PACIFIC POWER
A DIVISION OF PACIFICORP

825 NE Multnomah, Suite 2000
Portland, Oregon 97232

July 21, 2011

VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY

Washington Utilities and Transportation Commission
1300 S. Evergreen Park Drive, S.W.
P.O. Box 47250
Olympia, Washington 98504-7250

Attention: David W. Danner
Executive Director and Secretary

RE: UE-100514 – PacifiCorp's 2011 Integrated Resource Plan

Dear Mr. Danner:

PacifiCorp d.b.a. Pacific Power & Light Company submits for filing the Company's presentation material for the public meeting on July 28, 2011.

All formal correspondence and Staff requests regarding this filing should be directed to:

By e-mail (preferred): datarequest@pacificorp.com

By regular mail: Data Request Response Center
PacifiCorp
825 NE Multnomah Street, Suite 2000
Portland, OR 97232

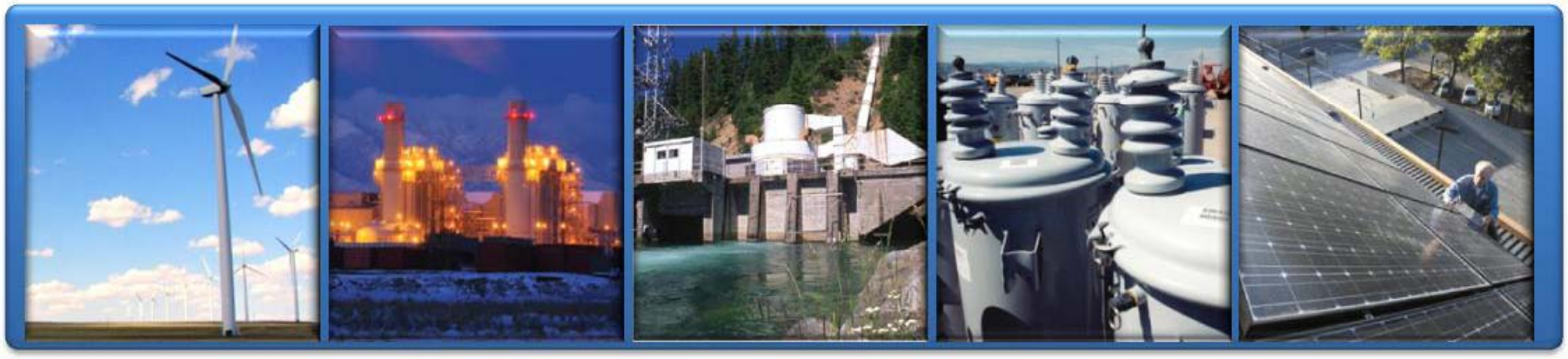
Any informal inquiries should be directed to Pete Warnken, Manager Integrated Resource Planning at (503) 813-5518 or me at (503) 813-6043.

Sincerely,

Andrea Kelly /SAM.

Andrea L. Kelly
Vice President, Regulation

cc: David Nightingale, WUTC
Deborah Reynolds, WUTC
Vanda Novak, WUTC
Steve Johnson, WUTC



2011
Integrated Resource Plan Overview

Washington Utilities and Transportation Commission

July 28, 2011

PacifiCorp

Rocky Mountain Power
Pacific Power
PacifiCorp Energy

Significant Changes from the Last IRP

- Decrease in peak resource need of 175 MW on an average annual basis for 2011 through 2020; capacity deficit begins in 2011 for both IRPs
  - Reduction in system coincident peak load of 345 MW on an average annual basis for 2011 through 2020 (west down 283 MW; east down 62 MW)
- Decrease in projected natural gas and wholesale electricity prices relative to the forecasts prepared in 2008 and 2009
- Methodology
  - Updated demand-side management/distributed generation potential study
  - Conducted Energy Gateway scenario analysis prior to preferred portfolio determination
  - Conducted Loss of Load Probability (LOLP) study, leading to selection of a 13% capacity planning reserve margin
  - Disaggregated west-side transmission topology
    - West Main bubble converted to four new bubbles (Portland/North Coals, Willamette Valley/Central Coast, South-Central Oregon/North California, Bethel Substation)
  - Implemented *System Optimizer* proof-of-concept modeling for optimized coal plant replacement scenarios

Other Key Drivers of the 2011 IRP

- Loss of momentum in federal energy and climate change policies contribute to continued uncertainty regarding long-term investment in clean energy technologies
- Public and legislative support for clean energy policies at the state level remains robust
- Continued efforts by the U.S. Environmental Protection Agency to regulate electric utility plant emissions, including greenhouse gases, criteria pollutants, and other emissions
- Expectations for a more favorable economic environment than assumed in 2009. Load growth in such areas as data centers and natural resource extraction
- Progress and challenges in planning for, permitting, and building the Energy Gateway transmission project
- Near-term procurement activities, including the planned acquisition of Lake Side 2 in Utah, with a 2014 in-service date

2011 IRP Regulatory Compliance

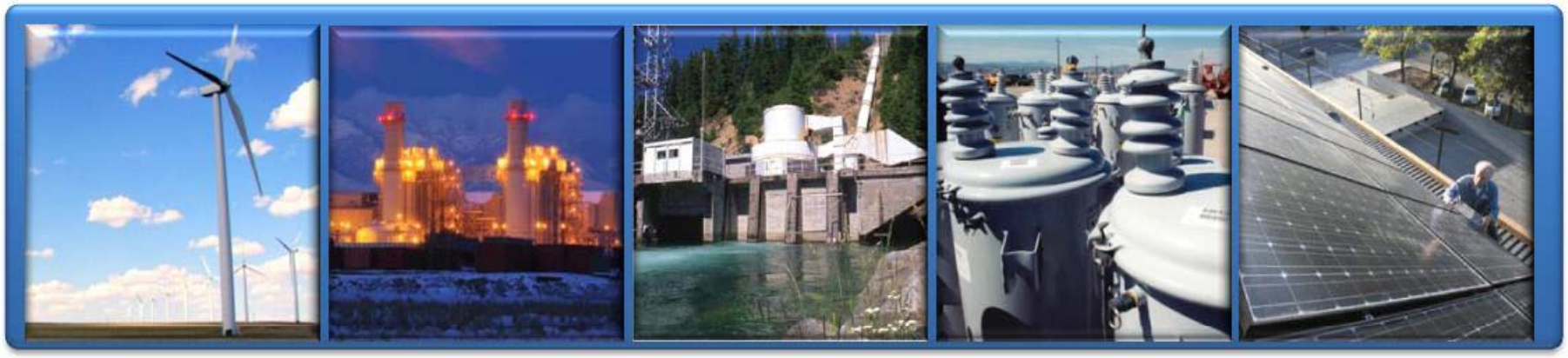
- Address each requirement under WAC 480-100-238
  - Compliance described in Table B.5, Appendix B of Volume II
- 2008 IRP Acknowledgment Letter Requirements
  - Transmission planning:

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2011 IRP
Letter Order, UE-080826, Attachment p. 1.	Transmission Planning (Chapter 4). The next IRP should discuss alternative transmission options.	Chapter 4 outlines an analysis of seven Energy Gateway deployment scenarios that considers alternative transmission footprints, investment costs, in-service dates, and economic drivers.
Letter Order, UE-080826, Attachment p. 1.	Transmission Planning (Chapter 4). The next IRP should discuss alternative deployment schedules for the transmission projects it considers and the benefits of each of the alternative deployment schedules of any transmission segments considered in the modeling.	Chapter 4 focuses on two deployment scenarios based on alternative directions for state and federal resource policies: a Green Resource Future and Incumbent Resource Future. Additionally, the section entitled "Customer Load and Resources" in Chapter 4 summarizes the process that PacifiCorp follows, in compliance with its Open Access Transmission Tariff, to plan for and invest in transmission to meet network customer load requirements.

2011 IRP Regulatory Compliance

- 2008 IRP Acknowledgment Letter Requirements
  - Out-year resource modeling and energy efficiency targets under RCW 19.285

Reference	IRP Requirement or Recommendation	How the Requirement or Recommendation is Addressed in the 2011 IRP
Letter Order, UE-080826, Attachment p. 3.	Specifically, the various portfolios have different resource selections during the first five years of the planning period. This might result in PacifiCorp, in its planning process, choosing a set of early resources because they are in a portfolio with lower risks in the later years of the planning horizon, even though the portfolios with higher risks could be mitigated by future flexibility rather than by choosing a different portfolio. • PacifiCorp should address this issue in its next IRP	PacifiCorp conducted a sensitivity analysis to isolate the near-term resource selection impact of out-year resources in the context of capacity expansion optimization modeling. The results of the sensitivity analysis are provided in Chapter 8.
Letter Order, UE-080826, Attachment p. 4.	The action plan does not specifically mention the utility's obligation under RCW 19.285 to determine and meet certain energy efficiency targets. The Commission reminds the Company that it needs to meet this obligation.	Action Item Number 6, Class 2 DSM, explicitly mentions PacifiCorp's obligation to meet energy efficiency targets under RCW 19.285.



IRP Results

PACIFICORP
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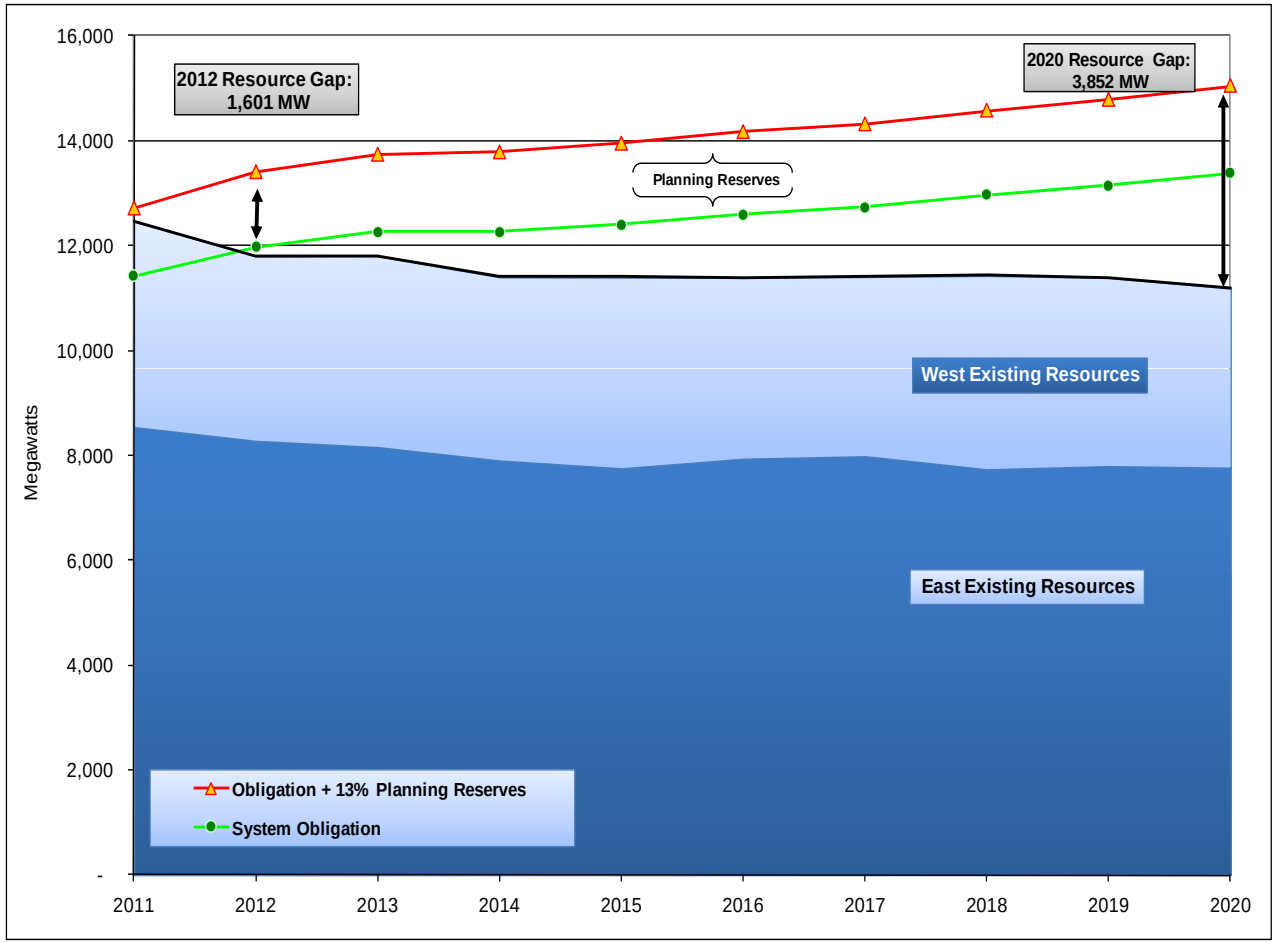
Coincident Peak Load Forecast

Year	Total	OR	WA	CA	UT	WY	ID	SE-ID
2011	**10,449**	2,332	775	160	4,840	1,329	679	336
2012	**10,716**	2,396	813	163	4,935	1,376	691	341
2013	**10,960**	2,429	802	164	5,074	1,423	721	346
2014	**11,252**	2,466	817	163	5,231	1,471	750	353
2015	**11,501**	2,496	830	166	5,354	1,509	787	359
2016	**11,740**	2,528	843	169	5,474	1,545	817	365
2017	**11,960**	2,557	855	171	5,602	1,574	831	370
2018	**12,194**	2,584	893	173	5,726	1,601	842	376
2019	**12,378**	2,611	880	174	5,845	1,633	854	381
2020	**12,607**	2,644	894	174	5,975	1,668	864	388
Average Annual Growth Rate								
2011-20	**2.1%**	**1.4%**	**1.6%**	**0.9%**	**2.4%**	**2.6%**	**2.7%**	**1.6%**
2021-30	**1.7%**	**0.9%**	**1.3%**	**1.0%**	**2.0%**	**2.3%**	**1.4%**	**1.4%**
2011-30	**1.9%**	**1.2%**	**1.4%**	**1.0%**	**2.2%**	**2.4%**	**2.0%**	**1.5%**

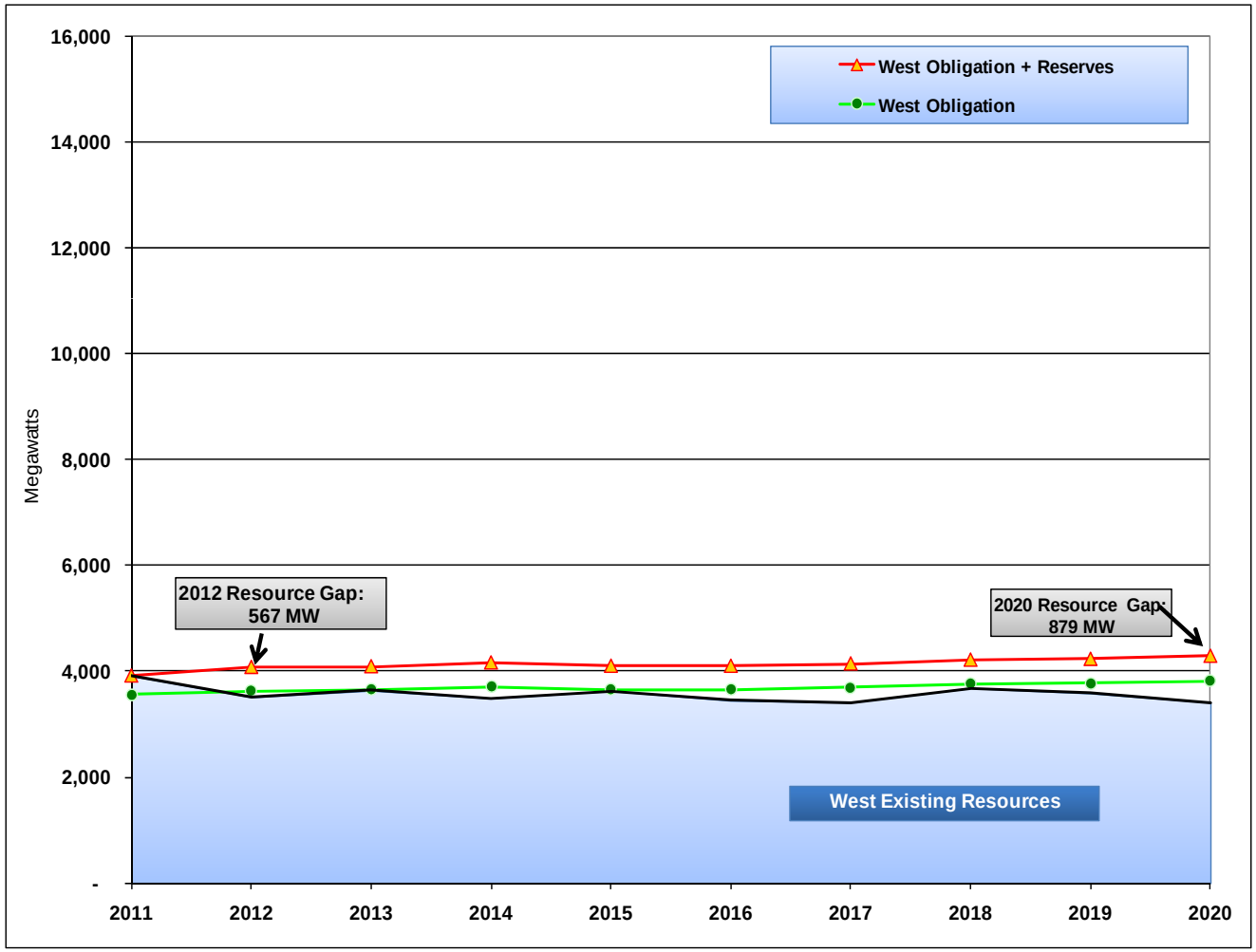
- Reflects peak loads prior to any load reductions from energy efficiency (Class 2 DSM)

Resource Need Determination - System



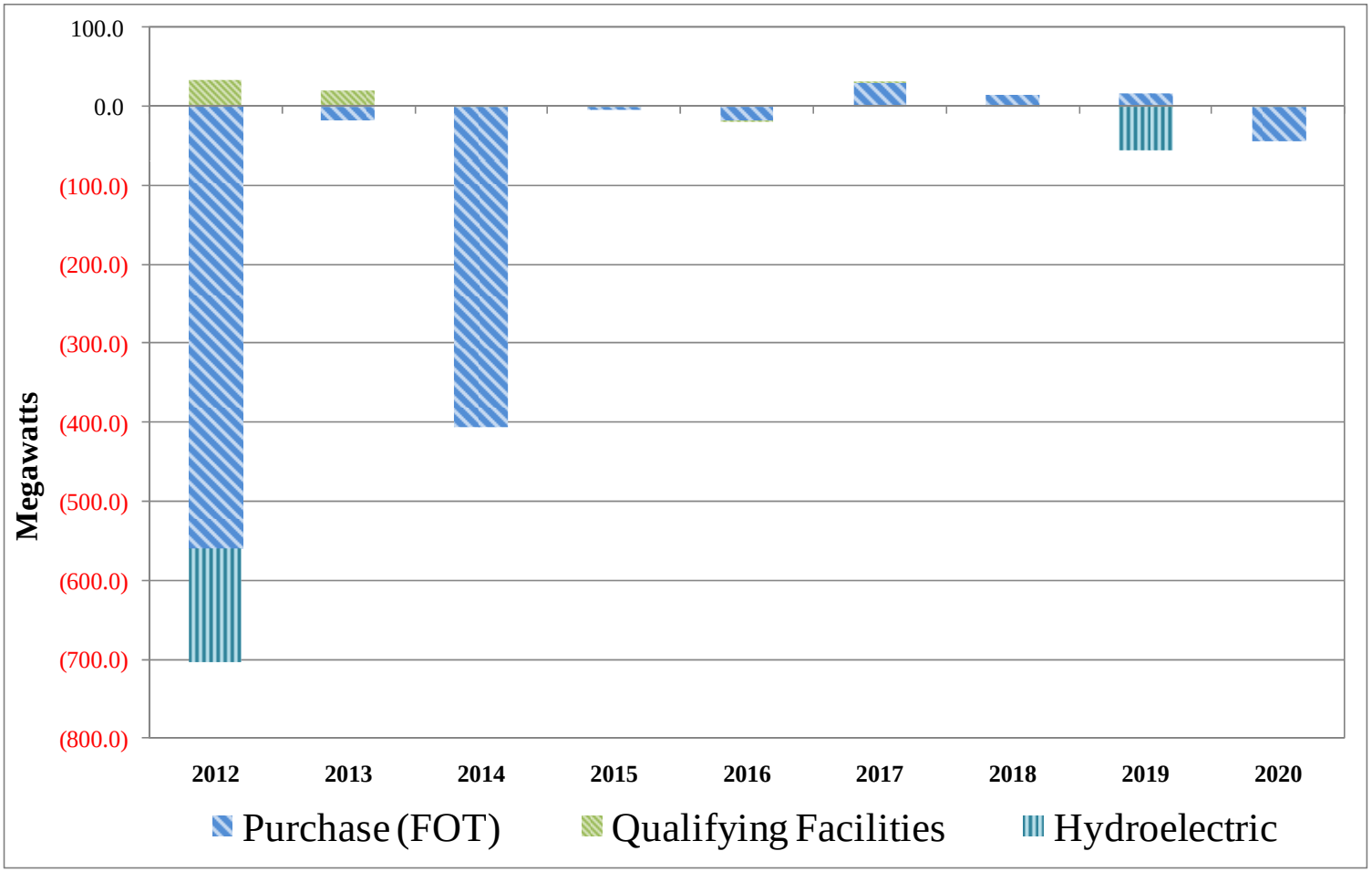
System	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Resources	12,468	11,802	11,810	11,404	11,399	11,397	11,412	11,433	11,395	11,192
System Obligation	11,497	11,973	12,264	12,256	12,403	12,595	12,728	12,961	13,145	13,376
Reserves (based on 13% target)	1,297	1,430	1,470	1,522	1,542	1,569	1,582	1,611	1,633	1,668
Obligation + 13% Planning Reserves	12,794	13,403	13,735	13,778	13,945	14,164	14,310	14,572	14,777	15,044
System Position	(326)	(1,601)	(1,925)	(2,373)	(2,546)	(2,767)	(2,898)	(3,139)	(3,383)	(3,852)

Resource Need Determination - West



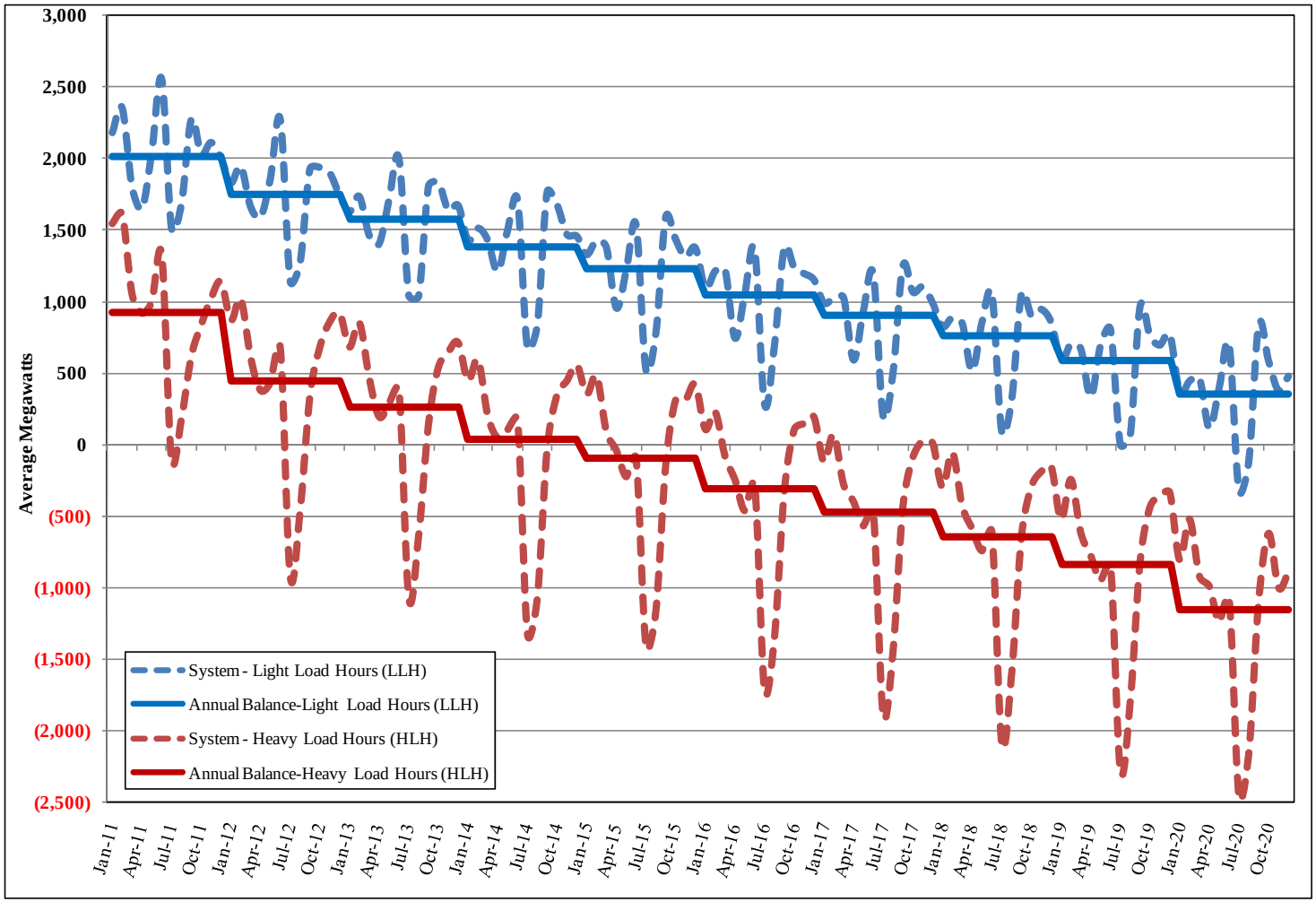
Power Purchase Contract Trends

- Expiration of BPA peaking contract (575 MW in late 2011) and hydro contracts in 2011-2012
- Expiration of third-quarter firm purchases ("front office transactions")

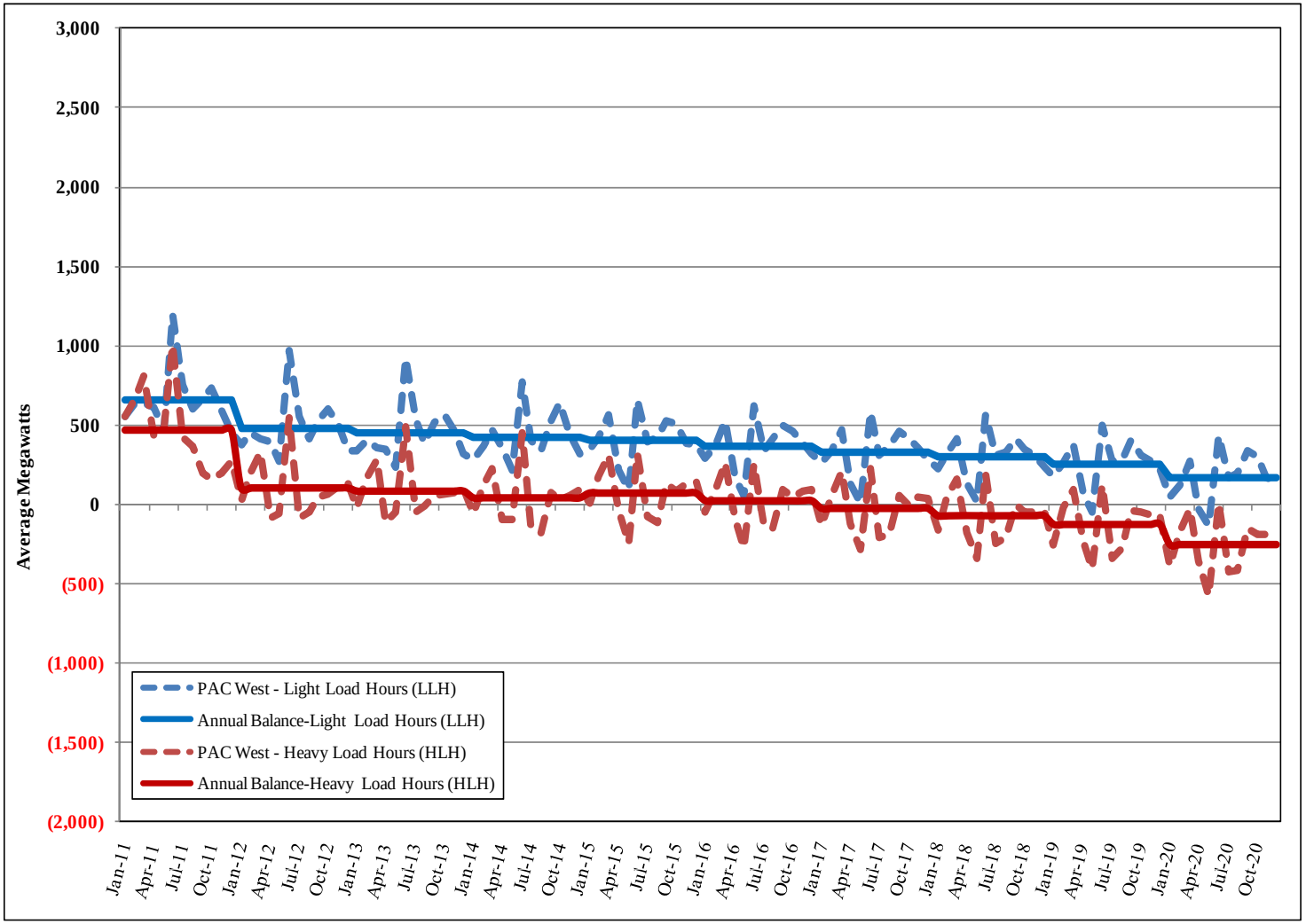


System Energy Balance

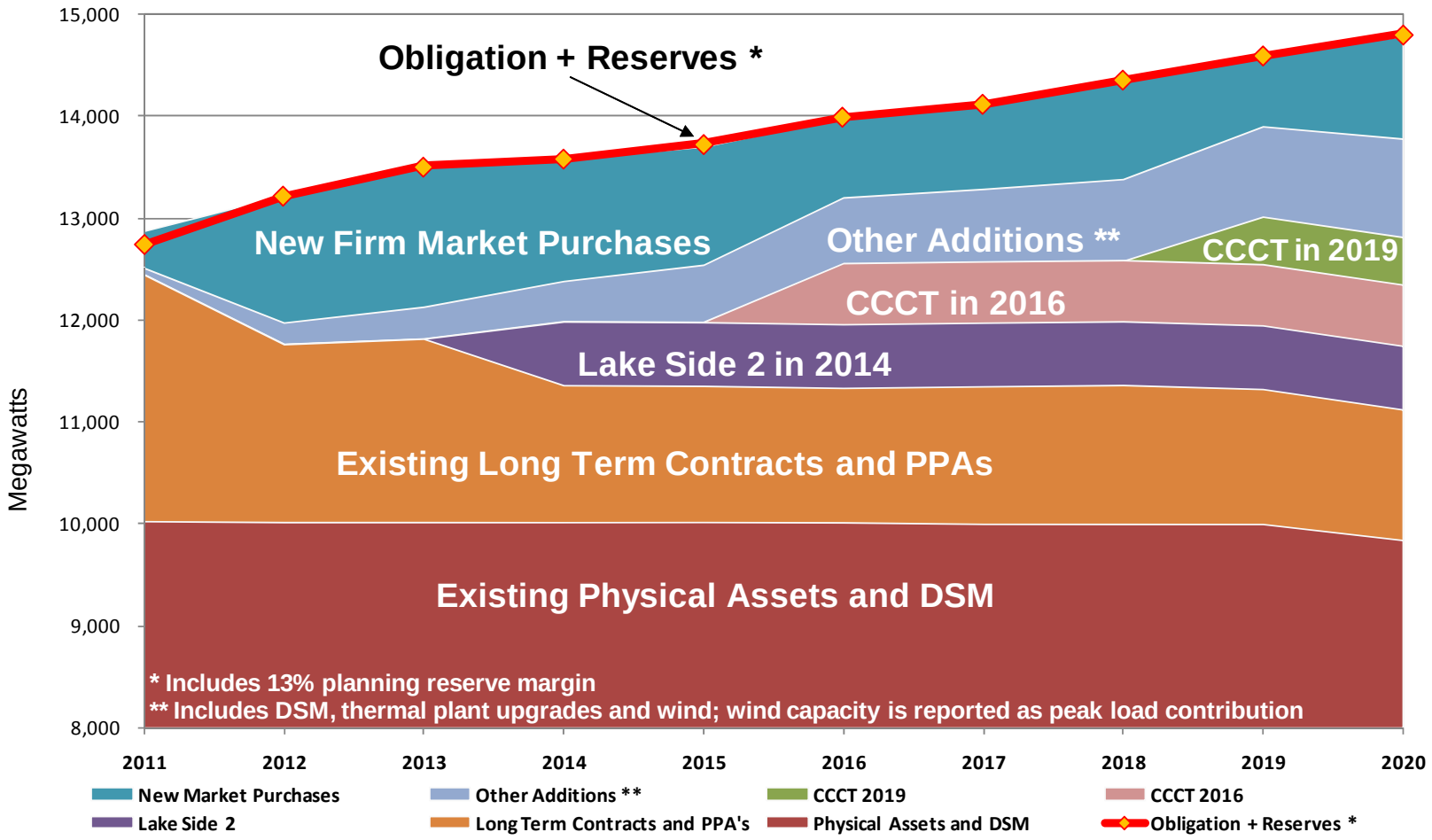
- Heavy load hour energy deficits begin in 2011



West-side Energy Balance



Addressing PacifiCorp's Peak Capacity Deficit



2011 IRP Resource Strategies – DSM

- Energy efficiency: acquire up to 1,200 MW of cost-effective capacity by 2020 (~4.5 million MWh)
  - Washington, 79 MW by 2020 (~383 thousand MWh)
  - Preferred portfolio includes about 2,560 MW by 2030 (~10.7 million MWh)
- Load control: acquire up to 250 MW of cost-effective irrigation load control, commercial curtailment, and residential direct load control by 2020 (~60 MW in the west)

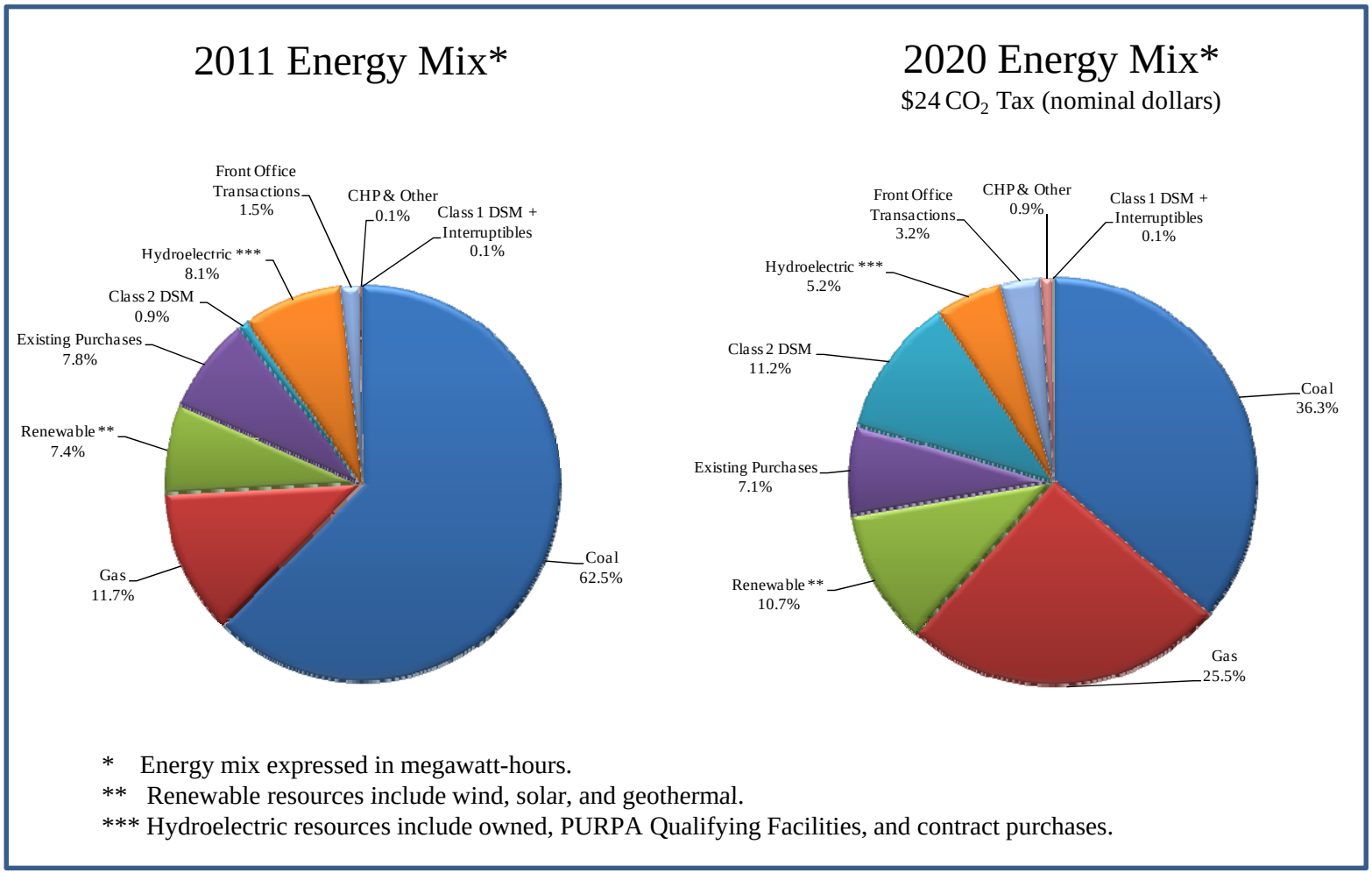
2011 IRP Resource Strategies – Thermal and Market

- Combined-cycle combustion turbines: 1,700 MW acquired by 2019
  - additions in 2014 (Lake Side 2), 2016, and 2019
- Firm market purchases: ranges from 350 MW to ~1,400 MW on an annual basis, peaking in 2013
- Coal plant turbine upgrades: 65 MW (12 MW at Jim Bridger)

2011 IRP Resource Strategies – Renewables and Distributed Generation

- Wind: Additions beginning in 2018, 800 MW added through 2020 and 2,100 MW added by 2030
  - additions driven by
    - Assumed long-term state/federal renewables policies and/or carbon policies and associated uncertainty
    - Fuel risk mitigation and resource diversity benefits
    - Federal production tax credit assumed to fully expire by 2015
- Distributed generation: acquire up to 100 MW by 2020
  - Combined Heat & Power, ~50 MW
  - Solar photovoltaic programs
  - Investigate cost-effectiveness of a solar hot water heating program
- Energy storage evaluation

Resource Energy Mix: 2011 versus 2020



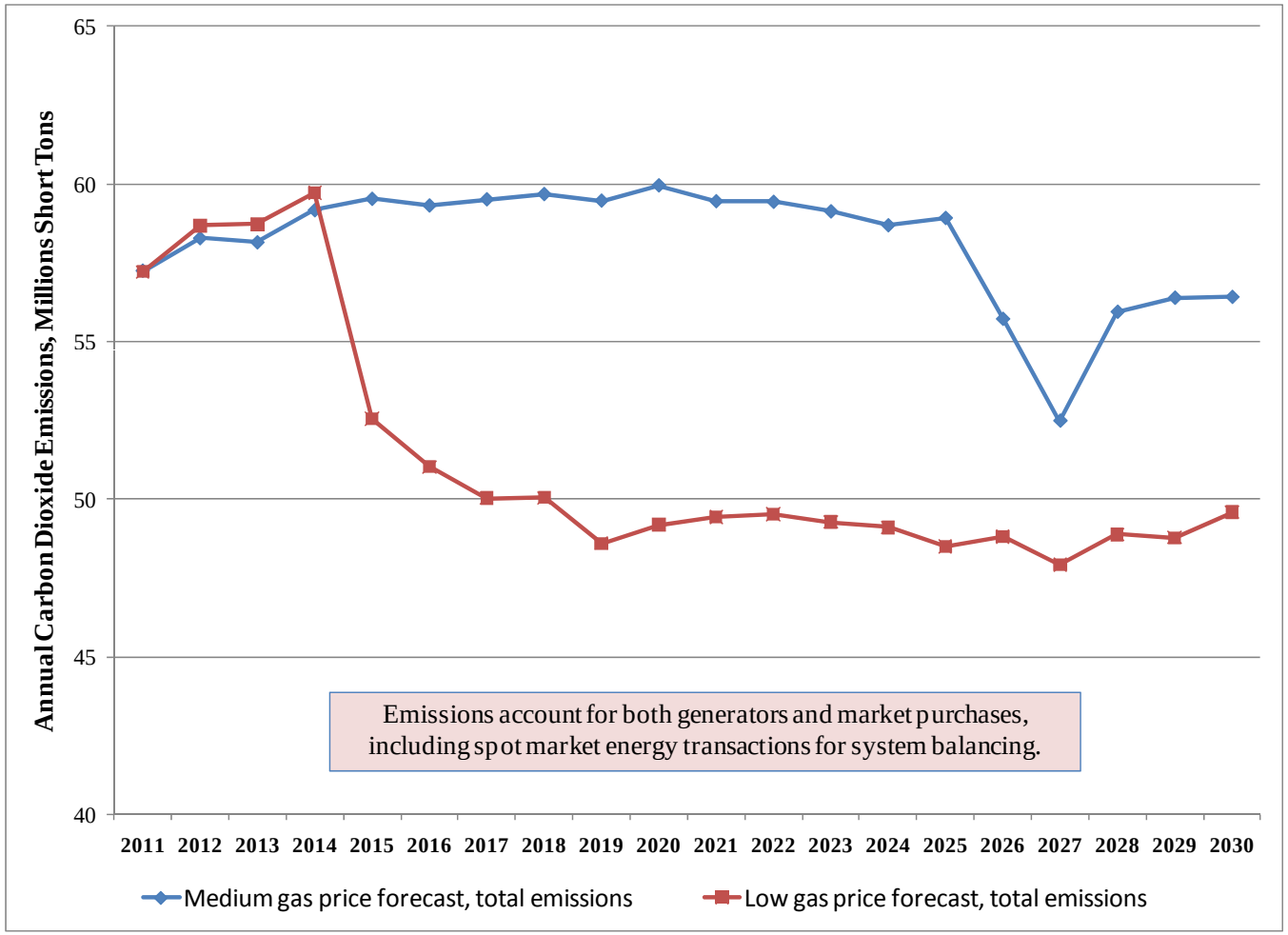
* Energy mix expressed in megawatt-hours.

** Renewable resources include wind, solar, and geothermal.

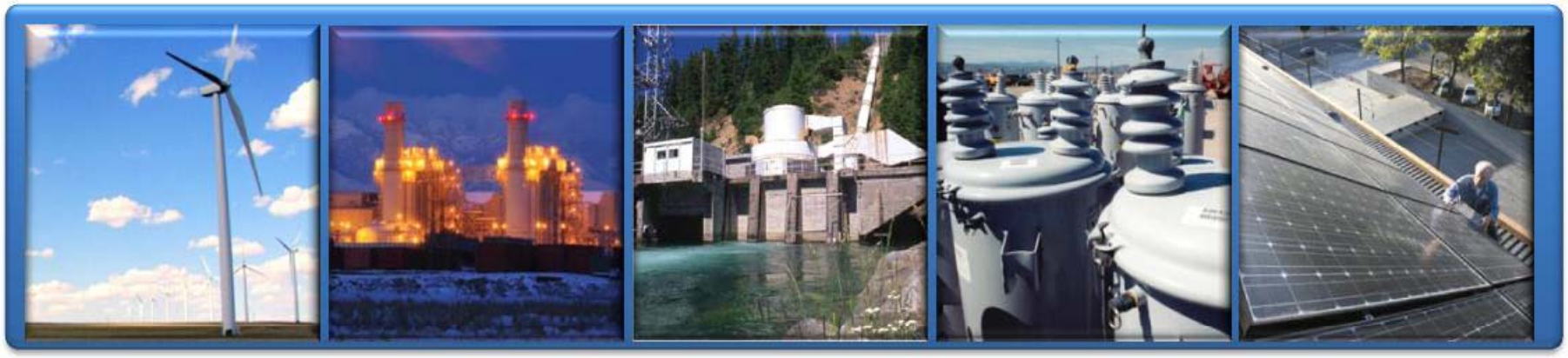
*** Hydroelectric resources include owned, PURPA Qualifying Facilities, and contract purchases.

Carbon Dioxide Emissions Trend

Based on nominal $19/ton CO_2 Tax beginning in 2015



- Gas prices have a significant impact on CO_2 emissions—lower prices lead to lower coal plant utilization and greater gas plant reliance



Energy Gateway Status and IRP Scenario Analysis

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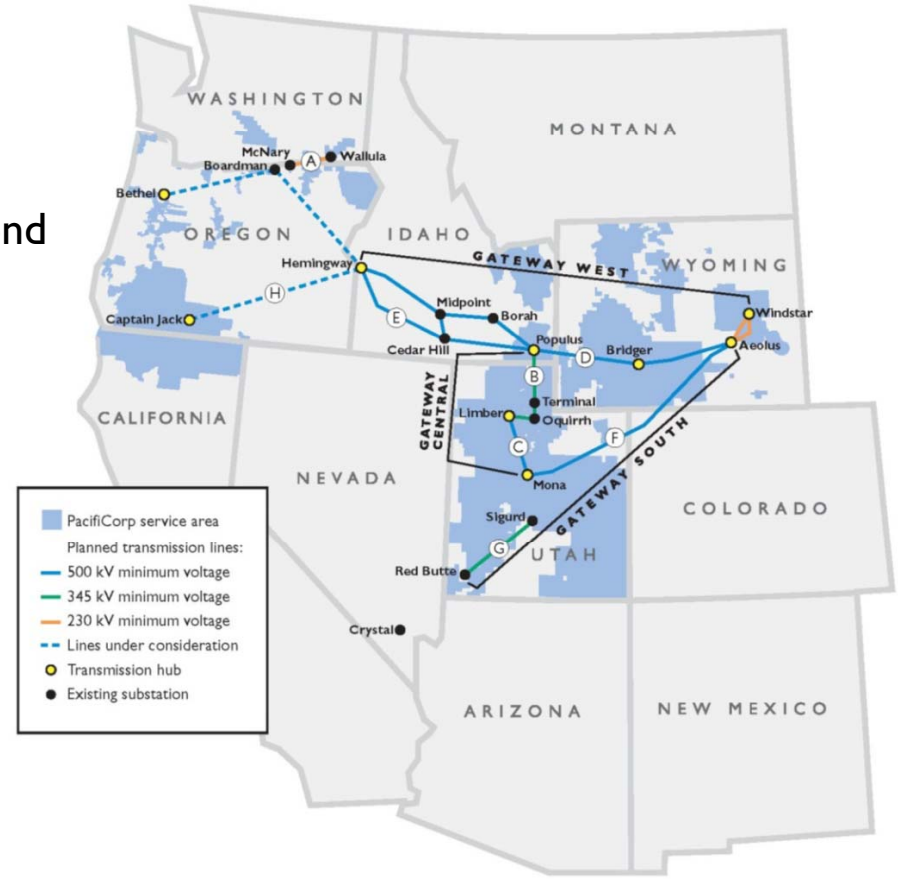
PacifiCorp Energy

Energy Gateway Overview

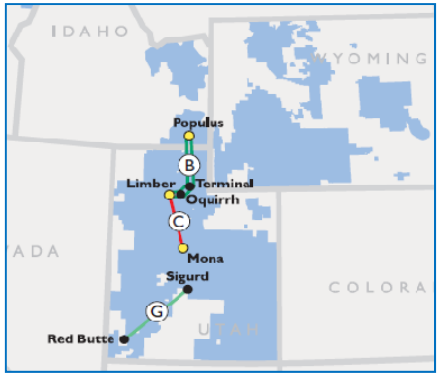
- **Key Principles**
  - Secure capacity for the long-term benefit of customers
  - Load service needs first, regional needs second
  - Support multiple resource scenarios
  - Secure regulatory and community support
  - Build it
- **Highlights**
  - Approximately 2,000 new line miles
  - Multi-year, multi-billion dollar investment
  - Segment "B" completed November 2010
  - Segment "C" under construction
  - Ratings and license obtained from WECC to interconnect and operate all segments



This map is for general reference only and reflects current plans.
It may not reflect the final routes, construction sequence or exact line configuration.

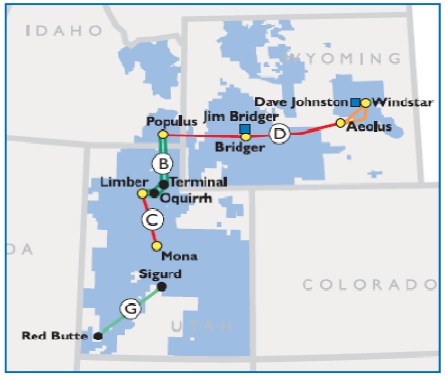
2011 IRP *System Optimizer* Scenarios

Scenario 1



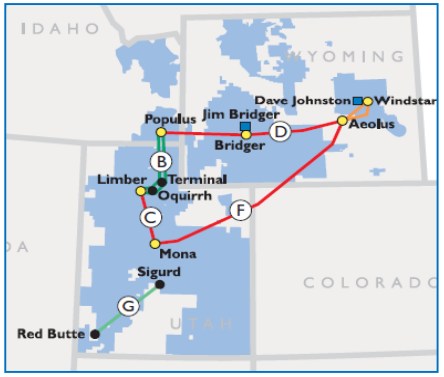
Wind (MWs)	
East	811
West	1421
Total	2232

Scenario 2



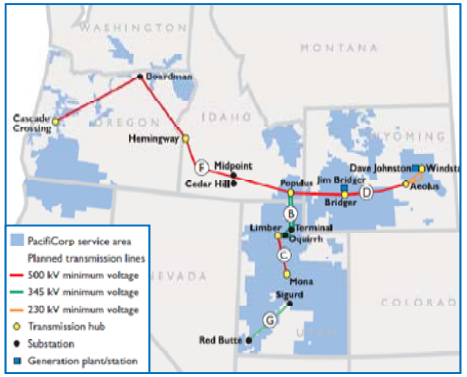
Wind (MWs)	
East	1758
West	284
Total	2042

Scenario 3



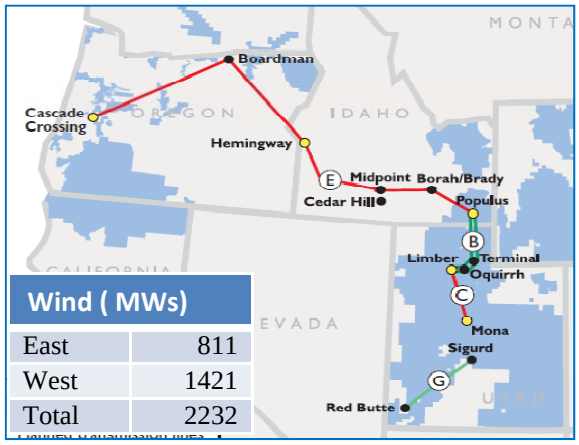
Wind (MWs)	
East	1768
West	300
Total	2068

Scenario 4



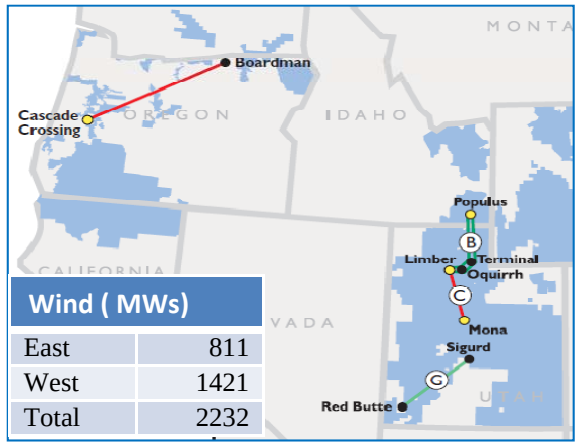
Wind (MWs)	
East	1758
West	284
Total	2042

Scenario 5



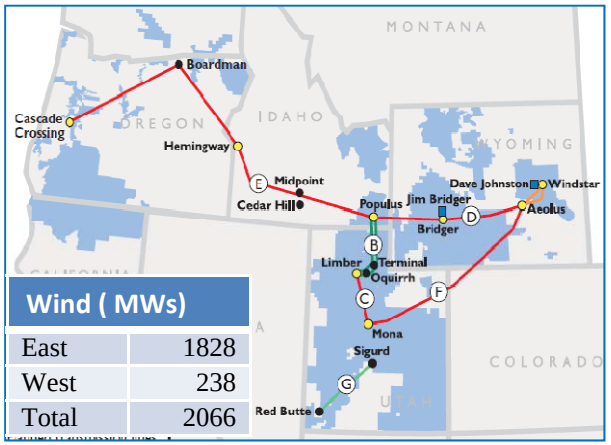
Wind (MWs)	
East	811
West	1421
Total	2232

Scenario 6



Wind (MWs)	
East	811
West	1421
Total	2232

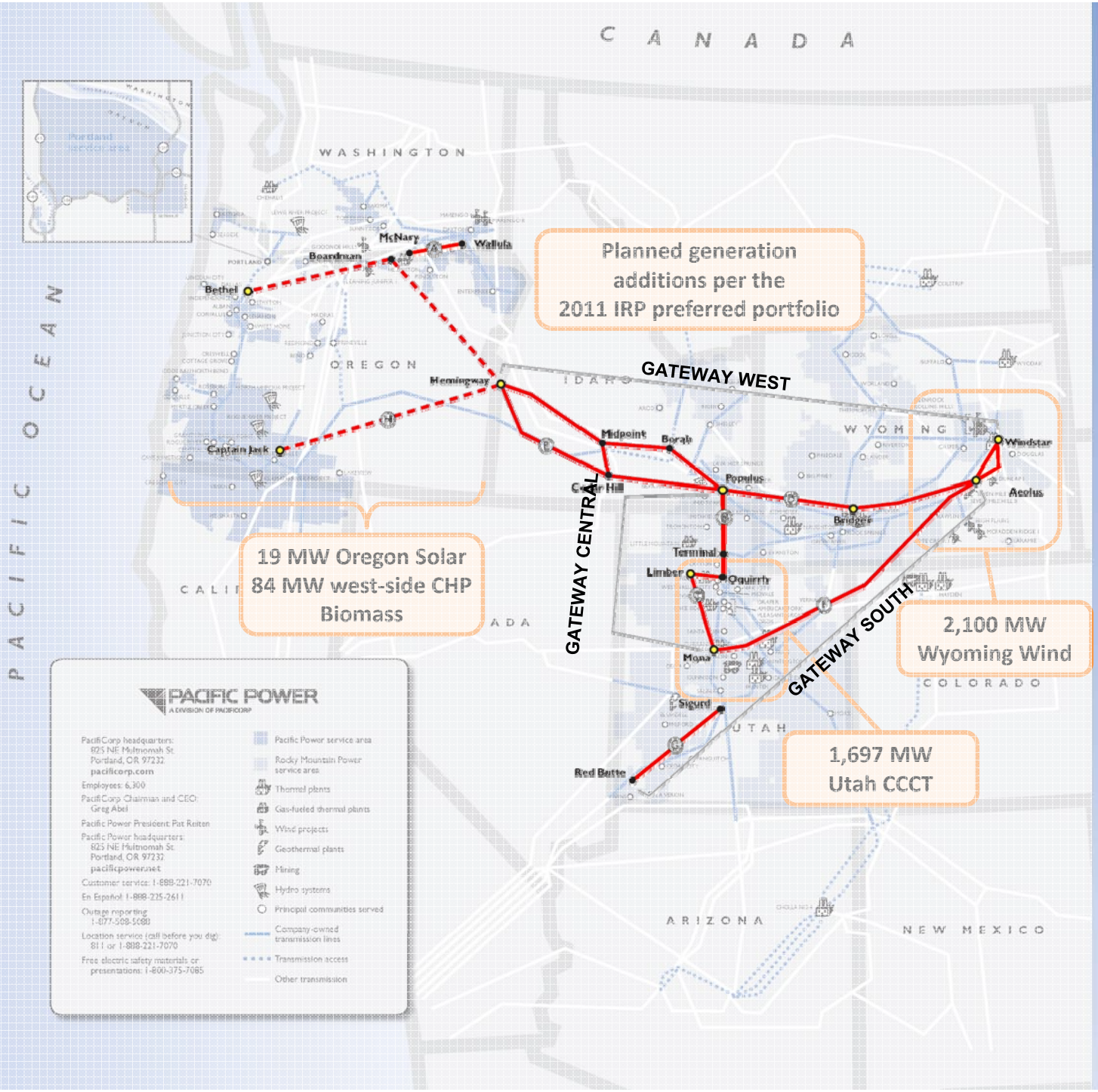
Scenario 7



Wind (MWs)	
East	1828
West	238
Total	2066

Foundational Assumption: Green Resource Future

- The IRP considered "green resource" and "incumbent resource" futures based on varying RPS and CO_2/gas price assumptions
- Seven Energy Gateway scenarios modeled
- The full Energy Gateway footprint (Scenario 7) provides the necessary capacity for a green resource future, with a PVRR $830 to $907 million lower than a limited transmission expansion (Scenario 1)
- However, without the mandate for additional renewables consistent with a green resource future, and regulatory support for associated transmission, the risk of building increases significantly
- Regulatory support is critically important to these investments materializing



PACIFIC POWER
A DIVISION OF PACIFICORP

PacifiCorp headquarters:
825 NE Multnomah St.
Portland, OR 97232
pacificorp.com

Employees: 6,300

PacifiCorp Chairman and CEO:
Greg Abel

Pacific Power President: Pat Reiten

Pacific Power headquarters:
825 NE Multnomah St.
Portland, OR 97232
pacificpower.net

Customer service: 1-888-221-7070

En Español: 1-888-225-2611

Outage reporting:
1-877-508-5088

Location service (call before you dig):
811 or 1-888-221-7070

Free electric safety materials or presentations: 1-800-375-7085

- Pacific Power service area
- Rocky Mountain Power service area
- Thermal plants
- Gas-fueled thermal plants
- Wind projects
- Geothermal plants
- Mining
- Hydro systems
- Principal communities served
- Company-owned transmission lines
- Transmission access
- Other transmission

CUSTOMERS & SERVICE AREA

Service area	136,000 square miles
Transmission lines	16,200 miles
Distribution lines	62,800 miles
Substations	900
Customers served	1.7 million

CUSTOMER & SALES PROFILE	KWH SALES	CUSTOMERS
Residential	30%	85%
Commercial	30%	13%
Industrial	39%	2%
Other	1%	

PACIFIC POWER

Pat Reiten, President

Oregon customers	557,778	32%
Washington customers	127,253	7%
California customers	45,095	3%

ROCKY MOUNTAIN POWER

Richard Walje, President

Utah customers	796,908	46%
Wyoming customers	134,799	8%
Idaho customers	70,982	4%

PACIFICORP ENERGY

Micheal Dunn, President

GENERATION

ENERGY SOURCE	CAPACITY (MW)	ENERGY (MWH)
Coal	58%	62%
Natural gas	21%	12%
Hydro	11%	5%*
Wind and other	10%	5%*
Energy purchased		16%

Company-owned net generation capacity: 10,623 megawatts (MW)

* PacifiCorp does not currently hold title to all the renewable energy attributes associated with generation from all these facilities.

MAJOR OWNED PLANTS INCLUDE:

THERMAL

PLANT	TYPE	MW (NET CAPACITY)
Jim Bridger	Coal	1,412†
Hunter	Coal	1,137†
Huntington	Coal	911
Dave Johnston	Coal	762
Naughton	Coal	700
Lake Side	Natural gas	558
Currant Creek	Natural gas	550
Chehalis	Natural gas	520
Cholla No. 4	Coal	395
Gadsby	Natural gas	351
Wyodak	Coal	268†
Hermiston	Natural gas	237†
Carbon	Coal	172
Craig	Coal	165†
Colstrip	Coal	148†
Hayden	Coal	78†
Little Mountain	Natural gas	14

HYDRO

MAJOR HYDRO PROJECTS	MW (NET CAPACITY)
Lewis River (3 plants)	578
North Umpqua River (8 plants)	200
Klamath River (4 plants)	170
Bear River (4 plants)	105
Rogue River	52
Minor hydro projects	52

WIND & GEOTHERMAL

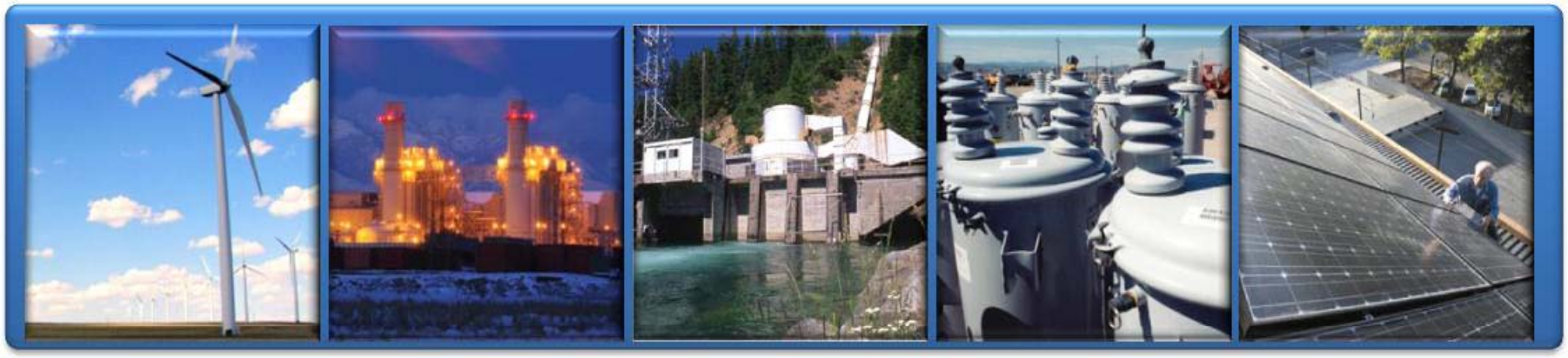
PROJECT	TYPE	MW (NET CAPACITY)
Marengo	Wind	140
Marengo II	Wind	70
Dunlap I	Wind	111
Leaning Juniper I	Wind	101
Seven Mile Hill	Wind	99
Seven Mile Hill II	Wind	20
High Plains	Wind	99
Glenrock	Wind	99
Rolling Hills	Wind	99
Glenrock III	Wind	39
Goodnoe Hills	Wind	94
Foote Creek I	Wind	33†
McFadden Ridge I	Wind	28
Blundell	Geothermal	34

† PacifiCorp's portion of a jointly owned project

MINING

PLANT SERVED	MINING METHOD	RECOVERABLE TONS (MILLIONS)
Jim Bridger	Surface/Underground	94
Huntington, Hunter & Carbon	Underground	35
Craig	Surface	46

Figures as of PacifiCorp Form 10-K, 12/31/10



Portfolio Modeling and Preferred Portfolio Selection Approach

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2011 IRP Modeling Approach - Steps

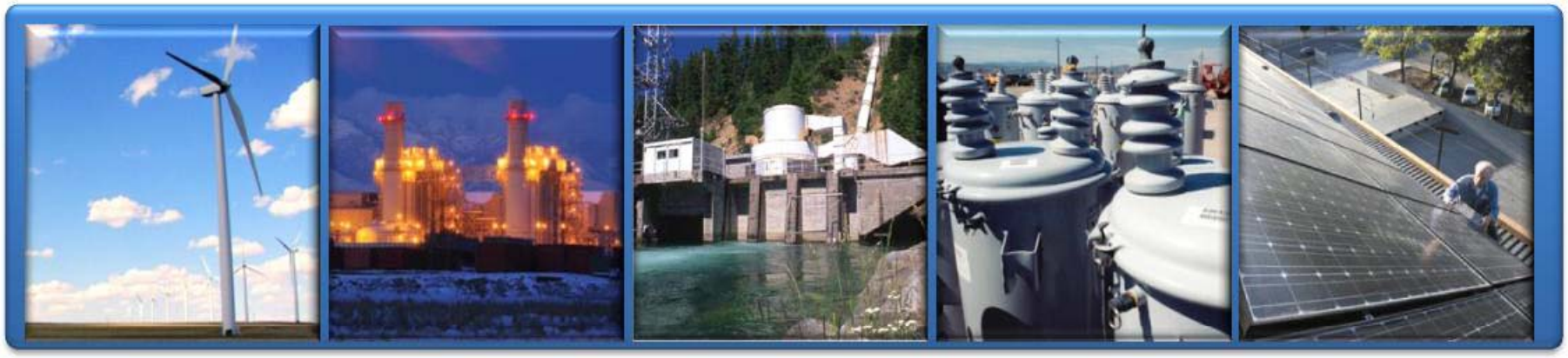
- Use capacity expansion optimization tool, *System Optimizer*, to develop alternative resource portfolios that meet capacity, energy, and resource-related state regulatory requirements, based on numerous input scenarios
- Conduct Monte Carlo production cost modeling of each portfolio (100 simulations resulting in 100 distinct portfolio costs) – accounts for stochastic behavior of loads, prices, and plant availability
- Select top-performing portfolios based on simulations with alternative CO_2 tax levels
  - Best combinations of low "average" and "upper-tail" portfolio costs

2011 IRP Modeling Approach - Steps

- Final screen: compare other performance metrics, including risk-adjusted cost, 10-year customer rate impact, CO_2 emissions, supply reliability, etc
- Select top three portfolios and simulate with *System Optimizer* given different deterministic cost assumptions (deterministic risk assessment)
- Select top-performing portfolio

2011 IRP Modeling Approach - Steps

- Preferred portfolio determination
  - Evaluate top portfolio based on resource-specific acquisition risks
    - Geothermal resource development costs ("dry hole" risk)
    - Preferred wind schedule for meeting regulatory compliance requirements, address public policy goals, mitigate fuel price risk
    - Timing of next major thermal resource (after Lake Side 2 in 2014)
  - Refine preferred portfolio resources and re-optimize with *System Optimizer* to ensure that capacity reserve margins are met for every year



Key IRP Inputs/Assumptions

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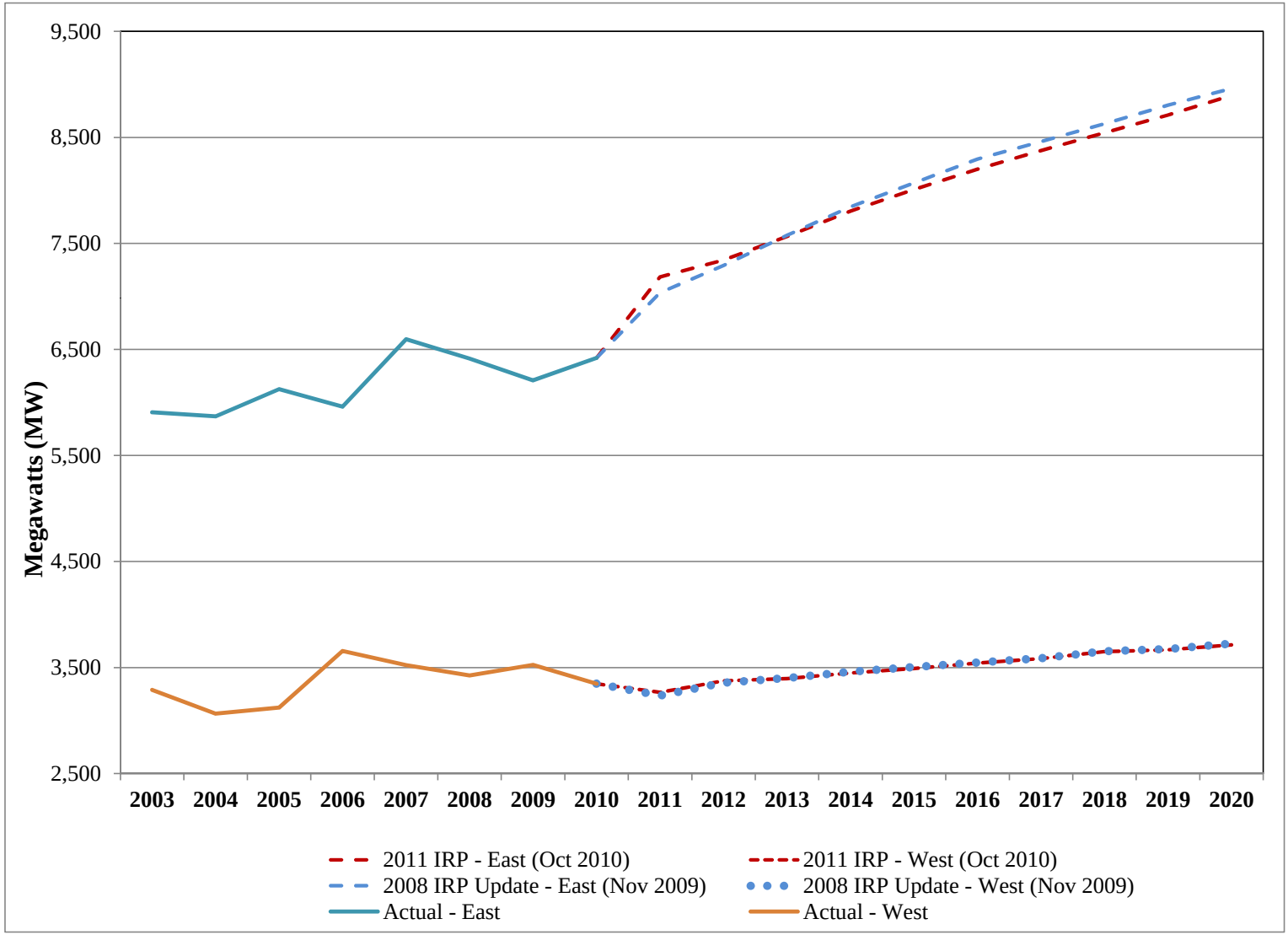
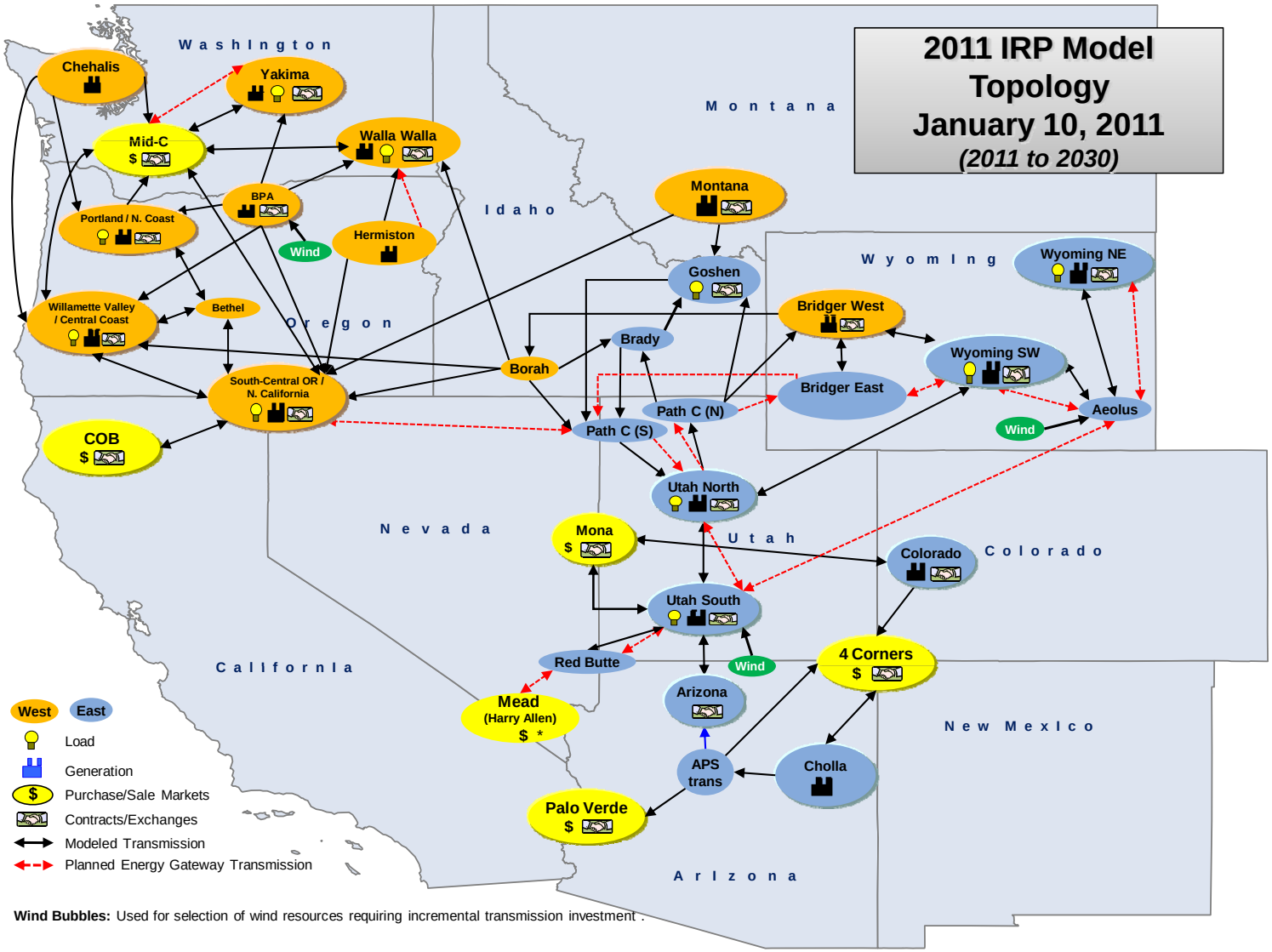
PacifiCorp Energy

Load Forecast - Comparison



Transmission System Model Topology



Wind Bubbles: Used for selection of wind resources requiring incremental transmission investment .

Resource Option Categories

Gas-fired, Utility Scale	Other Thermal, Utility Scale	Renewable, Utility Scale	Energy Storage, Utility Scale	Distributed Generation	Load Control (Class 1 DSM)	Energy Efficiency (Class 2 DSM)	Demand Response (Class 3 DSM)	Transmission
Cogeneration	Supercritical Pulverized Coal without CCS	Wind, 35% and 29% Capacity Factors	Advanced Battery Storage	Combined Heat & Power, Reciprocating Engine	Residential and Small Commercial Air Conditioning	Nine measure bundles grouped by cost for five states plus three measure bundles for Oregon provided by the Energy Trust of Oregon	Residential Time-of-Use	Energy Gateway Central
Aeroderivative SCCT	Supercritical pulverized coal with CCS	Geothermal, Brownfield (Dual Flash)	Hydro Pumped Storage	Combined Heat & Power, Gas Turbine	Residential Electric Water Heating	One bundle for Compact Florescent Lamps for 2011 and 2012.	Commercial Critical Peak Pricing	Energy Gateway Central plus Windstar-Populus
Intercooled Aeroderivative SCCT	Supercritical pulverized coal with retrofit CCS	Geothermal, Greenfield (Binary)	Compressed Air Energy Storage	Microturbine	Irrigation Direct Load Control		Commercial/ Industrial Demand Buyback	Energy Gateway Central plus Windstar-Populus plus Aeolus-Mona
Internal Combustion Engine	Integrated Gasification Combined Cycle with CCS	Solar, Thin Film Photovoltaic		Fuel Cell	Commercial/ Industrial Curtailment (includes distributed stand-by generation)		Commercial/ Industrial Real Time Pricing	Energy Gateway Central plus Windstar-Populus plus Aeolus-Mona plus Populus-Hemingway/Hemingway-Boardman-Cascade Crossing
SCCT Frame	Nuclear	Solar Concentrating (Thermal Trough with Gas Backup)		Commercial biomass (Anaerobic Digester)	Commercial/ Industrial Thermal Energy Storage		Mandatory Irrigation Time-of-Use	
CCCT: Wet-Cooled, Dry-Cooled, F Class, G Class, H Class		Solar Concentrating (Thermal Trough)		Rooftop Photovoltaic				
		Biomass		Solar Water Heaters				
		Hydrokinetic		Solar Attic Fans				

* CCS = Carbon Capture and Sequestration, SCCT = Simple-Cycle Combustion Turbine, CCCT = Combined-Cycle Combustion Turbine

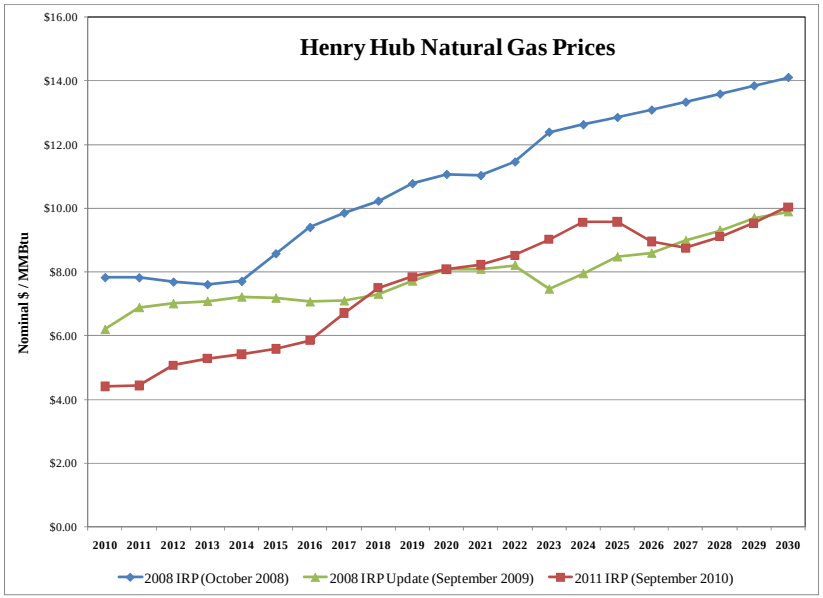
Natural Gas Price Forecast Scenarios

- Three underlying forecasts—High, Medium, Low—support development of scenario forecasts reflecting CO_2 prices and other IRP input assumptions

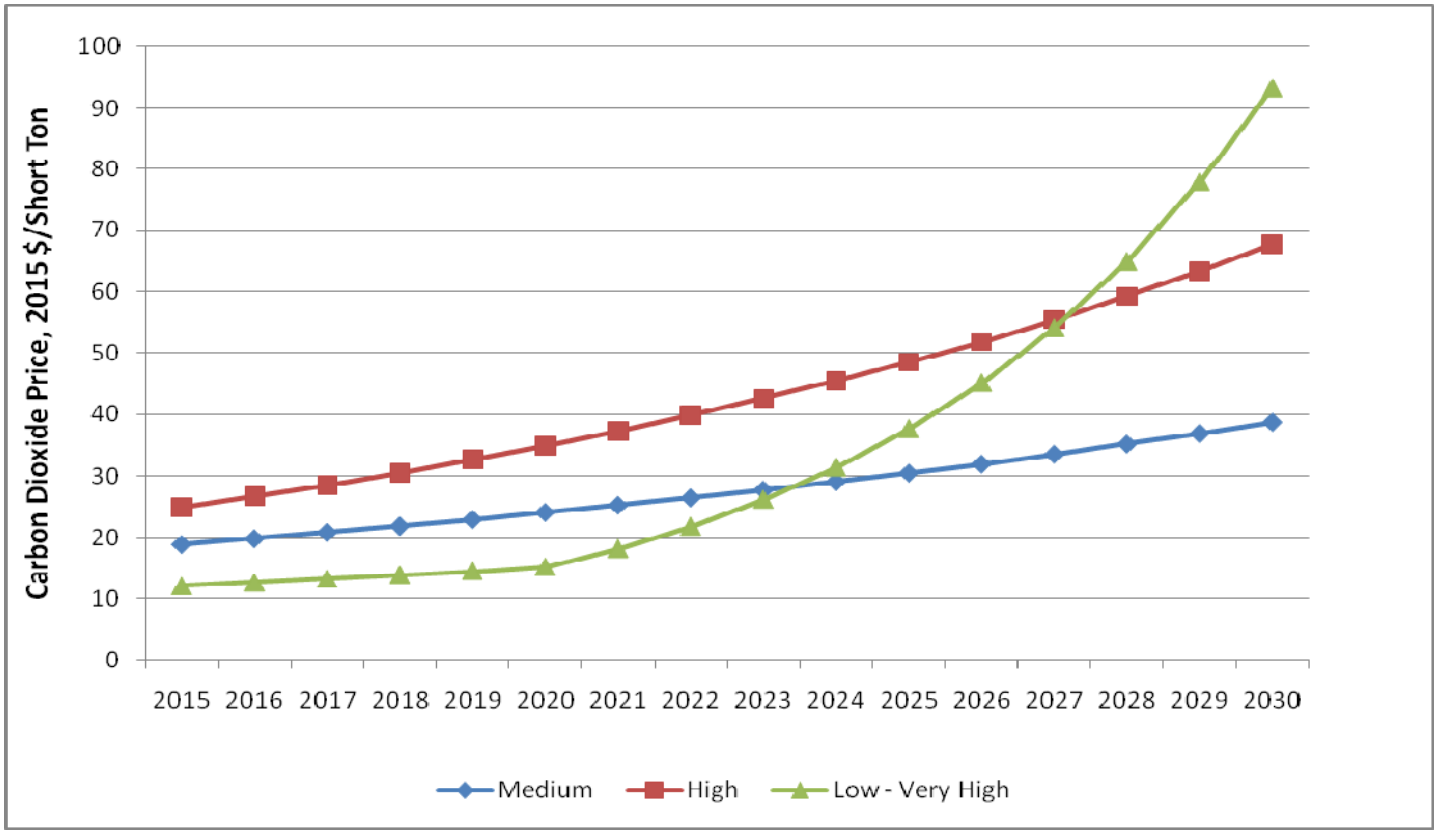
Henry Hub Natural Gas Price Forecast Summary (nominal $/MMBtu)

Forecast Name	2011	2015	2020	2025	2030
High	$4.41	$8.41	$10.99	$14.55	$15.97
Medium	$4.41	$7.43	$8.09	$9.58	$10.04
Low	$4.41	$4.79	$5.70	$6.75	$7.41

- Gas price forecasts significantly lower than the 2008 IRP and 2008 IRP Update



Carbon Dioxide Price Scenarios



- Also modeled CO_2 emissions physical hard cap scenarios
  - Base – 15% below 2005 emission levels by 2020, and 80% by 2050
  - Oregon – 10% below 1990 emission levels by 2020, and 80% by 2050

Conclusion

- 2011 IRP complies with Washington's IRP guidelines
  - Lowest reasonable cost criterion, considering:
    - Market volatility risks
    - Other risks
    - Washington state resource preferences
    - Resource dispatchability for resource mix
  - Conservation and load management assessment
    - Potential study available at: http://www.pacificorp.com/es/dsm.html
  - Short term action plan and progress report (Chapter 9)

Questions?