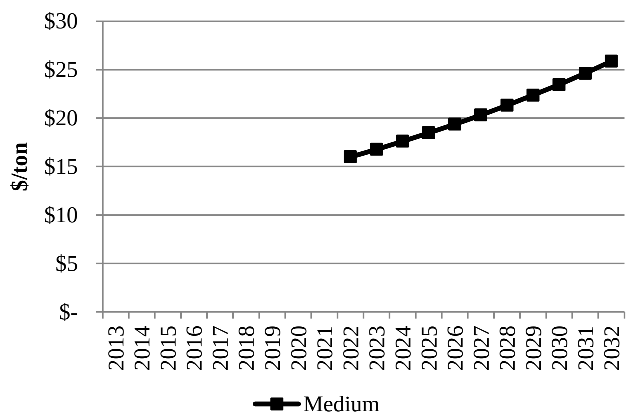
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-11 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Case C-11 will apply stringent case Regional Haze investments patterned after prospective federal implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
DJ 1	WY	LNB	2016
DJ 2	WY	LNB	2018
DJ 3	WY	SNCR	2017
J. Bridger 1	WY	SCR	2017
J. Bridger 2	WY	SCR	2017
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Wyodak	WY	SNCR	2017
Wyodak	WY	SCR	2025
Hunter 1	UT	BH, LNB	2014
Hunter 1	UT	SCR	2018
Hunter 2	UT	SCR	2017
Hunter 3	UT	SCR	2020

Theme: Environmental Policy
Case: C-11 (Stringent Regional Haze, Med Gas, Med CO_2 & Coal, With RPS)

Coal Unit	State	Technology*	Year
Huntington 1	UT	SCR	2018
Huntington 2	UT	SCR	2017
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 1	CO	SCR	2024
Craig 2	CO	SCR	2016
Colstrip 3	MT	SCR	2023
Colstrip 4	MT	SCR	2024
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-11 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-11 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

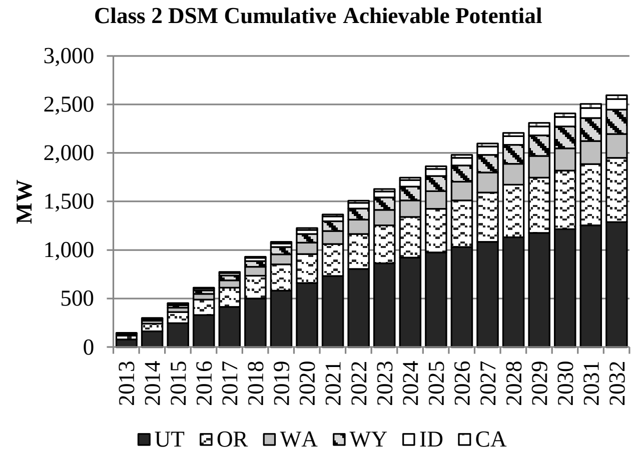
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

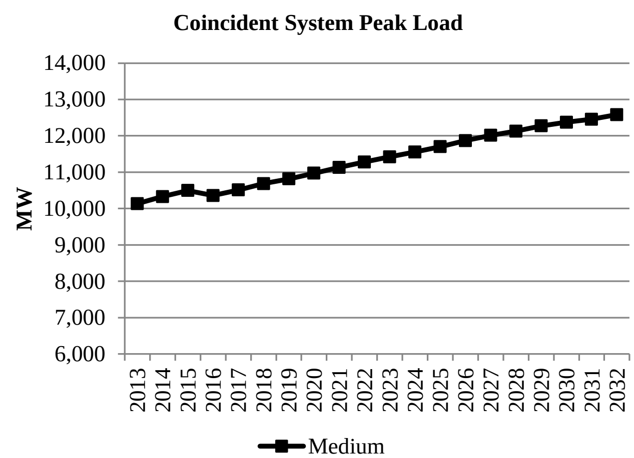
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

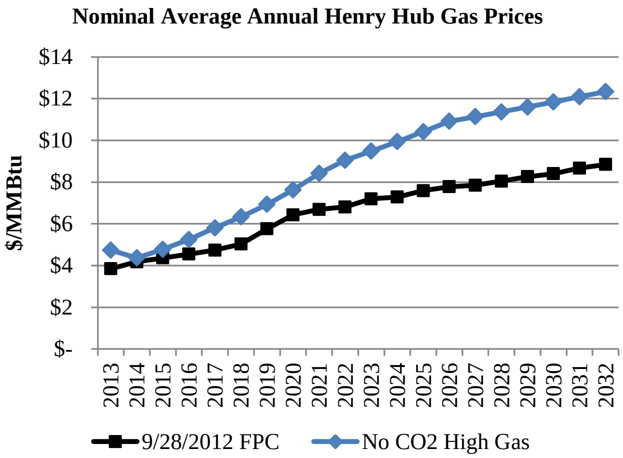
Theme: Environmental Policy
Case: C-12 (Stringent Regional Haze, High Gas, No CO_2, Low Coal, No RPS)

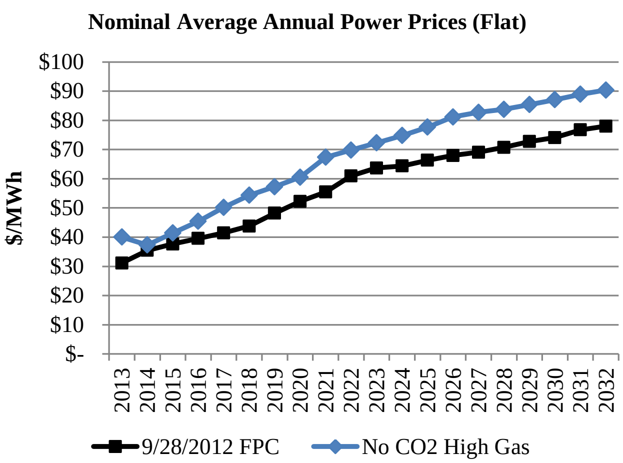
Description

Case C-12 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve

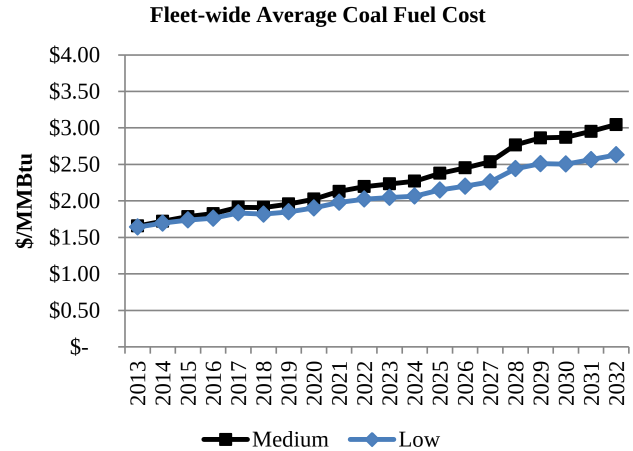
Case C-12 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.





Coal Fuel Costs

Case C-12 low coal costs are shown alongside the medium coal costs in the figure below.



Federal CO_2 Policy/Price Signal

Case C-12 does not have a federal CO_2 price assumption.

Regional Haze

Case C-12 will apply stringent case Regional Haze investments patterned after prospective federal implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
DJ 1	WY	LNB	2016
DJ 2	WY	LNB	2018
DJ 3	WY	SNCR	2017
J. Bridger 1	WY	SCR	2017
J. Bridger 2	WY	SCR	2017
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Wyodak	WY	SNCR	2017
Wyodak	WY	SCR	2025
Hunter 1	UT	BH, LNB	2014
Hunter 1	UT	SCR	2018
Hunter 2	UT	SCR	2017
Hunter 3	UT	SCR	2020
Huntington 1	UT	SCR	2018
Huntington 2	UT	SCR	2017
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 1	CO	SCR	2024
Craig 2	CO	SCR	2016
Colstrip 3	MT	SCR	2023
Colstrip 4	MT	SCR	2024
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-12 will include estimated costs to achieve compliance with the following:

Theme: Environmental Policy
Case: C-12 (Stringent Regional Haze, High Gas, No CO_2, Low Coal, No RPS)

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-12 does not include any federal RPS requirements.

State RPS

Case C-12 does not include any state RPS requirements.

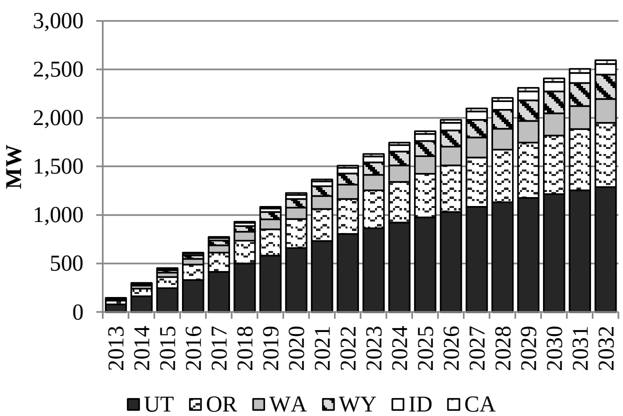
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.

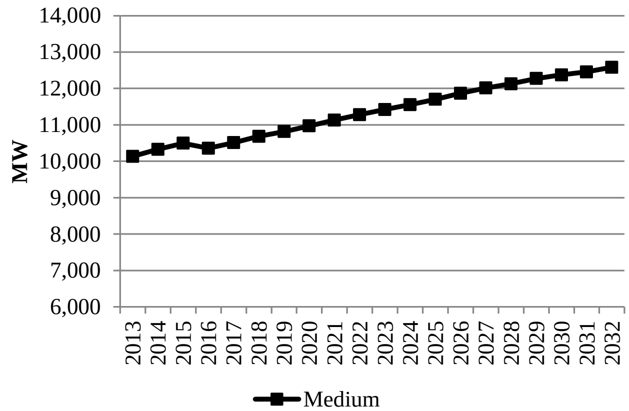
Class 2 DSM Cumulative Achievable Potential



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.

Coincident System Peak Load



Resource Specific

There are no other specific resource constraints that will be applied to this case.

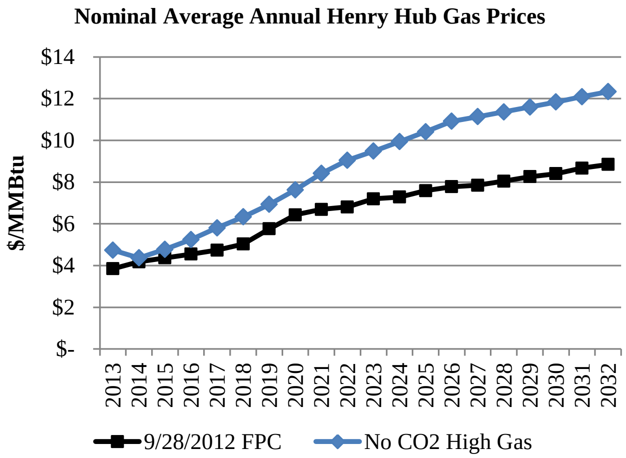
Theme: Environmental Policy
Case: C-13 (Stringent Regional Haze, High Gas, No CO_2, Low Coal, With RPS)

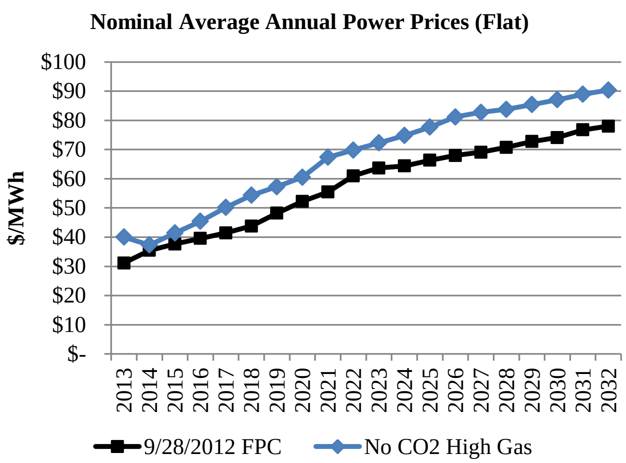
Description

Case C-13 is one of eleven core cases in the "Environmental Policy" theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve

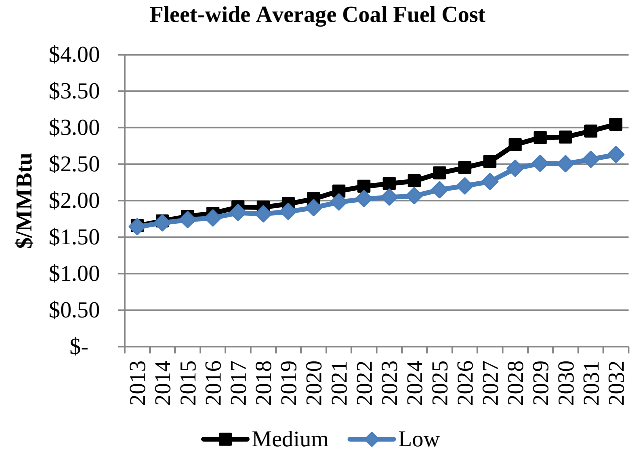
Case C-13 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.





Coal Fuel Costs

Case C-13 low coal costs are shown alongside the medium coal costs in the figure below.



Federal CO_2 Policy/Price Signal

Case C-13 does not have a federal CO_2 price assumption.

Regional Haze

Case C-13 will apply stringent case Regional Haze investments patterned after prospective federal implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
DJ 1	WY	LNB	2016
DJ 2	WY	LNB	2018
DJ 3	WY	SNCR	2017
J. Bridger 1	WY	SCR	2017
J. Bridger 2	WY	SCR	2017
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Wyodak	WY	SNCR	2017
Wyodak	WY	SCR	2025
Hunter 1	UT	BH, LNB	2014
Hunter 1	UT	SCR	2018
Hunter 2	UT	SCR	2017
Hunter 3	UT	SCR	2020
Huntington 1	UT	SCR	2018
Huntington 2	UT	SCR	2017
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 1	CO	SCR	2024
Craig 2	CO	SCR	2016
Colstrip 3	MT	SCR	2023
Colstrip 4	MT	SCR	2024
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-13 will include estimated costs to achieve compliance with the following:

Theme: Environmental Policy
Case: C-13 (Stringent Regional Haze, High Gas, No CO_2, Low Coal, With RPS)

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-13 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

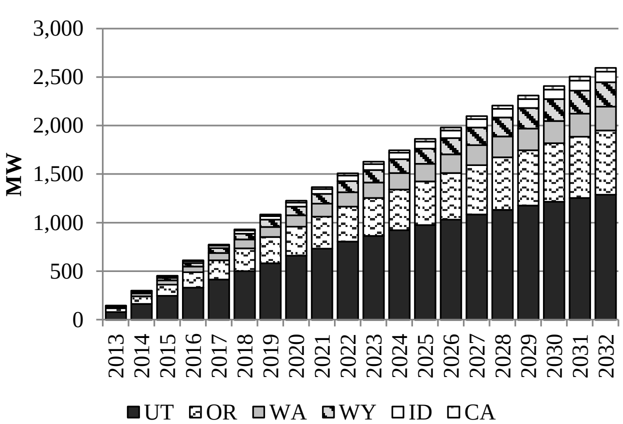
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.

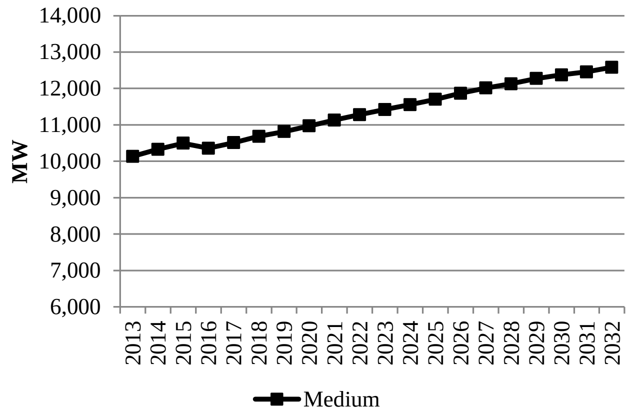
Class 2 DSM Cumulative Achievable Potential



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.

Coincident System Peak Load



Resource Specific

There are no other specific resource constraints that will be applied to this case.

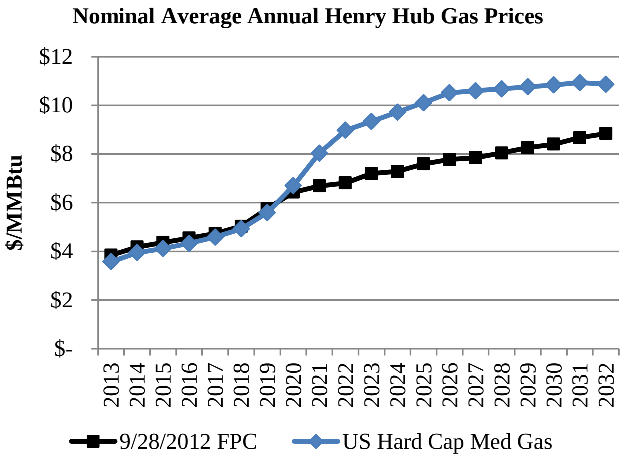
Theme: Environmental Policy
Case: C-14 (Base Regional Haze, Med Gas, U.S. Hard Cap, Med Coal, With RPS)

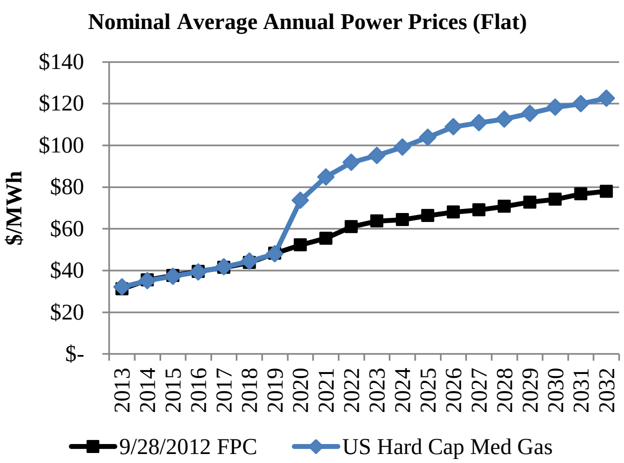
Description

Case C-14 is one of eleven core cases in the “Environmental Policy” theme (Cases C-4 through C-14). These cases are characterized by varying combinations of commodity market prices, CO_2 costs, RPS requirements, and Regional Haze requirements. This structure will enable reporting on the conditions that might require early retirement and resource replacement or conversion to natural gas for existing coal-fueled resources.

Forward Price Curve

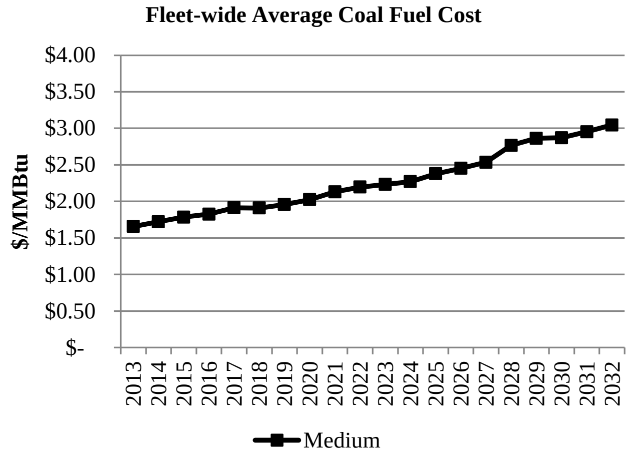
Case C-14 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.





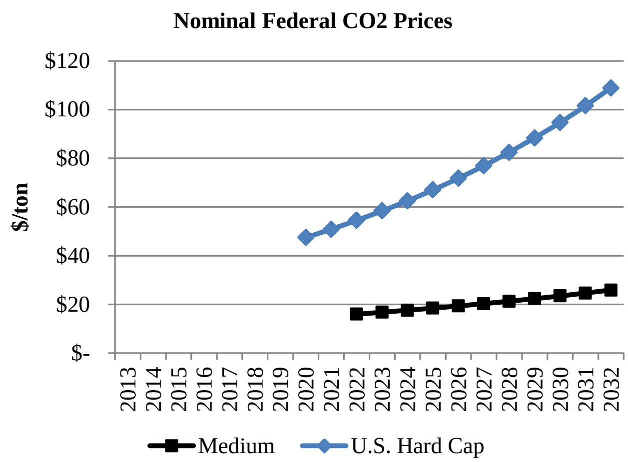
Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.



Federal CO_2 Policy/Price Signal

Case C-14 includes CO_2 prices required for the U.S. power sector to achieve an 80% reduction in emissions by 2050. Prices start in 2020 at approximately $47/ton rising to approximately $109/ton by 2032. These U.S. hard cap CO_2 prices are shown alongside the medium CO_2 price assumptions in the figure below.



Regional Haze

Case C-14 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023

Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-14 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-14 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

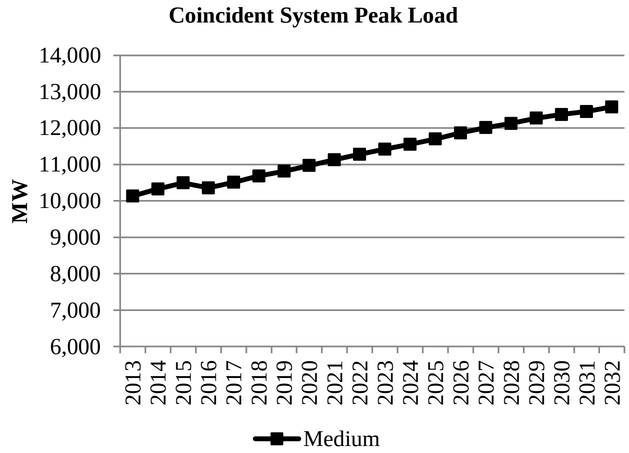
- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)

Supply curves will be adjusted from the base assumptions by accelerating ramp rates with resource selection up to the achievable potential identified in the 2012 potential study. Measure and market ramp rates are adjusted from the base case assumptions to allow selection of up to 2% of 2011 actual sales in each state. After discretionary resources are exhausted, annual opportunities decrease significantly, with remaining resources from equipment upgrades and new construction. Class 2 resources that are not selected in any given year are not available for selection in future years.

Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

Theme: Targeted Resources
Case: C-15 (No Thermal Base Load)

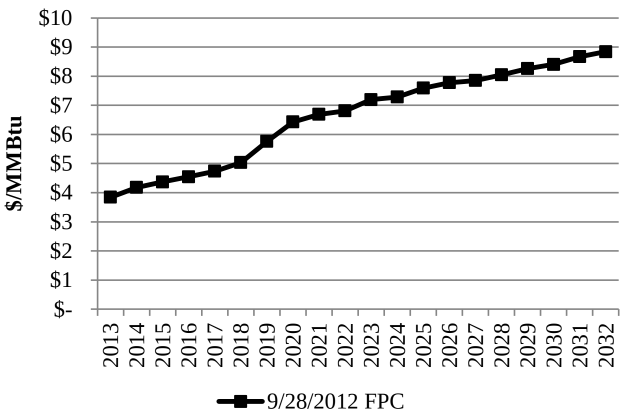
Description

Case C-15 is one of five core cases in the "Targeted Resources" theme (Cases C-15 through C-18). These cases are characterized by alternative assumptions for specific resource types to understand how those assumptions influence resource portfolios, costs and stochastic risk.

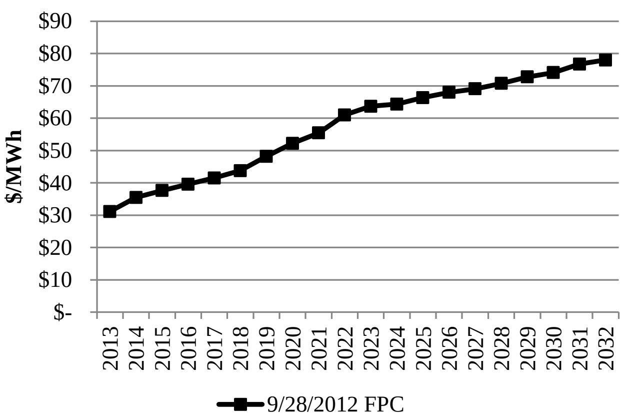
Forward Price Curve

Case C-15 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



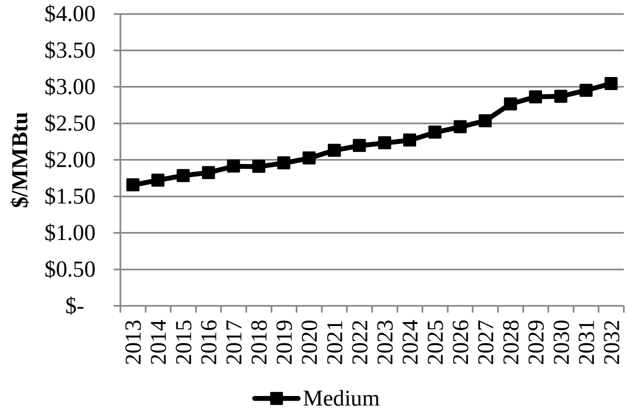
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

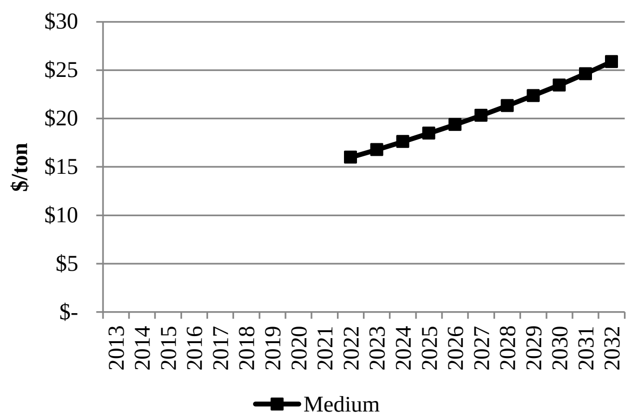
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-15 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Case C-15 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-15 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-15 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

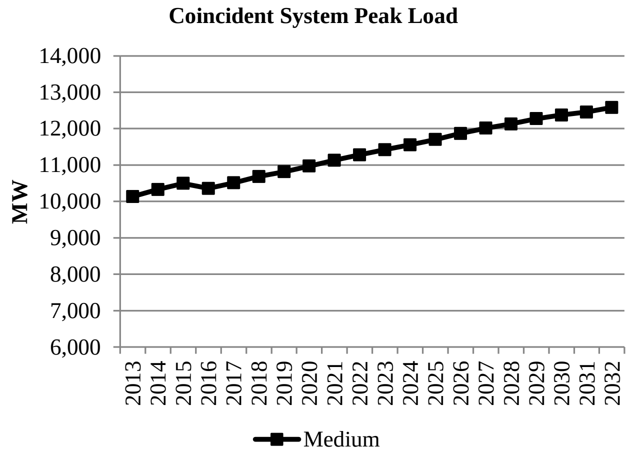
- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)

Supply curves will be adjusted from the base assumptions by accelerating ramp rates with resource selection up to the achievable potential identified in the 2012 potential study. Measure and market ramp rates are adjusted from the base case assumptions to allow selection of up to 2% of 2011 actual sales in each state. After discretionary resources are exhausted, annual opportunities decrease significantly, with remaining resources from equipment upgrades and new construction. Class 2 resources that are not selected in any given year are not available for selection in future years.

Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

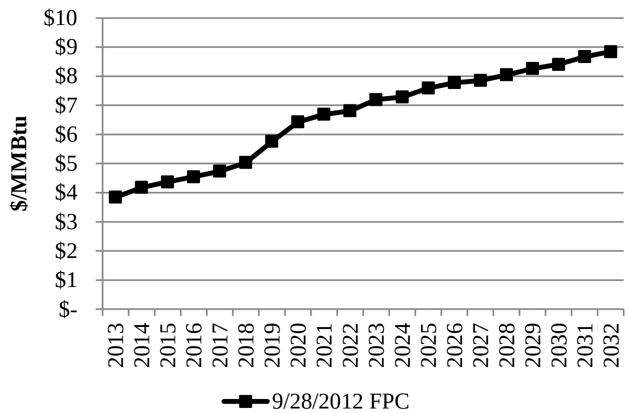
All base load thermal resources (gas-fired CCCTs) will be excluded as potential resource alternatives.

Theme: Targeted Resources
Case: C-16 (Geothermal RPS Strategy)

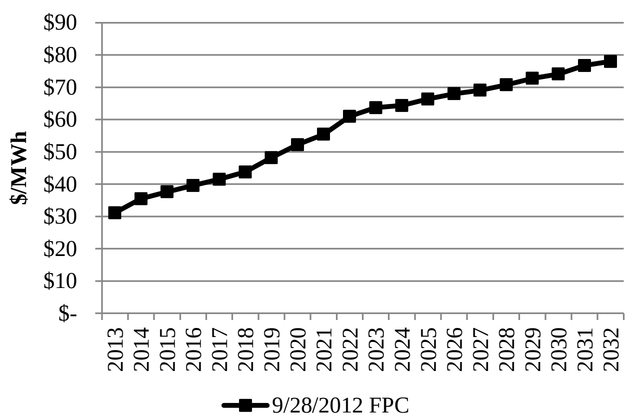
Description
Case C-16 is one of five core cases in the "Targeted Resources" theme (Cases C-15 through C-18). These cases are characterized by alternative assumptions for specific resource types to understand how those assumptions influence resource portfolios, costs and stochastic risk.

Forward Price Curve
Case C-16 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices

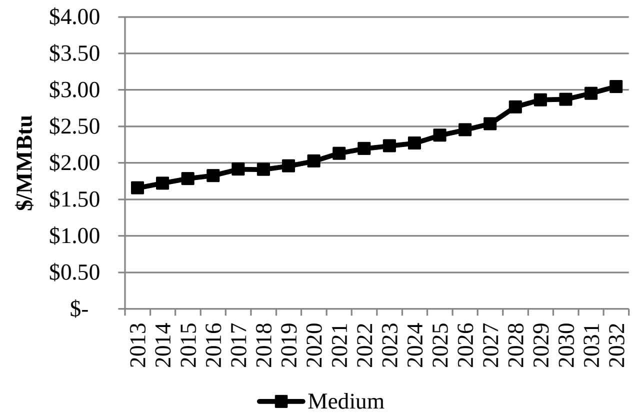


Nominal Average Annual Power Prices (Flat)



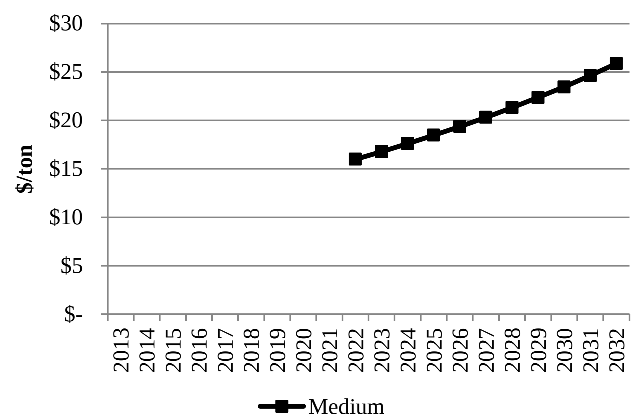
Coal Fuel Costs
Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal
Case C-16 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze
Case C-16 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-16 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-16 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

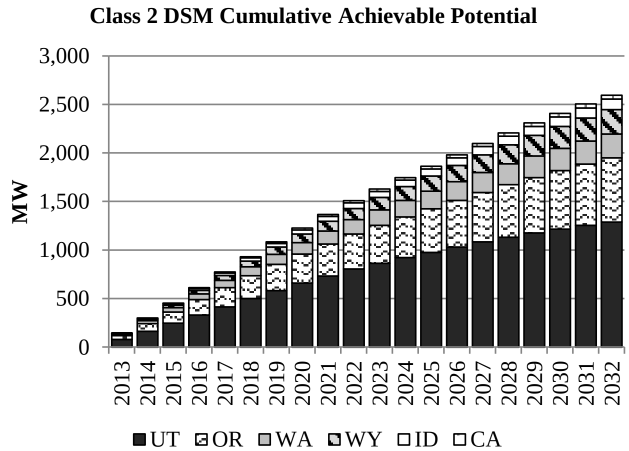
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

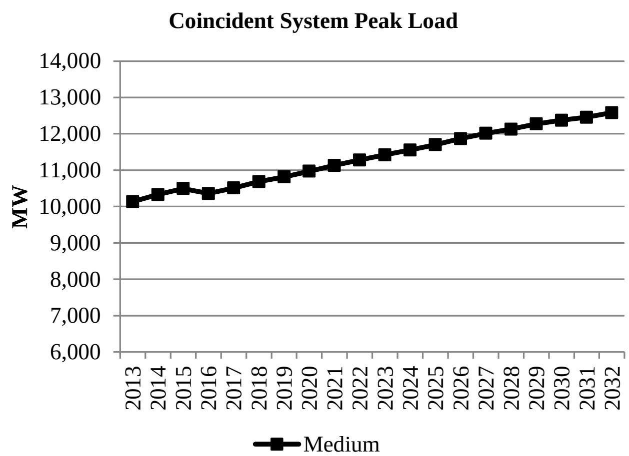
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

State and federal RPS assumptions will be met with geothermal resources at five sites identified in the 2011 Geothermal Information Request report prepared by Black & Veatch (B&V Report). Costs will reflect PPA pricing consistent with recent RFP activity. The total geothermal capacity available is 145 MW. Any RPS compliance shortfall that cannot be met with geothermal resource generation will be met with other renewable resource alternatives.

Theme: Targeted Resources
Case: C-17 (Market Price Spike)

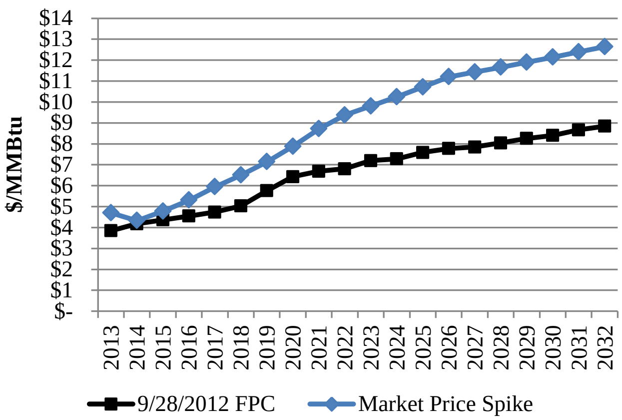
Description

Case C-17 is one of five core cases in the "Targeted Resources" theme (Cases C-15 through C-18). These cases are characterized by alternative assumptions for specific resource types to understand how those assumptions influence resource portfolios, costs and stochastic risk.

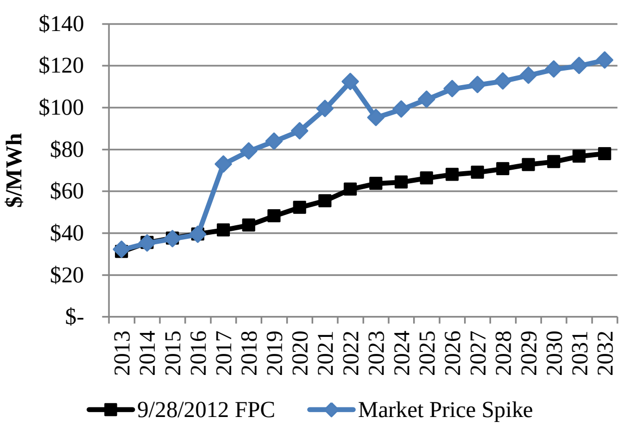
Forward Price Curve

Case C-17 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.

Nominal Average Annual Henry Hub Gas Prices



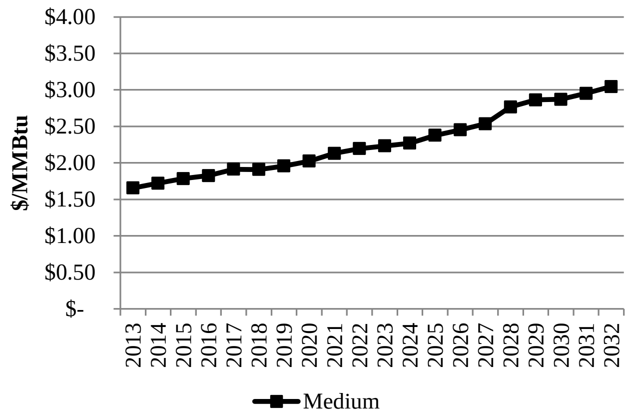
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

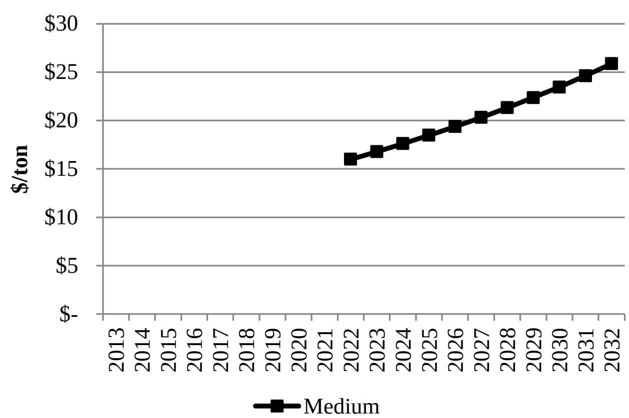
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-17 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Case C-17 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Case C-17 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Case C-17 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

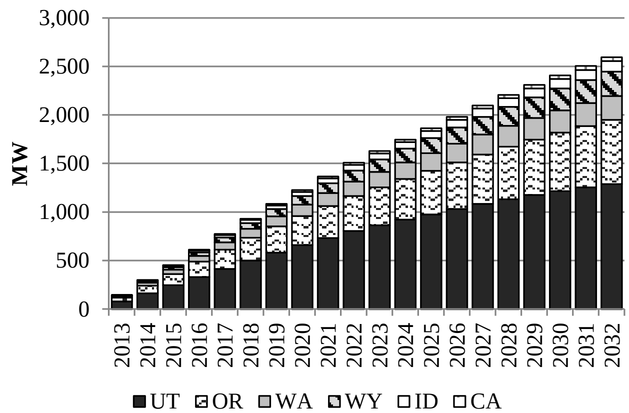
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

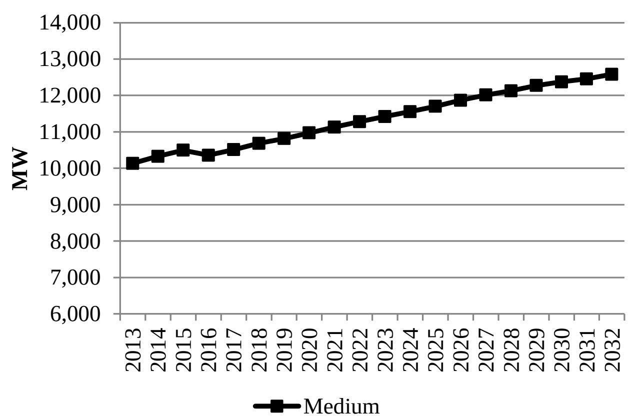
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

Forward price curves applied in the case reflect high gas price assumptions and an incremental power price increase over the period 2017 – 2022 at 50% on-peak and 30% off-peak.

Theme: Targeted Resources
Case: C-18 (Clean Energy Bookend)

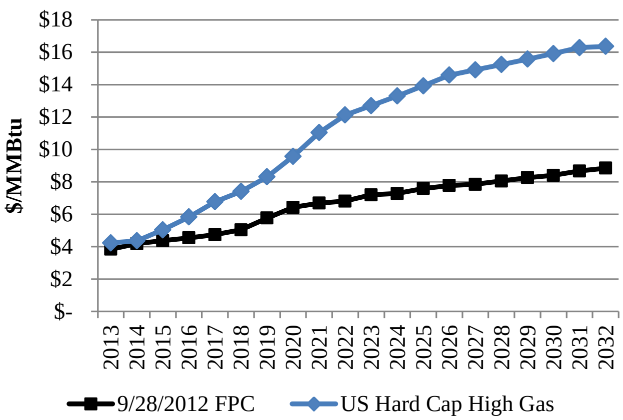
Description

Case C-18 is one of five core cases in the "Targeted Resources" theme (Cases C-15 through C-18). These cases are characterized by alternative assumptions for specific resource types to understand how those assumptions influence resource portfolios, costs and stochastic risk.

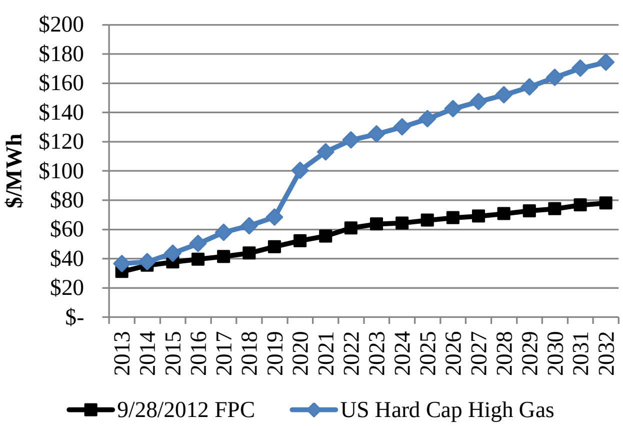
Forward Price Curve

Case C-18 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.

Nominal Average Annual Henry Hub Gas Prices



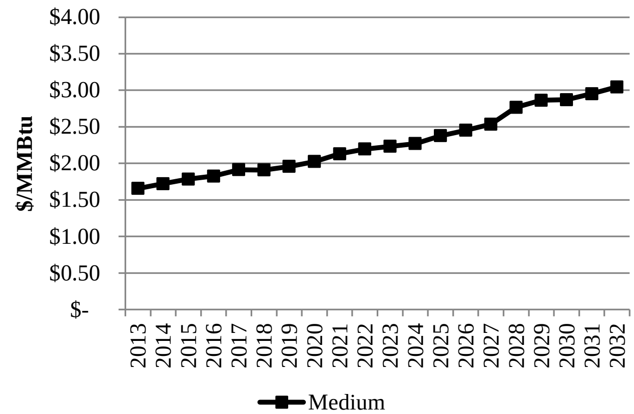
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

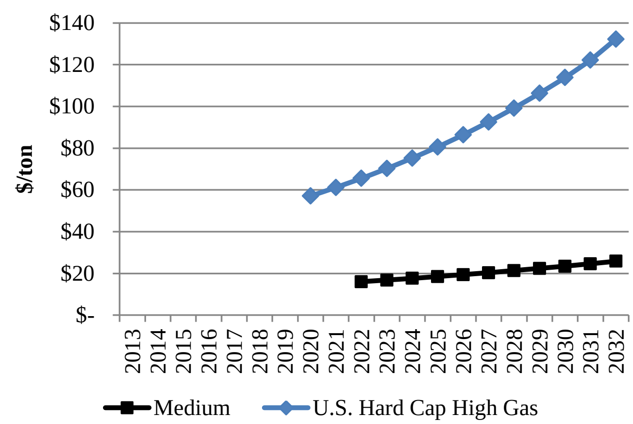
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Case C-18 includes CO_2 prices required for the U.S. power sector to achieve an 80% reduction in emissions by 2050. Prices start in 2020 at approximately \$57/ton rising to approximately \$132/ton by 2032. These U.S. hard cap CO_2 prices are shown alongside the medium CO_2 price assumptions in the figure below.

Nominal Federal CO2 Prices



Regional Haze

Case C-18 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023

Theme: Targeted Resources
Case: C-18 (Clean Energy Bookend)

Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions
Case C-18 will include estimated costs to achieve compliance with the following:
- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

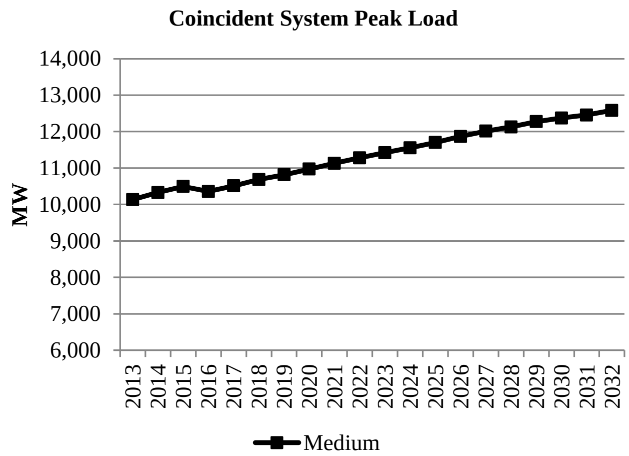
Federal RPS
Case C-18 does not include any federal RPS requirements.

State RPS
Case C-18 does not include any state RPS requirements.

Federal Tax Incentives
- PTCs are extended through 2019
- ITCs are extended through 2019

Energy Efficiency (Class 2 DSM)
Supply curves will be adjusted from the base assumptions by accelerating ramp rates with resource selection up to the achievable potential identified in the 2012 potential study. Measure and market ramp rates are adjusted from the base case assumptions to allow selection of up to 2% of 2011 actual sales in each state. After discretionary resources are exhausted, annual opportunities decrease significantly, with remaining resources from equipment upgrades and new construction. Class 2 resources that are not selected in any given year are not available for selection in future years.

Load Forecast
The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific
There are no other specific resource constraints that will be applied to this case.

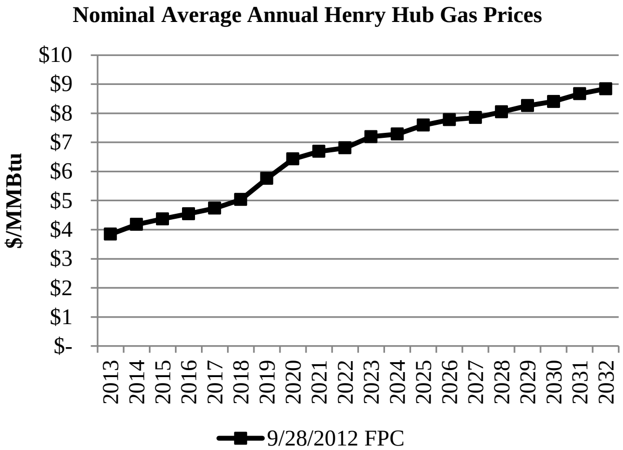
Theme: Transmission
Case: C-19 (Energy Gateway Segment D Alternative)

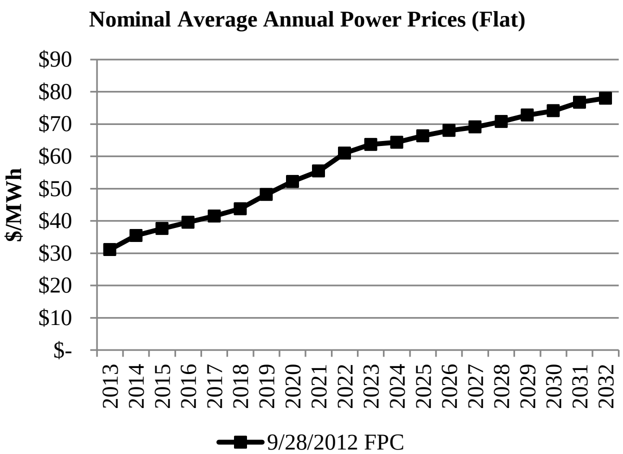
Description

Case C-19 represents an incremental Energy Gateway core case that will be implemented among all Energy Gateway Scenarios but for the Reference Case, which does not include segment D. This case evaluates an assumed third party transmission can be purchased from a newly built line connecting Wyoming with the Populous substation in Idaho.

Forward Price Curve

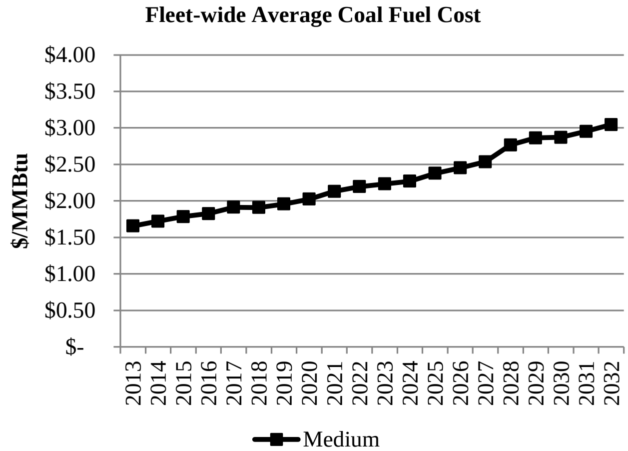
Case C-19 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.





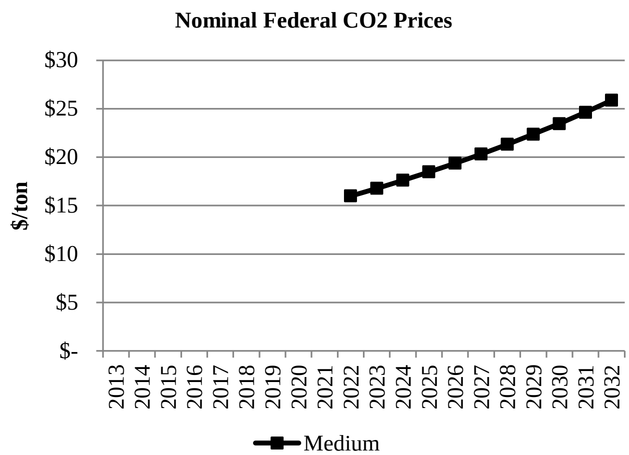
Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.



Federal CO_2 Policy/Price Signal

Case C-19 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.



Regional Haze

Case C-19 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions
Case C-19 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS
Case C-19 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

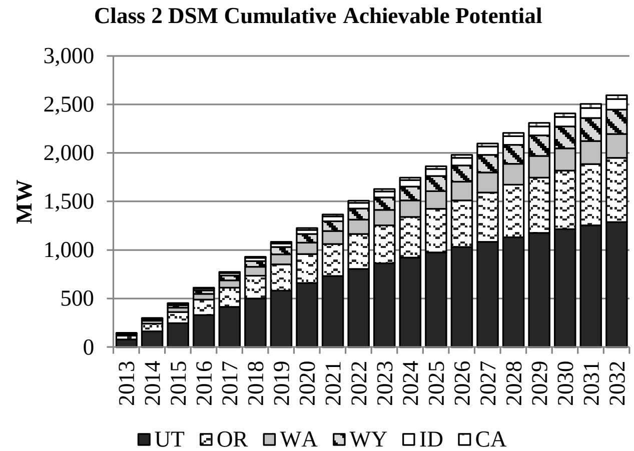
State RPS
Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

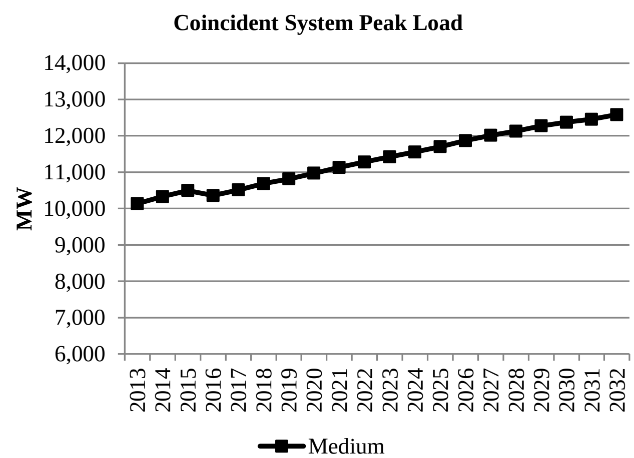
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast
The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Segment D Transmission Alternative
Wheeling costs applied to this case total $14.15/kW-mo for 900 MW and reflect the following assumptions:

- Costs are patterned after the only know project proposed that generally fits the targeted scenario, which is the proposed Zephyr DC project from Wyoming to Las Vegas.
- Total transfer capability is 3,000 MW, and 2,100 MW is paid for by other parties (wheeling costs are proportionate to the assumed 900 MW of firm transmission purchased).

Sensitivity Case Fact Sheets

Sensitivity Case Fact Sheets – S-1 to S-10, S-X

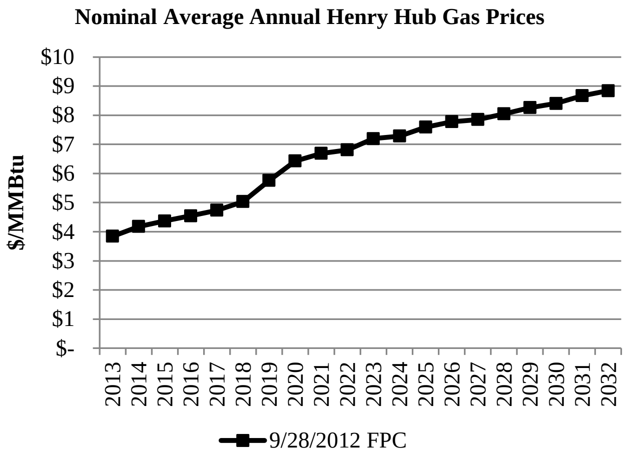
Theme: Load Sensitivities
Sensitivity: S-1 (Low Load Forecast)

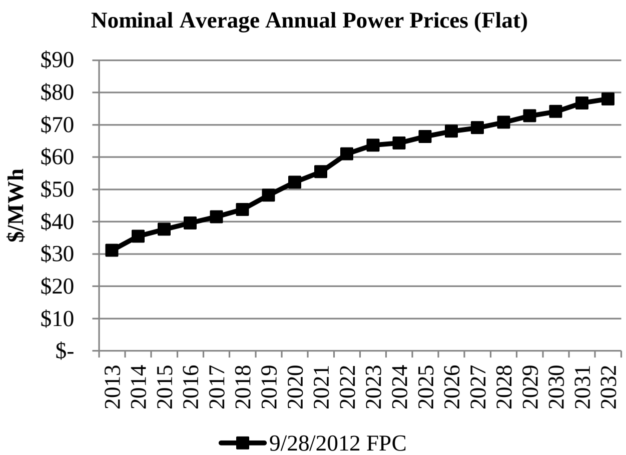
Description

Sensitivity S-1 will be completed assuming a low load forecast. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

Forward Price Curve

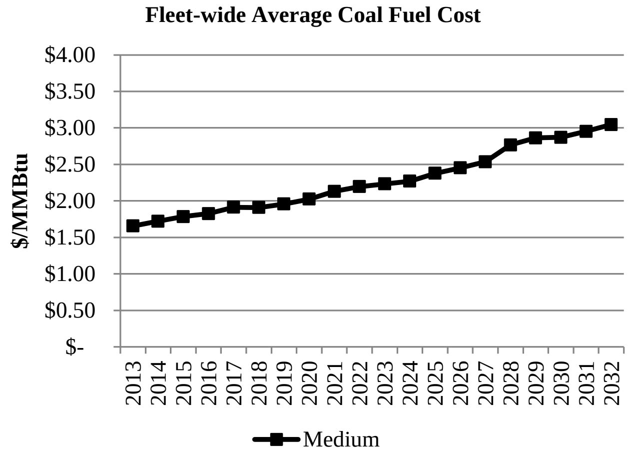
Sensitivity S-1 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.





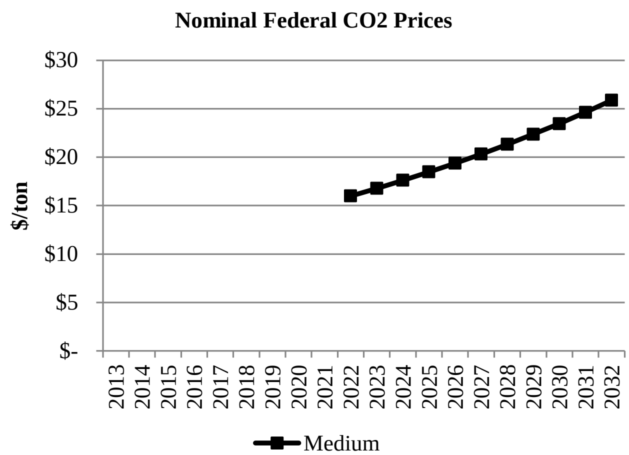
Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.



Federal CO_2 Policy/Price Signal

Sensitivity S-1 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.



Regional Haze

Sensitivity S-1 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

Theme: Load Sensitivities
Sensitivity: S-1 (Low Load Forecast)

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions
Sensitivity S-1 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS
Sensitivity S-1 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

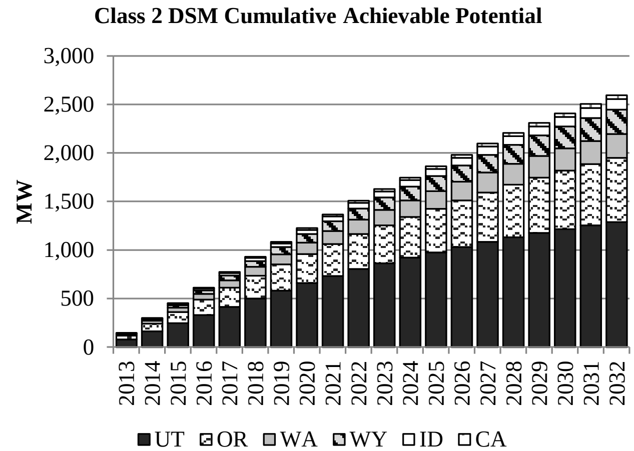
State RPS
Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

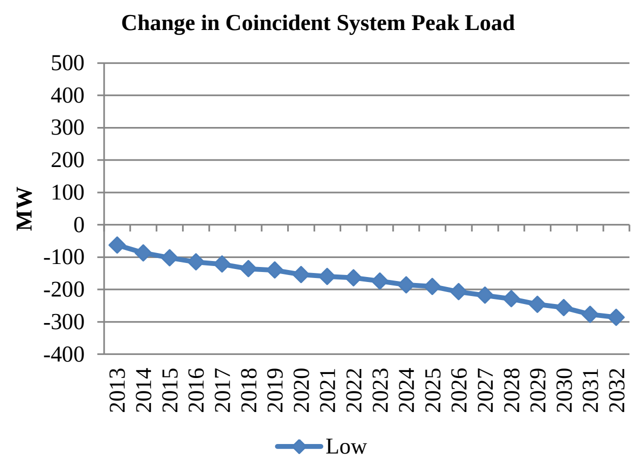
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast
A low load forecast derived using low economic driver assumptions will be used. The figure below shows the change in system coincident peak as compared to the medium (base) load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific
There are no other specific resource constraints that apply to this sensitivity.

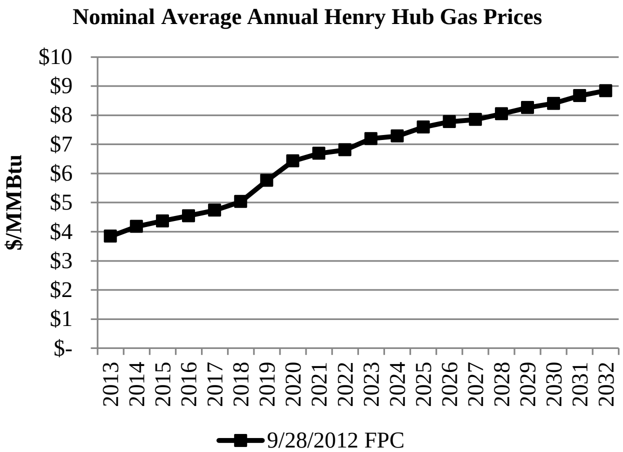
Theme: Load Sensitivities
Sensitivity: S-2 (High Load Forecast)

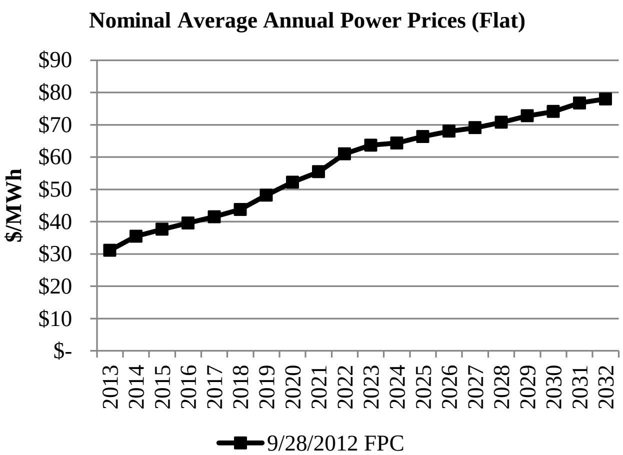
Description

Sensitivity S-2 will be completed assuming a high load forecast. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

Forward Price Curve

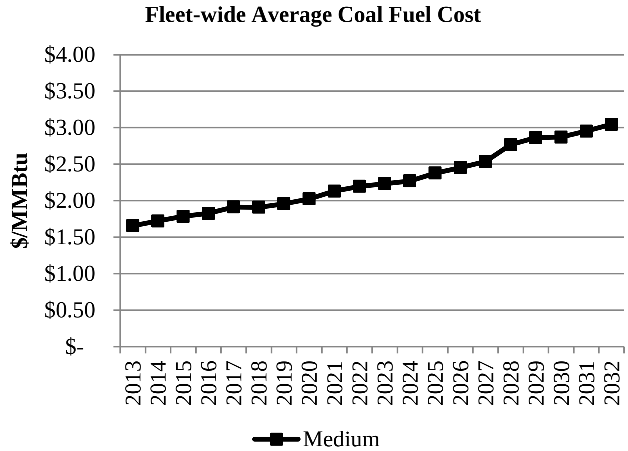
Sensitivity S-2 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.





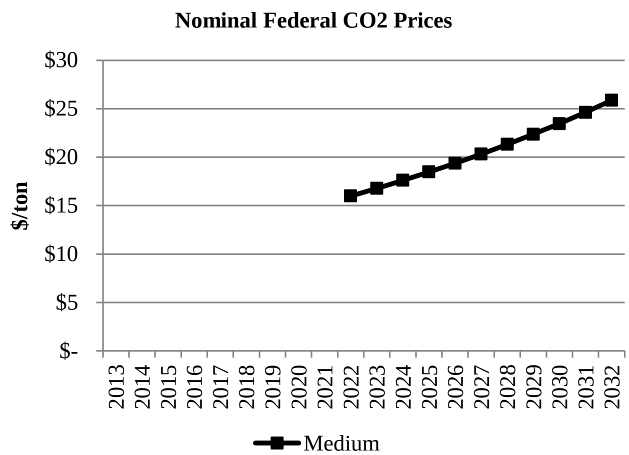
Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.



Federal CO_2 Policy/Price Signal

Sensitivity S-2 includes medium CO_2 prices starting 2022 at \$16/ton rising to approximately \$26/ton by 2032.



Regional Haze

Sensitivity S-2 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

Theme: Load Sensitivities
Sensitivity: S-2 (High Load Forecast)

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-2 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-2 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

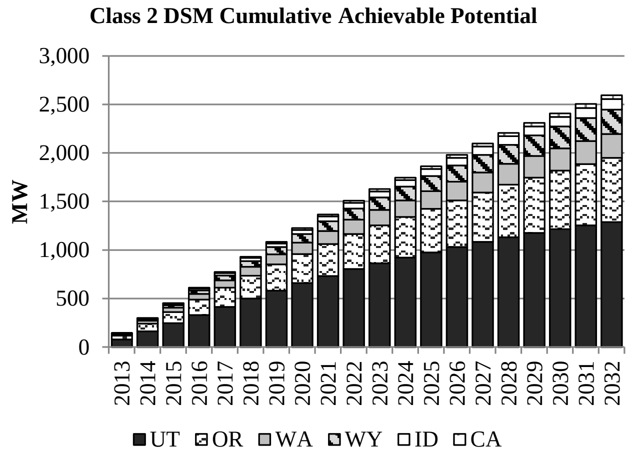
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

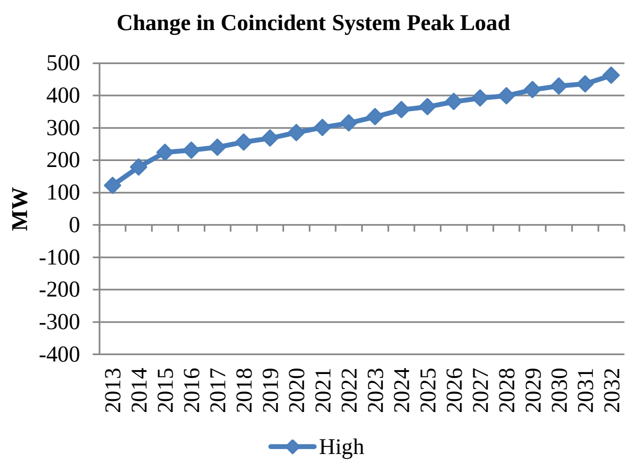
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

A high load forecast derived using high economic drivers and high industrial load growth will be used. The figure below shows the change in system coincident peak as compared to the medium (base) load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that apply to this sensitivity.

Theme: Load Sensitivities
Sensitivity: S-3 (1 in 20 Load)

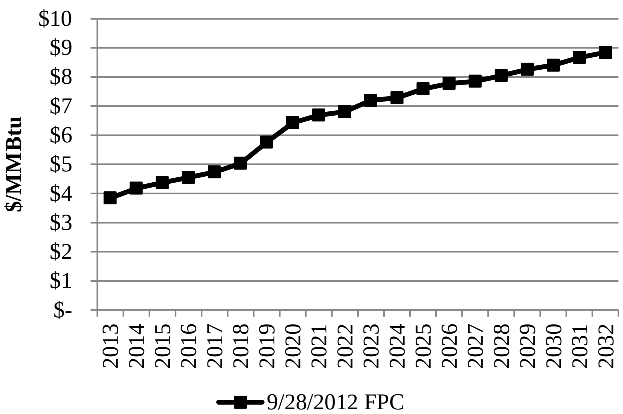
Description

Sensitivity S-3 will be completed assuming a 1 in 20 load forecast. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

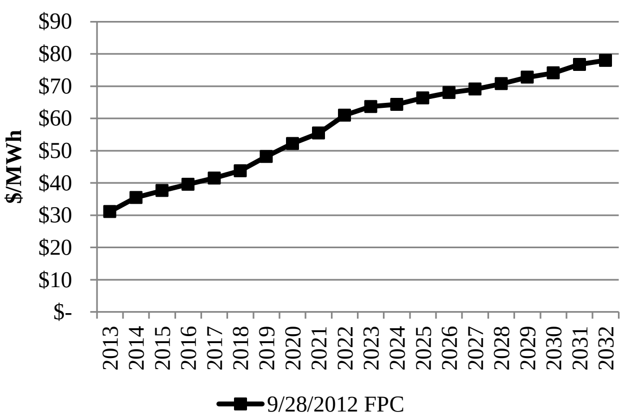
Forward Price Curve

Sensitivity S-3 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



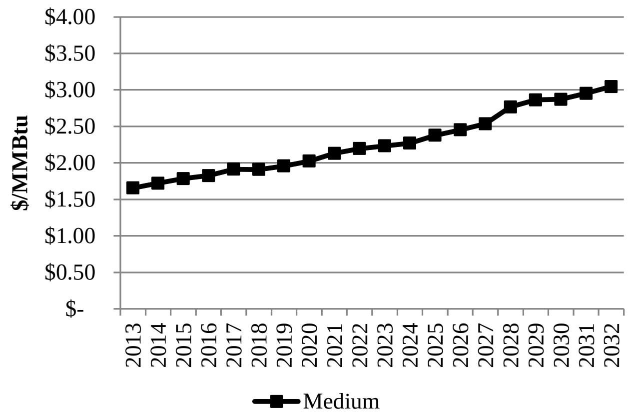
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

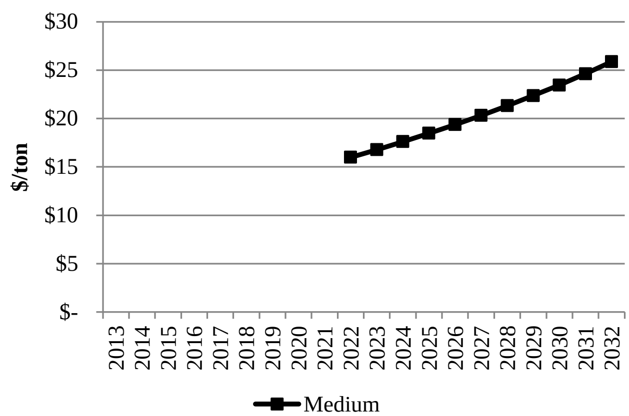
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Sensitivity S-3 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Sensitivity S-3 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-3 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-3 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

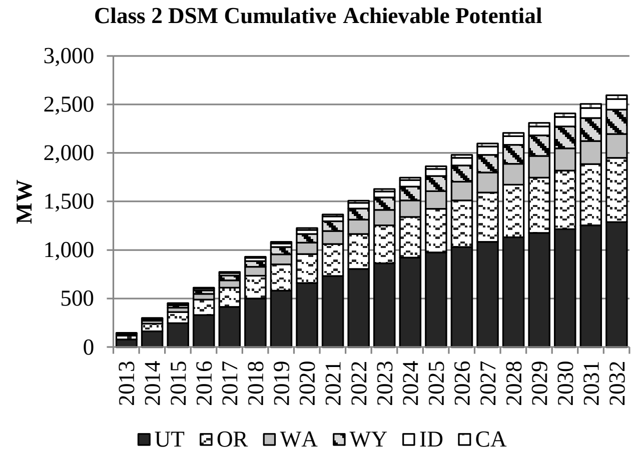
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

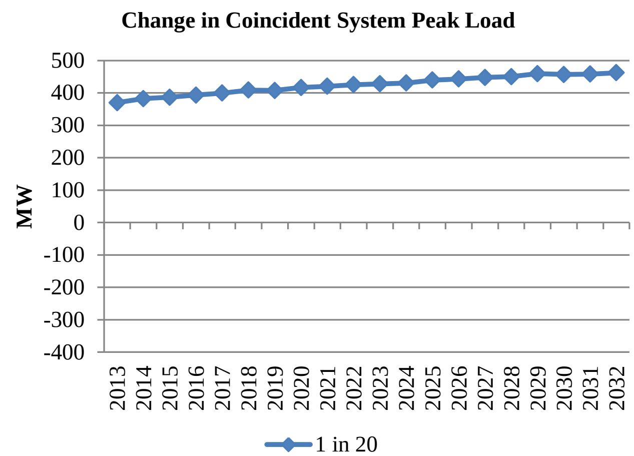
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

A 1 in 20 load forecast reflecting the top peak producing weather over the past 20 years will be used. The figure below shows the change in system coincident peak as compared to the medium (base) load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that apply to this sensitivity.

Theme: Environmental Policy Sensitivities
Sensitivity: S-4 (Hypothetical Regional Haze Compliance Alternative)

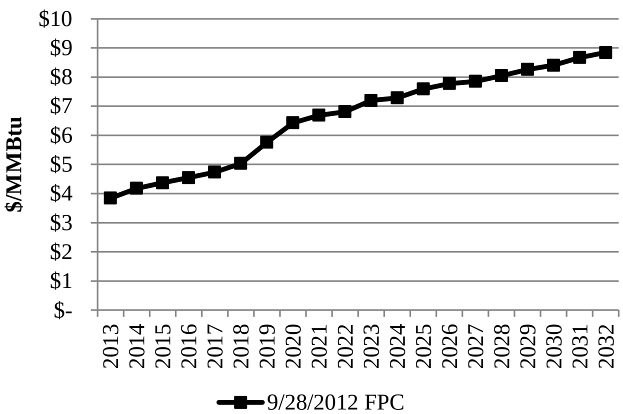
Description

Sensitivity S-4 will explore hypothetical compliance alternatives to near-term Regional Haze-based emissions control investments. For this sensitivity, it is assumed that near-term SCR investments currently required at Jim Bridger Units 3&4 and at Cholla Unit 4 can be avoided if a commitment is made to retire those coal units early. The selection of hypothetical retirement dates in this sensitivity is informed by an evaluation of the cost per ton of pollutant removed; much the same as such information would be factored into a BART analysis. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2. The results of Sensitivity S-4 will be presented in Confidential Volume 3 of the 2013 IRP.

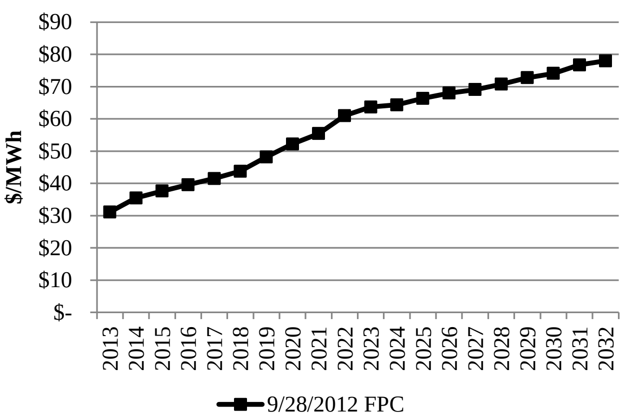
Forward Price Curve

Sensitivity S-4 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



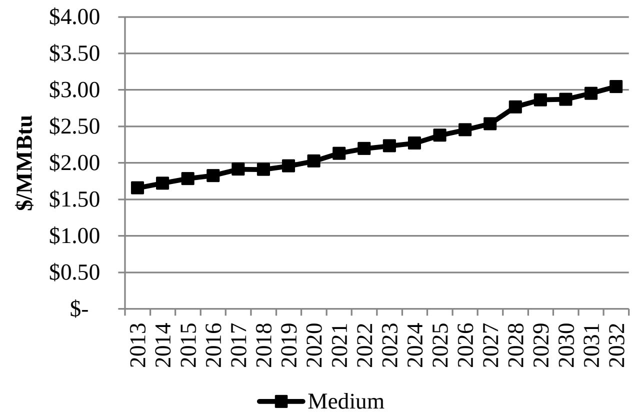
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

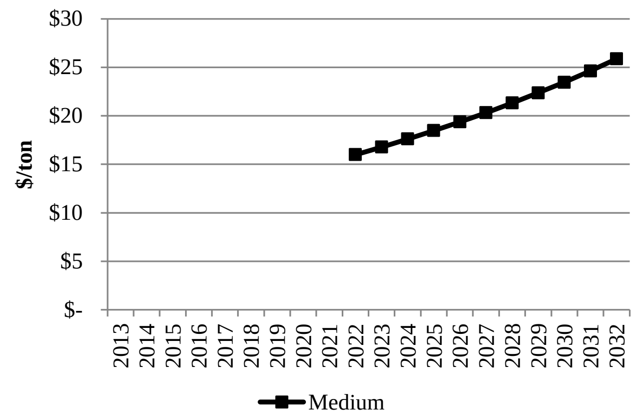
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Sensitivity S-4 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

For those units that are not being analyzed as part of this sensitivity, base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements will be applied.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Theme: Environmental Policy Sensitivities
Sensitivity: S-4 (Hypothetical Regional Haze Compliance Alternative)

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-4 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-4 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

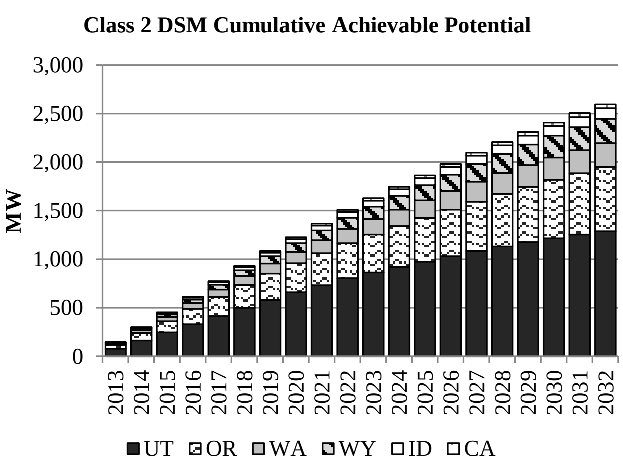
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

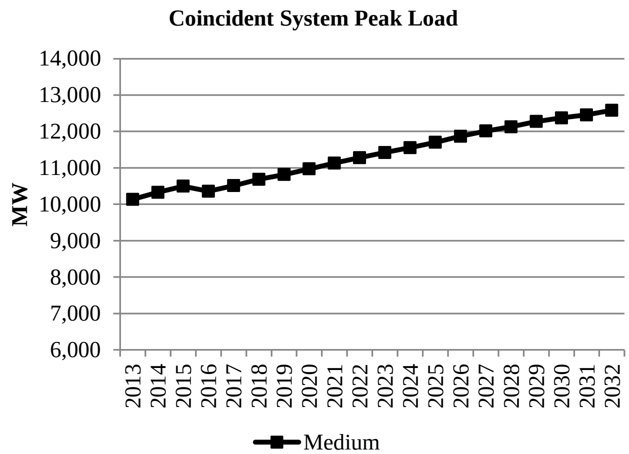
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

The Jim Bridger Unit 3 and Unit 4 S-4 Sensitivity will assume that if Units 3 and 4 are retired at the end of 2020 and 2021, respectively, SCR investments currently required in 2015 and 2016 can be avoided. The selection of the hypothetical retirement dates of 2020 and 2021 in this sensitivity is informed by an evaluation of the cost per ton of pollutant removed. In the case of Jim Bridger Units 3 and 4, the cost per ton of pollutant removed does not exceed a value that would likely be deemed excessive by EPA until the outer most years of unit operation. As such, a second criterion limiting the hypothetically negotiable compliance delay window to 5-years beyond the current compliance deadline is applied.

The Cholla 4 S-4 Sensitivity will assume that the unit is retired at the end of 2023 and that the SCR investment required in 2017 can be avoided. Again, the selection of the hypothetical retirement date of 2023 in this sensitivity is informed by an evaluation of the cost per ton of pollutant removed. In this case, the cost per ton of pollutant removed begins an upward trend in 2023 that that hypothetically could be deemed excessive by EPA. As such, a second criterion limiting the hypothetically negotiable compliance delay window to 5-years beyond the current compliance deadline is not applied.

Theme: Environmental Policy Sensitivities
Sensitivity: S-X (Emissions Control PVRR(d) Analysis)

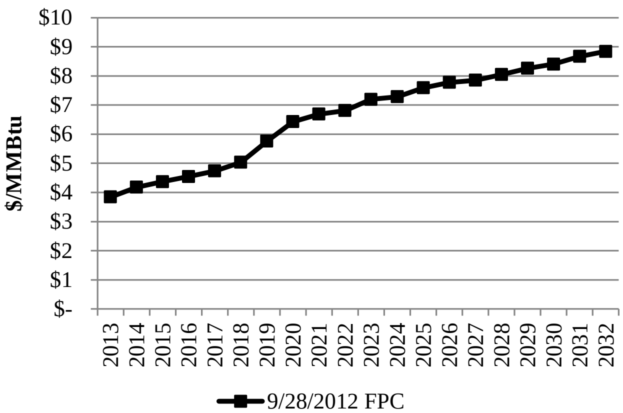
Description

Sensitivity S-X will be used to report the present value revenue requirement differential (PVRR(d)) associated with near-term emissions control investments. The PVRR(d) sensitivities will focus on near-term emissions control investments required at Hunter 1 (baghouse & low NO_X burners), Jim Bridger Units 3&4 (SCRs) and at Cholla Unit 4 (SCR). This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2. The results of Sensitivity S-X will be presented in Confidential Volume 3 of the 2013 IRP.

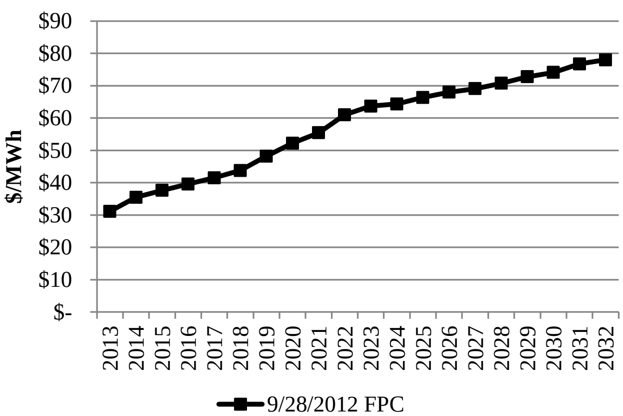
Forward Price Curve

Sensitivity S-X gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



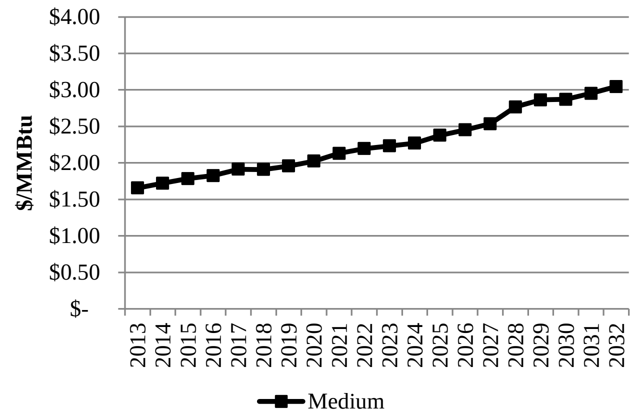
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

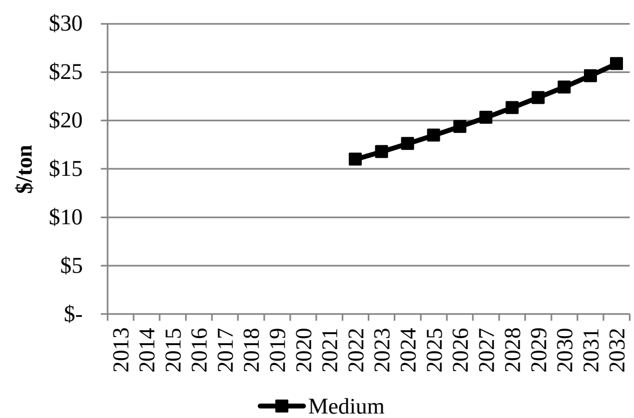
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Sensitivity S-X includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Sensitivity S-X will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-X will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-X will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

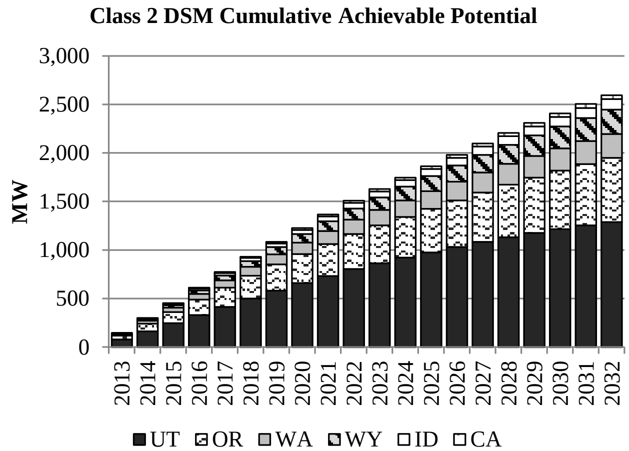
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

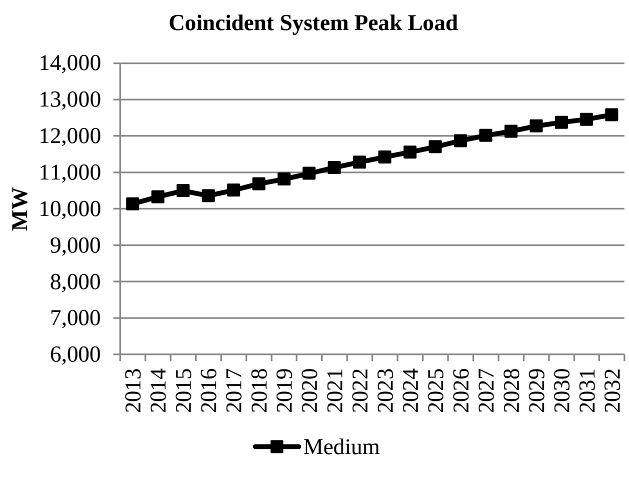
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

This sensitivity will be used to analyze the PVRR(d) of emissions control investments required at Hunter 1, Jim Bridger Units 3&4, and Cholla 4. To arrive at the PVRR(d) results, these units will be required to cease coal-fueled operation as an alternative to the required investments. The System Optimizer model will endogenously establish the prospective alternative – gas conversion or early retirement.

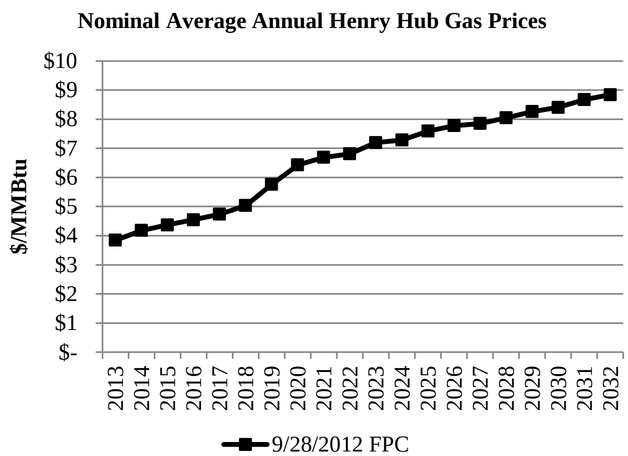
Theme: Targeted Resource Sensitivities
Sensitivity: S-5 (PTC/ITC Extension, No RPS)

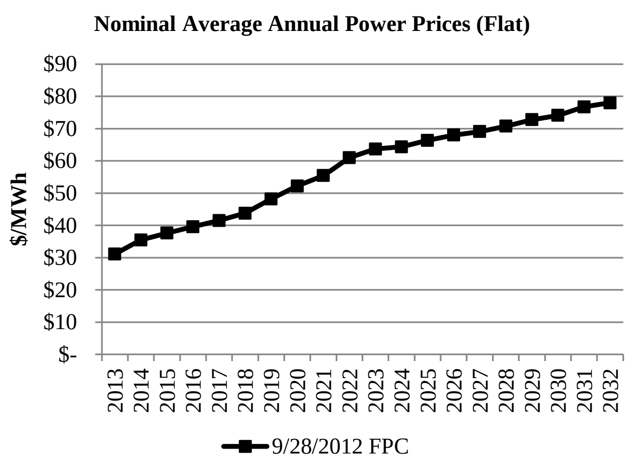
Description

Sensitivity S-5 will assume that federal tax incentives for renewable resources will be extended through 2019 and will not include any state or Federal RPS assumptions. This sensitivity is a variant of Core Case C-01 assuming Energy Gateway Scenario EG-2.

Forward Price Curve

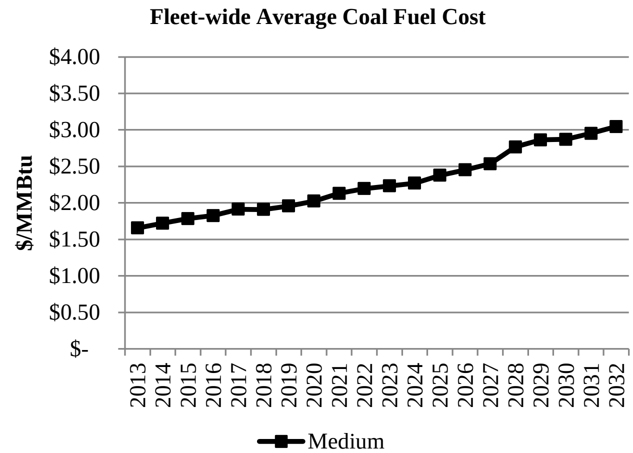
Sensitivity S-5 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.





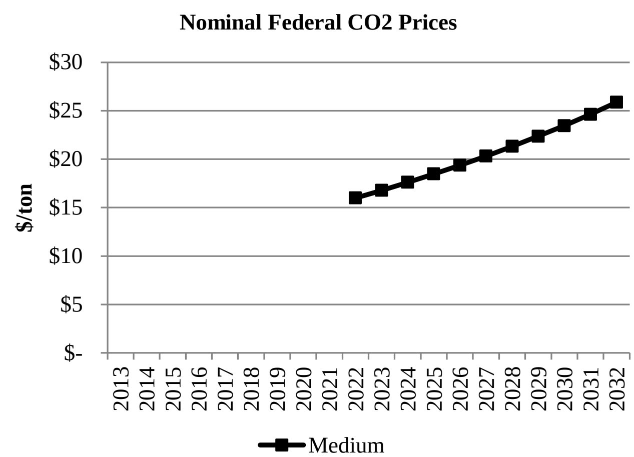
Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.



Federal CO_2 Policy/Price Signal

Sensitivity S-5 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.



Regional Haze

Sensitivity S-5 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

Theme: Targeted Resource Sensitivities
Sensitivity: S-5 (PTC/ITC Extension, No RPS)

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

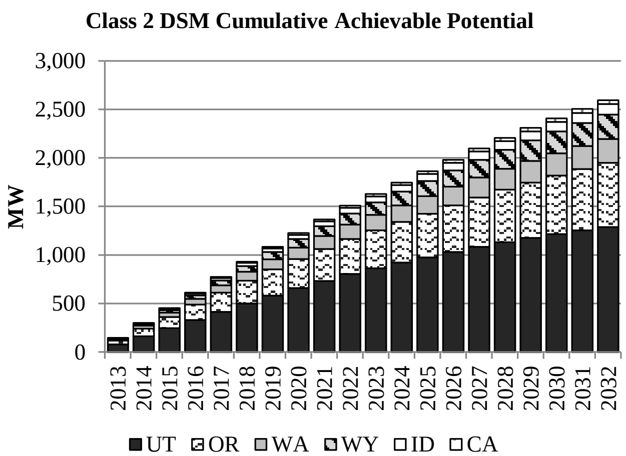
Other Non-CO_2 Environmental Policy Assumptions
Sensitivity S-5 will include estimated costs to achieve compliance with the following:
- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS
Sensitivity S-5 does not include any federal RPS requirements.

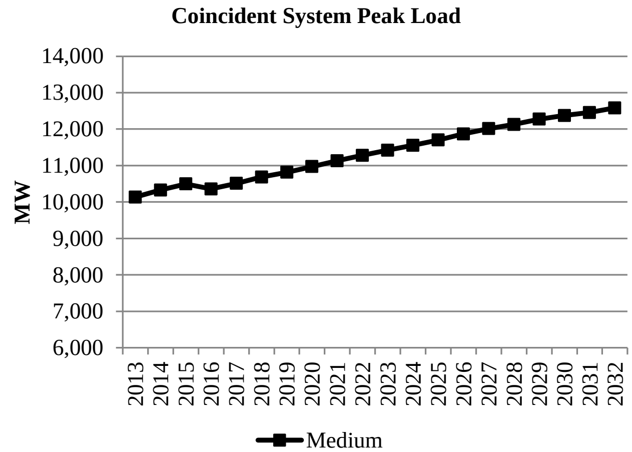
State RPS
Sensitivity S-5 does not include any state RPS requirements.

Federal Tax Incentives
- PTCs extended through 2019
- ITCs extended through 2019

Energy Efficiency (Class 2 DSM)
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast
The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific
There are no other specific resource constraints that will be applied to this sensitivity.

Theme: Targeted Resource Sensitivities
Sensitivity: S-6 (PTC/ITC Extension, With RPS)

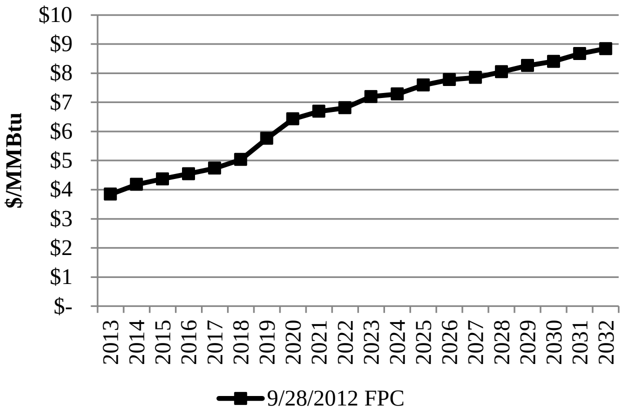
Description

Sensitivity S-6 will assume that federal tax incentives for renewable resources will be extended through 2019 and will include known state and prospective Federal RPS assumptions. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

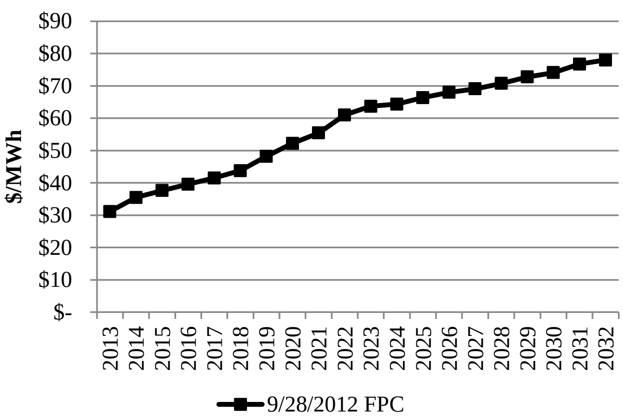
Forward Price Curve

Sensitivity S-6 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



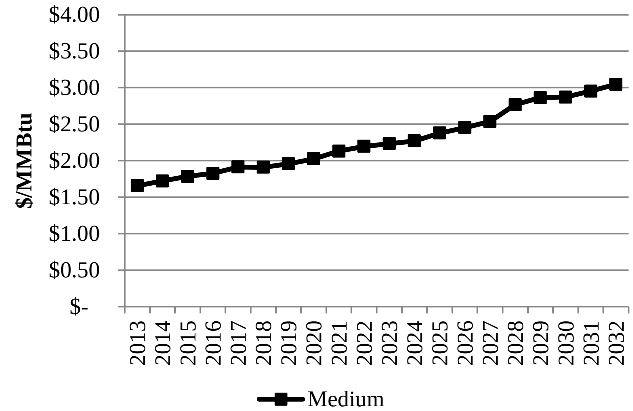
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

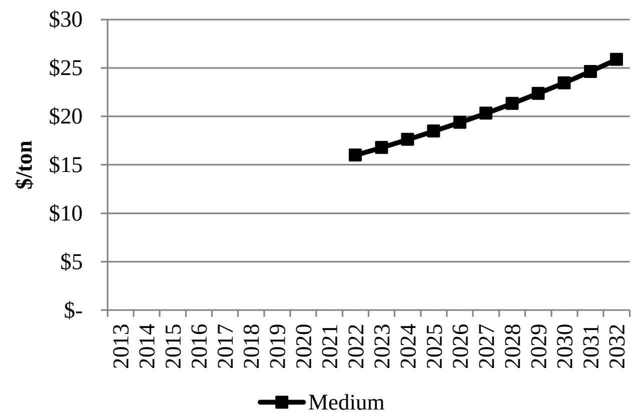
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Sensitivity S-6 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Sensitivity S-6 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions
Sensitivity S-6 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS
Sensitivity S-6 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

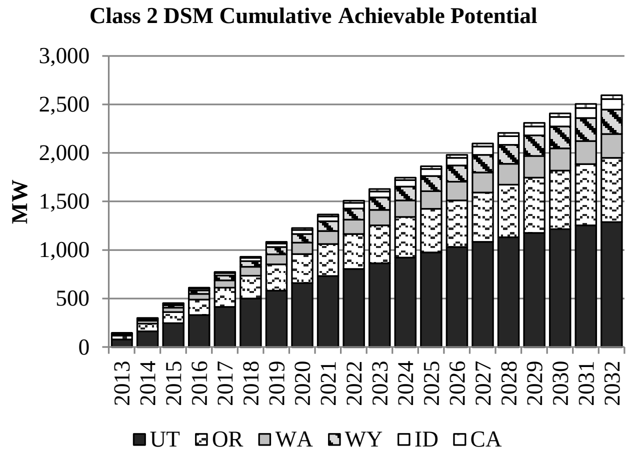
State RPS
Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

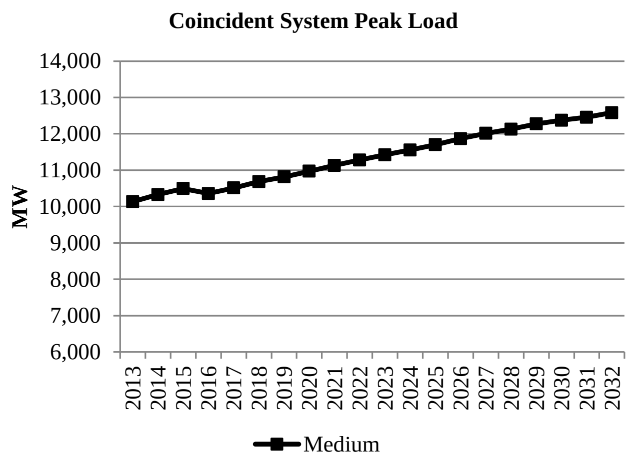
Federal Tax Incentives

- PTCs extended through 2019
- ITCs extended through 2019

Energy Efficiency (Class 2 DSM)
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast
The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific
There are no other specific resource constraints that will be applied to this sensitivity.

Theme: Targeted Resource Sensitivities
Sensitivity: S-7 (Endogenous RPS Compliance)

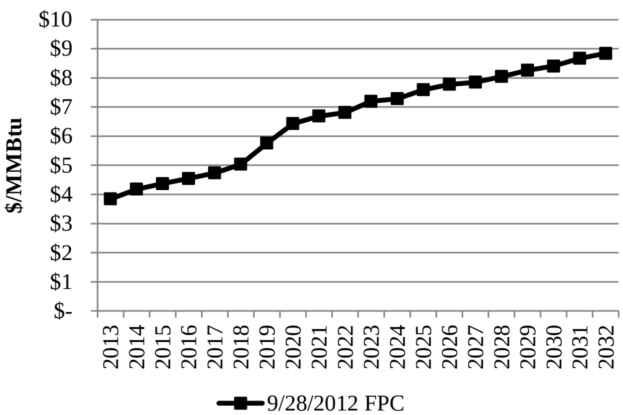
Description

Sensitivity S-7 will be completed using the RPS compliance logic built into the System Optimizer model. System level RPS requirements will be used as inputs and renewable resources will be added endogenously by the System Optimizer model. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

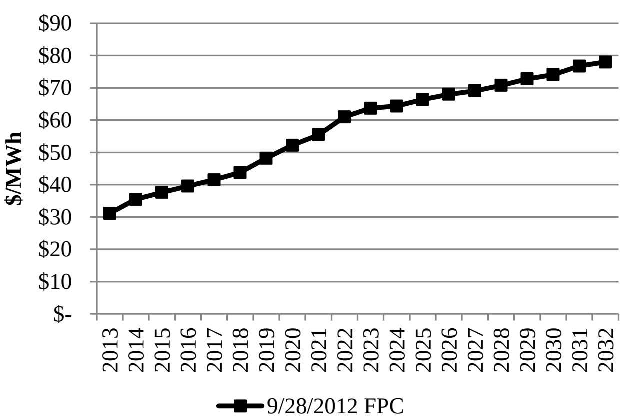
Forward Price Curve

Sensitivity S-7 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



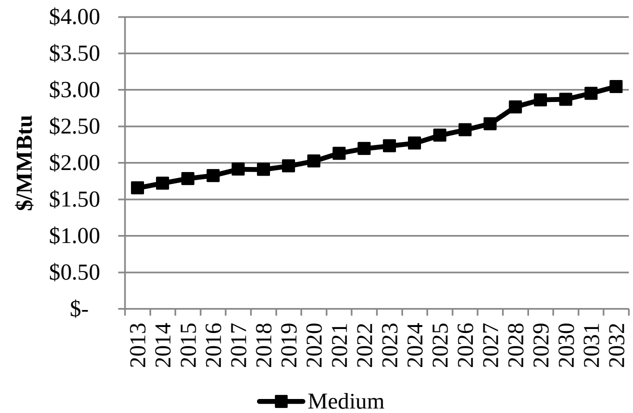
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

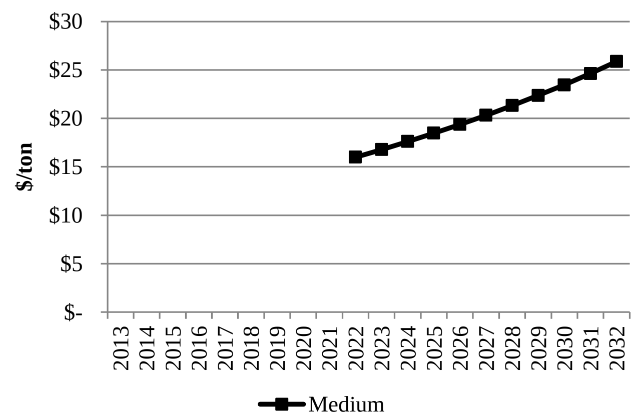
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Sensitivity S-7 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Sensitivity S-7 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-7 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-7 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

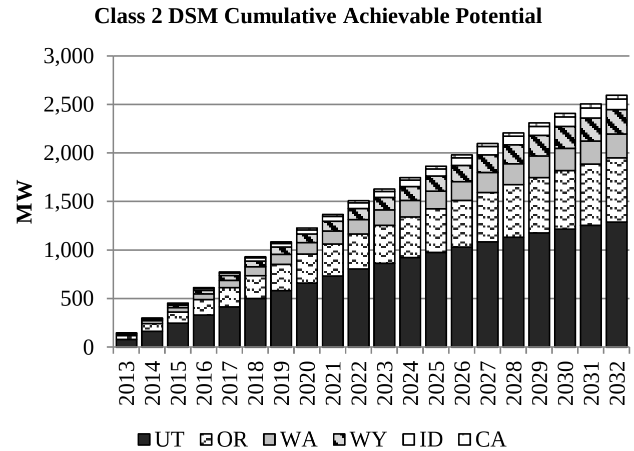
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

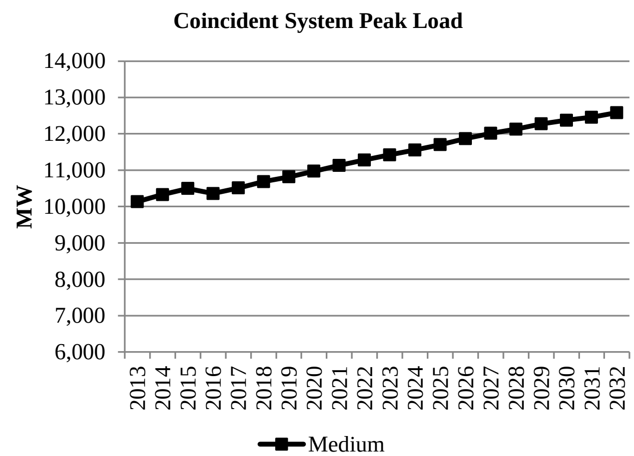
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

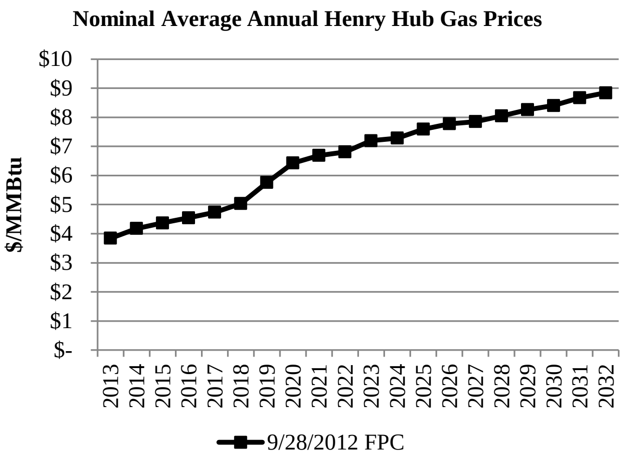
Theme: Targeted Resource Sensitivities
Sensitivity: S-8 (2013 Business Plan)

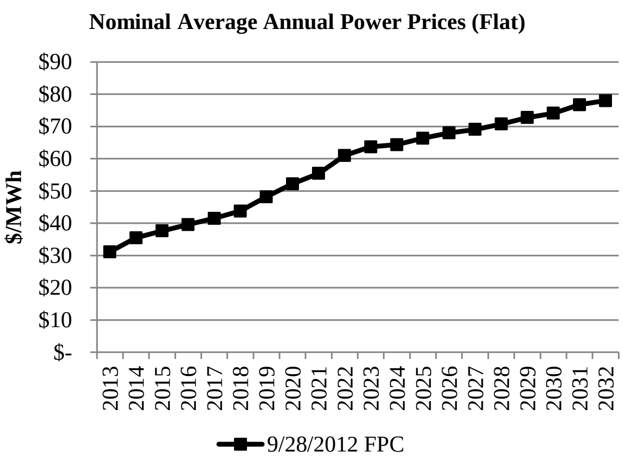
Description

Sensitivity S-8 will be completed with the resource portfolio from the Company's 2013 business plan and DSM resources re-optimized. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

Forward Price Curve

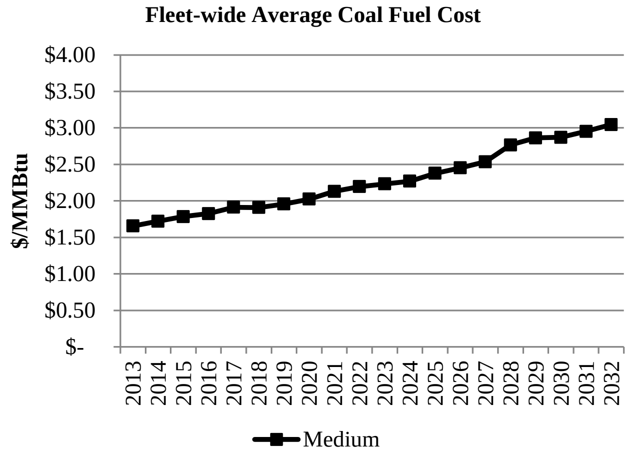
Sensitivity S-8 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.





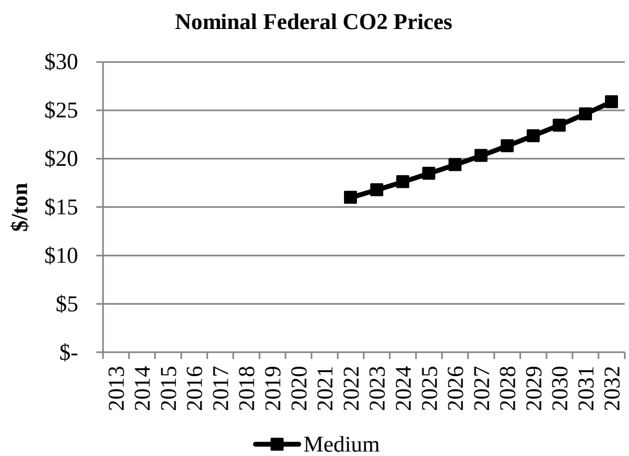
Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.



Federal CO_2 Policy/Price Signal

Sensitivity S-8 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.



Regional Haze

Sensitivity S-8 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-8 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-8 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

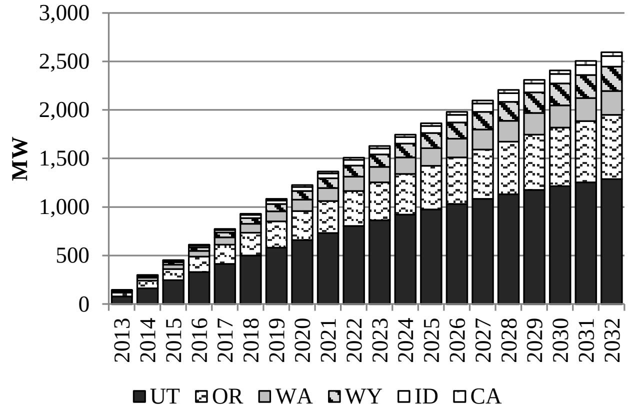
Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.

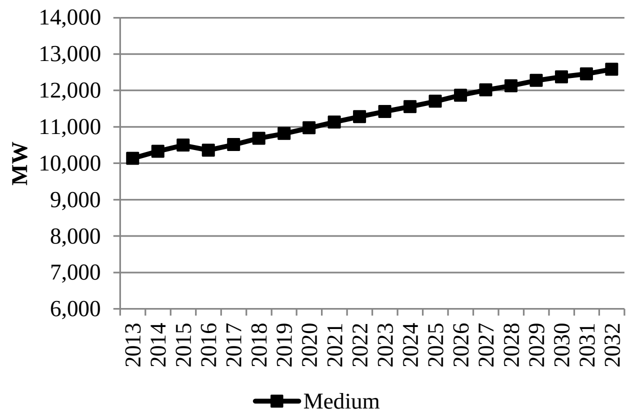
Class 2 DSM Cumulative Achievable Potential



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.

Coincident System Peak Load



Resource Specific

The resource expansion plan included in the 2013 Business Plan will be forced and DSM resources re-optimized.

Sensitivity: S-9 (Targeted Renewable Resources)

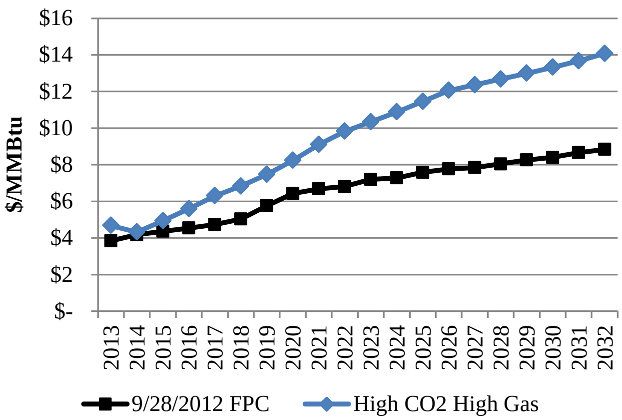
Description

Sensitivity S-9 will include market price assumptions (high gas, high CO_2) and federal tax incentive assumptions (extension of PTCs/ITCs) favorable to renewable resource additions. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

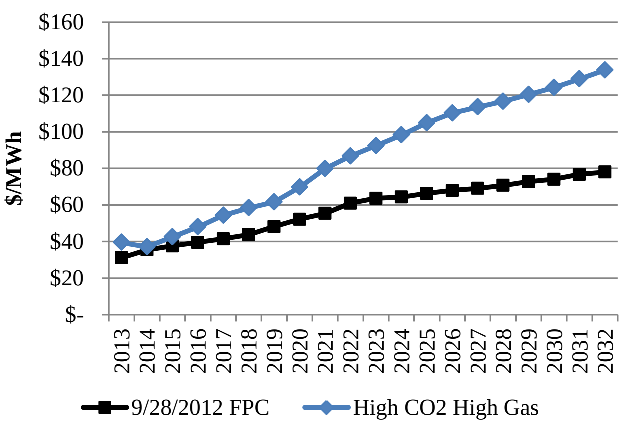
Forward Price Curve

Sensitivity S-9 gas and power prices are summarized alongside the medium case September 2012 forward price curve in the figures below.

Nominal Average Annual Henry Hub Gas Prices



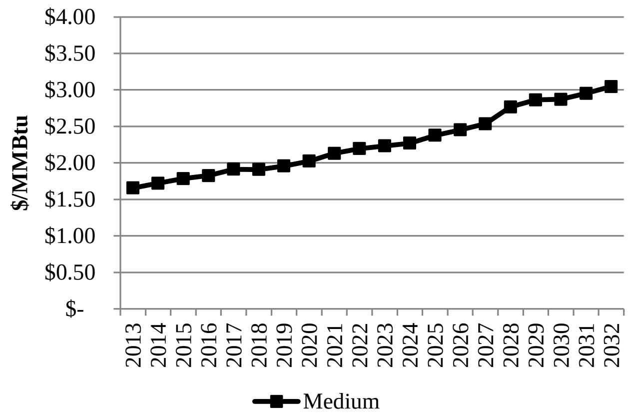
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

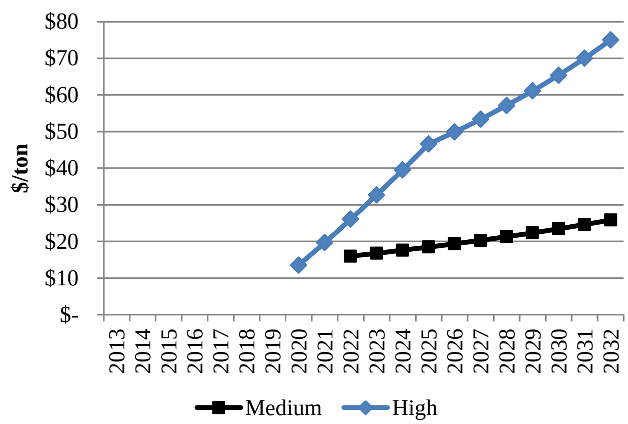
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Sensitivity S-9 includes high CO_2 prices starting 2020 at approximately \$14/ton rising to approximately \$75/ton by 2032. The high CO_2 prices are shown alongside the medium CO_2 price assumptions in the figure below.

Nominal Federal CO2 Prices



Regional Haze

Sensitivity S-9 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016

Theme: Targeted Resource Sensitivities
Sensitivity: S-9 (Targeted Renewable Resources)

Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-9 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-9 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

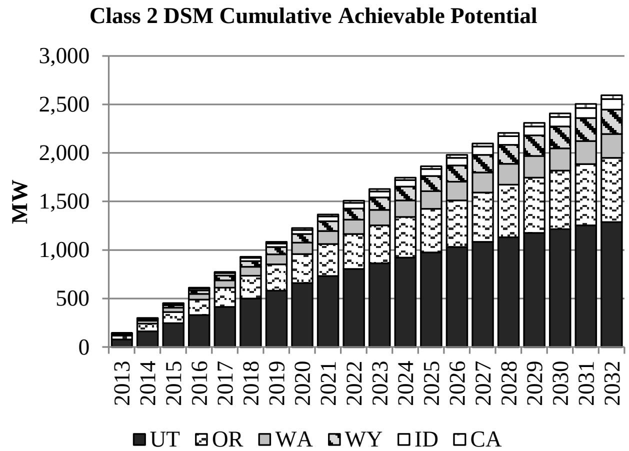
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs extended through 2019
- ITCs extended through 2019

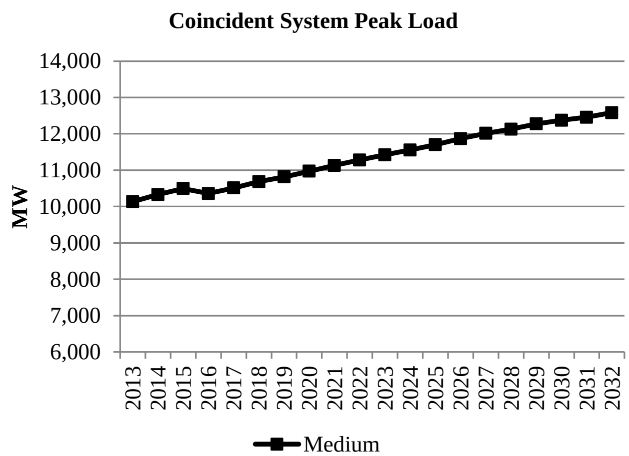
Energy Efficiency (Class 2 DSM)

Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable potential by state and year are summarized below.



Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

Theme: Targeted Resource Sensitivities
Sensitivity: S-10 (Class 3 DSM)

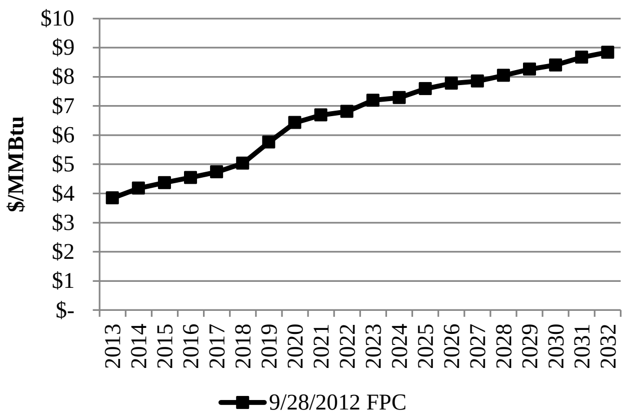
Description

Sensitivity S-10 will include Class 3 DSM resource alternatives. This sensitivity is a variant of Core Case C-03 assuming Energy Gateway Scenario EG-2.

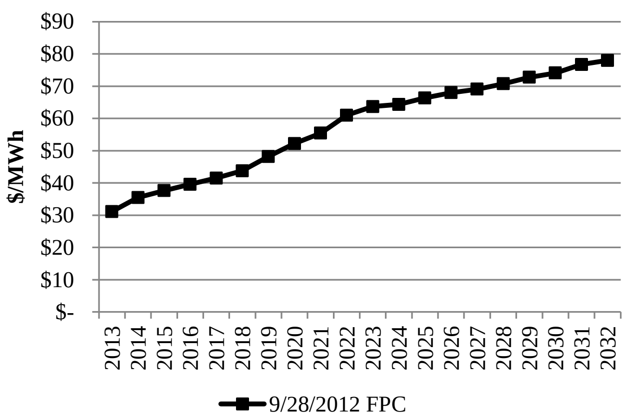
Forward Price Curve

Sensitivity S-10 gas and power prices will utilize medium natural gas and CO_2 price assumptions consistent with the Company's September 28, 2012 official forward price curve.

Nominal Average Annual Henry Hub Gas Prices



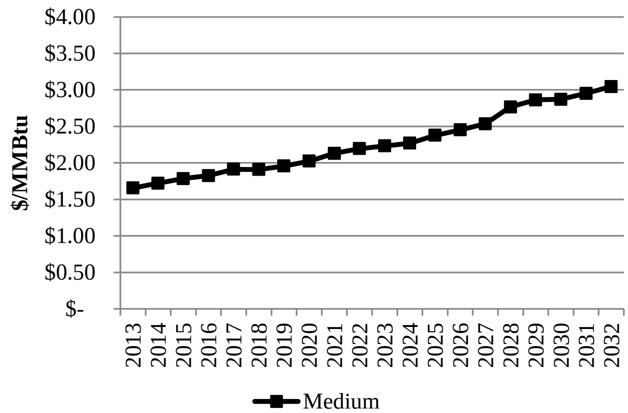
Nominal Average Annual Power Prices (Flat)



Coal Fuel Costs

Medium coal prices will be used. The figure below shows the medium fleet-wide average coal costs.

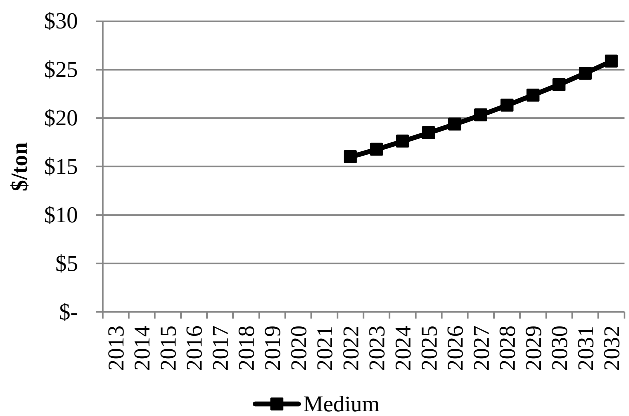
Fleet-wide Average Coal Fuel Cost



Federal CO_2 Policy/Price Signal

Sensitivity S-10 includes medium CO_2 prices starting 2022 at $16/ton rising to approximately $26/ton by 2032.

Nominal Federal CO2 Prices



Regional Haze

Sensitivity S-10 will apply base case Regional Haze investments patterned after known state implementation plan requirements and potential long-term requirements.

Coal Unit	State	Technology*	Year
J. Bridger 1	WY	SCR	2022
J. Bridger 2	WY	SCR	2021
J. Bridger 3	WY	SCR	2015
J. Bridger 4	WY	SCR	2016
Hunter 1	UT	BH, LNB	2014
Hunter 2	UT	SCR	2023
Hunter 3	UT	SCR	2024
Huntington 1	UT	SCR	2026
Huntington 2	UT	SCR	2023
Hayden 1	CO	SCR	2015
Hayden 2	CO	SCR	2016
Craig 1	CO	SNCR	2017
Craig 2	CO	SCR	2016
Cholla 4	AZ	SCR	2017

*SNCR = selective non-catalytic reduction; SCR = selective catalytic reduction; LNB = low NOx burner; BH = baghouse

Other Non-CO_2 Environmental Policy Assumptions

Sensitivity S-10 will include estimated costs to achieve compliance with the following:

- Mercury and Air Toxics (MATS)
- Coal Combustion Residuals (CCR) under subtitle D of RCRA
- Cooling water intake structures under §316(b) of the Clean Water Act

Federal RPS

Sensitivity S-10 will include the following federal RPS assumptions:

- Targets applied to retail sales (adjusted for non-qualifying hydro)
- 4.5% in 2018
- 7.1% in 2019 – 2020
- 9.8% in 2021 – 2022
- 12.4% in 2023 – 2024
- 15% by 2025

State RPS

Known state RPS requirements with targets as a percentage of retail sales (by year-end but for WA, which is Jan 1st):

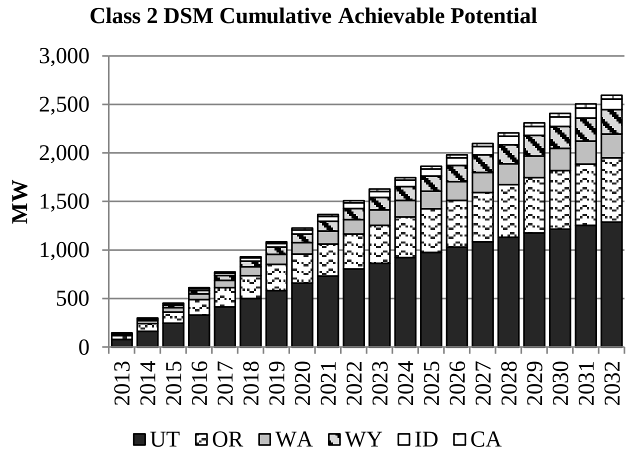
- CA: 20% through 2013, 25% by 2016, 33% by 2020
- OR: 5% by 2011; 15% by 2015; 20% by 2020, 25% by 2025
- WA: 3% by 2012; 9% by 2016; 15% by 2020
- UT: 20% of adjusted retail sales by 2025

Federal Tax Incentives

- PTCs expire end of 2012
- ITCs expire end of 2016

Energy Efficiency (Class 2 and Class 3 DSM)

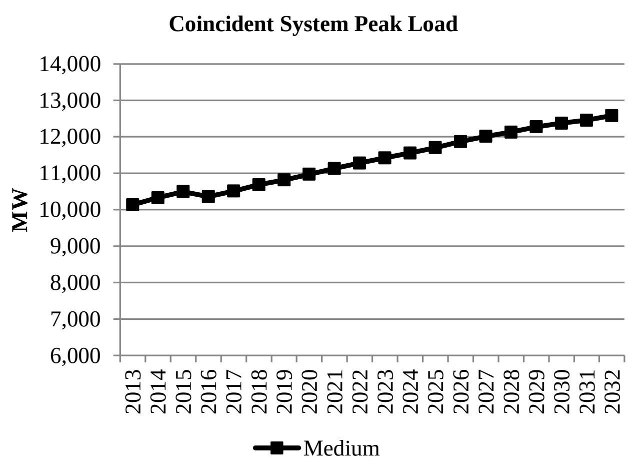
Base case supply curves and ramp rates with resource selections up to the achievable potential. Class 2 resources that are not selected in any given year are not available for selection in future years. Achievable Class 2 DSM potential by state and year are summarized below.



For this sensitivity, Class 3 DSM resources, which are generally considered non-firm due to the voluntary nature of customer response to price signals, will be considered firm resources. Only incremental potential is included in this sensitivity. To avoid overstating the capacity contribution of Class 3 DSM resources in this sensitivity, the potential for each Class 3 DSM product was adjusted for expected interactions among competing Class 1 and 3 DSM resource alternatives.

Load Forecast

The medium load forecast will be used. The figure below shows the system coincident peak load forecast before accounting for any potential contribution from DSM or distributed generation resources.



Resource Specific

There are no other specific resource constraints that will be applied to this case.

APPENDIX N – CLASS 2 DSM DECREMENT STUDY

This section presents the methodology and results of the energy efficiency (Class 2 demand-side management (DSM)) decrement study. For this analysis, the 2013 IRP preferred portfolio (Case C-07a under Energy Gateway scenario 2) was used to calculate the decrement value ("avoided cost") of various types of Class 2 DSM resources. To minimize the impacts of IRP specific assumptions when evaluating long-term resources, such as Class 2 DSM, PacifiCorp will use the 20-year levelized Class 2 DSM avoided costs shown in Table N.1 when evaluating the cost-effectiveness of current programs and potential new programs between IRP cycles.

To align with the resource costs applied for resource portfolio development using the System Optimizer capacity expansion model, cost credits were applied to the Class 2 DSM avoided cost values reflecting (1) a transmission and distribution (T&D) investment deferral benefit, (2) a generation capacity investment deferral benefit, and (3) a stochastic risk reduction benefit associated with clean, no-fuel resources.

Modeling Approach

To determine the Class 2 DSM avoided cost values, PacifiCorp defined 17 shaped Class 2 DSM resources, each at 100 megawatts maximum capacity, and available starting in 2013 and for the duration of the 20-year IRP study period.

Consistent with prior valuation studies, PacifiCorp first determined the system production cost with and without each Class 2 DSM resources using the Planning and Risk production cost model in Monte Carlo stochastic mode. The difference in production cost (stochastic mean present value revenue requirement (PVRR)) for the two runs indicates the system value attributable to the DSM resource through lower spot market transaction activity and resource re-optimization with the DSM resource in the portfolio. The cost credits mentioned above are then added separately outside of the model, thereby increasing Class 2 DSM avoided cost values. The Planning and Risk avoided cost values were determined for the medium CO_2 tax scenario (starting at $16/ton in 2022 and escalating to $26/ton by 2032).

Generation Resource Capacity Deferral Benefit Methodology

PacifiCorp used the System Optimizer model to determine the generation resource capacity deferral benefit. The approach is similar to the stochastic production cost difference method, except that only the fixed cost benefit of a 100-megawatt Class 2 DSM resource is calculated. This is accomplished by running System Optimizer model with a base resource portfolio, and then comparing the fixed portfolio costs against the cost of the same portfolio derived by System Optimizer that removes 100-megawatt of DSM program. The simulation period is 20 years. As a simplifying assumption, PacifiCorp applied the East "system" load shape for the generic DSM program, which has a capacity planning contribution of 94 percent and a capacity factor of 70 percent. The resource deferral fixed cost benefit is comprised of the deferred capital recovery and fixed operation and maintenance costs of a "next best alternative" resource—a combined-cycle combustion turbine (CCCT). The difference in the portfolio fixed cost represents the resource deferral benefit of the DSM program. (Note that System Optimizer's production cost benefits were not taken into account to avoid double-counting the benefit extracted from stochastic Planning and Risk model results.)

Since a 100-megawatt Class 2 DSM is not sufficiently large enough to defer a whole CCCT unit, System Optimizer was configured to allow fractional CCCT unit sizes for both the base portfolio and the Class 2 DSM resource portfolio. Deferral of CCCT capacity can begin starting in 2017. Note that each Class 2 DSM resource can also defer front office transactions (a market resource representing a range of forward firm market purchase products).

The resource capacity deferral benefit is calculated in two steps:

1. Fixed Cost Deferral Benefit Determination
   Fixed cost benefits are obtained by calculating the differences in annual fixed and capital recovery costs (millions of 2012 dollars) between the base portfolio and the portfolio with the Class 2 DSM program removed. The stream of annual benefits is then converted into a net present value (NPV) using the 2013 IRP discount rate (6.882 percent).
2. Levelized Value Calculation
   The fixed cost resource deferral benefit value obtained from step 1 is divided by the Class 2 DSM program energy in megawatt-hours (also converted to a NPV) to yield a value in dollars per megawatt-hour-year ($/MWh-year).

This value, along with the T&D investment deferral credit and stochastic risk reduction credit, are added to the Planning and Risk model decrement values to yield the final adjusted values.

Class 2 DSM Decrement Value Results

Table N.1 reports the NPV levelized avoided costs by DSM resource and CO_2 tax scenario for 2013 through 2032, along with a breakdown of the three cost credits (capacity deferral, T&D investment deferral, and stochastic risk reduction). Tables N.1 and N.2 report the levelized Avoided Cost and the annual nominal-dollar avoided costs, in $/MWh.

Consistent with the results for the 2011 IRP, the residential air conditioning decrements produce the highest value for both the east and west locations. The water heating, plug loads, and system load shapes provide the lowest avoided costs. Much of their end use shapes reduce loads during a greater percentage of off-peak hours than the other shapes and during all seasons, not just the summer.

Table N.1 – Levelized Class 2 DSM Avoided costs, 20-Year Net Present Value (2013-2032)

Resource	Location	Load Factor	Cost Credit Components ($/MWh)				Total Avoided Costs Including all Cost Credits ($/MWh)
			Capacity Resource Deferral	T&D Investment Deferral	Stochastic Risk Reduction	Total Credits	
Residential Cooling	East	10%	18.49	64.61	2.10	85.20	146.13
Residential Lighting	East	48%	18.49	12.85	2.52	33.87	80.86
Residential Whole House	East	35%	18.49	17.71	2.40	38.61	87.28
Commercial Cooling	East	20%	18.49	10.45	2.67	31.62	107.94
Commercial Lighting	East	48%	18.49	10.80	2.52	31.81	84.05
Water Heating	East	57%	18.49	31.95	2.44	52.87	79.18
Plug Loads	East	59%	18.49	12.76	2.74	33.99	77.48
System Load Shape	East	70%	18.49	8.88	2.62	29.99	75.75
Residential Cooling	West	7%	18.49	90.98	1.39	110.86	161.83
Residential Heating	West	25%	18.49	26.17	2.27	46.93	88.87
Residential Lighting	West	48%	18.49	12.85	2.81	34.15	77.85
Commercial Cooling	West	16%	18.49	12.93	2.81	34.23	106.58
Residential Whole House	West	49%	18.49	10.45	2.90	31.85	77.89
Commercial Lighting	West	48%	18.49	10.89	2.77	32.14	79.67
Water Heating	West	56%	18.49	37.75	2.24	58.48	75.70
Plug Loads	West	59%	18.49	12.76	2.72	33.98	74.88
System Load Shape	West	71%	18.49	8.61	2.85	29.96	73.03

Table N.2 – Annual Nominal Class 2 DSM Avoided Costs, 2013-2032

Decrement Name	Actual Load Factor	Decrement Values (Nominal $/MWh)									
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
EAST											
Residential Cooling	10%	118.51	118.95	123.98	131.72	153.60	121.70	144.87	140.44	128.53	171.08
Residential Lighting	48%	61.07	61.94	65.21	67.69	73.25	68.16	74.44	75.95	76.10	97.40
Residential Whole House	35%	66.21	67.40	71.01	73.51	80.03	73.14	81.81	82.80	80.60	106.52
Commercial Cooling	20%	82.92	84.76	88.64	92.74	104.68	89.66	103.14	103.01	97.71	132.00
Commercial Lighting	48%	61.66	63.53	66.62	69.31	74.53	70.43	77.96	77.89	78.63	103.10
Water Heating	57%	58.52	59.86	63.02	65.23	69.54	66.59	72.44	73.62	75.12	95.20
Plug Loads	59%	57.95	58.83	61.99	64.36	68.90	65.49	70.43	72.99	73.85	93.66
System Load Shape	70%	56.24	57.43	60.14	62.72	66.07	64.43	68.76	70.74	72.87	91.36
WEST											
Residential Cooling	7%	144.28	145.27	146.33	157.79	183.68	138.01	158.82	158.57	138.83	179.04
Residential Heating	25%	71.93	73.72	74.07	79.70	86.16	75.95	82.91	84.86	80.77	105.58
Residential Lighting	48%	60.57	61.87	63.50	66.90	71.78	66.74	71.48	73.44	73.51	91.95
Commercial Cooling	16%	88.92	89.67	91.53	97.59	109.02	90.80	101.81	102.90	96.11	120.75
Residential Whole House	49%	60.48	61.94	63.69	66.68	70.90	66.83	71.45	73.67	73.65	91.98
Commercial Lighting	48%	61.52	62.74	65.23	68.30	72.70	68.05	73.29	74.71	75.66	93.80
Water Heating	56%	58.20	59.55	61.46	64.49	68.32	64.84	69.31	71.20	72.46	88.33
Plug Loads	59%	57.77	59.19	60.56	63.71	67.36	63.87	67.89	70.46	71.35	88.84
System Load Shape	71%	55.97	57.38	58.93	61.86	64.57	62.29	65.87	68.35	70.12	86.38

Table N.2 – Annual Nominal Class 2 DSM Avoided Costs, 2013-2032 (Continued)

	Decrement Values (Nominal $/MWh)									
Decrement Name	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
EAST										
Residential Cooling	167.70	168.33	135.41	190.10	252.77	122.82	136.44	138.04	214.18	194.54
Residential Lighting	95.45	95.07	90.75	100.99	118.72	94.52	96.75	97.63	115.94	114.01
Residential Whole House	104.14	103.88	93.86	110.84	132.59	96.77	100.67	101.57	122.92	122.04
Commercial Cooling	124.62	125.67	113.18	135.87	176.68	107.72	119.99	116.78	157.09	145.85
Commercial Lighting	101.32	99.45	95.76	107.06	126.40	99.50	103.68	104.19	118.12	117.59
Water Heating	96.07	93.27	91.24	100.01	117.34	93.01	98.55	98.78	112.99	112.25
Plug Loads	93.13	90.17	86.05	97.27	114.19	93.20	93.08	95.05	112.32	109.66
System Load Shape	92.27	87.28	86.73	94.23	108.78	92.30	95.02	94.67	108.43	107.77
WEST										
Residential Cooling	153.86	183.13	143.24	199.23	264.43	109.03	131.61	142.59	240.98	220.96
Residential Heating	95.03	102.49	90.99	113.32	133.74	88.00	91.54	96.49	130.63	126.66
Residential Lighting	86.31	89.69	85.36	97.05	108.04	87.41	92.77	95.81	114.49	110.90
Commercial Cooling	110.18	122.28	106.86	129.57	162.76	94.22	109.41	114.91	156.95	148.11
Residential Whole House	86.20	90.12	85.75	97.66	108.08	88.08	93.75	96.10	113.21	110.81
Commercial Lighting	87.97	92.45	88.70	99.85	110.92	89.26	97.45	100.19	114.85	113.08
Water Heating	84.52	87.63	84.54	95.26	103.60	87.26	93.52	95.84	109.64	108.07
Plug Loads	84.09	87.33	82.89	94.45	102.92	85.96	91.92	93.43	109.16	106.98
System Load Shape	82.20	84.77	82.83	92.30	98.72	86.28	92.28	92.93	105.22	104.44

APPENDIX O – WIND AND SOLAR PEAK CONTRIBUTION

Overview

The amount of capacity provided by a resource at the time of system peak is known as its peak capacity contribution, which is stated as a percentage of its nameplate capacity. The Company calculated wind peak contribution by analyzing the historical generation over the Company's 100 summer peak load hours in each of four historical years and assuming a 90 percent probability that the resource will produce at least that same level of power during peak hours in the future. The solar peak contribution was determined based on third party information due to lack of historical data from the Company's system. The peak contributions of the resources using historic data are presented in Table O.1.

Table O.1 – Wind and Solar Peak Contribution (% of nameplate capacity)

Resource	Peak Contribution
Wind	4.2%
Solar	13.6%

Methodology

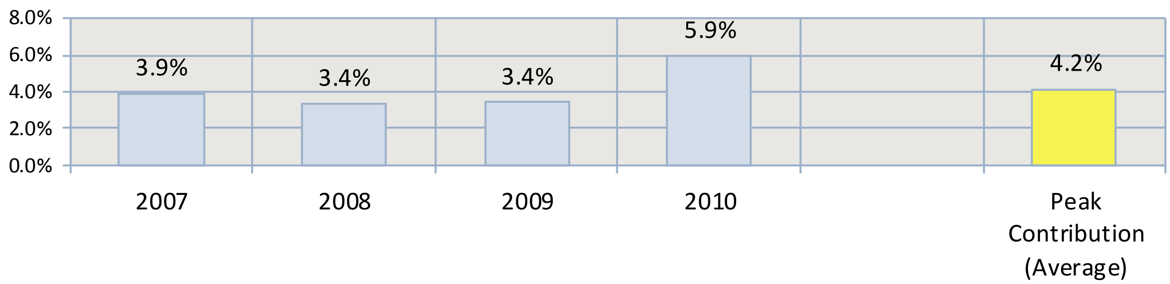
For both the wind and solar resources, the peak contributions are based on historical generation, if available, provided by a particular resource type in the top 100 summer peak load hours assuming a 90 percent probability that it will produce the same level of power during peak hours in the future. The historical data are from a four year period from 2007 to 2010. The average of the four annual values represents the peak contribution for that resource type. The period of measure is restricted to summer load hours since the Company's system peak occurs in the summer months. Detailed steps of the calculations are:

- Compile the aggregate energy output from all resources of the resource type in each hour of the year;
- Calculate the aggregate nameplate capacity from all resources of each type in each hour of the year;
- Divide the aggregate energy output by the aggregate nameplate capacity to arrive at the aggregate capacity factor for each hour of the year;
- Using actual hourly system load data for 2007-2010 to determine the top 100 load hours that occurred in each year between the months of June and September. The resulting hours are the top 100 summer peak load hours for each year 2007-2010;
- Align the hourly aggregate generation of the resource set to the top 100 summer peak load hours in each year; and
- Calculate the capacity contribution based on a 90 percent probability from the level of generation of the resource set during those peak hours.

Wind

The Company determined that the historic wind generation had a peak contribution of 4.2 percent. This value is comparable to the five percent wind capacity contribution assumption used by the Northwest Power and Conservation Council.[65] Hourly generation logs were used to develop the capacity contribution for the Company's system wind resources. The analysis included owned resources and non-owned wind resources where the Company acquired the output under a power purchase agreement. Figure O.1 shows the result of the study, and Table O.2 lists the wind generation resources that were included in the study.

Figure O.1 – Wind Peak Contribution, in top 100 summer load hours



[65] Sixth Northwest Conservation and Electric Power Plan, N.W.P.C.C. Chapter 12, 4, http://www.nwcouncil.org/energy/powerplan/6/final/SixthPowerPlan_Ch12.pdf .

Table O.2 – Resources Included in the Wind Analysis

Wind Resource	COD	Type	Nameplate Capacity
Chevron Wind QF	12/1/2009	PPA	16.5
Combine Hills	12/22/2003	PPA	41.0
Dunlap I Wind	10/1/2010	Owned	111.0
Foote Creek Generation	7/21/1997	Owned	32.1
Glenrock III Wind	1/17/2009	Owned	39.0
Glenrock Wind	12/31/2008	Owned	99.0
Goodnoe Wind	5/31/2008	Owned	94.0
High Plains Wind	9/13/2009	Owned	99.0
Leaning Juniper 1	9/14/2006	Owned	100.5
Marengo 1 & 2	8/3/2007	Owned	210.6
McFadden Ridge Wind	9/29/2009	Owned	28.5
Mountain Wind 1 & 2 QF	7/2/2008	PPA	140.7
Oregon Wind Farm QF	3/31/2009	PPA	64.6
Rock River I	11/7/2001	PPA	50.0
Rolling Hills Wind	1/17/2009	Owned	99.0
Seven Mile II Wind	12/31/2008	Owned	19.5
Seven Mile Wind	12/31/2008	Owned	99.0
Spanish Fork Wind 2 QF	7/31/2008	PPA	18.9
Three Buttes Wind	12/1/2009	PPA	99.0
Threemile Canyon Wind QF p500139	9/1/2009	PPA	9.9
Top of the World Wind p522807	10/1/2010	PPA	200.2
Wolverine Creek	2/12/2006	PPA	64.5
		Total Wind December 31, 2010:	**1,736.5**

Solar

The Company did not have sufficient historical data from operating solar resources during 2007 – 2010 from which it could develop the capacity contribution value for a solar QF. In the absence of actual system data, the Company relied on a simulated hourly solar profile developed by the National Renewable Energy Laboratory (NREL). The identical simulated hourly data is compared against the top 100 summer load hours in each year 2007 – 2010. Unlike wind, where the levels of generation change in each year depending on the output of the resource set, the simulated solar output remains constant in each year and is compared to changes in the top 100 peak summer load hours from year to year.

In developing the solar generation profile the Company used an NREL tool, called PVWatts, in order to simulate hourly solar generation levels based on historic meteorological solar radiation data. The PVWatts tool develops a solar profile based on input parameters such as the location, size, array type, tilt angle, and azimuth angle of the solar resource.

The peak contribution calculation was based on a simulated group of solar resources located throughout the Company's service territory. It was developed using the combined simulated profiles from five locations: Pocatello, ID; Yakima, WA; Pendleton, OR; Lander, WY; and Salt Lake City, UT. The analysis was performed twice, first with all of the resources configured to peak and second with all of the resourced configured to energy, as detailed above. Figure O.2 shows the result of the study

Figure O.2 – Solar Resource Peak Contribution, in top 100 summer load hours