EXHIBIT NO. WJE-21HCT DOCKET NOS. UE-090704/UG-090705 2009 PSE GENERAL RATE CASE WITNESS: W. JAMES ELSEA

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

Docket No. UE-090704 Docket No. UG-090705

PUGET SOUND ENERGY, INC.,

Respondent.

PREFILED REBUTTAL TESTIMONY (HIGHLY CONFIDENTIAL) OF W. JAMES ELSEA ON BEHALF OF PUGET SOUND ENERGY, INC.

REDACTED VERSION

DECEMBER 17, 2009

1	VI. PUBLIC COUNSEL ERRS BY COMPARING MINT FARM ENERGY		
2		CENTER OPERATING COSTS TO MARKET PRICES	
3	VII.	CONCLUSION	19
- II			

4

6

5

7

9

10

11

12

13

14

15

16 17

18 19 20

2122

PREFILED REBUTTAL TESTIMONY (HIGHLY CONFIDENTIAL) OF W. JAMES ELSEA

I. INTRODUCTION

- Q. Are you the same W. James Elsea who provided in this proceeding prefiled direct testimony, Exhibit No. WJE-1HCT, on May 8, 2009, and prefiled supplemental direct testimony, Exhibit No. WJE-20CT, on August 25, 2009, each on behalf of Puget Sound Energy, Inc. ("PSE")?
- A. Yes.
- Q. What is the purpose of your prefiled rebuttal testimony?
- A. This rebuttal testimony responds to the direct testimony of Scott Norwood,

 Exhibit No. SN-1HCT, witness for the Public Counsel section of the Washington

 State Attorney General's Office ("Public Counsel"), with respect to the

 quantitative analysis supporting PSE's acquisition of the Mint Farm Energy

 Center. Specifically, this rebuttal testimony demonstrates the following:
 - (i) the Mint Farm Energy Center was the best resource available to fill PSE's need,
 - (ii) the quantitative analysis of proposals submitted in the 2008 Request for Proposals supports PSE's acquisition of the Mint Farm Energy Center,
 - (iii) PSE appropriately considered the effects of imputed debt in considering long-term power purchase agreements ("PPA"), and

(iv) any comparison between the operating costs of the Mint Farm Energy Center and market power prices is misleading and irrelevant.

II. PSE HAS DEMONSTRATED A NEED TO ACQUIRE THE MINT FARM ENERGY CENTER TO MEET PSE'S ENERGY AND CAPACITY NEEDS

- Q. Does Public Counsel suggest that PSE failed to demonstrate a need to acquire the Mint Farm Energy Center to meet PSE's energy and capacity needs?
- A. Yes. Public Counsel suggests that PSE failed to demonstrate a need to acquire the Mint Farm Energy Center to meet PSE's energy and capacity needs and cites to a presentation to PSE's Board of Directors dated August 4, 2008, which "indicated that the plant would create surplus capacity on PSE's system through 2011." Exhibit No. SN-1HCT at page 9, lines 4-6. Public Counsel's suggestion is overly simplistic and incomplete and ignores the evidence presented of a dramatic need for PSE to acquire resources to replace expiring and retiring resources and meet its renewable portfolio standard obligations.

Q. How does PSE define resource need?

A. As discussed in my Prefiled Direct Testimony, Exhibit No. WJE-1HCT, in the 2007 IRP, Exhibit No. KJH-5, and in the 2008 RFP, Exhibit No. KJH-6, PSE defines resource need as "both an energy requirement and . . . a capacity requirement that were both developed during the 2003 Least Cost Plan." Exhibit No. WJE-1HCT at page 5, lines 2-3. The energy requirement is to have sufficient

firm resources to meet the average energy load in each month and is expressed in average Megawatts ("aMW"). Energy need is the difference between average load and available firm energy resources.

As a winter peaking utility, PSE experiences the highest demand for electricity when the weather is coldest. This is the peak energy demand that PSE must prepare to meet. In addition, PSE is also required to maintain sufficient reserves to minimize the risk of loss of load in the event of a forced outage or colder-than-expected weather.

For the 2007 Integrated Resource Plan (the "2007 IRP"), PSE projected the peak energy demand based on both a forecast of the customer base and an estimate of how much power would be used at a temperature of 13 degrees Fahrenheit. The 13 degrees Fahrenheit temperature represents approximately a one in twenty-year occurrence (5% exceedence probability) based on the 30-year historical data of minimum temperatures during the on-peak hours. *See* Exhibit No. KJH-5 at page 80.

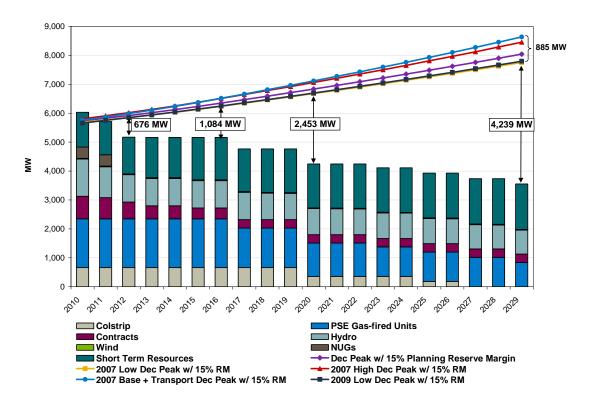
For the 2009 Integrated Resource Plan (the "2009 IRP"), PSE projected the peak energy demand based a forecast of how much power will be used at a temperature of 23 degrees Fahrenheit (a normal winter peak for PSE), plus a 15% planning margin. The 15% planning margin translates to a 5% loss of load probability, a

was approximately 150 aMW in January 2011. The projected supply side energy need grew to 700 aMW in January 2012 and nearly 1,200 aMW in 2015. The 13 degrees Fahrenheit capacity requirement grew from 208 MW in 2011 to 760 MW in 2012. *See generally* Exhibit No. WJE-1HCT at page 4, line 7, through page 5, line 17; *see also* Exhibit No. WJE-3.

C. <u>PSE's Reassessment of Electric Resources Needs in the 2009 IRP</u>

- Q. Does PSE's 2009 IRP project a need for PSE to acquire additional electric resources?
- A. Yes. To meet the projected base load demand of PSE's customers, the 2009 IRP projects that PSE will need to acquire 676 MW of electric resources and energy efficiency by 2012, 1,084 MW by 2015, and 2,453 MW by 2020. The chart below is presented in the Executive Summary of the 2009 IRP. *See* 2009 IRP, chapter 1, page 1-4. Although not contemporaneous with the decision to acquire Mint Farm, the 2009 IRP continues to demonstrate that PSE has a need to acquire resources. This is generally consistent with the conclusion of the 2008 RFP that Mint Farm meets only a portion of the 2012 resource need.

Figure 1. 2009 IRP - Electric Peak Capacity Resource Need: **Comparison of Projected Loads with Existing Resources**



These 2009 IRP numbers include the addition of the Mint Farm Energy Center and the Barclay's 4-year seasonal PPA and reflect the following pessimistic growth projections to reflect the economic downturn:

2009 Low Growth update assumes that the U.S. economy is in deep recession during 2009, experiences zero growth in 2010, and rebounds in 2011. This forecast assumes a slower average annual GDP growth rate of 1.7% from 2008 to 2019, and assumes significant cutbacks in regional Boeing and Microsoft employment. This forecast estimates an even deeper total drop in employment for PSE's service territory, -2.5%, from 2008 to 2010. Similarly, it forecasts lower personal income, number of households, and building permits in the near term (2008-2010) than either of the 2007 forecasts. However, the long-term 10-year annual employment growth rate of 1.0%, is actually slightly higher than the 2007 Low Growth forecast of 0.9%.

4

5

6

7

8

9

10

11

(v) a replacement PPA with Public Utility District No. 1 of Chelan County, Washington, for output from the Rocky Reach and Rock Island projects located on the middle stem of the Columbia River in central Washington to begin in November 2011 and June 2012 that represent over 300 MW in reduced capacity as compared to the PPA it replaces.

Exhibit No. KJH-5 at pages 83-92.

- Q. Has the recent economic downturn and PSE's revised load forecast eliminated PSE's need to acquire additional electric resources?
- A. No. Neither the recent economic downturn nor PSE's revised load forecast has eliminated PSE's need to acquire additional electric resources. The economic downturn and revised load forecast have affected load growth to some extent but have not affected PSE's need to replace expiring and retiring contracts and resources or to meet the renewable portfolio standard.
- Q. Has PSE previously explained that expiring and retiring resources are the primary reason for PSE's need to acquire additional electric resources?
- A. Yes. PSE's 2007 IRP expressly stated that "[t]he combination of economic growth and expiring supply contracts means that PSE faces large electric resource needs in the years ahead." Exhibit No. KJH-5 at page 8.

16

17

18

19

E. <u>Public Counsel's Need Analysis Inappropriately Focuses on Short-</u> <u>Term Need</u>

- Q. Given the extensive evidence of PSE's need for electric resources, why does

 Public Counsel suggest that PSE failed to demonstrate a need to acquire the

 Mint Farm Energy Center to meet PSE's energy and capacity needs?
- As stated above, Public Counsel makes an overly simplistic suggestion that PSE failed to show a need to acquire the Mint Farm Energy Center to meet PSE's energy and capacity needs because "the plant would create surplus capacity on PSE's system through 2011." Exhibit No. SN-1HCT at page 9, lines 4-6. This short-sighted suggestion inappropriately focuses on the first two years of the remaining 30 plus years of life of the Mint Farm Energy Center.

Q. Why is this short-sighted focus inappropriate?

A. Public Counsel's short-sighted focus is inappropriate because PSE must evaluate resource opportunities as they become available. As acknowledged by Commission Staff, "CCCT plants are 'lumpy' in that they become available in large blocks of capacity in a timeframe that is often not perfectly matched to load demand." Exhibit No. DN-1HCT at page 15, lines 19-20. The result of acquiring "lumpy" resources is that the portfolio may be periodically long with energy and capacity.

bid . . .

page 1. In other words, execution of the 15-year tolling PPA would not, in and of itself, met PSE's need for either 2011 or 2012.

III. PSE'S QUANTITATIVE ANALYSES SUPPORT THE ACQUISITION OF THE MINT FARM ENERGY CENTER

- Q. Does PSE agree with Public Counsel's evaluation of PSE's quantitative analysis process?
- A. No. PSE disagrees with Public Counsel's evaluation of PSE's quantitative analysis process. Public Counsel failed to examine all of the quantitative analyses when it determined that "the estimated system production cost benefits provided by three other gas-fired bids were higher than [the] Mint Farm [Energy Center]" Exhibit No. SN-1HCT at page 20, lines 7-9. In fact, two of these three projects—the tolling PPA and a purchase of an existing plant—had higher levelized costs than the Mint Farm Energy Center.
- Q. Did Public Counsel consider the higher levelized cost in recommending the tolling PPA over the acquisition of the Mint Farm Energy Center?
- A. Although Public Counsel acknowledges that the would have a higher levelized cost than the Mint Farm Energy Center because the PPA would be dispatched infrequently, Public Counsel dismissively asserts that this "is not an issue for concern" and "it simply reflects the fact that PSE is expected to have access to other lower cost sources of energy

on its system." Exhibit No. SN-1HCT at page 17, lines 15-16. In doing so, Public Counsel limits its assessment to two quantitative metrics—portfolio benefit and portfolio benefit ratio—and ignores the fact that the levelized cost of the tolling PPA is about \$50 per MWh (or about 35%) higher than the levelized cost of the Mint Farm Energy Center. *See* Exhibit No. RG-3HC at pages 115 and 187. Unlike Public Counsel, PSE evaluates all three of the quantitative metrics (levelized costs, portfolio benefit, and portfolio benefit ratio) when comparing projects.

- Q. Why is it important to look at each of levelized costs, portfolio benefit, and portfolio benefit ratio?
- A. As PSE stated in the presentation to its Board of Directors, dated August 4, 2008, comparison of quantitative metrics for gas plants is difficult because of the multiple variables involved, including but not limited to vintage, heat rate, and operating characteristics. *See* Exhibit No. RG-7HC at pages 34-35. Portfolio benefit is a metric that is often a function of plant size, so more portfolio benefit is not necessarily better. Portfolio benefit ratio is a metric introduced to offset the impact of plant size, but it sometimes has the unintended consequence of favoring gas plants that rarely run because the denominator in the ratio includes the capacity charges and a very low level of fuel and operating costs. Levelized cost provides an easily understood comparison of projects, but it often disfavors older or less efficient plant that provide mainly capacity reliability. In short, each

6

10

9

12

11

13 14

15

16 17

18

19

20

21

quantitative metric tells a story, and each story is necessary to assess the relative benefit or disadvantage of each proposal considered.

- Q. Does PSE have an identified energy need in addition to an identified capacity need?
- Yes. As stated above, and depicted monthly in Exhibit No. WJE-3, PSE has a A. significant identified energy need and a significant identified capacity need. A medium heat rate plant, such as the tolling PPA, would help satisfy PSE's identified capacity need but produce significantly less energy in PSE's portfolio than a lower heat rate plant, such as the Mint Farm Energy Center.
- Q. Do you agree with Public Counsel's suggestion that a project with a higher levelized cost would have benefits that are "more certain since they were less dependent on the level of future natural gas and market energy prices, which are difficult to predict?" (Exhibit No. RG-3HC at page 18, lines 3-4.)
- Although it is true that natural gas-fired plant that is dispatched fewer hours will A. be less dependent upon the price of natural gas, it is not necessarily true that lower exposure to fluctuations of gas prices will offset the higher level of exposure to market purchases. PSE's quantitative evaluation shows a slightly higher dispersion of portfolio benefits and levelized cost for the portfolio with the PPA than for the portfolio with the Mint Farm Energy Center. See Exhibit No. RG-3HC at pages 185-186.

7

11

14

13

15 16

17

18

19

20

IV. PUBLIC COUNSEL ERRONEOUSLY SUGGESTS THAT PSE SELECTED THE ACQUISITION OF THE MINT FARM ENERGY CENTER FOR NO OTHER REASON THAN TO ADD RATEBASE AND INCREASE SHAREHOLDER RETURN

- Q. Does Public Counsel suggest a motive for PSE to select the acquisition of the Mint Farm Energy Center over the PPA?
- Yes. Public Counsel erroneously suggests that PSE selected the acquisition of the A. Mint Farm Energy Center for no other reason than to add ratebase and increase shareholder return. See Exhibit No. SN-1HCT at page 18, line 13, through page 19, line 5.
- O. Does PSE use a shareholder metric to compare projects for resource acquisition?
- No. PSE evaluates each proposal according to the following criteria: A. (i) compatibility with resource need; (ii) cost; (iii) risk management; (iv) public benefits; and (v) strategic and financial considerations. Details of these criteria are spelled out in PSE's report on the 2008 All Generation Sources RFP (Exhibit No. RG-3HC at page 13) and in the Prefiled Rebuttal Testimony of Ms. Kimberly J. Harris, Exhibit No. KJH-8HCT. These criteria consider the benefit to PSE's customers, and PSE does not weight these criteria in any manner that would favor proposals that could potentially benefit shareholders.

10 11

13

14

12

15

16

17

19

18

20

21

V. PUBLIC COUNSEL MISTAKENLY IMPLI SHOULD EXCUDE THE EFFECT OF IMPUTED D ANALYZING COSTS ASSOCIATED WITH A TOLLING PPA

- Q. Does Public Counsel question the imputed debt cost adjustment that PSE tolling PPA? applied to the
- A. Although Public Counsel does not expressly question the imputed debt cost adjustment that PSE applied to the tolling PPA, Public Counsel erroneously suggests that such adjustment inappropriately burdens the PPA. See Exhibit No. SN-1HCT at page 12, lines 7-11. Any comparison of the portfolio benefits associated with the tolling PPA, without such imputed debt cost adjustment, to the Mint Farm Energy Center is meaningless.
- Is it appropriate to include imputed debt in the analysis of a PPA? Q.
- Yes. Existing Commission rules require that PSE consider the imputed debt of A. PPAs when evaluating and ranking resource alternatives. Specifically, the Commission's rules require that the criteria used to rank project proposals must at a minimum "recognize... risks imposed on ratepayers" and "recognize differences in relative amounts of risk inherent among different... financing arrangements, and contract provisions." WAC 480-107-035(2). In its 1994 order in Puget Sound Power & Light Company's prudence review case, the Commission's 1994 prudence order expressly instructed PSE to consider rating agencies' views of purchased power:

To date, the Mint Farm facility has not produced any energy cost savings for PSE's customers because the total cost of energy produced by the Mint Farm facility is significantly higher than current market prices for purchased energy.

Exhibit No. SN-1HCT at page 20, lines 1-4.

Q. Why is Public Counsel's comparison of Mint Farm Energy Center operating costs to market prices flawed?

A. Public Counsel's comparison of Mint Farm Energy Center operating costs with market prices is flawed for several reasons.

First, Public Counsel errs by comparing Mint Farm Energy Center operating costs, including fixed costs of gas transportation and fixed costs of transmission wheeling, to the average of on-peak market prices. Thus, Public Counsel is comparing fixed and variable operating costs to only the variable cost of market power. The effect of this error leads Public Counsel to imply that the Mint Farm Energy Center is operated in a way that does not cover its variable operating costs.

Second, in this comparison with market prices, Public Counsel errs by using an average of all monthly on-peak prices. This average incorrectly includes the lower priced spring months when PSE does not expect that the Mint Farm Energy Center would run. The effect of this error is to underestimate the market prices.

Finally, by proposing a disallowance for the deferred costs, Public Counsel would have PSE rely on market purchases until those purchases were higher than the

8

11

10

1213

14

15

16

17

18

19

20

operating costs plus fixed gas transportation and wheeling of the Mint Farm

Energy Center. This "lower of cost or market" theory effectively requires PSE to
forego cost recovery during any period in which (i) the Mint Farm Energy Center
would not be called upon to meet PSE's capacity needs need or (ii) the Mint Farm

Energy Center fixed and variable operating costs are greater than market prices.

- Q. Would Public Counsel's "lower of cost or market" theory allow PSE to recover the costs of future natural gas resources?
- A. No. Public Counsel's "lower of cost or market" theory would effectively deny PSE the recovery of some of the costs of any natural gas fired resource acquisition. The operating costs, including gas transportation and power wheeling, of any new gas-fired resource acquisition may exceed market prices in the short-term. This is true for plant ownership as well as tolling. PSE's 2007 and 2009 Integrated Resource Plans demonstrate that a strategy that combines conservation and generation from combined-cycle combustion turbines and renewable resources is the best strategy to meet the energy and capacity needs of PSE customers.

VII. CONCLUSION

- Q. Please summarize your conclusions.
- A. First, Public Counsel is incorrect in its assessment of PSE's resource need and in its conclusion that the tolling PPA was a better fit than the Mint

Farm Energy Center. This is not to suggest that the tolling PPA is a substandard proposal. Indeed, Public Counsel is correct that such proposal was attractive, and PSE continues to investigate it. In short, PSE has selected the best resource to match its energy and capacity need for 2011 and 2012, whereas the tolling PPA would not meet any identified need for 2011 and fail to satisfy the identified need for 2012 and beyond.

Second, Public Counsel erroneously suggests that PSE selected the acquisition of the Mint Farm Energy Center over the tolling PPA for no other reason than to add ratebase and increase shareholder return. This suggestion focuses only on the first two years of the projected 30+ year life of the Mint Farm Energy Center and relies upon an incomplete assessment of PSE's quantitative analysis that omits a comparison of levelized cost.

Third, Public Counsel mistakenly implies that PSE could, or should, exclude the effect of imputed debt in analyzing costs associated with a tolling PPA. This implication is directly contrary to the Commission's rules, which specifically require that PSE consider the imputed debt of PPAs when evaluating and ranking resource alternatives.

Finally, Public Counsel's "lower of cost or market" theory would effectively deny PSE the recovery of any costs of resource acquisition. PSE's Integrated Resource Plan demonstrates that a strategy combines conservation and generation from