

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Docket Nos. UE-111048 and UG-111049
Puget Sound Energy, Inc.'s
2011 General Rate Case

PUBLIC COUNSEL DATA REQUEST NO. 038

PUBLIC COUNSEL DATA REQUEST NO. 038:

Please provide economic analysis which demonstrates that the acquisition of LSR Phase 1 before it is required to meet EIA RPS targets produces benefits that offset the cost of early acquisition.

Second Revised Response:

Puget Sound Energy, Inc. ("PSE") hereby revises its First Revised Response to Public Counsel Data Request No. 038 to correct a reference to workpapers supporting the Re-run of the 2009 Integrated Resource Plan ("IRP") Models. In lieu of the workpapers on Aliza Seelig's Disk #1, please use the workpapers supplied in Attachment A to PSE's Response to Public Counsel's Data Request No. 288.

Accordingly, please find the following Second Revised Response to Public Counsel Data Request No. 038, which corrects the reference to these workpapers:

Pages 19 through 28 of the Prefiled Direct Testimony of Ms. Seelig, Exhibit No. ____ (AS-1HCT), discusses the following analyses related to the benefits of early acquisition.

- 1) the 2009 IRP
- 2) Discounted Cash Flow Analysis
- 3) Re-run of the 2009 IRP models
- 4) Comparative Analysis of Renewable Resources as Part of its 2010 Request for Proposals ("RFP") Process.

As discussed below, PSE has provided the supporting economic analyses either through an exhibit or workpapers in this proceeding.

- 1) Please see the Second Exhibit to the Prefiled Direct Testimony of Roger Garratt, Exhibit No. ____ (RG-3), for a copy of PSE's 2009 IRP. Analyses addressing least cost portfolio options – including options for wind resources – is provided in Chapter 8 of the IRP. See pages 236-239 of Exhibit No. ____ (RG-3) and Attachment A to PSE's Response to Public Counsel Data Request No. 204,

which is Appendix I to the 2009 IRP. Although the 2009 IRP does not specifically address Lower Snake River ("LSR") Phase 1 Wind Project, the 2009 IRP analysis demonstrated that it would be cost effective for PSE to acquire a total of 300 megaWatts ("MW") of wind resources by 2012 (100 MW in 2011, an additional 200 MW in 2012).

- 2) The Discounted Cash Flow analysis completed after the 2009 IRP compared the original LSR schedule of 500 MW by 2013 with the 2009 IRP schedule and other schedules for wind development. The economic analysis for this study is found in Disc 1 of the workpapers supporting the Prefiled Direct Testimony of Ms. Seelig. Specifically, please refer to the following folder and file structure:

AS-WP (C)
AS-WP (C) LSR Dev Plan
(C) Exhibit M to BOD Book
(C) Exhibit M Table 3.xls

- 3) PSE's re-run of the 2009 IRP models compared the original LSR schedule of 500 MW by 2013 with several other wind schedules, including a "just-in-time" schedule of building renewable projects in 2016 and 2020. This approach also indicated that PSE could cost-effectively add 600 MW of renewable resources by the end of 2012. The source model for this analysis was Portfolio Screening Model II (PSMIIA). These PSMIIA models are provided as confidential Attachment A to PSE's Response to Public Counsel Data Request No. 288.

The MS Excel model compiling this analysis is found in Disc 1 of the workpapers supporting the Prefiled Direct Testimony of Ms. Seelig. Specifically, please refer to the following folder and file structure:

AS-WP (C)
AS-WP (C) LSR Dev Plan
(C) Exhibit M to BOD Book
(C) Exhibit M Table 5 PSM II.xls

- 4) Comparative Analysis. This comparative analysis modeling approach differs from those above because the projects tested are real proposals from the 2010 RFP. LSR Phase 1 was selected in 4 out of 5 scenarios using the Portfolio Optimization Model version 13.6 (PSM III v. 13.6). The summary economic analysis and individual scenario models for these studies have been provided in the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig. For the summary, please see Disc 4 of the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig. Specifically, please refer to the following folder and file structure:

AS-WP (HC)

AS-WP (HC) Renewable Phase II
PSM III Models
PSM III Version 13.6\
Results Summary
PSM III RFP Resource Opt
Summary.xls

For the source models for each scenario, please see Disc 4 of the workpapers supporting the Prefiled Direct Testimony of Ms. Seelig. Specifically, please refer to the following folder and file structure:

AS-WP (HC)
AS-WP (HC)
AS-WP (HC) Renewable Phase II
PSM III Models
PSM III Version 13.6

CX

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PUBLIC COUNSEL DATA REQUEST NO. 045

PUBLIC COUNSEL DATA REQUEST NO. 045:

Please provide the carbon price (\$/ton) forecast used in the Phase I economic screening analysis of LSR Phase 1 and other renewable alternatives for each year of the evaluation period.

Response:

Please find below the carbon dioxide price forecast in nominal \$/ton used in the Phase I renewable evaluation of Lower Snake River Phase 1 and all other renewable alternatives for each year modeled.

Year	CO ₂ (\$/Ton)
2010	0
2011	0
2012	12
2013	13
2014	14
2015	15
2016	16
2017	17
2018	18
2019	20
2020	21
2021	24
2022	27
2023	30
2024	34
2025	39
2026	48
2027	60
2028	75
2029	94

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PUBLIC COUNSEL DATA REQUEST NO. 046

PUBLIC COUNSEL DATA REQUEST NO. 046:

Please provide the carbon price (\$/ton) forecast used for each of the scenarios evaluated in the Phase II economic screening analysis of LSR Phase 1 and other renewable alternatives for each year of the evaluation period.

Response:

Please find below the carbon price forecast in nominal \$/ton used in the Phase II renewable evaluation of Lower Snake River Phase 1 and all other renewable alternatives for each year modeled. The Business As Usual, Low Growth, and Low Growth with Base Capital Costs scenarios did not include a carbon price forecast.

Year	2010 Trends CO ₂ (\$/Ton)	Green World CO ₂ (\$/Ton)	Year	2010 Trends CO ₂ (\$/Ton)	Green World CO ₂ (\$/Ton)
2010	0	0	2020	21	67
2011	0	0	2021	24	72
2012	12	37	2022	27	78
2013	13	40	2023	30	84
2014	14	43	2024	34	90
2015	15	46	2025	39	97
2016	16	50	2026	48	104
2017	17	54	2027	60	112
2018	18	58	2028	75	121
2019	20	62	2029	94	130

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Docket Nos. UE-111048 and UG-111049
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PUBLIC COUNSEL DATA REQUEST NO. 047

PUBLIC COUNSEL DATA REQUEST NO. 047:

Please provide the generic resource capital and operating cost forecasts for wind and each other resource evaluated in the Phase I economic screening analysis of LSR Phase 1 and other renewable alternatives for each year of the evaluation period.

Response:

Capital costs and operating costs for generic resources used in Phase I of the renewable analysis can be seen in the following file located on Disc 2 of the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig:

AS-WP (HC)

AS-WP (HC) RFP Model Dev (2 of 3)

(HC) Generic Resource Development

Generic Resource Costs_RFP2010_Renewable Eval.xls

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Docket Nos. UE-111048 and UG-111049
Puget Sound Energy, Inc.'s
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PUBLIC COUNSEL DATA REQUEST NO. 048

PUBLIC COUNSEL DATA REQUEST NO. 048:

Please provide the generic resource capital and operating cost forecasts for wind and each other resource evaluated in each of the scenarios evaluated in the Phase II economic screening analysis of LSR Phase 1 and other renewable alternatives for each year of the evaluation period.

Response:

Capital costs and operating costs for generic resources used in the Phase I renewable evaluation did not change in the Phase II renewable. Please see Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 047 for generic resource capital and operating costs.

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Docket Nos. UE-111048 and UG-111049
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PUBLIC COUNSEL DATA REQUEST NO. 192

PUBLIC COUNSEL DATA REQUEST NO. 192:

Re: PSE's Response to Public Counsel Data Request No. 45.

Please provide the source documents supporting the provided carbon dioxide price forecast and explain the significant increase in prices beginning in 2025.

Response:

The carbon price forecast used in the 2010 Request for Proposals ("RFP") Phase I economic screening of Lower Snake River Phase 1 ("LSR") was based on Table 4 (page 17) of the Environmental Protection Agency's ("EPA") report, *Economic Impacts of S. 1733: The Clean Energy Jobs and American Power Act of 2009*, dated Oct. 23, 2009. This report is publicly available on EPA's web site at http://www.epa.gov/climatechange/economics/pdfs/EPA_S1733_Analysis.pdf.

Puget Sound Energy, Inc.'s ("PSE") staff selected this carbon price forecast for the 2010 RFP's Trends 2010 scenario because it was lower than the 2009 Integrated Resource Plan's ("IRP") base carbon price and more reflective of the then-current political climate for carbon regulation. When transferring data from the EPA's report, PSE staff inadvertently accelerated the increase in the forecast carbon price starting in 2021, resulting in a larger increase than reflected in the EPA report. The review team adopted these carbon price inputs as a reasonable mid point within the range of prices used in the analysis. The modeling result of using these higher carbon price forecasts led to an increase in electric market prices starting in 2021 in the Trends 2010 scenario, but met the test of a lower carbon price forecast. Pages 164-165 of the Third Exhibit to the Prefiled Direct Testimony of Aliza Seelig, Exhibit No. ___ (AS-3HC), compares the electric power prices, gas prices, and carbon prices of PSE's 2009 IRP and 2010 RFP.

During the review process PSE determined that carbon prices were not a key factor driving the selection of wind in PSE's models. This is demonstrated by looking at the combined results of three scenarios: Green World, which contains a high carbon price; Trends 2010, which contains a medium carbon price; and Business as Usual ("BAU"), which contains no carbon price. In all three scenarios PSE's optimization model

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selected LSR Phase I and the other two top wind proposals shown in Table 12 on page 36 of Ms. Seelig's Prefiled Direct Testimony, Exhibit No. ____ (AS-1HCT). Instead, PSE staff found that the selection of wind resources is driven by RCW 19.285, referred to as Washington's renewable portfolio standard ("RPS"). When PSE's obligation to meet the RPS is considered, the benefit of tax incentives, primarily the Treasury Grant or Production Tax Credit ("PTC"), make it attractive to add renewable resources in advance of the 2016 renewable need, as described on pages 19-28 of Exhibit No. ____ (AS-1HCT) and in PSE's Response to Public Counsel Data Request No. 038.

It is important to highlight that for the 2010 RFP, PSE included the BAU scenario as an alternative to the Trends 2010 scenario to specifically isolate carbon price. The BAU and Trends 2010 scenarios share similar input assumptions; the only differences are that the BAU scenario assumes carbon costs of \$0/ton and lower electric market prices resulting from the absence of carbon prices. A comparison of the input assumptions for these scenarios is shown on page 17 of Exhibit No. ____ (AS-1HCT). Despite the lower market value of renewable energy, the BAU scenario continues to select the top three ranked wind alternatives: [REDACTED] Wind Power Purchase Agreement ("PPA") (unsolicited), LSR Phase I Ownership, and [REDACTED] Wind Ownership (#10075), as well as the top ranked biomass alternative [REDACTED] PPA (#10009). The rankings by benefit ratio are shown in Table 12 on page 34 of Exhibit No. ____ (AS-1HCT). It can be concluded that the results of the Trends 2010 scenario were reasonable when compared to those of the BAU scenario, and that the top ranked projects from the screening would remain the top ranked projects even if the accelerated carbon forecast had not been introduced.

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PUBLIC COUNSEL DATA REQUEST NO. 193

PUBLIC COUNSEL DATA REQUEST NO. 193:

Re: PSE's Response to Public Counsel Data Request No. 46.

Price forecast for the 2010 Trends scenario and explain the significant increase in prices beginning in 2025.

Response:

Power price forecasts used in the 2010 Request for Proposals ("RFP") were developed using the AuroraXMP model. For more detail on the AuroraXMP model, please see page 153 of the Second Exhibit to the Prefiled Direct Testimony of Aliza Seelig, Exhibit No. ___(AS-3HC).

The significant increase in power prices beginning in 2025 can be attributed to the increase in carbon prices. Please see Puget Sound Energy, Inc.'s Response to Public Council Data Request No. 192 for an explanation on the source of the carbon price forecast used in PSE's 2010 Request for Proposals.

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PUBLIC COUNSEL DATA REQUEST NO. 287

PUBLIC COUNSEL DATA REQUEST NO. 287:

RE: PSE's Response to Public Counsel Data Request No. 38.

Please clarify whether the "Discounted Cash Flow Analysis" provided in Part (2) of this response reflects the impact of new wind resources on PSE's total system energy costs in each year, including costs of non-wind resources. If so, please identify the specific sections of the files provided which show this impact. If not, please explain why not, and explain how these analyses demonstrated early acquisition was justified without considering such other costs.

Response:

Puget Sound Energy, Inc. ("PSE") performed the Discounted Cash Flow Analysis to isolate specific benefits available to wind resources that impact the timing and cost of acquiring wind resources ahead of the compliance need. As explained on page 21 of the Prefiled Direct Testimony of Aliza Seelig, Exhibit No. ___ (AS-1HCT), the Discounted Cash Flow Analysis only considered capital cost, the Section 1603 Treasury Grant, and REC sales and as such did not evaluate non-wind resources. PSE used the Discounted Cash Flow Analysis as one tool of several to evaluate the benefits from early acquisition of wind and did not intend that such analysis would be used alone to demonstrate that early acquisition is justified. PSE performed the Discounted Cash Flow Analysis to determine whether there is a more optimal build plan than the plan identified in the 2009 Integrated Resource Plan with the above changes.

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Docket Nos. UE-111048 and UG-111049
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PUBLIC COUNSEL DATA REQUEST NO. 345

PUBLIC COUNSEL DATA REQUEST NO. 345:

Re: Testimony of Aliza Seelig, Exhibit No. AS-1HCT, p. 25, Table 6.

Please explain in detail why the "Incremental NPV Portfolio Cost from Lowest Cost Scenario" for the No Early Wind build schedule under the Business as Usual scenario is significantly higher than the Incremental NPV Portfolio Cost from Lowest Cost Scenario for the No Early Wind build schedule under the 2009 Trends Scenario. In particular, explain why these results indicate greater benefits for the "Phase 600 MW - then IRP" build schedule under the 2009 Business as Usual scenario when compared to the 2009 Trends Scenario, when the Business as Usual scenario is forecasted to have lower demand, lower gas prices, lower CO2 costs and lower market energy prices than the 2009 Trends Scenario, as reflected in Mr. Garratt's Exhibit No. ____ (RG-3), pp. 39-40 and pp. 454-455.

Response:

In Table 6 on page 25 of the Prefiled Direct Testimony of Aliza Seelig, Exhibit No. ____ (AS-1HCT), the "Incremental NPV Portfolio Cost from Lowest Cost Scenario" for the No Early Wind build schedule under the Business as Usual scenario is higher than the Incremental NPV Portfolio Cost from Lowest Cost Scenario for the No Early Wind build schedule under the 2009 Trends Scenario because the 2009 Business As Usual ("2009 BAU") market price scenario unintentionally reflects the costs of secondary market purchases under the assumptions used in the 2009 Trends market price scenario. The BAU market price scenario should have reflected the costs of secondary market purchases under the assumptions used in the 2009 BAU market price scenario.

As with Table 6 on page 25, Table 7 on page 27, and Table 13 on page 36 of Exhibit No. ____ (AS-1HCT), the Business As Usual ("BAU") market price scenario for the 2010 Request for Proposals ("2010 RFP") inadvertently reflects the costs of secondary market purchases and dispatch using the market prices in the 2010 Trends market price scenario.

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Attached as Attachment A to Puget Sound Energy Inc.'s ("PSE") Response to Public Counsel Data Request No. 345, please find is a revised Table 6 that reflects the costs of secondary market purchases under the assumptions used in the 2009 BAU market price scenario. Table 6 is also presented on page 181 of the Twelfth Exhibit to the Prefiled Direct Testimony of Roger Garratt, Exhibit No. ___ (RG-13HC), and is similarly revised in Attachment A.

Attached as Attachment B to PSE's Response to Public Counsel Data Request No. 345, please find a CD-ROM that contains a revised 2009 BAU model for each wind build schedule. These revised results include the lower cost of secondary market purchases reflecting the lower market prices, low gas prices, and lower carbon prices in the 2009 BAU market price scenario.

As a result of the revision to the 2009 BAU market price scenario, the net present value ("NPV") portfolio cost for each wind build schedule is lower in the revised 2009 BAU market price scenario, and the range of "Incremental NPV portfolio cost from the Lowest Cost Plan" has narrowed. The lower cost of secondary market purchases means that wind generation in the 2009 BAU market price scenario has a lower displacement value than wind generation in the 2009 Trends market price scenario. In other words, the secondary market purchases that wind generation displaces in the 2009 BAU market price scenario has a lower market value than the secondary market purchases that wind generation displaces in the 2009 Trends market scenario. Thus, the 2009 BAU market price scenario results in Table 6 of Exhibit No. ___ (AS-1HCT) overstate the costs of secondary market purchases.

Finally, the revised 2009 BAU market price scenario presented as Attachment A to PSE's Response to Public Counsel Data Request No. 345 continues to show that "Phase 600 MW – then IRP" is the highest ranked portfolio and lowest cost wind build schedule. The "No Early Wind" portfolio was the second most expensive portfolio of the eight alternatives evaluated, as compared to the most expensive portfolio as reflected in Table 6 on page 25 of Exhibit No. ___ (AS-1HCT).

Attached as Attachment C to PSE's Response to Public Counsel Data Request No. 345, please find a revised Table 7 and Table 13, which reflect the costs of secondary market purchases and dispatch under the market prices from the 2010 RFP BAU market price scenario. Table 13 is also presented as Figure 25 on page 42 of the Second Exhibit to the Prefiled Direct Testimony of Aliza Seelig, Exhibit No. ___ (AS-3HC), and in on page 203 of Exhibit No. ___ (RG-13HC). These tables are similarly revised in Attachment C.

Attached as Attachment D to PSE's Response to Public Counsel Data Request No. 345, please find an MS Excel model that shows the revised 2010 RFP BAU model. This revised result includes the lower cost of secondary market purchases and updated dispatch of resources reflecting the lower market prices and lower carbon prices in the 2010 BAU market price scenario.

Highly Confidential per Protective Order in WUTC Docket Nos. UE-111048 and UG-111049 *Redacted Version*

The updated 2010 RFP BAU model shows a higher overall portfolio cost reflecting changes in the optimized natural gas resource builds under the revised market prices. For the renewable resources, the updated 2010 RFP BAU model continues to show that it would be economically favorable for PSE to acquire LSR Phase I, [REDACTED] (Unsolicited) and [REDACTED] (#10075-a), selecting them in a minimum of four of the five scenarios, the same as in Table 7 on page 27 and Table 13 on page 36 of Exhibit No. ___ (AS-1HCT).

Attachment B to PSE's Response to Public Counsel Data Request No. 345 is CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

Attachments C and D to PSE's Response to Public Counsel Data Request No. 345 are HIGHLY CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

ATTACHMENT A to PSE's Response to Public Counsel Data Request No. 345

REVISED Table 6. Page 25 of AS-1HCT

\$ Thousands

Plan No.	Wind Build Schedule	2009 Trends Price Scenario			Business as Usual Price Scenario		
		NPV Portfolio Cost	Incremental NPV portfolio Cost from Lowest Cost Plan	Rank	NPV Portfolio Cost	Incremental NPV portfolio Cost from Lowest Cost Plan	Rank
1	LSR 7-29-09 Development Plan	\$19,454,371	\$42,214	4	\$12,599,200	\$37,276	4
2	Accelerated 500 MW - then IRP	\$19,453,221	\$41,063	3	\$12,602,568	\$40,644	5
3	2009 IRP Resource Plan	\$19,533,805	\$121,648	7	\$12,663,992	\$102,068	8
4	Phase 400 MW - then IRP	\$19,478,149	\$65,991	5	\$12,608,952	\$47,028	6
5	Phase 500 MW - then IRP	\$19,445,152	\$32,995	2	\$12,585,438	\$23,514	3
6	Phase 600 MW - then IRP	\$19,412,157	\$0	1	\$12,561,924	\$0	1
7	2009 Trends	\$19,479,380	\$67,222	6	\$12,575,914	\$13,990	2
8	No Early Wind	\$19,565,828	\$153,670	8	\$12,629,686	\$67,762	7

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"CONFIDENTIAL" Table of Contents

DR NO.	"CONFIDENTIAL" Material
345	Attachment B to PSE's Response to Public Counsel Data Request No. 345 is CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049. PSE's Response to Public Counsel Data Request No. 345 and Attachments C and D thereto are HIGHLY CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

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**ATTACHMENT B to PSE's Response to
Public Counsel Data Request No. 345**

on Disc

ATTACHMENT C to PSE's Response to Public Counsel Data Request No. 345

Dockets UE-111048 UG-111049
Exhibit No. AS-17HC CX
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PSE'S RESPONSE TO PUBLIC COUNSEL DATA REQUEST NO. 345

IS HIGHLY CONFIDENTIAL IN ITS ENTIRETY

**PAGE 3 ATTACHMENT B (PROVIDED ON DISC),
PAGES 9-10 (ATTACHMENT C) AND
ATTACHMENT D (PROVIDED ON DISC)**

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PUBLIC COUNSEL DATA REQUEST NO. 347

PUBLIC COUNSEL DATA REQUEST NO. 347:

Please provide a timeline with the start date and completion date of each of the analyses of LSR 1 as reflected in PSE Response to Public Counsel Data Request No. 38.

Response:

The following table contains modeling dates for the analyses described in Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 038:

Study	Modeling Dates
2009 Integrated Resource Plan ("IRP")	Started: April 2008 Completed: July 2009 (publication of IRP)
Discounted Cash Flow	Started: September 2009 Completed: November 2009
Re-run of 2009 IRP Models	Started: September 2009 Completed: October 2009
Comparative Analysis in 2010 Request For Proposal ("RFP")	Started: March 2010 (RFP bids) Completed: April 2010

PSE also provided the timing of the "Re-run of the 2009 IRP Models" analysis in its Response to Public Counsel Data Request No. 326.

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PUBLIC COUNSEL DATA REQUEST NO. 348

PUBLIC COUNSEL DATA REQUEST NO. 348:

Please provide a timeline with the dates of each of the PSE Board and EMC decisions regarding LSR 1 which are referenced in the testimonies of PSE witnesses Garratt and Seelig.

Response:

Attached as Attachment A to Public Counsel Data Request No. 348, please find a timeline showing the dates of each of the Puget Sound Energy, Inc. ("PSE") Board of Directors and Energy Management Committee decisions referenced in the Prefiled Direct Testimonies of Roger Garratt, Exhibit No. ___ (RG-1HCT), and Aliza Seelig, Exhibit No. ___ (AS-1HCT), regarding the Lower Snake River Wind Project Phase 1.

ATTACHMENT A to PSE's Response to Public Counsel Data Request No. 348

Low Snake River Wind Project Timeline

Date	Event
July 20, 2007	Resource Acquisition Update - Target acquisition list includes LSRWP development rights
September 25, 2007	Resource Acquisition Update - Target acquisition list includes LSRWP development rights
October 31, 2007	Resource Acquisition Update - LSRWP development rights preliminary commercial terms presented
January 17, 2008	Resource Acquisition Update - Target acquisition list includes LSRWP development rights
May 27, 2008	Resource Acquisition Update - R. Garratt presents potential acquisitions and an RFP update
May 27, 2008	Recommendation to EMC to enter Joint Development Agreement, acquiring 50% interest in LSRWP
January 14, 2009	EMC received LSRWP development update
March 19, 2009	EMC received LSRWP development update
May 21, 2009	EMC review of Asset Acquisition Agreement benefits and recommendation
May 21, 2009	EMC approved recommendation to enter Engineering and Procurement Agreement with BPA
May 28, 2009	EMC approved recommendation to present the benefits of the Asset Acquisition Agreement to the AMC
June 11, 2009	AMC approved recommendation to present the benefits of the Asset Acquisition Agreement to the BOD
June 30, 2009	BOD received LSRWP development update
July 27, 2009	BOD approved recommendation to purchase Remaining 50% Interest in LSRWP Development Rights
September 24, 2009	EMC development update in which January 2010 250 MW LSRWP Phase I was outlined
October 12, 2009	EMC approved recommendation to negotiate exclusively with Siemens for initial LSRWP turbines
November 2009	AMC received written LSRWP progress update
November 4, 2009	BOD received LSRWP development update
November 16, 2009	EMC presentation on benefits of building wind early
December 2009	AMC received written LSRWP progress update
January 2010	AMC received written LSRWP progress update
January 12, 2010	BOD received LSRWP development update
January 14, 2010	EMC notified LSRWP Phase 1 decision delayed to coincide with RFP and project size changed; PTC vs. ITC discussion
February 2010	AMC received written LSRWP progress update
February 25, 2010	BOD received LSRWP development update
March 2010	AMC received written LSRWP progress update
March 18, 2010	EMC received RFP proposals overview
April 22, 2010	2010 RFP final renewable short list presentation to EMC
April 22, 2010	EMC approved recommendation to ask BOD for approval of LSRWP Phase 1
May 5, 2010	BOD approved recommendation to construct LSRWP Phase 1
June 2010	AMC received written LSRWP progress update
July 2010	AMC received written LSRWP progress update
August 19, 2010	EMC received RFP update and reviewed LSRWP Phase 1 reanalysis
November 21, 2010	AMC received written LSRWP progress update
December 22, 2010	AMC received written LSRWP progress update
January 14, 2011	AMC received written LSRWP progress update
February 22, 2011	AMC received written LSRWP progress update
March 21, 2011	AMC received written LSRWP progress update
April 26, 2011	AMC received written LSRWP progress update

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PUBLIC COUNSEL DATA REQUEST NO. 360

PUBLIC COUNSEL DATA REQUEST NO. 360:

Reference page 170 of Exhibit No. AS-3HC.

Please explain whether the referenced adjustment to the end effects trending calculation of market revenues was corrected and reflected in the 2010 RFP Phase 1 and Phase II cost/benefit analyses for LSR 1 in the May 5, 2010 Board presentation supporting the recommendation to construct LSR 1. If not, please explain why not.

Response:

The Puget Sound Energy, Inc. ("PSE") analytic team began to modify Portfolio Screening Model I ("PSM I") to include Lower Snake River Wind Project, Phase 1 ("LSR Phase 1") as an existing resource after approval by the Energy Management Committee on April 22, 2010, but before the Board of Directors authorized the commencement of construction of LSR Phase 1 on May 5, 2011. This PSM I adjustment also occurred concurrent with additional analyses by the PSE analytic team on end effects and the possible extension of production tax credits in Portfolio Screening Model III ("PSM III") 13.9.1. If the Board of Directors had not approved the commencement of construction of LSR Phase 1, the PSE analytical team would have reversed the PSM I update. The PSE analytic team did not complete PSM I model version 14-3 until May 12, 2010, after the Board of Directors had authorized the construction of LSR Phase 1 and after the PSE analytic team made other incremental updates to PSM I to complete the analysis of the capacity resource decisions and continuing investigation of other renewable resources. PSE generally updates its models as new information arises.

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PUBLIC COUNSEL DATA REQUEST NO. 362

PUBLIC COUNSEL DATA REQUEST NO. 362:

Reference page 170 of Exhibit No. AS-3HC.

Please provide version 14-3 of the PSM I model analysis of LSR 1 which reflects the referenced adjustment to the end effects trending calculation of market revenues.

Response:

The model updates listed on page 172 of Exhibit No. ___ (AS-3HC) were made on or after April 29, 2011. The presentation to the Board of Directors of Puget Sound Energy, Inc. ("PSE") was finalized for distribution to members of the PSE Board of Directors on April 22, 2011. Therefore, the presentation to the PSE Board of Directors did not include any analyses that relied on the referenced model updates.

PSE continually updates its models as improvements are identified. If it is believed that an improvement is significant enough to potentially impact the results of analysis previously completed, PSE analysts test to see how results change.

In the case of the model updates listed on page 172 of Exhibit No. ___ (AS-3HC), the only update prior to the PSE Board of Directors meeting of May 5, 2010, that might have had any impact on the decision is the adjustments on end effects, which is described on page 170 of Exhibit No. ___ (AS-3HC). Therefore, PSE tested this change in Portfolio Screening Model III ("PSM III") prior to the PSE Board of Directors meeting and determined that the model updates did not affect the recommendation to the PSE Board of Directors that it authorize the construction of LSR Phase 1.

The models examining the effects of the end effects adjustment, along with an analysis that considered investment tax credit extensions, is included in a file entitled "Addendum Exh M - PSMIII 13.9.doc" in the following folder structure of DVD Disc 4 of the work papers in supporting the Prefiled Direct Testimony of Ms. Aliza Seelig:

AS-WP (HC)\
AS-WP (HC) Renewable Phase II\
PSM III Models\
PSM III Version 13.9

The PSE analytical team conducted this analysis as part of their continued due diligence in making the recommendation to the PSE Board of Directors and completed this analysis prior to the PSE Board of Directors meeting on May 5, 2010. Although the presentation to the PSE Board of Directors, which was finalized for distribution on April 22, 2010, did not include this analysis, such analysis was available for discussion at the PSE Board of Directors meeting.

Please see PSE's Response to Public Counsel Data Request No. 386 for further discussion of the Business as Usual ("BAU") scenario presented in Addendum M.

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Puget Sound Energy, Inc.'s
2011 General Rate Case

PUBLIC COUNSEL DATA REQUEST NO. 364

PUBLIC COUNSEL DATA REQUEST NO. 364:

Reference page 172 of Exhibit No. AS-3HC.

Please indicate which, if any, of the listed PSM I model updates were included in calculating the Phase 1 portfolio benefit for LSR 1 as presented in the May 5, 2010 Board presentation supporting the recommendation to construct LSR 1.

Response:

The Portfolio Screening Model updates listed on page 172 of Exhibit No. __ (AS-3HC) were updates completed after the review of renewable resources phase of the 2010 Request for Proposals ("2010 RFP") process. These model updates were made in preparation for the review of capacity resources phase of the 2010 RFP, which also included continuing investigation of those renewable resources that Puget Sound Energy, Inc. ("PSE") identified as possible acquisitions.

The model updates listed on page 172 of Exhibit No. __ (AS-3HC) were made on or after April 29, 2011. The presentation to the Board of Directors was finalized for distribution to members of the Board of Directors on April 22, 2011. Therefore, the presentation to the Board of Directors did not include any analyses that relied on the referenced model updates.

PSE continually updates its models as improvements are identified. If it is believed that an improvement is significant enough to potentially impact the results of analysis previously completed, PSE analysts test to see how results change.

In the case of the model updates listed on page 172 of Exhibit No. __ (AS-3HC), the only update prior to the Board of Directors meeting of May 5, 2010, that might have had any impact on the decision is the adjustments on end effects, which is described on page 170 of Exhibit No. __ (AS-3HC). Therefore, PSE tested this change in the Portfolio Screening Model III ("PSM III") prior to the Board of Directors meeting and determined that the model updates did not affect the recommendation to the Board of Directors that it authorize the construction of LSR Phase 1.

The models examining the effects of the end effects adjustment, along with an analysis that considered investment tax credit extensions, is included in a file entitled "Addendum Exh M - PSMIII 13.9.doc" in the following folder structure of DVD Disc 4 of the work papers in supporting the Prefiled Direct Testimony of Ms. Aliza Seelig:

AS-WP (HC)\
AS-WP (HC) Renewable Phase II\
PSM III Models\
PSM III Version 13.9

The PSE analytical team conducted this analysis as part of their continued due diligence in making the recommendation to the Board of Directors and completed this analysis prior to the Board of Directors meeting on May 5, 2010. Although the presentation to the Board of Directors, which was finalized for distribution on April 22, 2010, did not include this analysis, such analysis was available for discussion at the Board of Directors meeting.

Please see PSE's Response to Public Counsel Data Request No. 386 for further discussion of the Business as Usual ("BAU") scenario presented in Addendum M.

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Puget Sound Energy, Inc.'s
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PUBLIC COUNSEL DATA REQUEST NO. 367

PUBLIC COUNSEL DATA REQUEST NO. 367:

Reference page 172 of Exhibit No. AS-3HC.

Please provide the updated generic wind assumptions as reflected in PSM I version 14-6, and provide information supporting these changed assumptions.

Response:

Please see the tables on pages 166-69 of Exhibit No. ___ (AS-3HC), for a comparison of generic costs between the 2009 IRP and the 2010 Request for Proposals. The first table (on page 166) describes the model versions that were used in each evaluation phase. The subsequent tables show updates associated with each evaluation phase by resource type.

Please see PSE's Response to Public Counsel Data Request No. 147 for the location of the file used to develop generic cost assumptions for PSM I version 14-2.

The development of generic assumptions used in PSM I version 14-6 can be found in the following file located on DVD Disc 2 of the work papers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig:

AS-WP (HC)

AS-WP (HC) RFP Model Dev (2 of 3)

(HC) Generic Resource Development\

Generic Resource Costs_RFP2010_v7_Capacity and CI
Eval (PSM I).xls

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PUBLIC COUNSEL DATA REQUEST NO. 369

PUBLIC COUNSEL DATA REQUEST NO. 369:

Reference pages 173-174 of Exhibit No. AS-3HC.

Please indicate which, if any, of the listed PSM III model updates were included in calculating the 2010 RFP Phase 2 analysis results, as presented in the May 5, 2010, Board presentation supporting the recommendation to construct LSR 1.

Response:

The Portfolio Screening Model updates listed on pages 173 and 174 of Exhibit No. __ (AS-3HC) were made on or after April 22, 2011. The presentation to the Board of Directors of Puget Sound Energy, Inc. ("PSE") was finalized for distribution to members of the PSE Board of Directors on April 22, 2011. Therefore, the presentation to the PSE Board of Directors did not include any analyses that relied on the referenced model updates.

PSE continually updates its models as improvements are identified. If it is believed that an improvement is significant enough to potentially impact the results of analysis previously completed, PSE analysts test to see how results change.

In the case of the model updates listed on pages 173 and 174 of Exhibit No. __ (AS-3HC), the only update prior to the PSE Board of Directors meeting of May 5, 2010, that might have had any impact on the decision is the adjustments on end effects, which is described on page 170 of Exhibit No. __ (AS-3HC). Therefore, PSE tested this change in the Portfolio Screening Model III ("PSM III") prior to the PSE Board of Directors meeting and determined that the model updates did not affect the recommendation to the PSE Board of Directors that it authorize the construction of LSR Phase 1.

The models examining the effects of the end effects adjustment, along with an analysis that considered investment tax credit extensions, is included in a file entitled "Addendum Exh M - PSMIII 13.9.doc" in the following folder structure of DVD Disc 4 of the work papers in supporting the Prefiled Direct Testimony of Ms. Aliza Seelig:

AS-WP (HC)\
AS-WP (HC) Renewable Phase II\
PSM III Models\
PSM III Version 13.9

The PSE analytical team conducted this analysis as part of their continued due diligence in making the recommendation to the PSE Board of Directors and completed this analysis prior to the PSE Board of Directors meeting on May 5, 2010. Although the presentation to the PSE Board of Directors, which was finalized for distribution on April 22, 2010, did not include this analysis, such analysis was available for discussion at the PSE Board of Directors meeting.

Please see PSE's Response to Public Counsel Data Request No. 386 for further discussion of the Business as Usual ("BAU") scenario presented in Addendum M.

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PUBLIC COUNSEL DATA REQUEST NO. 379

PUBLIC COUNSEL DATA REQUEST NO. 379:

Reference page 166 of Exhibit No. AS-3HC.

Please provide the PSM models for the referenced final evaluation of capacity and renewable resources completed in early August 2010.

Response:

Page 166 of Exhibit No. ___ (AS-3HC) describes analysis that was performed in the Portfolio Screening Model III ("PSM III") where the investment tax credit cash grant was extended through the year 2020. In addition to this analysis being completed during the capacity phase of the 2010 Request for Proposals ("2010 RFP"), this sensitivity was also evaluated in the renewable phase of the 2010 RFP.

Please refer to the following folder locations located on DVD disc 6 of the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig for the analysis performed during the capacity phase of the 2010 RFP:

2010 Trends:

AS-WP (HC)
AS-WP (HC) Capacity and CI Phase II
(HC) PSM III
2010 Trends
Extend ITC

Business As Usual ("BAU"):

AS-WP (HC)
AS-WP (HC) Capacity and CI Phase II
(HC) PSM III
BAU
Extend ITC

Green World:

AS-WP (HC)
AS-WP (HC) Capacity and CI Phase II
(HC) PSM III
GW
Extend ITC

Low Growth:

AS-WP (HC)
AS-WP (HC) Capacity and CI Phase II
(HC) PSM III
LG
Extend ITC

Low Growth with Base Capital Costs:

AS-WP (HC)
AS-WP (HC) Capacity and CI Phase II
(HC) PSM III
LG w Base CapEx
Extend ITC

Each folder contains two files – one “All Generic” file that shows an optimized portfolio consisting of only generic resources, and one “RFP Resource Opt” file that contains the lowest cost mix of resources from the 2010 RFP and generic resources.

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PUBLIC COUNSEL DATA REQUEST NO. 384

PUBLIC COUNSEL DATA REQUEST NO. 384:

Reference the PSM III V.13.9.1 analyses for LSR 1 provided with PSE witness Seelig's workpapers, please provide the total portfolio benefit as reflected in the "Evaluation Summary" tab of each model, along with the portion of that total portfolio benefit that is attributable to the addition of LSR 1 for each of the scenarios evaluated.

Response:

The portfolio benefit should be found in cell B15 of the "Evaluation Summary" tab of each of the referenced models. The portfolio benefit reflects all resources in the portfolio, and it is difficult to separate the portion of the benefit that is attributable to just one resource.

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PUBLIC COUNSEL DATA REQUEST NO. 385

PUBLIC COUNSEL DATA REQUEST NO. 385:

Reference the PSM III V.13.9.1 analyses for LSR 1 provided with PSE witness Seelig's workpapers, please confirm that the "LG with Base Capital Costs" resource optimization case does not select LSR 1. If not, please indicate where within the model the costs and energy from LSR 1 are reflected.

Response:

The file entitled "Addendum Exh M - PSMIII 13.9.doc" describes the results of the Portfolio Screening Model III ("PSM III") 13.9.1 analysis. This file is located on DVD Disc 4 of the electronic working papers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig workpapers in the following directory path:

AS-WP (HC)
AS-WP (HC) Renewable Phase II
PSM III Models
PSM III Version 13.9

Please see the file entitled "RFP Resource Opt_PSM III v 13.9_LG w Base CapEx.xls," which contains the original result from the "LG with Base Capital Costs" scenario that did not select Lower Snake River Wind Project Phase I ("LSR Phase I"). This file is located on DVD Disc 4 of the electronic working papers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig workpapers in the following directory path:

AS-WP (HC)
AS-WP (HC) Renewable Phase II
PSM III Models
PSM III Version 13.9
LG (Base CapEx)

Please see the file entitled "RFP Resource Opt_Force LSR_PSM III v 13.9_LG w Base CapEx.xls," which contains the re-run assuming LSR Phase I in the "LG with Base Capital Costs" scenario. This file is located on DVD Disc 4 of the electronic workpapers

supporting the Prefiled Direct Testimony of Ms. Aliza Seelig workpapers in the following directory path:

AS-WP (HC)
AS-WP (HC) Renewable Phase II
PSM III Models
PSM III Version 13.9
ZSupport Analyses

The input energy and cost for LSR Phase I are reflected in each model listed above in the following worksheets and rows:

Energy: Worksheet "AURORAEnergyAll" Row 214
Cost: Worksheet "Acquisition Inputs" Rows 158 to 186

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PUBLIC COUNSEL DATA REQUEST NO. 386

PUBLIC COUNSEL DATA REQUEST NO. 386:

Reference the PSE Response to Public Counsel Data Request No. 345, Attachment D.

Please explain why PSM III V.13.6 was used rather than PSM III V13.9.1 for these analyses of LSR 1, and provide an updated version of these responses using PSM III V13.9.1.

Response:

Please see Attachment D to Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 345, which is an MS Excel model that shows the revised 2010 Request for Proposal ("2010 RFP") Business as Usual ("BAU") model. This revised result includes the lower cost of secondary market purchases and updated dispatch of resources reflecting the lower market prices in the 2010 BAU market price scenario.

PSE used Portfolio Screening Model III ("PSM III") version 13.6 for the analysis presented as Attachment D to PSE's Response to Public Counsel Data Request No. 345 because that version of PSM III was the primary model used in developing the analyses provided in the presentation to the PSE Board of Directors, dated May 5, 2010, that recommended the construction of Lower Snake River Wind Project Phase 1 ("LSR Phase 1").

Making the same adjustment to PSM III version 13.9.1 continues to show that it would be economically favorable for PSE to acquire LSR Phase I in the revised BAU scenario.

Attached as Attachment A to PSE's Response to Public Counsel Data Request No. 386 is a CD with the MS Excel model results of the adjusted PSM III version 13.9.1. Please note that Attachment A to PSE's Response to Public Counsel Data Request No. 386 is provided in electronic form only.

Attached as Attachment B to PSE's Response to Public Counsel Data Request No. 386 is a summary table with the revised BAU scenario results from PSM III Version 13.9.1.

Each of Attachment A and Attachment B to PSE's Response to Public Counsel Data Request No. 386 are HIGHLY CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

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PUBLIC COUNSEL DATA REQUEST NO. 386

"CONFIDENTIAL" Table of Contents

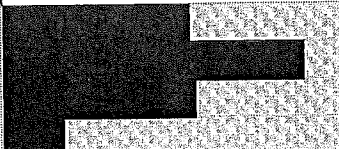
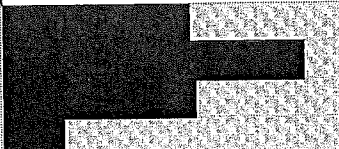
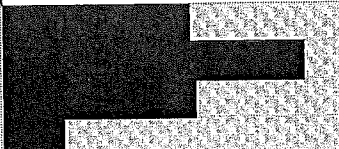
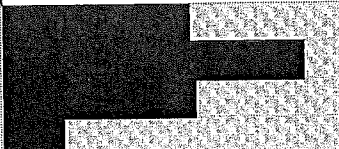
DR NO.	"CONFIDENTIAL" Material
386	Each of Attachment A and Attachment B to PSE's Response to Public Counsel Data Request No. 386 are HIGHLY CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.


**ATTACHMENT A to PSE's Response to
Public Counsel Data Request No. 386
is provided in electronic form only.**

**Attachment A to
Puget Sound Energy, Inc.'s Response to
Public Counsel Data Request No. 386
is REDACTED in its entirety as
CONFIDENTIAL per Protective Order in
WUTC Docket Nos. UE-111048 / UG-111049.**

**ATTACHMENT B to PSE's Response to
Public Counsel Data Request No. 386**

**Attachment B to Puget Sound Energy, Inc.'s
 Response to Public Counsel Data Request No. 386**

PSM III 13.9	Scenario Optimizations				
Proposed Wind Projects	Trends 2010	BAU (revised)	GW	LG	LG With Base Capital Costs ⁽¹⁾
LSRWP Phase 1	X	X	X		X
	X	X	X		X
			X		X
	X	X	X		X
	X	X	X		
RECs from Wind Acquisition	2,062,531	2,062,531	2,593,988	-	228,384
Equivalent MW Wind 30% CF	785	785	987	-	983

The revised BAU scenario in PSM 13.9.1, shown above, results include the lower cost of secondary market purchases and updated dispatch of resources reflecting the lower market prices in the 2010 BAU market price scenario. This reason for this revision is explained in Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 345. The only change in the selections in the above table is the  resource option is no longer selected in the BAU (revised) scenario.

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PUBLIC COUNSEL DATA REQUEST NO. 389

PUBLIC COUNSEL DATA REQUEST NO. 389:

In calculating the renewable resource requirements in the PSM modeling for the 2009 IRP Re-run analyses and 2010 RFP Phase 1 and Phase 2 quantitative analyses did PSE calculate annual RPS targets in each year based on the annual average of the utility's load for the previous two years, as specified in RCW 19.285.040(2)(c)? If not, please explain why not.

Response:

In calculating the Renewable Portfolio Standard ("RPS") target for the 2009 Integrated Resource Plan ("IRP") Re-run analysis and the 2010 Request for Proposals Phase 1 and Phase 2 analyses, Puget Sound Energy, Inc. ("PSE") did not use the average of the utility's load for the previous two years. When developing Portfolio Screening Model III ("PSM III") after the 2009 IRP, PSE wanted to replicate the results of the 2009 IRP. The 2009 IRP used the Strategist model from Ventyx, which did not support the optimization of resources while using the average load for the previous two years as a target. The version of PSM III used in the 2009 IRP Re-run and in the 2010 Request for Proposals analyses reflected this constraint.

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PUBLIC COUNSEL DATA REQUEST NO. 390

PUBLIC COUNSEL DATA REQUEST NO. 390:

Please provide the market revenues (\$/MWh) used for calculating end effects during the 2010 RFP analysis for each year of each PSM I and PSM III scenario evaluated before and after the adjustment to the end effects trending calculation referenced on page 170 of Exhibit No. AS-3HC.

Response:

Market revenue on a dollar per Megawatt hour (“\$/MWh”) basis is resource specific and dependent upon the scenario and operational characteristics of the resource.

Market revenues used for calculating end effects are found in the “End Effects” worksheet of the Portfolio Screening Model (“PSM”) I and PSM III. The following table generally shows the rows where market revenues are calculated by model version:

Model Version	PSM I Version 14.2 and Version 14.6	PSM III Version 13.6	PSM III Version 13.9.1	PSM III Version 14.2
Generic CCGT ⁽¹⁾	33	33	33	86
Generic SCGT (Peaker)	88	269	269	263
Generic Wind	198	210	210	322
Generic Duct Firing	253	-	-	-
RFP Capacity Acquisition	418, 473	619, 675, 731, 787, 843	619, 677, 735, 793, 851	672, 730, 788, 846, 904
RFP Wind PPA	508	1233, 1252, 1271, 1290, 1309	1368, 1387, 1406, 1425, 1444	1535, 1550, 1565, 1580, 1595
RFP Wind Acquisition	550	899, 955, 1011, 1067, 1123	909, 967, 1025, 1083, 1141	962, 1020, 1078, 1136, 1194
RFP Capacity PPA (Fixed Price)	582, 601	1157, 1176	1177, 1196, 1215, 1234, 1253	1230, 1245, 1260, 1275, 1290, 1305, 1320, 1335, 1350, 1365
RFP Capacity PPA (Toll)	620, 639	1195, 1214	1272, 1291, 1310, 1329, 1348	1382, 1397, 1412, 1427, 1442, 1457, 1472, 1487, 1502, 1517

Footnote (1): Revenue for CCGT in PSM III versions 13.6, 13.9.1, 14.2 includes Duct Firing

Please note that market revenue for power purchase agreements (“PPA”) is not shown in a unitized \$/MWh, but rather in thousands of dollars. To convert from thousands of dollars to \$/MWh, simply multiply the market revenue by 1000 then divide the product by the proposals’ annual generation. Annual generation data for PPAs are found in the “PPA Rollup” worksheet.

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PUBLIC COUNSEL DATA REQUEST NO. 395

PUBLIC COUNSEL DATA REQUEST NO. 395:

Does PSE believe that it was capable of forecasting: 1) the production costs of PSE's existing and new generating resources over the period 2010 through 2029, plus 2) the end effects of new resources over the period from 2030 through 2059, within a margin of error of 1% or less, using the PSM III modeling process that was employed to derive the 2010 RPF bid evaluation results as presented at the May 5, 2010, Board Meeting? If so, please provide any benchmarking analysis of the models or other analysis that demonstrates forecasting benefits of LSR 1 with this level of accuracy was possible in April of 2010.

Response:

Puget Sound Energy, Inc. ("PSE") recognizes the inherent uncertainty that accompanies forecasts and that forecasts made today are unlikely to be within a margin of error of 1% or less in accurately predicting future conditions. Neither PSE nor the Washington Utilities and Transportation Commission has ever applied the "margin of error of one percent" standard proposed in Public Counsel Data Request No. 395. To PSE's knowledge, there is no such standard in any state statute or any rule of order of the Washington Utilities and Transportation Commission.

PSE does not rely on a single point forecast to test resources. This is illustrated in the 2009 Integrated Resource Plan ("2009 IRP") and the 2010 Request for Proposal ("2010 RFP") scenario analyses, in which PSE used various forecasts to simulate multiple future conditions. The details of the assumptions used in the scenario analysis for the 2010 RFP are discussed in further detail in Exhibit No. ___ (AS-3HC), at pages 163 through 165.

Scenario analysis allows PSE to test resource portfolios across broad spectrums of future conditions rather than on one individual forecast. This methodology compensates for the inherent uncertainty of any one forecast. It is important to note that—regardless of the scenario evaluated—the Portfolio Screening Model III ("PSM III") optimization model consistently showed that the acceleration of additional wind resources was beneficial as compared to waiting until 2016.

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PUBLIC COUNSEL DATA REQUEST NO. 401

PUBLIC COUNSEL DATA REQUEST NO. 401:

Please provide the total expected costs for the "Resource Optimization" and "All Generic" cases for each year of the study period for each of the PSM III Version 13.6 and Version 13.9 scenarios provided on Disc 4 of the workpapers of witness Seelig.

Response:

Annual expected costs are found in several locations in Versions 13.6 and 13.9 of the Portfolio Screening Model III ("PSM III") optimization model. The following locations identify the annual expected costs and apply to both versions of PSM III optimization model:

- Net Market Purchases: Row 28 in the worksheet "Load_Market_DSM".
- DSM: Row 16 in the worksheet named "Results Summary".
- Revenue requirement for resource acquisition alternatives from the 2010 Request for Proposal ("2010 RFP") selected by the PSM III optimization model as part of the lowest cost portfolio: Row 58 in the worksheet named "ACQConsol".
- Revenue requirement for the selection of 2010 RFP power purchase agreements ("PPA") selected by the PSM III optimization model as part of the lowest cost portfolio: Row 20 in the worksheet named "Results Summary".
- Revenue requirement for generic resources selected by the PSM III optimization model as part of the lowest cost portfolio: row 58 of the worksheet named "Generic Consol".
- Variable cost of Puget Sound Energy, Inc.'s ("PSE") existing resources and contracts: row 58 of the worksheet named "Exist Consol" and row 11 of the worksheet named "Results Summary".

- End effects for generic resources selected by the PSM III optimization model as the lowest cost portfolio.
- End effects for resource acquisition alternatives from the 2010 RFP selected by the PSM III optimization model as part of the lowest cost portfolio.
- End effects for PPA alternatives from the 2010 RFP selected by the PSM III optimization model as part of the lowest cost portfolio.
- Revenue from Renewable Energy Certificate ("REC") sales produced by generic resources selected by the PSM III optimization model as part of the lowest cost portfolio: cells AW33:BQ33 of the worksheet named "LPProblem".
- Revenue from REC sales produced by 2010 RFP resources selected by the PSM III optimization model as part of the lowest cost portfolio: cells AW32:BQ32 of the worksheet named "LPProblem".
- Revenue from REC sales from the unsold portion of RECs produced by PSE's existing renewable resources: cells AW31:BQ31 of the worksheet named "LPProblem".

The location of the following components of expected cost vary by version of the PSM III optimization model.

Version 13.6 of the PSM III optimization model:

- End effects for generic resources selected by the PSM III optimization model as the lowest cost portfolio: cell W1326 of the worksheet named "End Effects".
- End effects for resource acquisition alternatives from the 2010 RFP selected by the PSM III optimization model as part of the lowest cost portfolio: cell W1327 of the worksheet named "End Effects".
- End effects for PPA alternatives from the 2010 RFP selected by the PSM III optimization model as part of the lowest cost portfolio: cell W1328 of the worksheet named "End Effects".

Version 13.9 of the PSM III optimization model:

- End effects for generic resources selected by the PSM III optimization model as the lowest cost portfolio: cell X1461 of the worksheet named "End Effects"

- End effects for resource acquisition alternatives from the 2010 RFP selected by the PSM III optimization model as part of the lowest cost portfolio: cell X1462 of the worksheet named "End Effects".
- End effects for PPA alternatives from the 2010 RFP selected by the PSM III optimization model as part of the lowest cost portfolio: cell X1463 of the worksheet named "End Effects".

PSE does not believe that a comparison of annual revenue requirements between "Resource Optimization" and "All Generic" cases is informative. Please see PSE's Response to Public Counsel Data Request No. 400. Additionally, PSE does not make resource decisions based on the annual costs in any one given year or subset of years.

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PUBLIC COUNSEL DATA REQUEST NO. 411

PUBLIC COUNSEL DATA REQUEST NO. 411:

RE: Exhibit No. AS-3HC, p. 174.

Please provide workpapers supporting the derivation of the updated generic wind generation assumptions that were made on June 9, 2010, and provide any modeling analyses that indicate the impact of these revised wind assumptions on the cost effectiveness of LSR 1.

Response:

Please refer to the file location identified in Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 367. Although the file name shown on page 174 of Exhibit No. ___ (AS-3HC) differs from the above mentioned file, the cost assumptions for generic wind resources found in both files are identical.

These updated assumptions were made a full month after the decision of PSE's Board of Directors to construct Phase 1 of the Lower Snake River Wind Project ("LSR Phase 1"). Therefore, PSE did not use these assumptions in evaluating LSR Phase 1.

During this same time in June 2010, PSE received new, unsolicited proposals and a few lower re-priced 2010 Request for Proposals bids. Please see Exhibit No. ___ (AS-3HC) at pages 49-52 for a discussion and results of the re-evaluation of LSR Phase 1 relative to those proposals.

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PUBLIC COUNSEL DATA REQUEST NO. 446

PUBLIC COUNSEL DATA REQUEST NO. 446:

Please confirm that the estimated LSR 1 benefits that were presented in the May 5, 2010, Board Meeting Presentation were calculated using the PSM I Version 14.2 model and therefore did not include the end effects trending calculation adjustment which was incorporated in PSM I Version 14.3 on April 29, 2010. If not confirmed, please explain.

Response:

Yes. Puget Sound Energy, Inc. ("PSE") used version 14.2 of the Portfolio Screening Model I ("PSM I"), which had its own end effects, and it did not include the end effects calculated in PSM I version 14.3.

The end effects calculation incorporated into PSM I version 14.3 were also incorporated into the PSM III version 13.9.1 optimization model that provided similar results as presented in the May 5, 2010 Board meeting.

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PUBLIC COUNSEL DATA REQUEST NO. 447

PUBLIC COUNSEL DATA REQUEST NO. 447:

RE: Exhibit No. AS-4HCT, p. 8.

- a. Please provide the referenced June 2010 re-evaluations of LSR 1 including all models and results of these analyses, and
- b. Explain whether LSR was modeled as an "existing resource" in these analyses, as indicated by the listing of model changes on pages 172 and 173 of Exhibit AS-3HC.

Response:

- a. Please see Puget Sound Energy, Inc.'s ("PSE") Response to Data Request No. 372. The models requested in Public Counsel Data Request No. 447(a) were provided on the same DVDs containing the workpapers of Aliza Seelig. See the following path:

AS-WP(HC)
AS-WP(HC)LSR Reevaluation

- b. Phase 1 of the Lower Snake River Wind Project was not modeled as an "existing resource" in the referenced June 2010 re-evaluation.

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PUBLIC COUNSEL DATA REQUEST NO. 450

PUBLIC COUNSEL DATA REQUEST NO. 450:

RE: Exhibit No. AS-4HCT, p. 8.

- a. Please provide the economic results for LSR 1 and other wind options presented to the PSE EMC at the April 22, 2010, meeting, and
- b. Please note whether those results were derived from the Phase I analysis of 2010 RFP options based on the 2010 Trends case scenario only. If not, please provide models and documentation of any other economic results for LSR 1 and other wind options presented at this meeting.

Response:

- a. Please see pages 207 through 210 and pages 214 through 231 of Exhibit No. ___(AS-3HC). Please also see the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig, Exhibit No. ___(AS-1HCT).
- b. The 2010 Trends pricing was not the only scenario supporting the economic results for Phase 1 of the Lower Snake River Wind Project and other renewable resources presented to the Energy Management Committee of Puget Sound Energy, Inc. ("PSE") at the meeting dated April 22, 2010. The economic results of Lower Snake River presented at the April 22, 2010 Energy Management Committee meeting of PSE included results from the scenario analysis performed in Portfolio Screening Model III ("PSM III") optimization model, which consists of five scenarios including the 2010 Trends scenario. These results can be seen in the column labeled "Quantitative Findings" on pages 214 through 231 of Exhibit No. ___(AS-3HC).

Models and documentation of the quantitative analyses have already been provided throughout this proceeding, including but not limited to the following:

- the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig, Exhibit No. ___(AS-1HCT);

- PSE's Response to Public Counsel Data Request No. 289;
- Table 7 on page 27 of Exhibit No. ____ (AS-1HCT);
- Table 13 on page 36 of Exhibit No. ____ (AS-1HCT);
- Figure 25 on page 42 of Exhibit No. ____ (AS-3HC);
- Page 417 of Exhibit No. ____ (AS-3HC); and
- PSE's Response to Public Counsel Data Request No. 345, which provides updated analyses to correct the Business as Usual scenario.

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PUBLIC COUNSEL DATA REQUEST NO. 451

PUBLIC COUNSEL DATA REQUEST NO. 451:

RE: PSE Response to Public Counsel Data Request No. 192.

Please provide the forecasted carbon prices from the referenced EPA report that PSE intended to use for its carbon price forecast for each year from 2021 through 2030.

Response:

Please see Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 192, which states, in part, as follows:

The carbon price forecast used in the 2010 Request for Proposals ("RFP") Phase I economic screening of Lower Snake River Phase 1 ("LSR") was based on Table 4 (page 17) of the Environmental Protection Agency's ("EPA") report, *Economic Impacts of S. 1733: The Clean Energy Jobs and American Power Act of 2009*, dated Oct. 23, 2009. This report is publicly available on EPA's web site at http://www.epa.gov/climatechange/economics/pdfs/EPA_S1733_Analysis.pdf.

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PUBLIC COUNSEL DATA REQUEST NO. 452

PUBLIC COUNSEL DATA REQUEST NO. 452:

RE: PSE Response to Public Counsel Data Request No. 192.

Please explain what events led PSE to discover that it had inadvertently accelerated the increase in forecasted carbon prices on August 30, 2011.

Response:

Puget Sound Energy, Inc. ("PSE") discovered the transposition error in preparing PSE's Response to Public Counsel Data Request No. 192. When setting up the models for the 2010 Request for Proposals process, PSE noticed that these prices were accelerating faster in the later years of the model; however, it was not considered a critical factor because it was during the later years of the model and it was with the range of other carbon prices.

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PUBLIC COUNSEL DATA REQUEST NO. 457

PUBLIC COUNSEL DATA REQUEST NO. 457:

RE: Exhibit No. AS-4HCT, p. 20.

Please provide the estimated benefits supplied from LSR 1 only for each of the scenarios presented in Table 6 along with the models and wind build schedules for the resource optimization and "All Generic" runs for each such analysis.

Response:

Please see Puget Sound Energy, Inc.'s Responses to Public Counsel Data Request Nos. 384, 398, and 400.

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PUBLIC COUNSEL DATA REQUEST NO. 460

PUBLIC COUNSEL DATA REQUEST NO. 460:

RE: Exhibit No. AS-4HCT, p. 27.

Please confirm that the "2010 RFP Base" carbon price forecast presented on this page reflects the data transfer error acknowledged in the PSE Response to Public Counsel Data Request No. 192. If not confirmed, please explain.

Response:

Puget Sound Energy, Inc. confirms that the "the '2010 RFP Base' carbon price forecast presented on this page reflects the data transfer error acknowledged in the PSE response to Public Counsel Data Request No. 192."

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PUBLIC COUNSEL DATA REQUEST NO. 463

PUBLIC COUNSEL DATA REQUEST NO. 463:

Please identify any other utilities that use the PSM III or PSM I models that were used by PSE to forecast benefits of LSR 1 in this case.

Response:

The Portfolio Screening Model I ("PSM I") screening model and the Portfolio Screening Model III ("PSM III") optimization model are proprietary models used by Puget Sound Energy, Inc. ("PSE"). Each of PSM I and PSM III is a Microsoft Excel-based revenue requirement model that PSE developed to evaluate incremental cost and risk for a wide variety of resource alternatives and portfolio strategies. PSE has used variations of these models in its resource acquisition and development decisions since 2003.

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PUBLIC COUNSEL DATA REQUEST NO. 464

PUBLIC COUNSEL DATA REQUEST NO. 464:

Please identify any other utilities that use the method of calculating end effects that was used by PSE to forecast benefits of LSR 1 in this case.

Response:

Puget Sound Energy, Inc. ("PSE") objects to Public Counsel Data Request No. 464 to the extent that such Public Counsel is requesting PSE to perform research that Public Counsel is capable of performing. Without waiving and subject to this objection, PSE provides the following response.

PSE has not conducted a study of utilities to identify other utilities that use the same method of calculating end effects.

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PUBLIC COUNSEL DATA REQUEST NO. 465

PUBLIC COUNSEL DATA REQUEST NO. 465:

Please confirm that PSM III provides a more rigorous and detailed production cost forecast than PSM I.

Response:

Puget Sound Energy, Inc. ("PSE") confirms that "PSM III provides a more rigorous and detailed production cost forecast than PSM I." A description of PSM I can be found in PSE's 2007 Integrated Resource Plan ("IRP"), and a description of PSM III can be found in PSE's 2008 IRP.

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PUBLIC COUNSEL DATA REQUEST NO. 466

PUBLIC COUNSEL DATA REQUEST NO. 466:

PC-466 RE: Exhibit No. AS-4HCT, p. 30.

Is PSE aware that other utilities assume that units which retire during the end effects period are replaced with resources of the same type in calculating end effects.

Response:

Puget Sound Energy, Inc. ("PSE") objects to Public Counsel Data Request No. 466 to the extent that Public Counsel is requesting PSE to perform research that Public Counsel is capable of performing. Without waiving and subject to this objection, PSE provides the following response.

PSE has not conducted an exhaustive study of all utilities to identify utilities that "assume that units which retire during the end effects period are replaced with resources of the same type in calculating end effects."

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PUBLIC COUNSEL DATA REQUEST NO. 469

PUBLIC COUNSEL DATA REQUEST NO. 469:

RE: Exhibit No. AS-4HCT, p. 34, line 1.

Considering the statement, "recognizing that PSE does not know future market prices," how can the Company accurately calculate end effects for LSR 1 and other resources for a period that is 20 to 50 years into the future?

Response:

Please see Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 395.

Redacted Version

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PUBLIC COUNSEL DATA REQUEST NO. 470

PUBLIC COUNSEL DATA REQUEST NO. 470:

RE: Exhibit No. AS-4HCT, p. 40.

Please provide the proposed price (\$/MWh) for each of the REC sale offers submitted in response to the 2010 RFP for each year of the offer.

Response:

Puget Sound Energy, Inc. ("PSE") received two proposals containing six offers for unbundled renewable energy credits ("REC") in response to its 2010 Request for Proposals ("2010 RFP"). The table below summarizes the proposed price, vintage year(s) and volume of each offer.

Project Name	Respondent	Vintage	Volume	\$/REC
(#10053-a)				
(#10053-b)				
(#10053-c)				
(#10053-d)				
(#10059-a)				
(#10059-a)				

It is important to note that [REDACTED] 10- and 20-year offers were mutually exclusive; only one could be selected. It is also important to note that the 2014-2018 offer from [REDACTED] was to be sourced from a pool of resources that included the [REDACTED]. This is relevant because [REDACTED] offered the full REC output of the [REDACTED] in its stand-alone proposal. Ultimately, even when combined, the unbundled REC proposals did not offer a sufficient amount of RECs to offset the need to acquire another resource to meet PSE's 2016 renewable requirements.

PSE's Response to Public Counsel Data Request No. 470 is HIGHLY CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

REDACTED
 VERSION

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PUBLIC COUNSEL DATA REQUEST NO. 474

PUBLIC COUNSEL DATA REQUEST NO. 474:

Please provide documentation of any concerns identified by PSE within the last three years regarding the accuracy of consistency of the optimization results of the PSM III optimization model or the Front Line Systems, Inc. Risk Solver Platform optimization algorithm.

Response:

Please see the section entitled "Portfolio Screening Model (PSM III)" on page 162 of Exhibit No. ___ (AS-3HC), which is from Puget Sound Energy, Inc.'s 2010 Request For Proposals, for a discussion of any concerns regarding the Portfolio Screening Model III ("PSM III") optimization model.

Please also see pages 4-5 of Exhibit No. ___ (AS-5HC) for a discussion of the optimization results in Version 13.9.1 of the PSM III optimization model.

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PUBLIC COUNSEL DATA REQUEST NO. 475

PUBLIC COUNSEL DATA REQUEST NO. 475:

Please indicate whether the resource optimization logic of the PSM III model was applied to determine any new resource requirements during the 30-year end effects period.

Response:

The Portfolio Screening Model III ("PSM III") optimization model does not optimize resource selections during the end effects period. Please see page 29, line 18, through page 30, line 5, of the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. __ (AS-4HCT), for a description of the end effects.

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PUBLIC COUNSEL DATA REQUEST NO. 478

PUBLIC COUNSEL DATA REQUEST NO. 478:

Please indicate whether the Aurora economic dispatch modeling of production was used to determine wind and other new resource generation levels, costs and market revenues during the 30-year end effects period.

Response:

AURORA was used in the following manner to determine the production and prices for the 30 year end effects:

Puget Sound Energy, Inc. estimated the market revenues, costs, and generation levels assumed beyond the twenty-year model horizon of the Portfolio Screening Model III ("PSM III") optimization model based on the last several years of revenues, costs, and generation levels from the AURORAxmp model. The 2010 Request for Proposal is consistent with the 2009 Integrated Resource Plan in the use of a twenty-year AURORAxmp model run, and an extension of the AURORAxmp model forecast into the end effects period.

The wind generation levels for 2010 RFP projects were input hourly into the AURORAxmp model. The forecasted hourly distribution of expected generation was provided by the 2010 RFP bidders based on their wind resource assessment. This forecast was further reviewed and adjusted by PSE's wind resource consultant DNV-GEC.

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PUBLIC COUNSEL DATA REQUEST NO. 479

PUBLIC COUNSEL DATA REQUEST NO. 479:

RE: Exhibit No. AS-4HCT, p. 20.

Please provide the PSM III model used to evaluate the "All Generic" costs for the Trends 2010 ITC 2016 study.

Response:

The "All Generic" PSM III optimization model that was run prior to the Trends 2010 ITC 2016 study did not provide any inputs used in PSE's evaluation; therefore the model was not saved.

The purpose of the "All Generic" study was to test the sensitivity of extending tax credits.

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PUBLIC COUNSEL DATA REQUEST NO. 480

PUBLIC COUNSEL DATA REQUEST NO. 480:

RE: Exhibit No. AS-4HCT, p. 20 and Disc 4 of Ms. Seelig's Direct Testimony workpapers.

Please confirm that the new wind resource levels for the "All Generic" version of the Trends 2010 ITC 2020 study are approximately 248 MW greater beginning in 2020 than the new wind resource levels reflected in the Resource Optimization version of the Trends 2010 ITC 2020 analysis. If not, please explain why not. If so, please explain this difference and indicate whether it increases the total expected cost of the All Generic case when compared to the Resource Optimization case.

Response:

Puget Sound Energy, Inc. ("PSE") confirms "that the new wind resource levels for the 'All Generic' version of the Trends 2010 ITC 2020 study are approximately 248 MW greater beginning in 2020 than the new wind resource levels reflected in the Resource Optimization version of the Trends 2010 ITC 2020 analysis."

The reason for the difference is that each model selected a different mix of resources to meet the future capacity, energy and REC need. For example, the Resource Optimization portfolio selected an RFP biomass plant that displaced generic wind. An additional example is that the All Generic portfolio selected about 150 MW less thermal generation. The costs of the two portfolios cannot be compared because each model selects the lowest cost combination of resources that are available. The All Generic model selects only from generic resources and the Resource Optimization model selects from both RFP resources and generic resources.

As both of these models are based on the minimum portfolio costs drawn from two different pools of resources, it is not possible to identify individual costs of each resource. The purpose of these two runs is to test sensitivity of extending tax credits, and not to compare the portfolio costs of the two different optimizations.

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PUBLIC COUNSEL DATA REQUEST NO. 485

PUBLIC COUNSEL DATA REQUEST NO. 485:

Does PSE agree that, at the time it conducted its analysis of LSR 1 and the 2010 RFP proposals in April, 2010, there was significant economic, market and regulatory uncertainty which made it very difficult to accurately forecast loads and generating resource costs over the 2010-2050 period covered by its Phase II analyses? If not, please explain why not.

Response:

There will always be uncertainty in forecasting and this is an issue in making any long term resource decision. Puget Sound Energy, Inc. ("PSE") mitigates this risk by rigorous scenario testing to determine how specific resources evaluate under a wide range of economic conditions. Please see PSE's Response to Public Counsel Data Requests Nos. 395 and 412.

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PUBLIC COUNSEL DATA REQUEST NO. 494

PUBLIC COUNSEL DATA REQUEST NO. 494:

Reference the PSE Response to Public Counsel Data Request No. 397:

If the 2010 RFP analysis was the definitive analysis supporting the selection of LSR 1, and the only estimate of portfolio benefits provided for LSR 1 in the May 5 Board Meeting presentation was derived from the PSM I 2010 Trends scenario analysis, please explain how the effects of uncertainty in forecasted market prices, loads, carbons prices and wind capital costs upon the cost effectiveness of LSR 1 were assessed by the Board in reaching its decision to approve LSR 1.

Response:

Throughout this proceeding, Puget Sound Energy, Inc. ("PSE") has provided information that was presented to the Board. PSE has generally responded to the information requested in Public Counsel Data Request No. 494 in PSE's Response to Public Counsel Data Request No. 395. A more specific responses to Public Counsel Data Request No. 494 requires a review of the portfolio metric results from PSE's screening model, Portfolio Screening Model I ("PSM I"), and a review of the optimization model, Portfolio Screening Model III ("PSM III").

PSM I and uncertainty. The Lower Snake River Phase 1 ("LSR Phase 1") portfolio benefit presented to PSE's Board of Directors on May 5, 2010 is \$68.8 million, as seen in Exhibit No. ___ (RG-13HC), at page 199. (Note \$62.8 million with corrected production payment cost, Exhibit No. ___ (AS-3HC), in Figure 20.) This calculation is based on PSM I version 14.2. Portfolio benefit calculated in PSM I is one of three screening metrics that PSE uses to choose the best resources to pursue in more rigorous quantitative and qualitative evaluation. An explanation of portfolio benefit is provided in the 2010 Request for Proposal ("RFP") Document, Exhibit No. ___ (AS-3HC), at page 29.

Portfolio Benefit is the difference between the net present value portfolio revenue requirement with a proposed project, and the net present value portfolio revenue requirement of the generic portfolio strategy. A positive

portfolio benefit means that the proposed project yields lower cost to the portfolio than a comparable “generic” resource. A negative portfolio benefit indicates the proposed resource is more expensive than a generic resource.”

The generic resource displaced by LSR Phase I in PSM I version 14.2 was a 340 MW wind plant in 2013. This generic plant also receives the benefit of federal tax stimulus. The generic plant and LSR Phase 1 respond similarly to the uncertainty in forecasted market prices, loads, carbons prices. Thus the portfolio benefit metric, based on the change between LSR Phase 1 and the displaced generic resource, in PSM I is not sensitive to these uncertainties. In PSM I, portfolio benefit helps to identify the candidate short list projects that should be evaluated further. The metric does not, by itself, inform us if the specific resource will be part of a lowest cost resource portfolio.

PSM III and uncertainty. Proposals selected for the candidate short list were subjected to more rigorous due diligence examination during the second phase of the 2010 RFP analysis. Please see Exhibit No. ___ (AS-3HC), beginning at page 30. This phase is typified by greater interaction with selected bidders and additional qualitative and quantitative analysis, designed to support a deeper understanding of the proposals and their potential performance within PSE's portfolio. For the quantitative analysis, PSE uses its optimization model, Portfolio Screening Model III (“PSM III”), to find the mix of 2010 RFP candidate short list projects and generic resources to minimize portfolio revenue requirement while meeting PSE's annual capacity need and annual REC need under the Washington RPS.

The uncertainties of forecasted market prices, loads, carbons prices and wind capital costs are addressed by the scenarios tested in PSM III. The details of the assumptions used in the scenario analysis for the 2010 RFP are discussed in Exhibit No. ___ (AS-3HC), at pages 163 through 165. Selection of a 2010 RFP resource in a number of scenarios indicates the favorability of that resource both in terms of cost and fit with energy, capacity and REC need of the portfolio. LSR Phase 1 was selected by the optimization model in 4 out of 5 scenarios, as shown in Exhibit No. ___ (RG-13HC), at page 203.

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PUBLIC COUNSEL DATA REQUEST NO. 499**PUBLIC COUNSEL DATA REQUEST NO. 499:****Reference the PSE Responses to Public Counsel Data Request No. 429:**

Please explain why PSE did not reevaluate LSR 1 with version 14-3 of the PSM I model and identify the date upon which PSE identified the need to make an adjustment to the end effects trending calculation of market revenues used for the end effects calculation.

Response:

The use of Portfolio Screening Model I ("PSM I") version 14-3 has been documented in Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request Nos. 429 and 362. PSE's Response to Public Counsel Data Request No. 362 discusses how the change in end effects methodology was tested in Portfolio Screening Model III ("PSM III") version 13.9.1 prior to the May 5, 2010 Board meeting, and that PSE concluded that the changes did not affect the recommendation given to the Board to construct Lower Snake River Phase 1 ("LSR Phase I"). For these reasons, LSR Phase 1 was not reevaluated in PSM I version 14-3.

The identification of the need to revise end effects methodology was on or about April 23, 2010.

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PUBLIC COUNSEL DATA REQUEST NO. 500

PUBLIC COUNSEL DATA REQUEST NO. 500:

Provide any benchmarking analyses performed within the last three calendar years to assess the reasonableness of the PSM III, PSM II and PSM I models.

Response:

Puget Sound Energy, Inc. ("PSE") has not performed any benchmarking analysis of PSM III, PSM II or PSM I model outputs.

PSE does review input assumptions for reasonableness. For example:

- Gas price assumptions and forecast are provided by an outside consultant.
- Generic resource assumptions are a combination of information provided by outside consultants in addition to PSE's own involvement in the market.
- AuroraXMP power prices are checked for reasonableness by reviewing regional capacity expansion, plant capacity factors are checked against historical data, and power prices are checked against other regional organizations that use the Aurora model. For example, a comparison of the 2009 Trends Power Price and the NWPCC 6th power plan power price is located in the October 7, 2010 IRPAG. The 2009 Trends Power was a levelized price of \$84.75 and the NWPCC 6th power plan was a levelized price of \$83.87. The NWPCC 6th power plan was published with real \$2006 so PSE used a 2.5 percent escalator and an 8.1 percent discount rate.
- The revenue requirement in PSM has been compared against pro forma analyses for resources that require such analysis

PSE has also reviewed output for reasonableness. For example, in 2009 PSE did review the Energy Information Administration's ("EIA") report dated April 2009, "An Updated Annual Energy Outlook 2009 Reference Case Reflecting Provisions of the

American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook". EIA states on page 4 of this report:

By 2012, wind generation with the ARRA is expected to be more than twice that projected in the no-stimulus case, 201 billion kilowatthours compared to 86 billion kilowatthours and estimated generation of 53 billion kilowatthours in 2008. Although wind capacity growth is projected to slow significantly after the expiration of the Federal tax credits in 2012, by 2030 total installed wind capacity is projected to be 67 percent greater because of the ARRA-stimulated growth than in the no-stimulus case.

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PUBLIC COUNSEL DATA REQUEST NO. 502

PUBLIC COUNSEL DATA REQUEST NO. 502:

Please confirm that the PSM I model does not use resource optimization algorithms but instead calculates costs of specific resources compared to cost of a "generic resource". If not, please explain why not.

Response:

Puget Sound Energy, Inc. ("PSE") can confirm the statement that the Portfolio Screening Model I ("PSM I") does not use resource optimization algorithms in creating the screening evaluation metrics. However, generic resource additions found in the "All Generic" version of PSM I were created by the Portfolio Screening Model III optimization from the same scenario.

Public Counsel's characterization of PSM I in its Data Request No. 502 is incomplete. Page 158 of the Second Exhibit to the Prefiled Direct Testimony of Aliza Seelig, Exhibit No. ___ (AS-3HC), describes how resources, like those received in response to the 2010 Request for Proposal ("RFP"), are used to displace generic resources and the impact on the overall portfolio is measured. This measurement includes, but is not limited to:

- the difference in costs between the evaluated resources and the displaced generic resource;
- the portfolio impact of timing differences in when resources are placed into service, and
- the change in market sales and purchases of electricity.

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PUBLIC COUNSEL DATA REQUEST NO. 504

PUBLIC COUNSEL DATA REQUEST NO. 504:

Reference PSE Response to Public Counsel Data Request No. 402:

The PSE Response to Public Counsel Data Request No. 402 was not responsive in that it did not provide the following information:

Please provide documentation or analysis developed by Navigant Consulting and/or PSE supporting the method of calculating end effects as in the PSM I and PSM III Version 13.6 and Version 13.9 models.

Response:

Puget Sound Energy, Inc. ("PSE") disagrees that its Response to Public Counsel Data Request No. 402 was not responsive. Nonetheless, Attached as Attachment A to Public Counsel Data Request No. 504, please find the Navigant Portfolio Screening Model Documentation presented to PSE on January 2004. Attachment A provides a high level description of end effects. It does not provide an analysis of the end effect calculation method used.

Attachment A to PSE's Response to Public Counsel Data Request No. 504 is CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

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PUBLIC COUNSEL DATA REQUEST NO. 504

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DR NO.	“CONFIDENTIAL” Material
504	Attachment A to PSE's Response to Public Counsel Data Request No. 504 is CONFIDENTIAL per Protective Order in WUTC Docket Nos. UE-111048 / UG-111049.

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Exhibit No. AS-58C CX
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**PSE'S RESPONSE TO PUBLIC COUNSEL DATA REQUEST NO. 504
CONFIDENTIAL ATTACHMENT A**

**IS CONFIDENTIAL IN ITS ENTIRETY
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PUBLIC COUNSEL DATA REQUEST NO. 397

PUBLIC COUNSEL DATA REQUEST NO. 397:

Please confirm that the PSM III analysis savings results presented at the May 5, 2010, Board Meeting represent portfolio savings supplied from LSR 1 plus other new wind resources proposals obtained through the 2010 RFP process that ultimately were not selected by PSE, and therefore such savings do not represent the savings or customer benefits supplied solely by LSR 1. If not, please explain why not.

Response:

No, Puget Sound Energy, Inc. ("PSE") cannot confirm the above. At the PSE Board of Directors meeting dated May 5, 2010, PSE did not present a portfolio benefit savings metric from the Portfolio Screening Model III ("PSM III") optimization model. PSE presented portfolio benefits of each individual resource relative to a generic resource as evaluated in the Portfolio Screening Model I ("PSM I") screening model. In addition to the metrics from PSM I, PSE also presented the combination of resources selected by Version 13.6 of the PSM III optimization model. PSE also had the results from the Version 13.9 of the PSM III optimization model available for discussion at the PSE Board of Directors meeting dated May 5, 2010.

PSE explained that—in all scenarios from Version 13.6 of the PSM III optimization model—it was cost-effective to accelerate the acquisition of wind resources from the alternatives in the 2010 Request for Proposals ("2010 RFP") before 2016. PSE also explained the qualitative evaluation results of each resource alternative from the 2010 RFP.

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Docket Nos. UE-111048 and UG-111049
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PUBLIC COUNSEL DATA REQUEST NO. 400

PUBLIC COUNSEL DATA REQUEST NO. 400:

Please provide the total expected costs for the "Resource Optimization" and "All Generic" cases, along with the resultant total Portfolio Benefit as derived from the "Evaluation Summary" sheet for each of the PSM III Version 13.6 and Version 13.9 scenarios provided on Disc 4 of the workpapers of witness Seelig, and confirm that these amounts include end effects as indicated by the Total Cost Summary in the "Results Summary" sheet of each such PSM III file.

Response:

The portfolio benefit found in Versions 13.6 and 13.9 of the Portfolio Screening Model III ("PSM III") optimization model is an unused calculation, and Puget Sound Energy, Inc. ("PSE") cannot verify the accuracy of the information presented in those cells. The presentation of such metric in the PSM III optimization model is a vestige from the Portfolio Screening Model I ("PSM I") screening model and does not imply, in any way, that PSE conducted or relied upon this metric.

As stated in PSE's Response to Public Counsel Data Request No. 398, PSE does not conduct a portfolio benefit analysis with the PSM III optimization model because such optimization model was not designed for such an analysis. The cells identified in PSE's Response to Public Counsel Data Request No. 384 are less informative because such metric compares two separately optimized portfolios where both portfolios reflect the benefit of taking advantage of tax incentives early.

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Puget Sound Energy, Inc.'s

2011 General Rate Case

PUBLIC COUNSEL DATA REQUEST NO. 403

PUBLIC COUNSEL DATA REQUEST NO. 403:

Please indicate how long PSE has used the method of calculating end effects which was used for the 2010 RFP evaluation for resource planning and evaluation purposes, and describe any changes to this end effects calculation method that have been implemented by PSE since January of 2008.

Response:

Puget Sound Energy, Inc. ("PSE") started using the end effects calculation for the 2003 Least Cost Plan. PSE documented the methodology in the 2003 Least Cost Plan. Appendix J to the April 2003 Least Cost Plan contains a discussion of the modeling process and includes a description of the end effects calculation. The end effects methodology has been used and reviewed in the evaluation of new resources since 2003.

PSE has not materially changed the end effect methodology between January 2008 and the documented edits provided on pages 172-174 of Exhibit No. ___ (AS-3HCT). PSE has kept a log of model edits from before January 2008, and such log can be found on the "Update Log" tab of the Portfolio Screening Model I ("PSM I") screening model. A similar log for the Portfolio Screening Model III ("PSM III") optimization model can be found on the "Comments" tab of the PSM III optimization model.

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PUBLIC COUNSEL DATA REQUEST NO. 404

PUBLIC COUNSEL DATA REQUEST NO. 404:

Please confirm that PSE's end effects calculation does not reflect the need to add new renewable resources to comply with RPS requirements after LSR 1 and other wind resources retire.

Response:

Puget Sound Energy, Inc.'s ("PSE") models, as referenced in this case, do not use a replacement cost methodology to estimate the cost of end effects after the 20-year planning horizon. In that regard, please see the following statement in the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. ___ (AS-4HCT):

PSE's end effects calculation includes all the costs of resources assumed during the 20-year planning horizon, the remaining rate base cost at the end of the planning horizon, and any portfolio benefit from the book life beyond the planning horizon.

Exhibit No. ___ (AS-4HCT) at page 32, lines 9-12.

PSE has used its current end effects methodology since the 2003 Least Cost Plan. Please see PSE's Response to Public Counsel's Data Request No. 403.

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PUBLIC COUNSEL DATA REQUEST NO. 407

PUBLIC COUNSEL DATA REQUEST NO. 407:

Please confirm that forecasted generation levels of renewable generation and other generation resources used in PSE's end effects calculations for the PSM III Version 13.6 model used to calculate portfolio benefits presented at the May 5, 2010, Board Meeting were not produced from a production cost simulation model, but instead were simply extrapolated based on the average level of generation over the 2026-2029 period. If not confirmed, please explain.

Response:

No. Puget Sound Energy, Inc. ("PSE") uses the AURORAxmp model to forecast generation during the first twenty years of Version 13.6 of the Portfolio Screening Model III ("PSM III") optimization model. For the levels of generation in the end effects period, the PSM III optimization model uses an average generation based on years 2026-2029 from the AURORAxmp model to project plant output.

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PUBLIC COUNSEL DATA REQUEST NO. 409

PUBLIC COUNSEL DATA REQUEST NO. 409:

RE: Addendum LSRWP Appendix M and PSM III Version 13.9 runs included on Disk 4 of witness Seelig's workpapers.

Please confirm that in two of the five scenarios evaluated LSR 1 was not selected as an optimal resource, and that in the other three scenarios evaluated the total portfolio benefit, including benefits attributable to LSR 1 and other new wind resources, was approximately 0.2% (two tenths of one percent) of the estimated total cost of the All Generic portfolio alternatives including end effects. If not confirmed, please explain why not.

Response:

Public Counsel did not make its calculation available to Puget Sound Energy, Inc. ("PSE") for confirmation. Therefore, PSE can neither confirm nor deny that "in two of the five scenarios evaluated LSR 1 was not selected as an optimal resource, and that in the other three scenarios evaluated the total portfolio benefit, including benefits attributable to LSR 1 and other new wind resources, was approximately 0.2% (two tenths of one percent) of the estimated total cost of the All Generic portfolio alternatives including end effects." If and to the extent that Public Counsel's calculation relies on the portfolio benefit found in Versions 13.6 and 13.9 of the Portfolio Screening Model III ("PSM III") optimization model, PSE does not conduct a portfolio benefit analysis with the PSM III optimization model because such optimization model was not designed for such an analysis. Please see PSE's Response to Public Counsel Data Request Nos. 394, 396, 398, 399 and 400.

The Addendum to Appendix M provided as the First Exhibit to the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. ___ (AS-5HC), shows that Version 13.9.1 of the PSM III optimization model selected Phase 1 of the Lower Snake River Wind Project ("LSR Phase 1") in five of the seven analyses. Two of these analyses were designed to examine the potential extension of production tax credits ("PTCs"), which was the primary reason PSE initiated this analysis. Although LSR Phase 1 was not initially selected by version 13.9.1 of the PSM III optimization model in the low growth scenario

and the low growth with Base Cap Ex scenario, PSE reoptimized the portfolio with LSR Phase 1 in the Low Growth Base Capex scenario and found an additional \$39 million of benefit when compared to the "Resource Optimized" portfolio in the Low Growth Base CapEx scenario that did not include LSR Phase 1.

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**Docket Nos. UE-111048 and UG-111049
Puget Sound Energy, Inc.'s
2011 General Rate Case**

PUBLIC COUNSEL DATA REQUEST NO. 425

PUBLIC COUNSEL DATA REQUEST NO. 425:

RE: Exhibit No. AS-4HCT, p. 4.

Please provide all models for the analysis described on lines 5-12, indicate whether this was a new analysis performed for rebuttal testimony, and, if so, identify the versions of the models used and any changes in inputs or modeling methods that were applied when compared to the model versions that were relied upon at the time of the May 5, 2010 Board Meeting.

Response:

The information described on page 4, lines 5-12, of the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. ___ (AS-4HCT), is data that are available in the working Portfolio Screening Model III ("PSM III") optimization models provided in the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig, Exhibit No. ___ (AS-1HCT). PSE revised the Business As Usual ("BAU") price scenario from the 2010 Request for Proposals ("2010 RFP"). Please see PSE's Response to Public Counsel Data Request Nos. 345 and 386 for the revised BAU scenarios from versions 13.6 and 13.9.1 of the PSM III optimization model. The PSM III optimization model constructs the least cost portfolio by changing the decision variables in the PSM III optimization model's "LP Problem" worksheet.

By comparing the "LPProblem" worksheets between two sets of Version 13.9.1 PSM III optimization models, it is possible to identify the changes made to the input decision variables. The primary change in decision variables is that PSE removed Phase 1 of the Lower Snake River Wind Project from 2012 and inserted an equivalent size project in 2016. The PSM III optimization model files supporting the column titled "Portfolio Cost with Generic Equivalent in 2016" in Table 2 of the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. ___ (AS-4HCT), contain identical scenario input assumptions, financial inputs for all resource alternatives, and calculation logic as the models used in the first column "Portfolio Cost with LSR Phase 1 in 2012," which had been run and were available for the PSE Board of Directors meeting dated May 5, 2010.

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Docket Nos. UE-111048 and UG-111049
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PUBLIC COUNSEL DATA REQUEST NO. 426

PUBLIC COUNSEL DATA REQUEST NO. 426:

Please provide electronic models and underlying calculations supporting each of the tables presented in Exhibit No. AS-4HCT.

Response:

Please see the following locations for source data used in the tables found in the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. ____ (AS-4HCT).

- Table 1:** Please see Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 425.
- Table 2:** Please see PSE's Response to Public Counsel Data Request No. 425.
- Table 3:** There are no underlying models or calculations used to present this data.
- Table 4:** Please see PSE's Response to Public Counsel Data Request No. 345.
- Table 5:** Please see Attachment A to PSE's Response to Public Counsel Data Request No. 426.
- Table 6:** Information in Table 6 derived from models whose locations are provided in Attachment A to PSE's Response to Public Counsel Data Request No. 364.
- Table 7:** There are no underlying models or calculations used to present this data.
- Table 8:** Information in Table 8 derived from models whose locations are provided in Attachment A to PSE's Response to Public Counsel Data Request No. 349.

Table 9: Information in this table and model is found in the "Summary and Tables" worksheet of the following spreadsheet found in DVD Disc 1 of the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig, Exhibit No. ___(AS-1HCT), at the following folder location:

AS-WP (C)
AS-WP (C) LSR Dev Plan
(C) Backup LSR MW and Schedule
(C) DCF Excel Model Development Schedule
(C) DCF for May 2010 BOD.xls

Table 10: Information in this table is available in Attachment C of PSE's Response to Public Counsel Data Request No. 345. The location of models used to create this table can be found in PSE's Response to Public Counsel Data Request Nos. 38 and 345.

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PUBLIC COUNSEL DATA REQUEST NO. 428

PUBLIC COUNSEL DATA REQUEST NO. 428:

RE: Exhibit No. AS-4HCT, p. 7.

Please confirm that the results of the re-run of the 2009 IRP analysis were the basis for PSE's decision to solicit wind resources in the 2010 RFP.

Response:

As described in pages 6 through 12 of the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. ___ (AS-1HCT), Puget Sound Energy's ("PSE") decision to solicit wind resources in the 2010 Request for Proposals for All Generation Sources ("2010 RFP") was informed by the results of the 2009 Integrated Resource Plan ("2009 IRP"). The 2009 IRP found that it was lower cost to build wind early to take advantage of expiring tax credits rather than build the wind just in time to meet renewable need. The re-run of the 2009 IRP further confirmed that the lowest cost resource strategy includes building wind early to take advantage of expiring tax incentives rather than building renewable resources just in time to meet need. Finally, the results of the 2010 RFP confirmed the 2009 IRP's finding that it was lower cost to build wind early to take advantage of expiring tax credits rather than build the wind just in time to meet renewable need.

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PUBLIC COUNSEL DATA REQUEST NO. 495

PUBLIC COUNSEL DATA REQUEST NO. 495:

Please confirm that each of the PSM III analyses presented in the May 5, 2010 Board Meeting presentation included proposed wind resources other than LSR 1 that PSE's staff did not recommend for approval.

Response:

Yes, the wind resources referenced in Public Counsel Data Request No. 495 were not recommended for approval but were presented as resources that required further evaluation. In addition to presenting the results from quantitative analysis, the Board was also presented with qualitative analysis that identified key risks for these proposals. The qualitative review and assessment of these proposals can be found on pages 55-60, 204-207, 209, 210, and 216-224 of Exhibit No. ____ (RG-13HC).

One significant risk that the majority of these proposals shared was that the quoted pricing that the quantitative analysis was based on was contingent on successfully obtaining the Section 1603 Treasury Grant. As Puget Sound Energy, Inc. reviewed the development schedule for these proposals, it was discovered that there was significant risk that these projects probably would not meet the Section 1603 Treasury Grant deadlines that existed at the time of the May 5, 2010 Board meeting.

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PUBLIC COUNSEL DATA REQUEST NO. 415

PUBLIC COUNSEL DATA REQUEST NO. 415:

RE: Exhibit No. RG-28CT, p. 16.

Please confirm that PSE's contractual obligation to sell RECs to SCE, and SCE's obligation to purchase RECs from PSE, under the referenced second REC sale contract with SCE, was contingent upon CPUC approval of the contract and that this approval not yet known on May 5, 2010.

Response:

Yes. Please also see Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 415.

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PUBLIC COUNSEL DATA REQUEST NO. 416

PUBLIC COUNSEL DATA REQUEST NO. 416:

RE: Exhibit No. RG-28CT, p. 16.

Please confirm that the forecasted REC sales to SCE under the contract was included in each of the PSM I and PSM III Version 13.6 and 13.9 analyses that were included in Disc 4 of witness Seelig's workpapers, and which were presented to support selection of LSR 1 at the May 5, 2010, Board Meeting. If not, please explain why not.

Response:

Please see Puget Sound Energy, Inc.'s First Supplemental Response to Public Counsel Data Request No. 320 for a description of the Renewable Energy Certificate ("REC") sales contract between Puget Sound Energy, Inc. ("PSE") and Southern California Edison ("SCE"). All versions of the Portfolio Screening Model I ("PSM I") screening model and the Portfolio Screening Model III ("PSM III") optimization model included in Disc 4 of the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig reflected this contractual commitment.

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PUBLIC COUNSEL DATA REQUEST NO. 417

PUBLIC COUNSEL DATA REQUEST NO. 417:

RE: Exhibit No. RG-28CT, p. 16.

Before May 5, 2010, did PSE evaluate scenarios which considered potential availability of RECs from the sale contract that could be used, in light of the uncertainty which existed. If not, please explain why not. If so, please provide the models which evaluated this issue.

Response:

Puget Sound Energy, Inc. ("PSE") did not evaluate scenarios that excluded PSE's contractual commitments to sell renewable energy credits to Southern California Edison because these contractual commitments were firm commitments based on what PSE knew at the time.

PSE's renewable energy credit ("REC") agreement with Southern California Edison ("SCE") was fully-executed (i.e. signed by an authorized representative of each entity) on May 29, 2009, and governed by the WSPP Master Agreement existing between PSE and SCE. The WSPP Master Agreement has specific provisions to address, among other things, dispute resolution and damages, should one party breach its obligations under the agreement. Once an agreement is fully-executed, it is binding between the parties, and, in this agreement, subject to the satisfaction of the conditions specified within the agreement (and found on pages 2-3 of Attachment C of PSE's Response to Public Counsel Data Request No. 277).

This agreement, like other Renewable Portfolio Standard ("RPS") agreements executed by California investor-owned utilities, is subject to approval from the California Public Utilities Commission ("CPUC") prior to commencement of the delivery term specified in the agreement. Different from the cost recovery process in Washington, California investor-owned utilities obtain cost recovery authorization from their CPUC in advance of receiving and remitting payment for the energy and/or RECs under an agreement.

With respect to the PSE and SCE agreement, once fully-executed, neither party without consequence, could terminate the agreement and the obligations set forth within,

PSE's Response to Public Counsel Data Request No. 417

Date of Response: January 27, 2012

Person who Prepared the Response: Anna Mikelsen / Michael Mullally

Witness Knowledgeable About the Response: Roger Garratt / Aliza Seelig

without receiving a final order from the CPUC (with the exception of no action taken by the CPUC by the specified date in the agreement).

CPUC approval of the agreement had not been obtained on May 5, 2010. The PSE Board of Directors was aware that PSE was selling RECs to California utilities and the projected volumes of such sales. Moreover, PSE and SCE had no reason to suspect that the CPUC would reject the agreement. Indeed, the CPUC had approved three REC sale agreements that involved PSE prior to the PSE Board of Directors meeting on May 5, 2010. Please see Attachments A and B to PSE's Response to Public Counsel Data Request No. 277 for copies of PSE REC sale agreements approved by the CPUC in June 2009 and October 2009, respectively. Please also see Attachment D to PSE's Response to Public Counsel Data Request No. 277 for a copy of a REC sale agreement that received final CPUC approval in June 2010. Based on the three previous CPUC approvals, PSE management had no reason to suspect that the CPUC would reject the last SCE agreement.

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PUBLIC COUNSEL DATA REQUEST NO. 419

PUBLIC COUNSEL DATA REQUEST NO. 419:

RE: Exhibit No. RG-28CT, p. 19-20.

Please identify all of the "All Generic" PSM I and PSM III (Versions 13.6 and 13.9) which were provided on Disc 4 of witness Seelig's workpapers and relied upon to support the recommendation to construct LSR 1 at the May 5, 2010, Board Meeting, in which the first generic wind resource was added in 2016 or later.

Response:

Only one version of the "All Generic" Version 13.9.1 of the Portfolio Screening Model III ("PSM III") optimization model chose to wait until 2016 to build generic wind resources. This version of the optimization model was a sensitivity analysis to the 2010 Trends scenario in which production tax credits were extended through 2020. This analysis is discussed in detail on pages 18-20 of the Prefiled Rebuttal Testimony of Ms. Aliza Seelig, Exhibit No. ___ (AS-4HCT), and can be found in the following location on DVD Disc 4 of the workpapers supporting the Prefiled Direct Testimony of Ms. Aliza Seelig:

AS-WP (HC)

AS-WP (HC) Renewable Phase II

PSM III Models

PSM III Version 13.9

2010 Trends

All Generic_2020 ITC_PSM III v 13.9_Trends.xls

Dockets UE-111048 UG-111049
Exhibit No. AS-73HC CX
REDACTED VERSION

**HIGHLY CONFIDENTIAL “Addendum LSR WP
Appendix M-Development Plan”**

IS HIGHLY CONFIDENTIAL IN ITS ENTIRETY

PAGES 1 THROUGH 6

Dockets UE-111048 UG-111049
Exhibit No. AS-74HC CX
REDACTED VERSION

**HIGHLY CONFIDENTIAL “All Generic vs. Optimized Wind
Resource Additions”**

IS HIGHLY CONFIDENTIAL IN ITS ENTIRETY

PAGES 1 THROUGH 28

**HIGHLY CONFIDENTIAL “2010 TRENDS NEW RESOURCE
OPTIMIZATION (PSM III VERSION 13.9.1), COMMENTS TAB”**

IS HIGHLY CONFIDENTIAL IN ITS ENTIRETY

PAGES 1 THROUGH 9

Dockets UE-111048 UG-111049
Exhibit No. AS-76HC CX
REDACTED VERSION

HIGHLY CONFIDENTIAL "PSM III ANALYSIS FOR 2010 RFP"

IS HIGHLY CONFIDENTIAL IN ITS ENTIRETY

PAGES 1 THROUGH 14

Dockets UE-111048 UG-111049
Exhibit No. AS-77HC CX
REDACTED VERSION

**HIGHLY CONFIDENTIAL “CHANGES IN WIND REVENUES (\$/MWH)
DUE TO END EFFECTS TRENDING MODIFICATION”**

IS HIGHLY CONFIDENTIAL IN ITS ENTIRETY

PAGES 1 THROUGH 14

Dockets UE-111048 UG-111049
Exhibit No. AS-78HC CX
REDACTED VERSION

**HIGHLY CONFIDENTIAL AND CONFIDENTIAL
WORKPAPERS OF ALIZA SEELIG
(ELECTRONIC FORM ONLY – PROVIDED ON DVDs)**

IS HIGHLY CONFIDENTIAL AND CONFIDENTIAL IN ITS ENTIRETY

(DISKS 1 – 8)

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

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PUBLIC COUNSEL DATA REQUEST NO. 511

PUBLIC COUNSEL DATA REQUEST NO. 511:

RE: PSE Response to Public Counsel Data Request No. 425.

PSE Response to Public Counsel Data Request No. 425 is non-responsive. PC-425 asked PSE to provide all models used for the analysis described on lines 5-12, of page 4 of Exhibit No. AS-4HCT, however the response did not provide the models used for the described analysis. As originally requested, please provide these models, and identify where within Ms. Seelig's workpapers these models are located.

Response:

Files used in the column "Portfolio Cost with Generic Equivalent in 2016" of Table 2 can be found in the folder named "LSR in 2016". Files used in the column "Portfolio Cost with LSR Phase 1 in 2012" of Table 2 are the Portfolio Screening Model III ("PSM III") version 13.9 "Resource Optimization" models found in the following locations:

For the 2010 Trends, Green World, and Low Growth w/ Base CapEx scenarios, see Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 364.

For the Business as Usual (corrected market prices) scenario, see PSE's Response to Public Counsel Data Request No. 386.

For the Low Growth scenario, see the folder named "LSR in 2012" in Ms. Seelig's rebuttal testimony workpapers. Lower Snake River ("LSR") Phase 1 was not originally selected in the Low Growth scenario, so for this example PSE created a version of PSM III where LSR Phase 1 was selected in 2012.

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PUBLIC COUNSEL DATA REQUEST NO. 512

PUBLIC COUNSEL DATA REQUEST NO. 512:

RE: PSE Response to Public Counsel Data Request No. 425.

PSE Response to Public Counsel Data Request No. 425 is non-responsive. PC-425 asked whether the analysis described on lines 5-12, of page 4 of Exhibit No. AS-4HCT was a new analysis performed for the rebuttal testimony, however the response did not reply to this question. As originally requested, please indicate whether the referenced analysis was a new analysis performed for the rebuttal testimony.

Response:

The analysis referenced in Public Counsel Data Request No. 512 is not new analysis in the sense that this information was available in the models provided in the workpapers of Aliza Seelig. These models are the Portfolio Screening Model III ("PSM III") version 13.9 optimization models where the locations are identified in Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 511.

What is new is the presentation of results, since some of the portfolios presented in Table 2 of Exhibit No. ___ (AS-4HCT) are less than optimal. The purpose of the exercise described in lines 5-12 on page 5, and illustrated in Table 2, of Exhibit No. ___ (AS-4HCT) is to refute Public Counsel's claim that Lower Snake River ("LSR") Phase 1 "is not expected to benefit customers when compared to the "No Early Wind" alternative for the next 20 years", as stated on lines 10-12 of Exhibit No. ___ (SN-1CT). By comparing the results shown in Table 2, PSE demonstrates that Public Counsel's statement is not accurate.

PSE's Response to Public Counsel Data Request No. 425 describes the use of an existing optimization model, PSM III version 13.9.1, with identical scenario input assumptions. To understand that it is not new analysis, consider this analogy: an optimization model is like an educational 35mm filmstrip. Each frame is a portfolio of resources to be evaluated. Using this analogy, the optimization model runs through the full filmstrip looking for the frame with the lowest cost combination of resources. The analysis described on page 4, lines 5-12, of Exhibit No. ___ (AS-4HCT) is indicative of

stopping on two separate frames of the filmstrip and comparing the costs. This is not new analysis, but rather a look at the model on two different frames. The first frame shows the portfolio costs assuming LSR Phase 1 with a commercial operation date in 2012. The second frame shows the portfolio costs if LSR Phase 1 is replaced by a similarly sized alternative plant with a commercial operation date in 2016.

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PUBLIC COUNSEL DATA REQUEST NO. 513

PUBLIC COUNSEL DATA REQUEST NO. 513:

RE: PSE Response to Public Counsel Data Request No. 425.

PSE Response to Public Counsel Data Request No. 425 is non-responsive. PC-425 requested that, if the analysis described on lines 5-12, of page 4 of Exhibit No. AS-4HCT was a new analysis performed for the rebuttal testimony, PSE identify the versions of the models used and any changes in inputs or modeling methods that were applied when compared to the model versions that were relied upon at the time of the May 5, 2010 Board Meeting. However, PSE's response did not provide the requested information. As originally requested, please identify the versions of the models used and any changes in inputs or modeling methods that were applied when compared to the model versions that were relied upon at the time of the May 5, 2010 Board Meeting.

Response:

The model referenced in Public Counsel Data Request No. 513 was Portfolio Screening Model III ("PSM III") version 13.9.1 optimization model. See Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request Nos. 511 and 512.

PSE's Response to Public Counsel Data Request No. 425 indicates that changes in the input decision variables could be identified by comparing the "LPProblem" worksheets. An examination of the input decision variables shows that PSE assumed the acquisition of 3.4 generic wind plants, or 340 MW in 2016. The original models which had been run and were available for the PSE Board of Directors meeting dated May 5, 2010 would have only had an integer choice for the number of plants in 2016 resulting in 100 MW, 200 MW, 300 MW, 400 MW or 500 MW. See PSE's Response to Public Counsel Data Request No. 512 for an explanation of how the models were used in the analysis described on lines 5-12, of page 4 of Exhibit No. ____ (AS-4HCT).

Other than the integer modification of 3.4 generic wind plants in 2016 and removal of Lower Snake River Phase 1 from 2012, there are no other input changes to the models which had been run and were available for the PSE Board of Directors meeting dated May 5, 2010.

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Puget Sound Energy, Inc.'s
2011 General Rate Case****PUBLIC COUNSEL DATA REQUEST NO. 514****PUBLIC COUNSEL DATA REQUEST NO. 514:****RE: PSE Response to Public Counsel Data Request No. 426.**

PSE Response to Public Counsel Data Request No. 426 is non-responsive. PC- 426 requested that PSE provide electronic models and underlying calculations supporting each of the tables presented in Exhibit No. AS-4HCT. PSE's response referred to the PSE Response to Public Counsel Data Request No. 425 as the source of the requested information for Table 1 of Exhibit No. AS-4HCT. However, the response to PC-425 does not provide the electronic models and underlying calculations supporting Table 1 of Ms. Seelig's rebuttal testimony. Please provide this information for Table 1 as originally requested in PC-426, and identify where within Ms. Seelig's workpapers these models and calculations are located.

Response:

Support for Table 1 of Exhibit No. ___(AS-4HCT) can be found in the electronic workpapers of Aliza Seelig's rebuttal testimony. Please review the file named "AS-4HCT Table 1.xls".

Values shown in the row named "PV (Benefit) of Cash Grant" are described in Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 52.

Values shown in the row named "PV (Benefit) of Sales Tax Exemption" are described in PSE's Response to Public Counsel Data Request No. 54.

Values shown in the row named "Net PV (Benefit)" are shown in Table 2 of Exhibit No. ___(AS-4HCT) in the column "Cost / (Benefit) of Building LSR Phase 1 Early". The location of the electronic models used to calculate these values are provided in PSE's Response to Public Counsel Data Request No. 511.

Values shown in the row named "PV Cost / (Benefit) other Portfolio" is the Net PV (Benefit) less the sum of the PV (Benefit) of Cash Grant and the PV (Benefit) of Sales Tax Exemption.

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PUBLIC COUNSEL DATA REQUEST NO. 515

PUBLIC COUNSEL DATA REQUEST NO. 515:

RE: PSE Response to Public Counsel Data Request No. 426.

PSE Response to Public Counsel Data Request No. 426 is non-responsive. PSE Response to Public Counsel Data Request No. 426 is non-responsive. PC-426 requested that PSE provide electronic models and underlying calculations supporting each of the tables presented in Exhibit No. AS-4HCT. PSE's response referred to the PSE Response to Public Counsel Data Request No. 425 as the source of the requested information for Table 2 of Ms. Seelig's rebuttal testimony. However, the response to PC-425 does not provide the electronic models and underlying calculations supporting Table 2 of Exhibit No. AS-4HCT. Please provide this information for Table 2 as originally requested in PC-426, and identify where within Ms. Seelig's workpapers these models and calculations are located.

Response:

Please see Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 511.

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PUBLIC COUNSEL DATA REQUEST NO. 516

PUBLIC COUNSEL DATA REQUEST NO. 516:

Please provide the PSM III models used to calculate the "All Generic" total cost amounts as reflected in cell B14 of the "Evaluation Summary" tab of each of the seven PSM III "Resource Optimization" models included in the workpapers for Ms. Seelig's rebuttal testimony.

Response:

The "All Generic" optimizations of Portfolio Screening Model III ("PSM III") for each of the seven files provided in Aliza Seelig's rebuttal workpapers can be found in the following locations:

For the 2010 Trends, 2010 Trends (2020 ITC), Low Growth, and Low Growth w/ Base CapEx scenarios, please see Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 364.

For the Business as Usual (corrected market prices) scenario, please see PSE's Response to Public Counsel Data Request No. 386.

For the Green World scenario, please see PSE's Response to Public Counsel Data Request No. 491.

Please see PSE's Response to Public Counsel Data Request Nos. 398, 400, and 480 where it is explained why PSE did not rely upon cell B14 of the "Evaluation Summary" worksheet in PSM III.

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PUBLIC COUNSEL DATA REQUEST NO. 522

PUBLIC COUNSEL DATA REQUEST NO. 522:

RE: Exhibit No. AS-3HC, p. 204 and 205.

For each proposal and project listed on Exhibit No. AS-3HC, p. 204-205 that was reviewed as a part of the March-April 2010 Renewable Resources Evaluation, please provide the following information:

- a. The date on which its Phase I Screening Analysis began,
- b. The date on which its Phase I Screening Analysis was complete,
- c. The date on which its Phase II Analysis began,
- d. The date on which its Phase II Analysis was complete,
- e. The date PSE notified the bidder of its status related to Phase I and/or Phase II of the evaluation.

Response:

- a. The renewable Phase I screening analysis began on March 3, 2010.
- b. All proposals received in response to Puget Sound Energy, Inc.'s 2010 Request for Proposal were quantitatively evaluated in the Portfolio Screening Model I ("PSM I") and presented in a weekly evaluation team meeting by April 7, 2010. However, after the identification of a candidate short-list, additional screening analysis was performed when an unsolicited proposal or an update to an existing proposal was received. Quantitative analysts also continued to peer review the PSM I results and made adjustments as necessary.
- c. Resource inputs used in the quantitative analysis of the renewable Phase II began development on April 1, 2010. Phase II qualitative analysis began once a proposal was reviewed in a weekly evaluation team meeting and was selected to be evaluated in Phase II.
- d. Phase II analysis was completed on April 22, 2010.
- e. Please see Public Counsel Data Request No. 521.

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PUBLIC COUNSEL DATA REQUEST NO. 524

PUBLIC COUNSEL DATA REQUEST NO. 524:

RE: Exhibit No. AS-3HC, p. 472.

Please provide:

- a. the dates on which the Reevaluation of LSR Phase I took place,
- b. the dates on which "several companies resubmitted renewable resource proposals to PSE,"
- c. the dates on which "PSE received several new renewable resource project proposals."

Response:

- a. The date the reevaluation of Lower Snake River Phase I was concluded was June 30, 2010. See Exhibit No. ___(AS-3HC), pages 472 and 475.
- b. See Exhibit No. ___(AS-3HC), page 101 showing unsolicited (or new) proposals and re-priced (or resubmitted) proposals through July 2010. See Exhibit No. ___(AS-3HC), page 244 and 245, which shows unsolicited (or new) and re-priced (or resubmitted) proposals received up until the June 17, 2010 EMC meeting.
- c. See Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 524(b).

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PUBLIC COUNSEL DATA REQUEST NO. 528

PUBLIC COUNSEL DATA REQUEST NO. 528:

When was the 2010 RFP Process Document (Exhibit No. AS-3HC) written?

Response:

Puget Sound Energy, Inc. ("PSE") began to compile the contemporaneous documentation included in its 2010 Request for Proposal ("RFP") Process Document as early as March 2, 2010, the date proposals were due. PSE continued to develop and edit the document throughout the RFP evaluation process and beyond. The document was formally finalized as the Third Exhibit to Aliza Seelig's Prefiled Direct Testimony, Exhibit No. ___ (AS-3HC), on June 13, 2011.