PACIFIC POWER
A DIVISION OF PACIFICORP

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June 24, 2015

VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY

Steven V. King
Executive Director and Secretary
Washington Utilities and Transportation Commission
1300 S. Evergreen Park Drive SW
P.O. Box 47250
Olympia, WA 98504-7250

Re: Docket No. UE-140546—2015 Integrated Resource Plan Presentation

Pacific Power & Light Company, a division of PacifiCorp (Pacific Power or Company), submits for filing its presentation for the Washington Utilities and Transportation Commission's Recessed Open Meeting on Pacific Power's 2015 Integrated Resource Plan.

Please direct informal inquiries to Ariel Son, Manager, Regulatory Projects, at (503) 813-5410.

Sincerely,

R. Bryce Dalley /AS
R. Bryce Dalley
Vice President, Regulation

Enclosure

cc: Jeremy Twitchell

2015
Integrated Resource Plan

Washington Utilities and Transportation Commission

Docket UE-140546

Recessed Open Meeting

June 25, 2015

PACIFIC POWER
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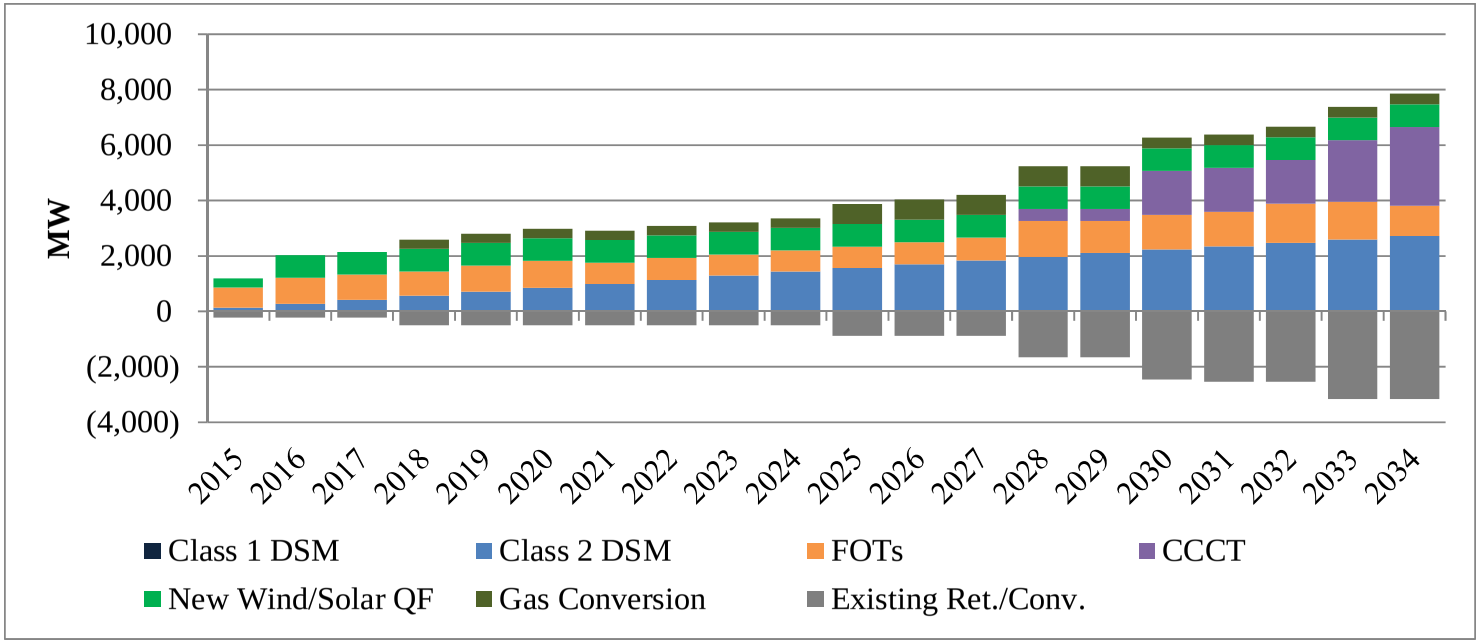
2015 IRP Highlights

- No new generating resources in the action plan.
  - Near-term resource needs continue to be met with demand-side management (DSM) and Front office Transactions (FOTs).
  - The first new generating resource, a 423 MW CCCT, is not needed until 2028.
  - We will issue at least annually, RFPs seeking unbundled RECs that will qualify in meeting Washington renewable portfolio standard targets through 2017.
- No new emission control installations in the action plan.
  - Naughton Unit 3 natural gas conversion in 2018.
  - Cholla Unit 4 permitting to cease coal-fueled operations by the end of April 2025.
  - Currently no plans to install selective catalytic reduction (SCR) at Dave Johnston Unit 3 or Wyodak.
  - By the end of the 20-year planning horizon, it is assumed that approximately 2,800 MW of existing coal-fueled generation will either be retired or converted to burn natural gas.
- Complete construction of the transmission customer-driven Wallula to McNary transmission project and continue Energy Gateway permitting activities.

Key Elements of PacifiCorp's IRP Process

- 7 Public Input Meetings
  - Initiated June 5, 2014
  - 4 of the 7 meetings scheduled as two-day sessions
- 5 State-Specific Meetings
  - Held over the course of June 2014
- 2 Technical Workshops
  - Portland/Salt Lake City to review the 111(d) modeling tools
- Portfolio Modeling
  - 33 core case portfolios
  - 15 sensitivity studies
- Public Input/Feedback Form
- 10 Supplemental Studies
  - Conservation Potential Study
  - Distributed Generation Study
  - Wind Integration Study
  - Planning Reserve Margin Study
  - Wind & Solar Capacity Contribution Study
  - Stochastic Parameter Study
  - Anaerobic Digester Resource Assessment
  - Energy Storage Screening Study
  - Flexible Resource Needs Assessment
  - Resource Adequacy Evaluation
- Filed March 31, 2015
  - Filing includes 5 DVD data disks

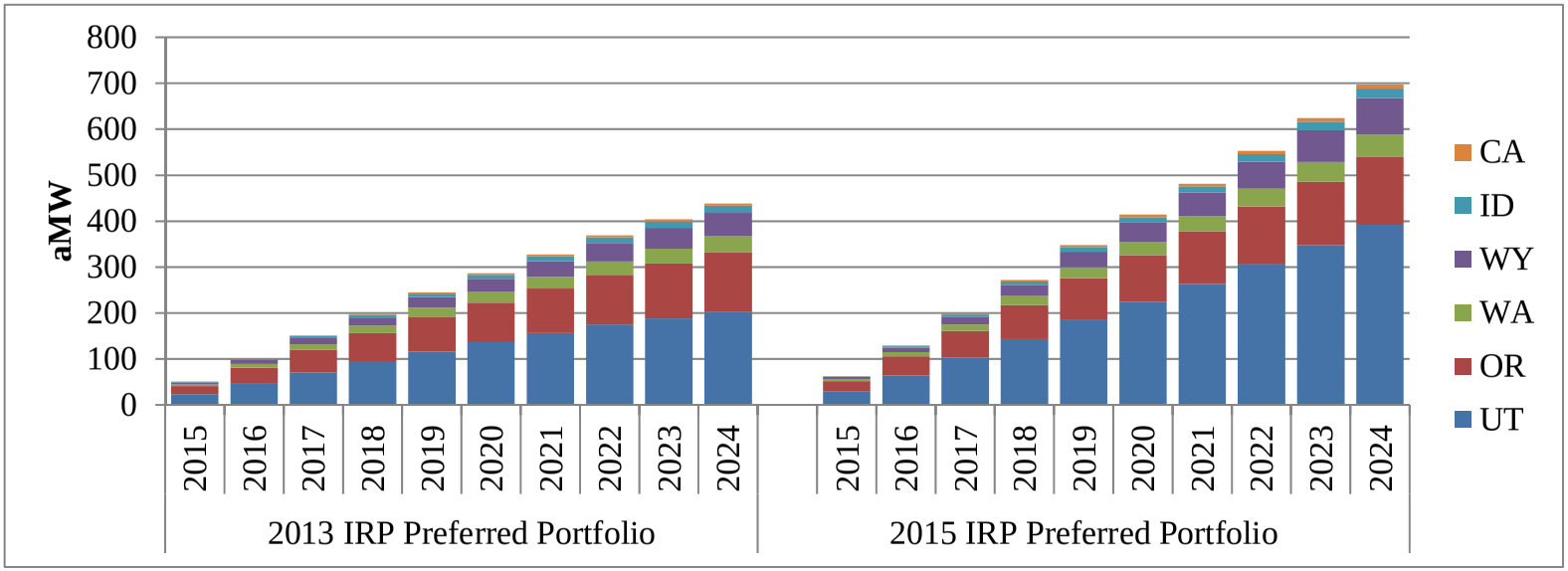
2015 IRP Preferred Portfolio



- Firm market purchases (labeled as FOTs) are down 29% relative to the 2013 IRP
- Accumulated acquisition of new energy efficiency resources account for 86% of load growth over the next decade
- First deferrable thermal resource, new combined cycle plant, is added the portfolio in 2028
- By 2034 approximately 2,800 MW of existing coal capacity is assumed to retire or be converted to burn natural gas
- The portfolio reflects 816 MW of qualifying facility power purchase agreements from wind and solar projects expected to come online in 2015 and 2016
- CO_2 emissions are projected to fall below 1990 levels by 2025, and fall 14% below 1990 levels by 2034

Preferred Portfolio: Class 2 DSM

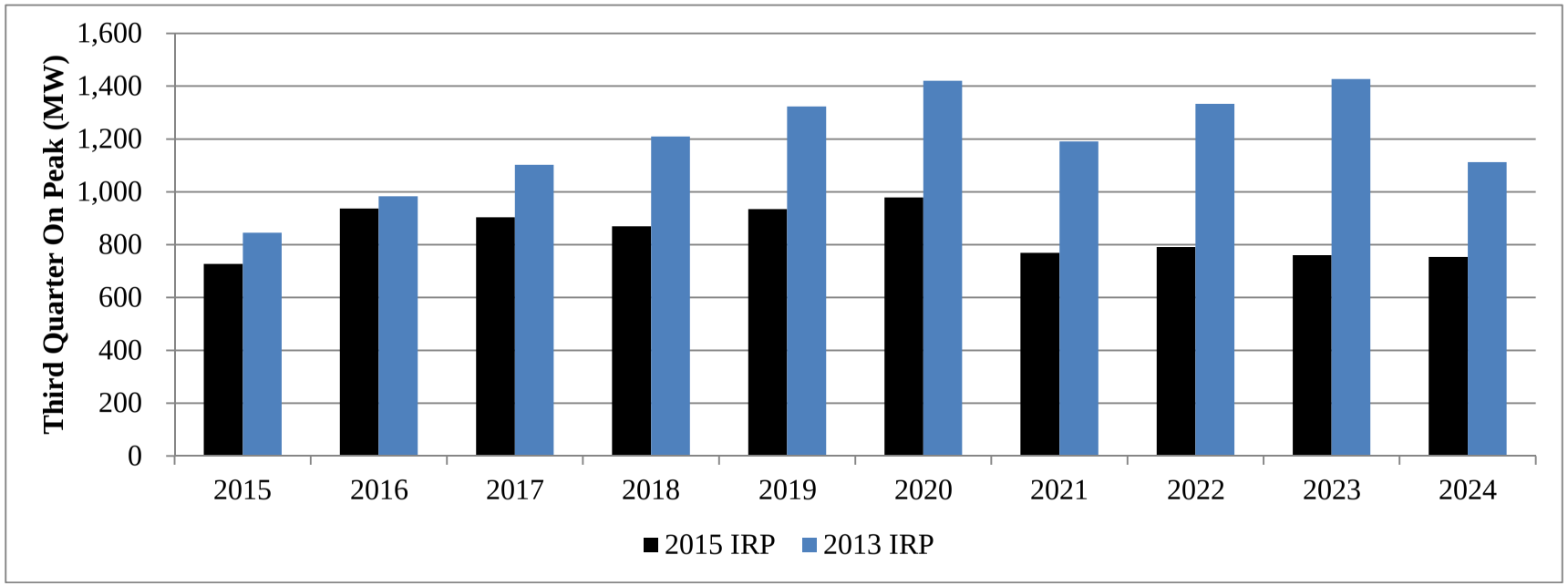
- Penetration of energy efficiency is up 59% by 2024 relative to the 2013 IRP, driven by opportunities in:
  - Cost-effective lighting
  - Heating & cooling
  - Water heating
  - Appliances
  - Industrial process end-uses



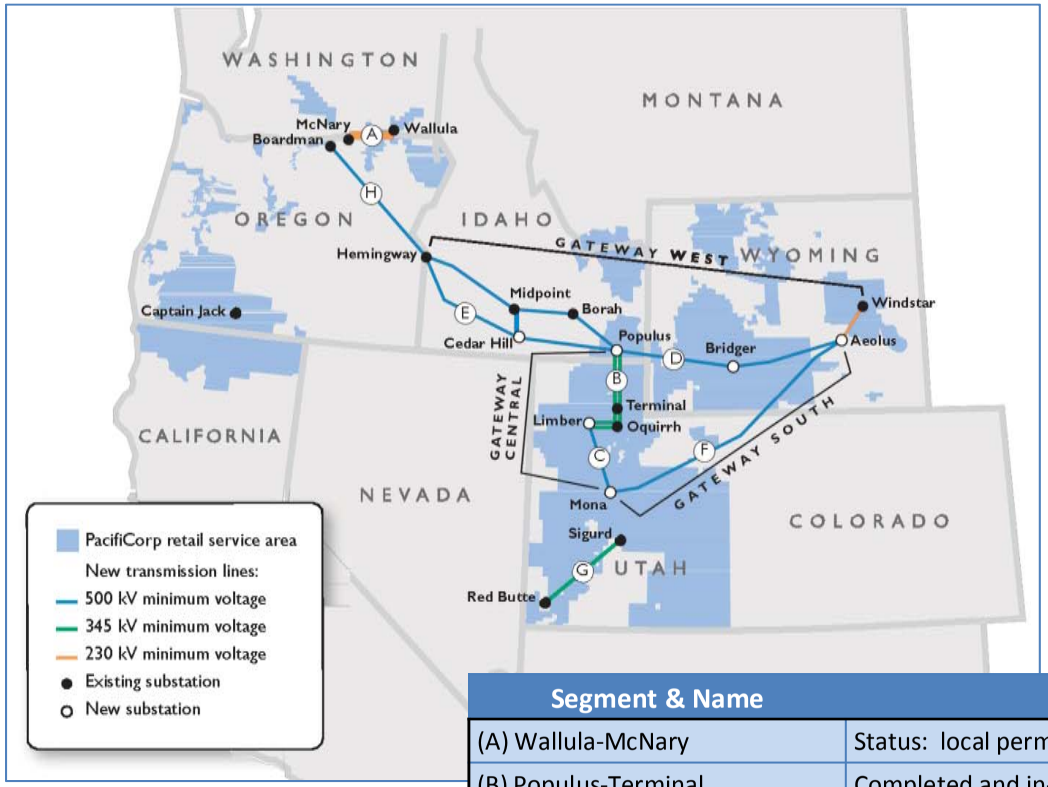
Preferred Portfolio: Front Office Transactions

- With increased energy efficiency, reliance on FOTs (or short-term firm market purchases) is reduced as compared to the 2013 IRP Preferred Portfolio.

- Over the 2015–2024 period, FOTs are approximately 29% lower when compared to the 2013 IRP preferred portfolio.
  - West-side market purchases are reduced at COB and Mid-C.
  - East-side market purchases are reduced at Mona (eliminated through the front ten years of the planning horizon).



2015 IRP – Transmission



Segment & Name	Status	Scheduled In-Service
(A) Wallula-McNary	Status: local permitting completed	2017 sponsor driven
(B) Populus-Terminal	Completed and in-service November 2010	
(C) Mona-Oquirrh	Completed and in-service May 2013	
(C) Oquirrh-Terminal	Rights-of-way acquisition underway	June 2021
(D) Windstar-Populus	Permitting underway	2019-2024
(E) Populus-Hemingway	Permitting underway	2019-2024
(F) Aeolus-Mona	Permitting underway	2020-2024
(G) Sigurd-Red Butte	Completed and in-service May 2015	
(H) Boardman to Hemingway	Pursuing joint-development and/or firm capacity opportunities with project sponsors	Sponsor driven

2015 IRP Regional Haze Scenarios

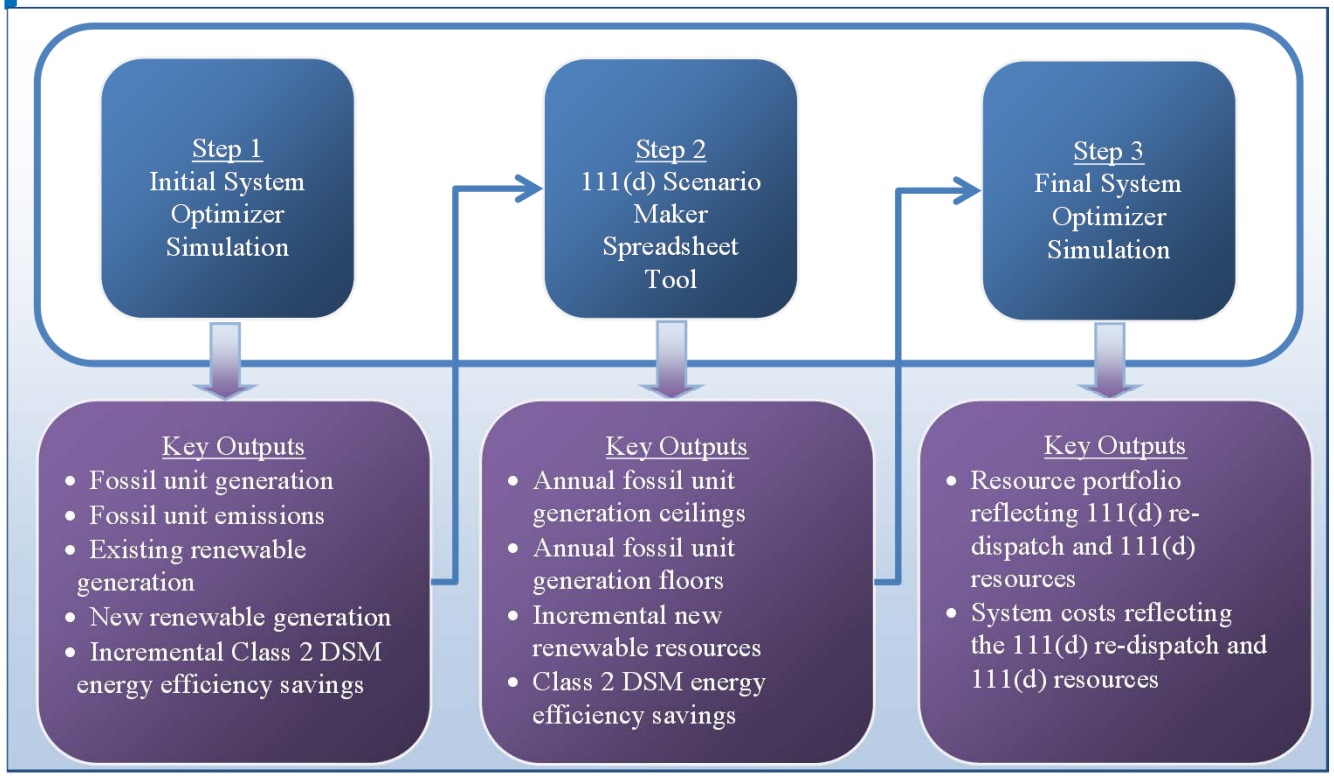
Coal Unit	Reference	RH-1	RH-2	RH-3
Dave Johnston 1	Shut Down Dec 2027	Shut Down Mar 2019	Shut Down Mar 2019	Shut Down Dec 2027
Dave Johnston 2	Shut Down Dec 2027	Shut Down Dec 2027	Shut Down Dec 2023	Shut Down Dec 2027
Dave Johnston 3	SCR by Mar 2019; Shut Down Dec 2027	Shut Down Dec 2027	Shut Down Dec 2027	Shut Down Dec 2027
Dave Johnston 4	Shut Down Dec 2027	Shut Down Dec 2032	Shut Down Dec 2032	Shut Down Dec 2027
Hunter 2	SCR by Dec 2021	Shut Down by Dec 2032	Shut Down by Dec 2024	Shut Down by Dec 2032
Huntington 1	SCR by Dec 2022	Shut Down by Dec 2036	Shut Down by Dec 2024	SCR by Dec 2022
Huntington 2	SCR by Dec 2022	Shut Down by Dec 2021	Shut Down by Dec 2021	Shut Down by Dec 2029
Jim Bridger 1	SCR by Dec 2022	Shut Down by Dec 2023	Shut Down by Dec 2023	SCR by Dec 2022
Jim Bridger 2	SCR by Dec 2021	Shut Down by Dec 2032	Shut Down by Dec 2028	SCR by Dec 2021
Wyodak	SCR by Mar 2019	Shut Down by Dec 2039	Shut Down by Dec 2032	Shut Down by Dec 2039

Common to All Scenarios:
Carbon 1&2 shutdown 2015; Cholla 4 gas conversion 2025; Colstrip 3&4 SCR 2023/2022, respectively; Craig 1&2 SCR 2021/2018, respectively; Hayden 1&2 SCR 2015/2016, respectively; Naughton 1&2 shutdown 2029; Naughton 3 gas conversion 2018, shutdown 2029; Hunter 1&3 SCR 2021/2024, respectively; and Bridger 3&4 SCR 2015/2016, respectively

111(d) Modeling in the 2015 IRP

- 111(d) Compliance Scenarios
  - Emission rate targets (all states/retail states)
  - Emission rate targets *and* future CO_2 prices
  - Mass cap (existing resources only/new and existing resources)
- Emission Rate Target Scenarios
  - State emission rate targets are applied to each PacifiCorp state
  - New combined cycle plants are subject to 111(b) and 111(d) and therefore, not allowed in Oregon, Washington, and Idaho
  - Flexible allocation of system renewable resources and energy efficiency from Idaho and California
  - Allocation of system renewables for 111(d) compliance are independent from RECs used for state RPS compliance
  - Sensitivity requiring concurrent use of RECs for RPS with 111(d) renewables

111(d) Emission Rate Target Modeling Steps



Compliance Strategies (111(d) Emission Rate Target Scenarios)

- Prioritize re-dispatch with base energy efficiency
- Prioritize re-dispatch with incremental energy efficiency
- Prioritize new renewable resources with incremental energy efficiency

Balancing Authority Area Sensitivity: S-10

- The Washington Utilities and Transportation Commission requested the Company model the East and West control areas separately:

  "The Company must model the two areas separately in the next IRP as a prerequisite for acknowledgement."

- S-10 assesses the impact of independently planning for a sub-system as compared to planning for PacifiCorp's system as a whole.

- Sub-systems are defined by PacifiCorp's east and west balancing authority areas (BAAs), also referred to as east and west control areas (ECA and WCA).

- Comparison of ECA and WCA standalone resource portfolios to benchmark system portfolio.
  - Benchmark system portfolios is derived under Regional Haze Scenario 3 and assumes unbundled REC strategy for state RPS, consistent with draft preferred portfolio.
  - Portfolio and system cost impacts are reported.
  - With and without 111(d).

S10 Sensitivity: Overview of Assumptions

- WCA standalone portfolio developed with System Optimizer.
  - Winter peak, maintain 13% planning reserve margin.
  - Allow January on-peak FOTs, maintaining limits at Mid C (775 MW), COB (300 MW), and NOB (100 MW)
  - Class 2 DSM capacity contribution updated to align with a winter peak.
  - With 111(d), assumes Chehalis is retired at the end of 2019, new CCCT resources are not allowed, and Oregon can use a WCA allocation of renewables to meet PacifiCorp's share of its 111(d) targets.
  - Without 111(d), new CCCT resources are allowed.

- ECA standalone portfolio developed with System Optimizer.
  - Summer peak, maintain 13% planning reserve margin.
  - Summer on-peak FOTs, no access to west-side FOTs, but inclusion of Mona (300 MW).
  - Class 2 DSM capacity contribution updated to align with a summer peak.
  - With 111(d), assume flexible allocation of ECA renewable resources can be used to meet PacifiCorp's share of Utah and Wyoming emission rate targets.

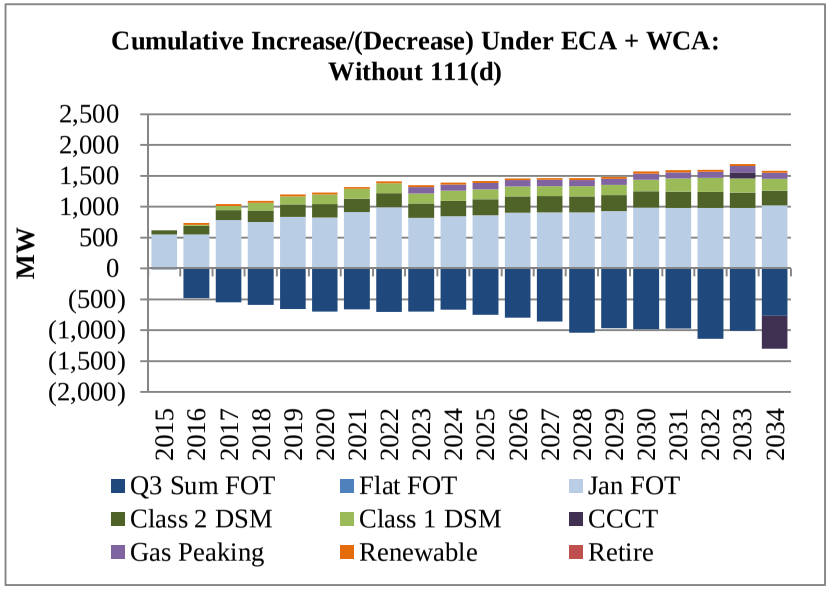
S-10 Sensitivities: Summary of System Costs

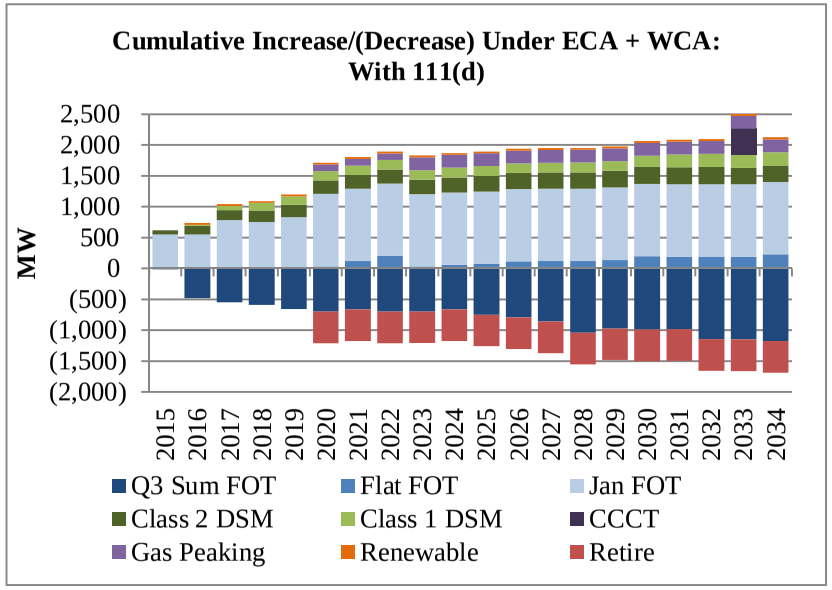
Increase/(Decrease) Relative to the System Benchmark ($m)	System Optimizer	PaR Stochastic Mean		
	Medium Gas	Low Gas	Medium Gas	High Gas
Without 111(d)	$1,149	n/a	n/a	n/a
With 111(d)*	$1,326	$2,031	$2,109	$2,158

- System Optimizer results show that planning the system on a WCA standalone and ECA standalone basis leads to higher costs.
- The incremental cost of planning for two standalone system increases under 111(d).

*Note, PaR results reflect resource portfolios developed under 111(d) but do not capture re-dispatch costs under 111(d).

S-10 Sensitivity : ECA+WCA Portfolio Results





- As compared system benchmark portfolio, combined standalone ECA and WCA portfolios cannot rely on resource selections in the other BAA to meet their respective planning reserve margin targets.
- January FOTs are needed for the WCA; and incremental DSM is needed for the ECA.
- Without the ECA, the WCA includes a gas peaking resource in 2023 without 111(d) and in 2020 with 111(d) (coinciding with the retirement at Chehalis) and needs January FOTs
- Without the WCA, the ECA no longer has access to west side FOTs and needs incremental Class 1 and Class 2 DSM resources; Mona FOT limit had to be increased to allow the ECA to achieve its target 13% planning reserve margin in 2015 – 2017 (711 MW, 459 MW, and 359 MW, respectively)
- Total increase in System Optimizer PVRR = $1,149m without 111(d) and $1,326m with 111(d)