EXHIBIT NO. ___(WJE-1HCT)
DOCKET NO. UE-06___/UG-06___
2006 PSE GENERAL RATE CASE
WITNESS: W. JAMES ELSEA

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-06____** **Docket No. UG-06____**

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

REDACTED VERSION

FEBRUARY 15, 2006

PUGET SOUND ENERGY, INC.

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

CONTENTS

PUGET SOUND ENERGY, INC.

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

I. INTRODUCTION

Q. Please state your name, business address, and position with Puget Sound Energy, Inc.

A. My name is W. James Elsea. My business address is 10885 N.E. Fourth Street Bellevue, WA 98004. I am the Financial Analysis Manager of Energy Resources for Puget Sound Energy, Inc. ("PSE" or "the Company").

Q. Have you prepared an exhibit describing your education, relevant employment experience, and other professional qualifications?

A. Yes, I have. It is Exhibit No. ___(WJE-2).

Q. What are your duties as Financial Analysis Manager of Energy Resources for PSE?

A. My present responsibilities include oversight of analysis of individual power resources and portfolios of power resources for the Company's Least Cost Plan and resource acquisition processes.

Q. What is the nature of your testimony in this proceeding?

A. My testimony in this case picks up where I left off in PSE's 2005 Power Cost Only Rate Case, Docket Number UE-050870 (the "2005 PCORC"). In that case, I described the modeling tools and quantitative analyses the Company utilized to evaluate the various resource alternatives that were proposed in response to its 2004 Requests for Proposals ("RFPs") process to meet the Company's need for additional power resources.

That 2004 RFP process led to the acquisition of the Hopkins Ridge Wind Project, the prudence of which was approved in the 2005 PCORC. The same 2004 RFP process, along with subsequent modeling updates and analyses, also led to the selection and acquisition of the Wild Horse Wind Project and the purchased power agreement with OrSumas, LLC for the output of the ORMAT Recovered Energy Generation resource ("ORMAT PPA") that are presented for recovery and prudence determination in this proceeding.

Because Stage 1 and Stage 2 of the Company's 2004 RFP modeling tools and analyses have already been presented to the Commission and other stakeholders in the context of the 2005 PCORC, my direct testimony in this case focuses instead on the modeling updates and additional analyses that were completed after the Hopkins Ridge acquisition and the Company's 2005 PCORC filing. Information about the earlier stages of the 2004 RFP process modeling and analyses is provided as Exhibit No. ___(WJE-8HC) to my testimony in this case.

Q. Please summarize the results of the Company's additional modeling and analyses.

A. The Company's additional analyses showed that the Wild Horse Project remained the next most attractive project to emerge from PSE's 2004 RFP process (after the Hopkins Ridge Project that PSE had already acquired), with a 20-year levelized cost of approximately $[redacted]/MWh and a net present value benefit to PSE's electric portfolio that ranges from a low of $35 million under conditions of low future gas prices to $67 million under conditions of high gas prices. In general, the Wild Horse Wind Project results in portfolio benefits of greater than $50 million when compared with the cost of generic resources in the Company's 2005 Least Cost Plan ("LCP").

These analyses also showed that the ORMAT PPA presented a favorable opportunity, with a 20-year levelized cost of approximately $[redacted]/MWh and a portfolio benefit of $0.4 million in the base price scenario when compared with generic resources from the 2005 LCP. In addition, this resource, through the productive use of waste heat from Northwest Pipeline compressor turbines, provides additional supply diversity to PSE's portfolio, as described in Mr. Roger Garratt's direct testimony, Exhibit No. ___(RG-1HCT).

Q. Does your testimony address any projects other than the Wild Horse Wind Project and the ORMAT PPA?

A. Yes, I also describe how the Company's modeling tools, analyses and additional

information were utilized to evaluate the new purchased power agreement and related transmission agreement with the Public Utility District No. 1 of Chelan County, Washington, for the Rocky Reach and Rock Island hydropower resources (collectively the "Chelan Contract") that is described in greater detail in Mr. Joel L. Molander's direct testimony, Exhibit No. __(JLM-1T) and is also presented for prudence determination in this proceeding.

The Company's modeling showed that the Chelan Contract has a 20-year levelized cost of $[redacted]/MWh, with a net present value benefit to PSE's electric portfolio of approximately $360 million.

II. ADDITIONAL QUANTITATIVE EVALUATION OF THE 2004 RFP PROCESS FINALISTS

A. A Brief Review of the Portfolio Screening Model Analyses of Stage 2 RFP Finalists

Q. Please summarize how the Company selected projects for further pursuit using the Company's Portfolio Screening Model in the Stage 2 Analysis of its 2004 RFP evaluation process.

A. The Company combined 18 leading project proposals into portfolios by considering the following: (i) cost of the stand-alone resource, (ii) seasonal supply shapes, (iii) resource diversity, and (iv) how well the combinations of resources satisfied the Company's resource need. PSE ultimately selected 12 representative portfolios under four price scenarios for further evaluation through

the Portfolio Screening Model. Details regarding this process, including the summary conclusions described below, are provided in Exhibit No. ___(WJE-8HC).

Q. What is the Portfolio Screening Model?

A. The Portfolio Screening Model is a simulation model that the Company has developed to help evaluate cost and risk for a wide variety of resource alternatives and portfolio strategies. The Portfolio Screening Model can be used to calculate variable costs for resources that are currently in or may be added to the Company's electric portfolio, as well as fixed costs for new resources that may be added to the portfolio. The model can also be used to perform probabilistic analysis of several key uncertainty factors and addresses a variety of topics related to resource acquisitions including end effects for resource alternatives that have varying lives.

Q. How did the Company analyze the 12 portfolios mentioned above?

A. The Company calculated the present values of portfolio costs for each of the 12 portfolios. The Company also prepared a scatter plot of portfolio cost and risk for the twelve portfolios in each of the four scenarios to compare how well portfolios perform in each of the price scenarios. The scatter plot and evaluation are provided in Exhibit No. ___(WJE-8HC).

Q. What did the Company conclude from this portfolio analysis?

A. The conclusion of the quantitative analysis in Stage 2 showed that acquisition of the entire Stage 1 "short" list, and most combinations thereof, would present a low cost portfolio. Of particular note is that in each scenario, a portfolio made up of the following resources was one of the lowest cost portfolios with medium level of risk:

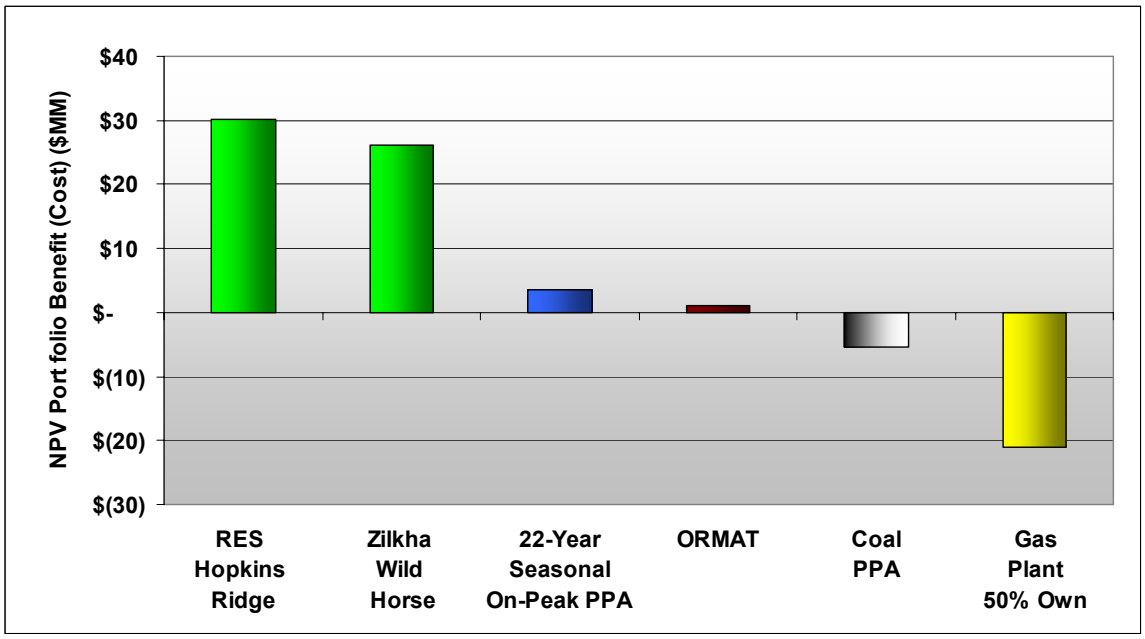
1. APS 2-yr PPA
2. Wild Horse Wind Project
3. Hopkins Ridge Wind Project
4. ORMAT Recovered Heat Project

Given this quantitative analysis, the Company was in the position to focus additional efforts on qualitative factors, due diligence, and negotiations regarding final commercial terms in pursuing final contracts to acquire the resources that made the short list, as described in Mr. Roger Garratt's direct testimony.

Q. Did the Company separately examine the resources that made up the portfolios?

A. Yes, the Company used the Portfolio Screening Model to model the existing PSE portfolio and separately added individual proposals in a separate Portfolio Screening Model run. The chart below presents the results of such modeling as to including or not including each proposal in the portfolio. The benefit or cost to the portfolio is measured by the change in 20-year NPV total portfolio cost. In

each case, the base portfolio assumed energy deficits would be purchased from the market through 2008, and beginning in 2009 a mix of additional wind resources along with an equal mix of gas and coal generation resources would be added to meet the Company's load need.



Q. How did the Wild Horse and ORMAT projects compare to other project proposals submitted in the 2004 RFP process with respect to quantitative analyses?

A. The Wild Horse Project compared very favorably. As discussed in Exhibit No. ___(WJE-8HC), the wind project proposals had one of the lowest ranges of projected levelized costs ($44 to $96 per MWh) of any fuel type submitted in response to PSE's RFPs. Among the six wind projects on the "most favorable" list, the Wild Horse Wind Project had the next lowest projected levelized-cost,

second only to the Hopkins Ridge Project, which the Company also acquired. The ORMAT project also showed net portfolio benefits, albeit to a lesser extent than the Wild Horse or Hopkins Ridge projects.

B. Subsequent Updates to PSE's 2004 RFP Stage 2 Modeling

Q. Did the Company undertake any updates to the Portfolio Screening Model subsequent to its Stage 2 analysis for the 2004 RFP process?

A. Yes. Generally, the Company updates prices for natural gas and power as forward prices change and as long-term third-party forecasts are updated. Because the due diligence and contract finalization stage of the 2004 RFP process extended for a number of months after the conclusion of the Stage 2 analysis, the Company again updated its forward gas prices in August 2005 for the Wild Horse Wind Project evaluation. The Company did so again in October 2005 for the Chelan Contract evaluation, which is described below.

Q. Did the Company undertake other updates besides gas and power prices?

A. Yes, the Company updated the weighted average cost of capital to 8.4% that was allowed by the Commission in the 2004 general rate case. In addition, the Company also strives on an ongoing basis to improve modeling logic.

During June 2005, the Company changed the logic involved in the calculation of end-effects. The end effects for a generation plant are forecast as the present

value of the difference between margin value of the power created and book value of the generation plant in the 20th year. The margin value of the plant is the difference between the projected market value of the power and the projected fixed and variable costs of plant operation. If the projected margin is positive and greater than the book value, then there is terminal value to the plant that reduces portfolio revenue requirements. If the projected margin is negative, then there is a terminal cost.

Prior to the June 2005 logic change, if the projected margin was negative, the terminal cost was the sum of the book value and the negative margin. However, the Company believes that if projected margins were negative, the plant likely would not be operated and consequently the terminal cost would be limited to the unrecovered book cost. Accordingly, the Company updated its Portfolio Screening Model to reflect this revised end effects calculation.

Q. What was the impact of that change?

A. Compared with the Stage 2 RFP analysis, this logic change had the effect of reducing the portfolio costs, by reducing the terminal cost, of thermal resources.

C. <u>Updated Wild Horse Wind Project Analysis</u>

Q. What gas and power prices did the Company use in the August 2005 Update for evaluation of the Wild Horse Wind Project?

A. In August 2005 the Company updated the AURORA model and the Portfolio Screening Model with the projected gas and power prices resulting from two different scenarios. For scenario one, the Company reoptimized the Business As Usual Scenario described in the 2005 Least Cost Plan with the following gas prices. For gas prices in 2006-2010, the Company used Kiodex average marks for that time period from June 1, 2005 to July 21, 2005. For 2011-2025, the Company used CERA "Rear View Mirror" forecast prices. The gas prices are described in PSE's 2005 LCP Chapter V. Natural Gas Price Forecasts, a copy of which is provided as Exhibit No. ___(WJE-3), and the scenarios are described in Chapter X, Electric Analysis and Results, a copy of which is provided as Exhibit No. ___(WJE-4). This levelized Sumas gas price from 2006-2025 was $6.20/mmbtu.

Additional changes to AURORA were the adoption of Northwest Power and Conservation Council's ("NWPCC") regional load forecast for the Oregon-Washington-Idaho region in AURORA. The Company adopted the NWPCC load forecast in an attempt to calibrate the AURORA output Mid-C power prices to the Kiodex Mid-C forward prices. This scenario is referred to as Business As Usual August 05.

Q. What was the second scenario used to update gas and power prices?

A. For scenario two, the Company used current Kiodex gas prices through 2010 and then assumed a continuing trend of higher gas prices. This levelized gas price

from 2006-2025 was $7.90/mmbtu. This scenario is referred to as the Strategic Plan Scenario.

Q. What is Kiodex and why did the Company use an average of Kiodex for forward gas prices?

A. Kiodex Global Market Data ("Kiodex") is a third party service for energy and commodity market data, as explained in Mr. Mills' direct testimony. Beginning in June 2005, the Company has contracted with Kiodex for data pertaining to specific gas and power trading points. For long-term forecasts used in analysis of resource acquisitions, the Company uses Kiodex forward gas prices for the first 5 years of the analysis period. To reduce the potential for selecting extreme high or low forward marks, the Company uses the Kiodex daily marks averaged over a three month period. The Kiodex prices were available for June 1 through July 21, 2005, at the time the Company prepared the August update.

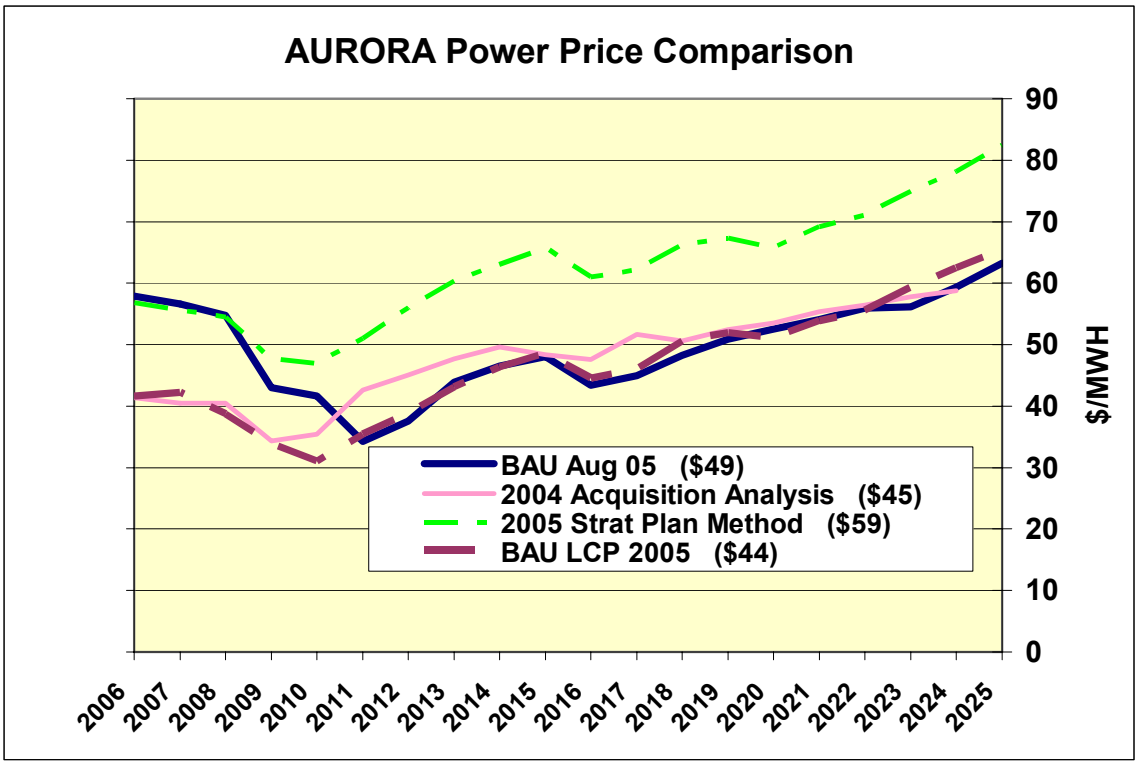
Q. How did these updated gas price forecasts compare with the prices assumed in the 2004 RFP acquisition process and the 2005 LCP?

A. The following graph shows the Business As Usual August 05 and the Strategic Plan Scenario gas prices compared with the price forecasts assumed in the 2004 RFP acquisition process and the 2005 LCP. In general, the updated forecasts reflect higher forward market prices in 2006-2010.

CHART REDACTED

Q. What were the power price forecasts that resulted from these gas price forecasts?

A. The following graph shows the power price forecasts for the Business As Usual August 05 and the Strategic Plan Scenario compared with the power price forecasts assumed in the 2004 RFP acquisition process and the 2005 LCP.



Q. To what resources did the Company apply these updated scenarios?

A. Using the two scenarios, Business As Usual August 05 and 2005 Strategic Plan Method, the Company evaluated the Hopkins Ridge Wind Project, the Wild Horse Wind Project, an existing CCCT project located in the Northwest, and a proposed CCCT Project with an expected commercial operation date of 2009.

Q. Did the Company use an updated cost forecast for the Wild Horse Project in the Portfolio Screening Model?

A. Yes. The Company periodically updated the pro forma financial forecast for the Wild Horse Project to reflect new information derived from due diligence and negotiations with the Wild Horse Project developer. The costs for the Wild Horse

Project are higher than those for the Hopkins Ridge Project, as discussed in Mr. Roger Garratt's direct testimony. The Portfolio Screening Model analysis used a "snapshot" of pro forma costs as of August 16, 2005.

Q. What did the Company conclude from this updated modeling?

A. The Hopkins Ridge and Wild Horse wind resources continued to demonstrate greatest benefit to the Company's power portfolio. The updated portfolio benefit analysis is referred to as PSM 7-5A, and is shown in the following chart:

CHART REDACTED

Applying the August 2005 Business As Usual reoptimization, the Wild Horse Project presented a $54 million portfolio benefit, relative to the 2005 LCP Generic Portfolio. This benefit does not include any Project residual value that may exist at the end of the Project's 20 year useful life.

Q. What is the projected levelized cost of power from the Wild Horse Project and how does that compare to other project proposals with respect to these updated quantitative analyses?

A. The updated levelized cost of the Wild Horse Wind Project in the Portfolio Screening Model forecast is approximately $[redacted]/MWh. This compares favorably with the levelized cost of about $80/MWh for gas fired CCCT generation.

D. Quantitative Evaluation of the ORMAT PPA

Q. Did the Company also reevaluate the estimated costs and benefitsof the ORMAT PPA?

A. Yes. The Company further evaluated this relatively small resource opportunity, which is to provide 4.95 MW of net capacity and approximately a 65% capacity factor. The PPA is priced at $[redacted]/MWh in 2007, the first year of commercial operation with an annual escalation of [redacted]% per year through the 20 year term.

Q. How does the portfolio analysis of the ORMAT PPA compare with other alternatives?

A. As shown in the Total Portfolio Benefit chart shown in Section III, below, the ORMAT PPA is estimated to have a portfolio benefit of $0.4 million in the base price scenario when compared with generic resources from the 2005 LCP. This relatively small benefit means that the costs of the ORMAT PPA are

approximately the same costs as the generic mix of market purchase, gas generation and coal generation assumed in the Portfolio Screening Model. In addition, this resource, through the productive use of waste heat from Northwest Pipeline compressor turbines, provides additional supply diversity to PSE's portfolio.

The levelized cost of the ORMAT PPA is approximately $[redacted]/MWh including $[redacted]/MWh of power cost and $[redacted]/MWh of imputed debt cost. The comparison of levelized cost with other alternatives is shown in the Levelized Resource Cost chart presented below in Section III.

III. QUANTITATIVE EVALUATION OF THE CHELAN CONTRACT

Q. Has the Company applied the modeling tools described above and in your Exhibit No. ___(WJE-8HC) to evaluate other resource opportunities?

A. Yes. The Company also applied these tools to resource opportunities that came to its attention outside the 2004 RFP process. The Company ran the Portfolio Screening Model, with the inputs and updates described above, to evaluate the potential cost or benefit to PSE's power portfolio of the Chelan Contract.

Q. Please describe the Company's quantitative evaluation of the Chelan Contract.

A. First, the Company developed a flexible proforma model of revenue requirements

associated with the contract. The foundation for the proforma was estimates of operating and capital improvement costs. To this foundation was added logic for quantification of the term sheet conditions including up-front payments required by the Public Utility District No. 1 of Chelan County, Washington, and put forth in their offer. The result was a proforma model that compiled capital and operating costs into annual contract cost including imputed debt.

Second, the Company developed an estimate of the price of market power with similar characteristics to the power from this contract. Similar characteristics include variable energy, useable capacity that is about two times the average energy, and ancillary services such as load following, voltage control, and hour to hour energy and capacity flexibility resulting from drawing down or filling storage capacity.

Third, the Company used a forecast of 60 years of variable hydro conditions in a Monte Carlo simulation of the proforma model to test the range of contract costs due to weather uncertainty.

Finally, the Company used its Portfolio Screening Model to calculate the benefit to PSE's electric portfolio of the contract versus the 2005 LCP generic portfolio. The Portfolio Screening Model was run in Monte Carlo mode to check variability of portfolio power costs versus the 2005 LCP generic portfolio.

Q. Please explain the proforma model used to evaluate the proposed power purchase agreement.

A. The proforma analysis was developed by the Company using MS Excel software. The output of the model is the forecast of annual revenue requirements through 2031. The annual revenue requirement is comprised of operation and maintenance of the Rocky Reach and Rock Island hydro projects, the existing and future debt service of these hydro projects, and the upfront payments and other fees included in the PPA. The detail of the assumptions is included in Exhibit No. ___(WJE-5HC). The detailed model output is shown in Exhibit No. ___(WJE-6HC).

Q. Did the proforma model include a calculation of the cost of imputed debt?

A. Yes. The cost of imputed debt is the equity return on the amount of equity that would be required to offset imputed debt to maintain the Company's capital and interest coverage ratios. Imputed debt is explained further on page 16 of Exhibit No. ___(WJE-5HC).

Q. What is the estimated cost of the Chelan Contract?

A. From the present through the term of the contract, all in operating costs of the Chelan Contract are approximately $[redacted] million (Nominal dollars) and $[redacted] million (NPV at 8.4%). On a levelized basis, the estimated all-in cost of the PPA is $[redacted] per MWh. This levelized cost includes the carrying cost on the

$89 million up-front payment from the date of payment through the term of the contract. The levelized cost also includes amortization of the $89 million plus carrying costs from date of power receipt through the term of the contract.

	2006-2031		
Contract Costs (2006 Dollars in 000's)	Nominal ($000)	NPV ($000)	2006 Levelized ($/MWh)
Operating Costs	$ [redacted]	$ [redacted]	$ [redacted]
Equity Offset Imputed Debt	$ [redacted]	$ [redacted]	$ [redacted]
TOTAL	$ [redacted]	$ [redacted]	$ [redacted]

Q. Did you compare the Chelan Contract costs with a current estimate of equivalent market power?

A. Yes. As stated above the Company developed an estimate of the price of market power with equivalent synthetic hydro characteristics. Beginning with an October 2005 AURORA forecast of energy prices, the Company developed an equivalent hydro market price by considering capacity and ancillary service characteristics to the power from this contract. For an explanation see Exhibit No. ___(WJE-7HC). The proposed Chelan Contract is about $1.3 billion less than the same amount of power at equivalent synthetic hydro market prices, or $[redacted] per MWh less on a levelized basis.

	2006-2031		
Market Benefits (2006 Dollars in 000's)	Nominal ($000)	NPV ($000)	2006 Levelized ($/MWh)
Equivalent Market Costs	$ [redacted]	$ [redacted]	$ [redacted]
Benefits vs. Market	$ [redacted]	$ [redacted]	$ [redacted]

The following graph shows the annual comparison of the Chelan Contract, under average hydro conditions, with the current estimate of equivalent synthetic hydro market power that includes the AURORA October update plus capacity value and ancillary service value.

CHART REDACTED

Q. Did the Company evaluate the estimated cost of the Chelan Contract under adverse hydro conditions?

A. Yes, to evaluate the impact of hydro variability on Chelan Power System costs, PSE assumed power generation at Rocky Reach and Rock Island as forecast in Final Regulation FR06, developed by the NWPP for 70 water years from 1929 through 1998. Minimum generation during the 70-year period was 80% of the average and occurs in water-year 1937.

Q. What is the variability of the levelized cost that can be expected over the 20-year contract term?

A. The variability of the 20-year levelized cost, including imputed debt, ranges from a low of $[redacted]/MWh to a high of $[redacted]/MWh. This distribution has a mean of $[redacted]/MWh and a coefficient of variation of 4.7% ($[redacted]/MWh).

Q. What is the cost variability in a single year due to hydro variability?

A. The Company evaluated the range of contract costs, revenue requirement, expected for 2013, the first full single year with output from both Rocky Reach and Rock Island. The cost range is forecast from about $[redacted]/MWh to $[redacted]/MWh. As expected, the range is wider for a single year than for a series of 20 years.

Q. Did you use the Portfolio Screening Model that has been used in the evaluation 2004 RFP offers and the Wild Horse Wind Project and ORMAT PPA discussed above?

A. Yes. Costs and benefits of the proposed Chelan Contract to PSE's overall resource portfolio were evaluated using the Company's 20-year Portfolio Screening Model that is used to evaluate all potential resource acquisition candidates. Because the proposed PPA ends in 2031, six years beyond the 20 year horizon of the Portfolio Screening Model, the end effects of the proposed Agreement were evaluated within the Portfolio Screening Model using a trend of the market values in the last three years of the Agreement. This is a similar approach to the logic used to evaluate the end effects of a generation plant that has a useful life longer than the Portfolio Screening Model study length.

Q. Were there other modifications to the Portfolio Screening Model?

A. Yes, two additional modifications. First, the Company's base portfolio assumed in the Portfolio Screening Model was modified to remove the assumed level of energy and capacity available from the Chelan Contract from resources. Second, the Company updated the gas and power prices prior to running the Portfolio Screening Model.

Q. What gas prices were assumed in the evaluation of the proposed Chelan Contract?

A. Base Gas Price assumed a levelized price of $6.28/mmbtu (2006-2025). For the period 2006 through 2010 the Company used Kiodex forward prices based on average of historic forward prices 6/1/2005 through 8/15/2005. Forward prices are pre hurricanes Katrina and Rita. For the years from 2011 through 2020 the Company used the CERA (Cambridge Energy Research Associates) "Rear View Mirror" forecast dated Q4 2004. From 2020 through 2025 the Company trended the CERA prices.

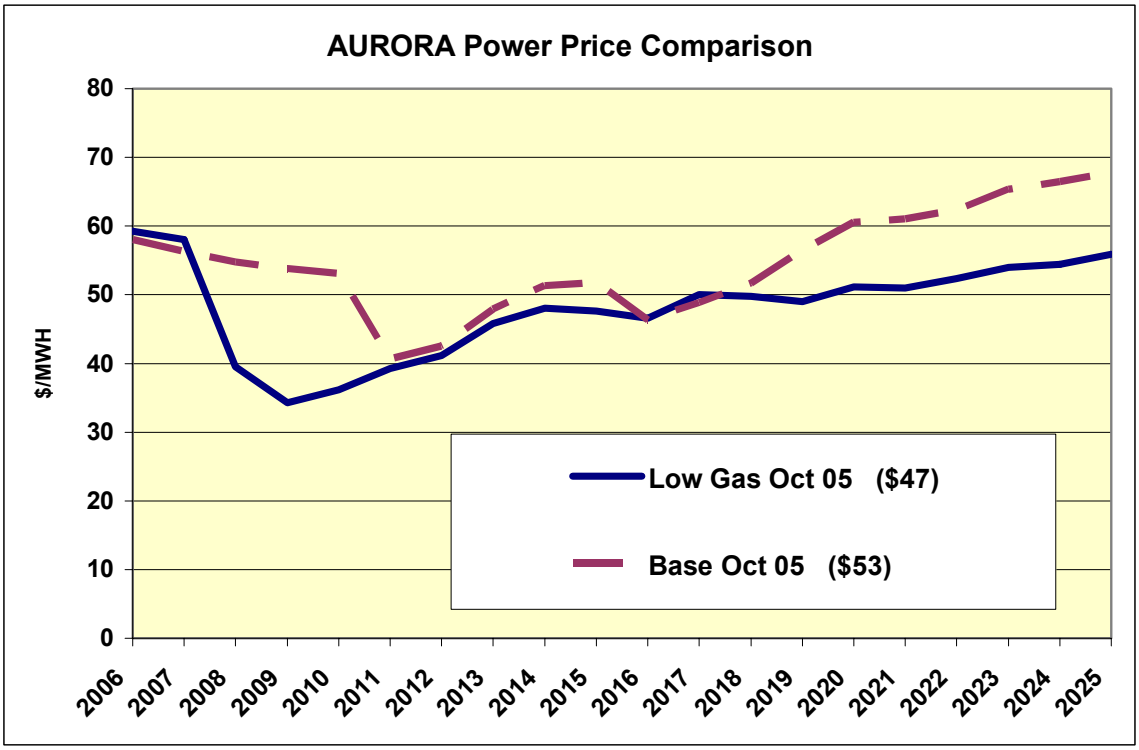
CHART REDACTED

The Low Gas Price Assumptions resulted in a levelized gas price of $5.16/mmbtu

(2006-2025). For the years 2006 and 2007 the Company used forward prices based on the average of historic forward prices 6/1/2005 through 8/15/2005. And for the years 2008 through 2020 the Company used the CERA "World in Turmoil" forecast dated Q4 2004. From 2020 through 2025 the Company trended the CERA prices.

Q. What were the resulting power prices assumed in the evaluation of the proposed Chelan Contract?

A. The AURORA forecast of power prices, assuming the gas prices shown above resulted in a levelized power price of about $53/MWh for the base price scenario and $47/MWh for the low gas price scenario.



Q. What did the results of the Portfolio Screening Model show?

A. The Portfolio Costs shown below are for PSE's portfolios, both with and without the proposed Chelan Contract. Portfolio costs include the variable fuel costs of PSE's existing portfolio, fixed and variable costs of assumed new resources, market purchases when the portfolio is deficit in any hour, market sales when the portfolio is surplus, and end effects for any generation resources with a useful life longer than the term of the model.

Static Analysis Reference Price Scenario: This Portfolio comparison indicated that the proposed Agreement reduces portfolio costs by over $359 million (PV 2006$), and by over $1.2 billion in nominal dollars.

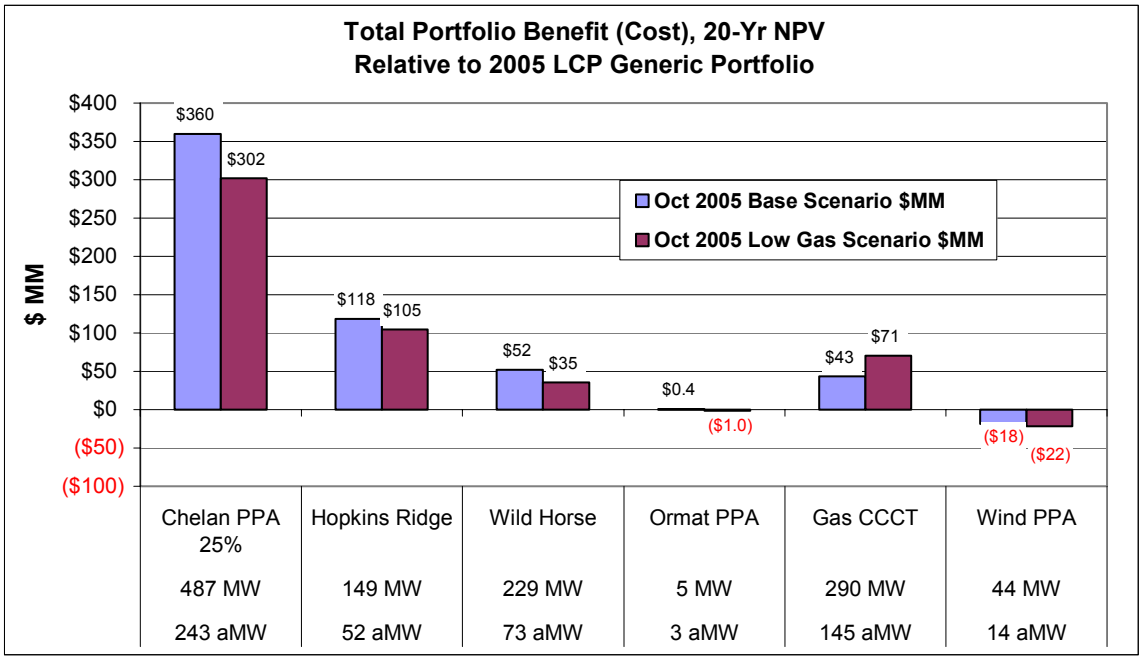
Static Reference Case	With Chelan (000's)	Without Chelan (000's)	(Savings) Cost (000's)
20-year NPV (2006 $)	$7,745,109	$8,104,841	($359,732)
20-year Nominal	$19,669,699	$20,936,768	($1,267,070)

Static Analysis Low Gas Price Scenario: This Portfolio comparison indicated that the proposed Agreement reduces portfolio costs by over $300 million (PV 2006$). The low gas price scenario was run to test the viability of the Agreement under conditions when gas prices fell below $4.00 per mmbtu at the start of the Agreement and spot power prices were also proportionally lower. The following table shows that the portfolio savings are robust even under conditions of lower market prices for power and gas.

Static Low Gas Case	With Chelan (000's)	Without Chelan (000's)	(Savings) Cost (000's)
20-year NPV (2006 $)	$7,396,014	$7,697,896	($301,882)
20-year Nominal	$19,467,922	$20,518,932	($1,051,010)

Q. How does the portfolio analysis for the proposed Chelan Contract compare with the Company's Wind Projects and other alternatives?

A. The Portfolio benefit of the proposed Chelan Contract is approximately $360 million when compared to a PSE portfolio that contains the 2005 LCP generic resources in place of the Chelan Contract. Also shown on the chart is the significant benefit of the Hopkins Ridge Wind Project and a confirmation of the portfolio benefits of Wild Horse Wind Project.



Q. What are the levelized costs of each of these resources?

A. Although on a portfolio basis the Chelan Contract shows the largest benefit, the levelized cost of the proposed Chelan Contract is approximately equal to the levelized cost of the Hopkins Ridge Wind Project. The chart below shows the levelized project costs for each of the resources shown in the portfolio evaluation used in the Chelan Contract Analysis.

CHART REDACTED

IV. CONCLUSION

Q. Please summarize your testimony.

A. PSE's extensive quantitative analyses of the many resource alternatives proposed

to it in its 2004 RFP process, including updated analyses undertaken after PSE's decision to acquire the Hopkins Ridge Wind Project, ultimately led to the conclusion that the Wild Horse Wind Project was the next most attractive resource opportunity available to PSE from a levelized cost and portfolio benefit perspective.

PSE also updated the quantitative evaluation of the ORMAT PPA and concluded that portfolio benefits and levelized cost remain attractive as initially determined in the 2004 short list evaluation.

PSE also applied the quantitative modeling it had developed for the 2004 RFP process to other opportunities that arose outside that process. These analyses showed that the proposed new purchased power agreement and related transmission agreement with the Chelan Public Utility District for the Rocky Reach and Rock Island hydroelectric projects was lower priced and even more beneficial to the Company's electric portfolio than any of the resource alternatives to emerge from the 2004 RFP.

Q. Does that conclude your testimony?

A. Yes, it does.

[BA060400075]