



# Oregon

John A. Kitzhaber, MD. Governor

## Public Utility Commission

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November 16, 2012

### ***Via Electronic Filing***

OREGON PUBLIC UTILITY COMMISSION  
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**RE: Docket No. UM 1182 (PHASE II) – In the Matter of  
PUBLIC UTILITY COMMISSION OF OREGON Investigation Regarding  
Competitive Bidding.**

Enclosed for electronic filing in the above-captioned docket is the Public  
Utility Commission Staff's Opening Testimony,

*/s/ Kay Barnes*

Kay Barnes

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c: UM 1182 Service List (parties)

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**PUBLIC UTILITY COMMISSION  
OF OREGON**

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**UM 1182 (Phase II)**

**Staff Opening Testimony**

**Of**

**Robert J. Procter**

**In the Matter of  
PUBLIC UTILITY COMMISSION OF OREGON  
Investigation Regarding Competitive Bidding.**

**November 16, 2012**

CASE: UM 1182  
WITNESS: ROBERT J. PROCTER

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**Opening Testimony**

**November 16, 2012**

1 **Q. PLEASE STATE YOUR NAME, OCCUPATION, AND BUSINESS**  
2 **ADDRESS.**

3 A. My name is Robert J. Procter. My business address is 550 Capitol Street NE  
4 Suite 215, Salem, Oregon 97301-2551.

5 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK**  
6 **EXPERIENCE.**

7 A. My Witness Qualification Statement is found in Exhibit Staff/101.

8 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

9 A. To present Staff's views on (1) Commission Order that shape Phase II, (2)  
10 propose a conceptual framework for Phase II, and (3) Summarizing previously  
11 submitted studies relying on the conceptual framework.

12 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

13 A. My testimony is organized as follows:

14 Section I –Commission Orders that Shape Phase II

15 Section II – Proposed Conceptual Framework for Phase II

16 Section III – Review of Submitted Studies

17

18 **SECTION I – COMMISSION ORDERS THAT SHAPE PHASE II**

19 **Q. WHAT ARE THE GOALS FOR PHASE II?**

20 A. There are three goals:

21 1. Determine how the four risks (listed later in this section) are accounted  
22 for in a utility's current bid evaluation process;

- 1           2.           Determine if bias exists in the evaluation method towards either the
- 2                           Benchmark Resource bid or the IPP bid; and
- 3           3.           Recommend specific rules or guidelines to remove that bias.

4       **Q. WHAT COMMISSION ORDERS SHAPE PHASE II?**

5       A.       There are three Commission Orders that provide direction about Phase II.

6           There is Order No. 06-446 that contains Guideline 10(d) that the Commission  
7           has directed to be the focus for this phase. Order No. 11-001 directed that a  
8           Phase II investigation be opened. Finally, there is Order No. 12-324 that  
9           identifies what four risks are to be examined in Phase II.

10      **Q. WHAT RISKS ARE TO BE EXAMINED IN PHASE II?**

11     A.       In Order No. 12-324, the Commission identified the four risks that are being  
12           addressed in Phase II. These are as follows:

- 13           1.           Cost Over-run and Under-run Risk;
- 14           2.           Wind Capacity Factor Risk;
- 15           3.           Counter-Party Risk; and
- 16           4.           Heat-Rate Degradation Risk.

17      **Q. WHAT IS COMPETITIVE BIDDING GUIDELINE 10(d)?**

18     A.       That guideline is contained in Order No. 06-446 titled, "In the Matter of an  
19           Investigation Regarding Competitive Bidding." Guideline 10(d) of that Order  
20           states, "If the RFP allows affiliate bidding or includes ownership options, the IE  
21           [Independent Evaluator] will independently score the utility's Benchmark  
22           Resource (if any) and all or a sample of the bids to determine whether the  
23           selections for the initial and final short-lists are *reasonable*. In addition, the IE

1 will evaluate the unique risks and advantages associated with the Benchmark  
2 Resource (if used), including the regulatory treatment of costs or benefits  
3 related to actual construction cost and plant operation differing from what was  
4 projected for the RFP.”

5 **Q. WHAT DID THE COMMISSION SAY IN ORDER No. 11-001?**

6 A. The Commission said they want “...a more comprehensive accounting and  
7 comparison of all of the relevant risks.” They clearly expect Phase II to perform  
8 a more in-depth analysis of risks that arise from a utility’s benchmark resource  
9 versus buying the output from an IPP.

10 **Q. HOW DID THE COMMISSION DEFINE OR DESCRIBE THAT BIAS?**

11 A. The Commission did not opine on the cause, magnitude, or impact of that bias.  
12 At least one reason for mandating a Phase II investigation is to examine, to the  
13 extent possible, the issue of bias in an analytically rigorous way. They also  
14 mandated that Phase II focus on competitive bidding guideline 10(d).

15 **SECTION II – PROPOSED CONCEPTUAL FRAMEWORK FOR PHASE II**

16 **Q. WHAT IS THE PURPOSE OF THIS SECTION?**

17 A. The purpose of this section is to describe a conceptual framework for Phase II.  
18 It is designed to address each of the three goals of this phase: (1) determine  
19 how the risks are addressed in bid evaluation, (2) determine what bias exists,  
20 and (3) recommend adjustments to guideline 10(d) to account for that bias.

21 **Q. WHAT IS THE FOCUS OF THE RISK ANALYSIS IN PHASE II?**

22 A. The focus is risk to ratepayers.

23 **Q. HOW DOES STAFF DEFINE RISK?**

1 A. A very general statement of risk is the following: Risk is the variation of  
2 outcomes around the expected outcome of some choice. Let's look at  
3 construction cost risk. Assume that variation in construction cost is the only  
4 risk. In this case, risk is the variation in construction cost, both higher and  
5 lower than, the expected amount of construction costs. The premise in Phase  
6 II is that once the plant is built, and the actual construction cost is known, some  
7 party will bear that higher cost or capture the cost savings, whichever occurs.

8 **Q. HOW IS RISK MEASURED?**

9 A. Risk may be measured calculating the variance of values around an expected  
10 value. It has also been measured using the standard deviation. There are also  
11 more complex methods of measuring risk when the distribution of outcomes are  
12 not what is called 'normally distributed.'

13 **Q. IF THE COMMISSION HAS ALREADY CONCLUDED THAT THE BID**  
14 **EVALUATION PROCESS IS BIASED TOWARDS THE BENCHMARK**  
15 **RESOURCE BID, WHY NOT MOVE DIRECTLY TO DETERMINING HOW TO**  
16 **REVISE THE BID EVALUATION CRITERIA?**

17 A. It is first important to assess the extent to which the four risks under  
18 investigation are sources of bias in bid evaluation. It is also important to  
19 determine the nature of any bias that exists.

20 **Q. PLEASE EXPLAIN.**

21 A. One argument that's received a good deal of focus in economics for the last 60  
22 years is known as the Averch-Johnson Effect (A-J Effect). It argues that rate-  
23 of-return regulation encourages utility over-capitalization. As a result, utility

1 regulation itself results in an inherent bias towards the Benchmark Resource  
2 bid at the expense of the IPP bid.

3 **Q. IS THE A-J EFFECT INCLUDED IN PHASE II?**

4 A. No. Phase II does not include any examination of the A-J Effect. However, it is  
5 the backdrop for the argument that there is a bias towards the Benchmark  
6 Resource bid.

7 **Q. WHAT STANDARDS DO YOU PROPOSE BE APPLIED FOR ASSESSING**  
8 **HOW CURRENT BID EVALUATION METHODS ACCOUNT FOR EACH OF**  
9 **THE FOUR RISKS?**

10 A. Staff proposes three questions be answered for each risk:  
11 1. How well does the methodology calculate or systematically assesses risk  
12 using a conventional definition of risk?  
13 2. How well does the methodology systematically assess ratepayer risk in a fair  
14 and unbiased way?  
15 3. How well does the methodology account for how specific contract terms  
16 affects risk exposure?

17 **Q. DOES THE CURRENT EVALUATION METHOD NEED TO ACCOUNT FOR**  
18 **RISK USING A QUANTITATIVE ADJUSTMENT?**

19 A. Not necessarily. The method may use a quantitative adjustment to bids for the  
20 four risks under investigation, and it may result in more qualitative guidelines.  
21 Comments filed by PacifiCorp, Portland General Electric, and Idaho Power  
22 Company address this very point. In their comments, they propose that the  
23 Commission's direction to develop an analytic framework could include



1           “...development of generic qualitative criteria to be applied in a fact-specific  
2           situation e.g., a bid solicitation.”<sup>1</sup>

3           **Q. COULD THE CURRENT BID EVALUATION TREAT THE BENCHMARK**  
4           **RESOURCE BID AND THE IPP BID DIFFERENTLY AND THAT**  
5           **TREATMENT NOT BE EVIDENCE OF BIAS?**

6           A. Yes. The fact that the Benchmark Resource bid and the IPP bid are treated  
7           differently is not, in and of itself, evidence of bias in bid scoring. There are  
8           circumstances when these two bids must be treated differently. The issue of  
9           bias only arises when the bid scoring doesn't correctly account for the  
10          differences in ratepayer risk exposure between any two bids. What this means  
11          is that as long as guideline 10(d) as implemented is properly accounting for this  
12          differential risk exposure, there is no need to propose changes to guideline  
13          10(d).

14          **Q. PLEASE PROVIDE AN EXAMPLE.**

15          A. Assume there are two bids, one from a utility and one from an IPP. They both  
16          bid a CCCT using the same EPC contractor. They are alike in every other  
17          important way, such as, the sites are next to each other, they have the same  
18          access to transmission and gas, and so forth. Under these assumptions the  
19          construction cost risk inherent in the projects are also the same. Now assume  
20          that the utility's contract with the EPC is a cost-plus arrangement while the IPP  
21          bid is for a fixed \$/MWh basis. In this hypothetical scenario, the IPP bid would

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1 See: “Comments by Portland General Electric Company, PacifiCorp and Idaho Power Company on the Status of Docket UM1182,” December 22, 2011.

1 have less ratepayer risk. The current bid evaluation method should be able to  
2 reflect this different allocation of the same construction cost risk. In principle, it  
3 could be accounted for in the quantitative evaluation or the qualitative  
4 evaluation.

5 **Q. DOES JUDGING IF BIAS EXISTS BOIL DOWN TO MAKING SURE THAT**  
6 **THE CURRENT BID EVALUATION CRITERIA HAVE BEEN APPLIED**  
7 **FAIRLY?**

8 A. It goes beyond that. The Commission is interested in Phase II systematically  
9 evaluating if the current bid evaluation criteria itself is structured in such a way  
10 as to result in bias. If it turns out that the existing bid evaluation criteria  
11 reasonably accounts for differences in risk between two bids, then that is  
12 evidence that the bid evaluation criteria are free of bias. In that case, changes  
13 to guideline 10(d) are not warranted. In contrast, if there are two bids that  
14 leave ratepayers exposed in substantively different ways to at least one of the  
15 four risks under investigation, and the bid evaluation criteria does not  
16 accurately account for this difference, then that is evidence that the bid  
17 evaluation criteria contains bias. In this case, changes in the guideline 10(d)  
18 are warranted.

19 **Q. WHAT APPROACH DO YOU PROPOSE BE USED TO ELIMINATE BIAS?**

20 A. The mix of possible remedies will need to be tailored to the facts of the  
21 assessment. Possible solutions include applying a specific quantitative adder  
22 to applying a qualitative adjustment, or some adjustment between these two

1 alternatives. The facts must guide which types of bids should be treated  
2 differently in bid evaluation.

3 **Q. WHAT STEPS ARE INVOLVED IN DETERMINING RATEPAYER RISK**  
4 **EXPOSURE, SAY, TO VARIATION IN CONSTRUCTION COST?**

5 A. Determining the riskiness of a specific bid requires examining (1) the potential  
6 variation, as measured by the variance or standard deviation, in actual  
7 construction cost over-run and cost under-run, and (2) how the contract and bid  
8 terms associated with the bid exposes ratepayers to that variation.

9 **Q. ARE YOU ARGUING THAT ASSESSING HOW THE CURRENT BID**  
10 **EVALUATION METHOD CAPTURES RISK TO RATEPAYERS MUST TAKE**  
11 **ACCOUNT OF CONTRACT AND BID SPECIFICS?**

12 A. Yes, in some systematic way. To assess how the bid evaluation method  
13 captures that risk, the contract and bid terms, to the extent they are known or  
14 can be forecasted, must be considered in the bid evaluation method.

15 **Q. IS THE DESIGN OF THE RFP AN ISSUE IN PHASE II?**

16 A. No. The RFP is outside the scope of this investigation. Before the RFP is  
17 released, it too has been vetted with the public to, among other things, assure it  
18 is consistent with what is contained in the utility's Action Plan in its most  
19 recently acknowledged Integrated Resource Plan (IRP).

20

21

### **SECTION III: REVIEW OF SUBMITTED STUDIES**

22 **Q. WHAT IS THE FOCUS OF THIS SECTION?**

1 A. This section includes Staff comments on reports and papers (hereafter, called  
2 Reports) entered into the record for this docket that pertains to the four risks  
3 addressed in this phase.

4 **Q. WHAT REPORTS ARE ADDRESSED IN THIS SECTION?**

5 A. The following reports are reviewed.

6 1. "Phase 2 Comments of the Northwest and Intermountain Power  
7 Producers Coalition," Northwest and Intermountain Power Producers  
8 Coalition (NIPPC), March 19, 2012, Attachment 1 (NIPPC Report).

9 2. "Leveling the Bidding Field: Some Initial Steps Toward Fairly  
10 Comparing Proposals for Utility-Owned Generation and Independent  
11 Power Projects," MRW & Associates, LLC, November 16, 2011  
12 (MRW & A Paper).

13 3. "Long-Term Procurement Planning Proceeding Concerning Bid  
14 Evaluation," Testimony of William A. Monsen, on behalf of the  
15 Independent Energy Producers Association in Track III,  
16 August 4, 2011 (Monson Testimony).

17 **Q. TURNING FIRST TO THE NIPPC REPORT, WHICH OF THE FOUR RISKS  
18 DID THEY EXAMINE?**

19 A. Using NIPPC nomenclature, they examined Capital Cost Adder, Heat-Rate  
20 Adder, and a Renewable Generation Capacity Factor Adder. They also  
21 examined other adders none of which are included in Phase II. Therefore, Staff  
22 will not comment on them in this testimony.

23 **Q. WHAT IS NIPPC'S APPROACH TO THE CAPITAL COST ADDER?**

1 A. On pg. 5 of the NIPPC Report, they state, "NIPPC derived the capital cost  
2 adders based on comparison of the recorded installed cost for the Utility-  
3 Owned Generation (UOG) with the initial projection of these costs that the utility  
4 disclosed to its regulator." NIPPC also stated that their numerical analysis used  
5 publicly available data for nine UOG plants in California. On pg. 6, they note  
6 that five of the projects are CCCT's, three are SCCT's, and one is a  
7 reciprocating engine.

8 **Q. WHAT DID THEY CONCLUDE?**

9 A. NIPPC proposed to increase the capital cost of the Benchmark Resource bid by  
10 eight percent. They reached that recommendation after comparing the  
11 expected construction cost to the actual construction cost for a set of projects in  
12 California. From that data, they conclude that forecasted construction costs  
13 were eight percent below actual construction cost, on average. They implicitly  
14 assumed that ratepayers bear that higher cost from the Benchmark Resource  
15 bid but not the IPP bid.

16 **Q. IS NIPPC'S ANALYSIS CONSISTENT WITH THE FRAMEWORK IN**  
17 **SECTION II?**

18 A. No. Referring to the three goals on page one lines 21-22 and page 2 lines 1-3,  
19 none of their adders consider how the utility's current bid evaluation  
20 methodology addresses the four risks. They assume the answer for goal two  
21 and they do make a recommendation for adjusting the bias they argue exists,  
22 which is goal three. Regarding the first goal, there analysis does not include an  
23 examination of the current bid evaluation guidelines. Concerning goal two,

1 assessing if those guidelines lead to bias towards some types of bids, they  
2 make the implicit assumption that the current bid evaluation process is biased  
3 towards the Benchmark Resource bid. While they propose an adjustment for  
4 the evaluation process, it is not calculated consistent with how risk is presented  
5 in Section II of this testimony.

6 **Q. IS IT REASONABLE THAT THEIR ANALYSIS ONLY INCLUDES UTILITY-**  
7 **OWNED PLANTS?**

8 A. No. NIPPC implicitly assumes that cost over-runs from the construction of  
9 Benchmark Resource bid are totally placed on ratepayers whereas the IPP bid  
10 completely insulates ratepayers against all construction cost over-runs. These  
11 assumptions effectively assume away issues that need examination in Phase II.

12 **Q. DOES STAFF HAVE CONCERNS WITH THEIR DATA AND**  
13 **METHODOLOGY?**

14 A. Yes. Staff has four concerns with the data used to derive the capital cost  
15 adder.

16 **Q. WHAT IS STAFF'S FIRST CONCERN?**

17 A. First, the data set is extremely small. While having data from the relevant  
18 Oregon utilities would help make the data set more robust, given that the focus  
19 here is capital cost, Staff anticipates that gas plant construction costs must be  
20 fairly standard since the technology is fairly standard. Therefore, NIPPC could  
21 have searched for other data points, and if others were found from yet other  
22 states, they could then have structured an argument supporting their addition to  
23 the data set.

1 **Q. WHAT IS STAFF'S SECOND DATA/METHODOLOGY CONCERN?**

2 A. At this point, Staff objects to pooling Combined-Cycle Combustion Turbine  
3 (CCCT) capital cost with Single-Cycle Combustion Turbine (SCCT) capital cost.  
4 If the utility's RFP solicits a CCCT, a gas plant adder should be calculated  
5 using only CCCT capital cost. The same argument applies if the utility solicits a  
6 SCCT.

7 **Q. WHAT IS STAFF'S THIRD CONCERN?**

8 A. NIPPC recommends using the average difference in construction cost,  
9 expressed as a percentage, as the bid adjustment adder. Since this  
10 investigation is about ratepayer risk, using that average value does not  
11 calculate that proposed adder consistent with either the variance or the  
12 standard deviation of capital cost.

13 **Q. DOESN'T THEIR METHOD OF WEIGHT AVERAGING ADDRESS**  
14 **RATEPAYER RISK?**

15 A. No. Their method appears reasonable with respect to calculating a weighted  
16 average expected value. There is still the question of how to account for the  
17 risk of capital cost over-runs or under-runs. What NIPPC could do is calculate  
18 the variance or the standard deviation for its sample. Keep in mind that it is  
19 important to account for contract and bid terms and regulatory treatment when  
20 deciding to apply the variance or standard deviation to a given bid. Staff's  
21 concerns about their sample remain.

22 **Q. WHAT IS STAFF'S FOURTH CONCERN?**

1 A. NIPPC makes no mention of how to address construction cost over-run risk for  
2 other types of resources. To be fair, NIPPC notes this limitation, and leaves  
3 open the question of how to address the issue for bid evaluation for renewable  
4 resource RFP's.

5 **Q. HOW DO CONTRACT TERMS AFFECT THE DECISION OF WHETHER**  
6 **APPLYING AN ADDER IS VALID?**

7 A. Assume a capital cost over-run occurs. How that capital cost over-run is  
8 addressed depends on the bid and contract terms for the Benchmark Resource  
9 bid and the IPP bid. For the Benchmark Resource bid, typical regulatory  
10 treatment by this Commission needs to be included.

11 **Q. IF THE IPP BIDS A FIXED PRICE AND A COST OVER-RUN OCCURS, DO**  
12 **THEY JUST LOSE THAT MONEY?**

13 A. This is an important question. Assume the Benchmark Resource bid and the  
14 IPP bid are for exactly the same CCCT built by the same EPC contractor. The  
15 two bids are the same in every other regard. If there is a cost over-run, the  
16 utility will approach this Commission and seek recovery of those costs in their  
17 next rate case. The IPP does not have that opportunity. How the IPP protects  
18 itself is it builds a cushion in its bid to cover this possibility.

19 **Q. DOES THAT LEAD TO A NEW QUESTION ADDRESSING THE BID**  
20 **SELECTION CRITERIA?**

21 A. Yes. This is not within the scope of Phase II as defined in Commission Order.  
22 What it raises is the problem that is inescapable. Selecting an initial short-list of  
23 bids is a problem in constrained optimization. There are likely to be trade-offs



1 between cost and risk. There are also likely to be other factors that must be  
2 explicitly considered that may not be adequately addressed in the scoring  
3 process.

4 **Q. DOES THIS CONCLUDE YOUR TESTIMONY ABOUT NIPPC'S CAPITAL**  
5 **COST ADDER?**

6 A. At this time, yes.

7 **Q. WHAT ARE STAFF'S CONCERNS WITH NIPPC'S APPROACH TO A HEAT-**  
8 **RATE DEGRADATION (HRD) ADDER?**

9 A. First, they have not provided a calculation of risk. Second, their proposed  
10 adder has data and methodological issues. Third, it does not appear to  
11 consider how contract terms of specific bids influence ratepayer exposure to  
12 this risk.

13 **Q. WHAT IF THE HRD ADJUSTMENT WAS APPLIED ONLY TO THE**  
14 **BENCHMARK RESOURCE BID?**

15 A. Applying an adder only to the Benchmark Resource bid, implicitly assumes  
16 ratepayers face no exposure to the cost of deliveries from the IPP bid. Assume  
17 the IPP bid is a fixed price bid in \$/MWh and the utility only pays for what is  
18 delivered. That bid will have some assumption about HRD embedded in it. If  
19 the actual degradation is higher than forecasted, the utility pays the same  
20 \$/MWh for the now smaller deliveries and it also will go to the market to  
21 purchase added power that the IPP did not deliver. If the actual degradation is  
22 lower than forecasted, the utility pays the same \$/MWh for the now larger  
23 deliveries. Ratepayers remain exposed to variations in the cost of power from

1 the IPP due to variations in HRD from what is expected. It is true that the price  
2 per unit of delivery is fixed in this example; but the utility should be concerned  
3 about the total cost of power deliveries from the IPP.

4 **Q. WHAT IS THE STAFF VIEW OF NIPPC'S CALCULATION OF HRD ADDER?**

5 A. At this point in time, Staff has several concerns with the calculation. The first  
6 two are concerns about the data set and the third is a concern about the  
7 methodology. These concerns are as follows:

- 8 1. The vintage of the plants;
- 9 2. The type of plants; and
- 10 3. The calculation methodology.

11 **Q. WHAT IS STAFF'S CONCERN ABOUT PLANT VINTAGE?**

12 A. Staff is concerned that the vintage of plants in the data sub-set are not  
13 representative of gas plants that will be bid into future RFPs. The data set  
14 available to NIPPC contains over 2,000 observations. NIPPC culled that to  
15 something over 500 observations. NIPPC limited their data sub-set using data  
16 points between "...the years 1981 and 1999, inclusive." Note that using data for  
17 these years includes plant heat-rates for plants with on-line dates earlier than  
18 1981. For example, it appears that a study by PacifiCorp using these data has  
19 an on-line date of 1923.

20 **Q. WHAT IS STAFF'S CONCERN ABOUT THE TYPE OF PLANTS IN THE**  
21 **DATA SET?**

22 A. Since the large data set overwhelmingly consists of primarily SCCTs, NIPPC's  
23 implicit assumption is that the pattern of heat-rate degradation for CCCTs is to

1 be reasonably approximated by the heat-rate degradation pattern for SCCTs.  
2 However, NIPPC provided no analysis to support that implicit assumption.

3 **Q. WHAT IS STAFF’S METHODOLOGICAL CONCERN?**

4 A. NIPPC did not calculate the HRD in a way that is consistent with the approach  
5 to risk laid out in Section II.

6 **Q. PLEASE ILLUSTRATE THE VARIOUS ALTERNATIVES IN A TABLE.**

7 A. Here is the table.

Alternative	HRD (%)
<b><u>Base Case – NIPPC Analysis</u></b> (Base Case Data Set) Remove plants in states that have de-regulated and observations that imply very good (<6,500) heat-rates.	5.60
<b><u>Alternative One</u></b> Begin with Base Case Data Set. Remove observations that imply very poor (greater than 8,000).	1.93
<b><u>Alternative Two</u></b> Begin with Base Case Data Set. Add back plants in states that have de-regulated. This is Alternative Two Data Set.	1.42
<b><u>Alternative Three</u></b> Begin with Alternative Two Data Set. Remove observations that imply ‘very poor’ and ‘very good’ heat-rates.	1.58
<b><u>Alternative Four</u></b> Begin with original data set. Remove ‘very poor’ and ‘very good’ heat-rates. Weight observations by MWh output.	0.53
<b><u>Alternative Five</u></b> Begin with original data set. Do not remove any observations. Weight by plant output in MWhs.	0.11 (PAC calculated 0.10)

8  
9 **Q. WHAT QUESTIONS DOES STAFF HAVE ABOUT NIPPC’S DATA USED TO**  
10 **CALCULATE HRD?**

11 A. Several questions arise. For example,

- 1 1. How does HRD change when poorly performing plants are omitted?
- 2 2. How does HRD change when both poorly and very well performing
- 3 plants are omitted but plants in states that de-regulated are included?
- 4 3. How does HRD change when all data are included and the
- 5 observations are weighted by plant output?

6 These questions then led to constructing five alternative scenarios.

7 **Q. WHAT HAS STAFF OBSERVED ACROSS THESE VARIOUS SCENARIOS?**

8 A. It's worth noting that NIPPC's approach leads to the highest HRD adjustment  
9 Staff has observed. Alternatives one-three appear to form a group based on  
10 the value of HRD. Then, alternatives four and five also form a group based on  
11 the value of HRD. This suggests to Staff that how the following two questions  
12 are addressed will materially affect the value of HRD.

- 13 1. Should plants in states that have de-regulated, and/or low performing
- 14 and/or very highly performing plants be omitted from the data set?
- 15 2. Should plant heat-rates be weighted by plant output?

16 **Q. WHAT IS ALTERNATIVE ONE?**

17 A. Alternative One addresses the question: What is the Impact on HRD when  
18 plants with very poor heat-rates (greater than 8,000) are removed?

19 **Q. WHAT IS THE RATIONALE FOR ALTERNATIVE ONE?**

20 A. One argument for adjusting the data set is that future CCCTs will be  
21 characterized by annual heat-rates below 8,000. Another argument for  
22 removing those observations is to take a more balanced approach to  
23 constructing a data sub-set. Staff removed all observations with heat-rates in

1 excess of 8,000 btu's/kwh from the data set used in the Base Case – NIPPC  
2 Analysis.

3 **Q. WHAT IS THE RESULT?**

4 A. The resulting HRD drops to 1.93 percent from 5.6 percent. Whether this  
5 adjustment is made to the data set significantly affects the value for HRD.  
6 Therefore, it is prudent to consider the rationale for removing (or keeping) these  
7 observations in the data set.

8 **Q. WHAT IS ALTERNATIVE TWO?**

9 A. Alternative Two addresses the question: How does the HRD change from the  
10 Base Case Analysis when plants in states that have de-regulated are kept in  
11 the data set?

12 **Q. WHAT IS THE RATIONALE FOR ALTERNATIVE TWO?**

13 A. It isn't clear why observations from plants located in states that have de-  
14 regulated their electric market should be omitted. Further, NIPPC doesn't  
15 define what they mean by de-regulation of a state's electric market. This is an  
16 important point since there are numerous ways to modify existing regulation  
17 and call it de-regulation.

18 **Q. WHAT QUESTION/ISSUE ARISES FROM THIS LARGE CHANGE IN HRD?**

19 A. Omitting the observations for plants in states that have de-regulated their  
20 electric market also significantly lowers the HRD. At this point, Staff has no  
21 good hypothesis to explain this change. This result does suggest to us that the  
22 inclusion or exclusion of these observations from the data is an important issue.  
23 Yet, to reiterate, Staff cannot think of a reason why de-regulation, or what type

1 of de-regulation, leads to a change in how a plants' heat-rate degrades over  
2 time.

3 **Q. WHAT IS ALTERNATIVE THREE?**

4 A. Alternative Three addresses the following question: How does the HRD change  
5 when only plants with very poor and very good heat-rates are omitted (but keep  
6 in observations from plants in states that have de-regulated)?

7 **Q. WHAT OTHER CONCLUSIONS DO YOU REACH FOR ALTERNATIVE ONE-  
8 ALTERNATIVE THREE?**

9 A. Variations in the data sets between those three alternatives produce values for  
10 HRD that are significantly different from that produced in the Base Case  
11 Analysis or in Alternatives Four and Five. This leads Staff to seriously question  
12 the rationale for the data set and method used in the Base Case Analysis.  
13 When Staff examined the HRD for the next two alternatives leads Staff to  
14 further question NIPPC's selection of data and methodology supporting their  
15 value of HRD equal to 5.6

16 **Q. WHAT IS ALTERNATIVE FOUR?**

17 A. Alternative Four is a sensitivity analysis on how HRD changes when plants with  
18 very good and very poor performance are omitted.

19 **Q. WHAT IS THE RATIONALE FOR ALTERNATIVE FOUR?**

20 A. Staff constructed this alternative to address the scenario of omitting plants that  
21 have heat-rates <6,500 and >8,000 but keeping plants in that are in states that  
22 have de-regulated (as long as they have heat rates >6,500 and <8,000).

1 Adding this scenario assures that Staff have covered the permutations for plant  
2 heat-rates and de-regulation.

3 **Q. WHAT IS THE VALUE OF HRD FOR ALTERNATIVE FOUR?**

4 A. HRD equals 0.53.

5 **Q. WHAT IS ALTERNATIVE FIVE?**

6 A. It addresses the question of how does HRD change if each heat-rate is  
7 weighted by the plant output in that year.

8 **Q. WHAT IS THE RATIONALE FOR ALTERNATIVE FIVE?**

9 A. In order to capture how significant a particular heat-rate is (and therefore,  
10 HRD), it is appropriate to weight each observation by MWh of plant output.  
11 Omitting this step from the calculation of the HRD adjustment implicitly treats  
12 the HRD of a 200MW plant the same as an equivalent HRD for a 100MW plant.  
13 A 100MW plant that ran for 4000 hours should get twice the weight of a 100MW  
14 plant that ran for only 2000 hours (assuming equally efficient plants, etc.).

15 **Q. WHAT IS THE VALUE OF HRD FOR ALTERNATIVE FIVE?**

16 A. HRD equals 0.11. Note that Staff made an adjustment to the analysis  
17 performed by PAC that produced an HRD equal to 0.10.

18 **Q. WHICH OF THESE ALTERNATIVE APPROACHES TO CALCULATING AN  
19 HRD FACTOR DOES STAFF SUPPORT?**

20 A. Based on the analysis and arguments reviewed to date, Staff supports the  
21 result of 0.011 in Alternative Five. However, it is important to reiterate that  
22 none of these approaches attempts to capture risk as it was defined in Section

1 II. Nonetheless, these various ways of calculating HRD are illustrative of the  
2 role that data set construction plays when account for HRD risk.

3 **Q. DOES THIS CONCLUDE YOUR TESTIMONY ON HRD?**

4 A. At this time, yes.

5 **Q. WHAT ADDER DID NIPPC PROPOSE FOR A RENEWABLE BENCHMARK  
6 RESOURCE?**

7 A. They recommended a 15 percent reduction in the capacity factor for all  
8 Benchmark Resource bids that are for wind resources. They also  
9 recommended that this reduction be applied to all bids for any Benchmark  
10 Resource that is a renewable if no analysis exists on the specific renewable  
11 technology being bid.

12 **Q. WHAT IS STAFF'S OPINION OF NIPPC'S PROPOSED ADDER?**

13 A. At this point, Staff has the same concerns with this adder as Staff had with their  
14 other proposed adders. NIPPC implicitly assumes that the capacity factor for a  
15 renewable resource is an issue only for a Benchmark Resource bid. That  
16 assumption is based on either evidence that an equivalent IPP renewable  
17 resource is immune to capacity factor over-estimation or the utility's customers  
18 face no risk associated with capacity factor over-estimation at IPP owned  
19 plants. To answer the question of whether an adjustment for wind capacity  
20 factor for the Benchmark Resource is justified, it should include a comparison  
21 of the contracts for the Benchmark Resource bid and IPP bid. In addition, the  
22 analysis should also determine how the current bid evaluation methods address  
23 this risk.



1 **Q. REFERRING TO THE NIPPC REPORT, FIGURE 6 ON PAGE 10 SHOWS**  
2 **THAT THE ACTUAL CAPACITY FACTOR FOR PACIFICORP'S WIND**  
3 **PLANTS LIES BELOW THE ANTICIPATED CAPACITY FACTOR FOR THAT**  
4 **SAME PLANT. WHY ISN'T THIS CONCLUSIVE EVIDENCE THAT WIND**  
5 **CAPACITY FACTOR FOR THE BENCHMARK RESOURCE BID SHOULD BE**  
6 **REDUCED BY 15 PERCENT?**

7 A. There are several reasons why Staff currently views NIPPC's argument for that  
8 adjustment as incomplete.

9 1. Their data only included utility-owned plants. Therefore, the data set does  
10 not allow the question of whether the actual versus expected capacity  
11 factor for utility-owned wind plants are measurably different from those for  
12 IPP developed plants.

13 2. The analysis omits a consideration of how contracts affect ratepayer  
14 exposure.

15 3. Their analysis does not examine how the current bid evaluation methods  
16 address this issue.

17 **Q. DOES STAFF HAVE ANY OTHER CONCERNS ABOUT HOW NIPPC'S**  
18 **DATA OR METHODOLOGY SUPPORTING THEIR CAPACITY FACTOR**  
19 **ADDER?**

20 A. At this time, Staff is deferring from further assessing NIPPC's approach to this  
21 adjustment factor. Staff reserves the right to address this issue as Phase II  
22 progresses.

23 **Q. DOES THIS CONCLUDE STAFF COMMENTS ON NIPPC'S REPORT?**

1 A. Yes, at this point in time.

2 **Q. WHAT REPORT IS STAFF COMMENTING ON NEXT?**

3 A. Staff now turn to the report titled “Leveling the Bidding Field: Some Initial Steps  
4 Toward Fairly Comparing Proposals for Utility-Owned Generation and  
5 Independent Power Projects” (MRW Report).

6 **Q. ON PG. 1 OF THE MRW REPORT, THERE IS THE FOLLOWING**  
7 **STATEMENT: “GENERALLY SPEAKING, COST OVER-RUNS AND**  
8 **PERFORMANCE SHORTFALLS AT UTILITY OWNED GENERATION (UOG)**  
9 **PROJECTS ARE PASSED THROUGH DIRECTLY TO RATEPAYERS AS**  
10 **LONG AS COST OVER-RUNS ARE NOT THE DIRECT RESULT OF GROSS**  
11 **MISMANAGEMENT OR FRAUD.” WHAT IS YOUR OPINION OF THAT**  
12 **STATEMENT?**

13 A. MRW provided no documentation from records at the Oregon Commission.  
14 Staff would certainly consider relevant evidence as this investigation proceeds.

15 **Q. WHAT IS YOUR VIEW OF THEIR ARGUMENT THAT A BENCHMARK**  
16 **RESOURCE BID OF \$85/MWH AND AN IPP BID OF \$85/MWH ARE NOT**  
17 **EQUIVALENT BIDS (PG. 1)?**

18 A. Staff has several issues with that argument. First, it’s worth noting that MRW’s  
19 conclusion reflects their starting assumption. Their starting assumption is that  
20 any cost increase of the Benchmark Resource bid is automatically passed thru  
21 to ratepayers whereas the IPP bid, by definition, has a cap on cost at the  
22 \$/MWh bid. Unless they have compared the contracts associated with the  
23 Benchmark Resource bid and the IPP bid, their starting point assumes away a

1 critical step in bid evaluation. If that step is performed and the conclusion  
2 supports the argument made is the focus of this question, then Staff agree that  
3 some adjustment must be made to one or both of these two bids. Second,  
4 Staff addresses the scenario they pose (see: the answer to the question on  
5 page 13, lines 15-16). It is highly unlikely that the IPP will submit the same  
6 \$/MWh bid for the very reason that they have no way to recover a cost over-run  
7 if the proposed contract and bid terms provides for no such mechanism.

8 **Q. WHAT IS YOUR VIEW OF THE STATEMENT MADE ON PG. 6 OF THE MRW**  
9 **REPORT THAT STATES “BID ADDERS FOR CONSTRUCTION COSTS**  
10 **SHOULD BE SET BASED AT THE AVERAGE COST OVER-RUN THAT**  
11 **REGULATORY COMMISSIONS HAVE ALLOWED TO BE PASSED**  
12 **THROUGH TO RATEPAYERS”?**

13 A. Staff is disinclined to support this approach as a blanket approach to be applied  
14 to any Benchmark Resource bid in any RFP issued by any of the three utilities  
15 this Commission regulates. At the top of Section I Staff defined three goals for  
16 Phase II. Recommendations should be made in keeping with the procedure  
17 reflected in those goals. In addition, any quantitative adjustment should be  
18 consistent with how risk is addressed in Section II.

19 **Q. DOES THIS CONCLUDE YOUR TESTIMONY REGARDING THE MRW**  
20 **REPORT?**

21 A. For the time being, yes.

22 **Q. WHAT IS YOUR VIEW OF THE MONSEN TESTIMONY?**

23 A. At this time, Staff limits its review to the following parts of Monsen’s testimony:

1 1. Lines 6 - 8 on page 6

2 2. Lines 5 - 18, page 27

3 **Q. WHAT IS STAFF'S VIEW OF LINES 6-8 ON PAGE 6 IN MONSEN'S**  
4 **TESTIMONY?**

5 A. At this point in time, it's our view that the period of time over which projected  
6 project costs should be amortized should be performed in such a way that  
7 variations in project life between bids is placed on a common footing. Doing so  
8 will remove the issue he raises about amortizing bids using different lengths of  
9 time.

10 **Q. WHAT IS STAFF'S VIEW OF LINES 5-18 ON PAGE 27 IN MONSEN'S**  
11 **TESTIMONY?**

12 A. Here, Monsen argues that all costs associated with developing the utility's  
13 Benchmark Resource bid should be included in its bid rather than be recovered  
14 in the general rate case. That issue lies outside the scope of Phase II.

15 **Q. DOES THIS CONCLUDE YOUR REVIEW OF MONSEN'S TESTIMONY?**

16 A. At this time, yes.

17 **Q. WHAT COMMENTS DO YOU HAVE REGARDING THE NIPPC COMMENTS**  
18 **DATED MARCH 19, 2012?**

19 A. At this time, none.

20 **Q. WHAT COMMENTS DO YOU HAVE REGARDING THE COMMENTS FILED**  
21 **BY THE INDUSTRIAL CUSTOMERS OF NORTHWEST UTILITIES (ICNU)**  
22 **DATED MARCH 19, 2012?**

23 A. At this time, none.

1 **Q. HAS STAFF DEVELOPED TESTIMONY ADDRESSING COUNTER-PARTY**  
2 **RISK?**

3 A. No.

4 **Q. PLEASE EXPLAIN.**

5 A. This section is focused on addressing reports, studies, testimony, and formal  
6 filings in this docket to date. Nothing has been filed or handed out at a  
7 workshop that addresses counter-party risk other than making comments about  
8 it while focusing on a different issue. Staff expects it will both address counter-  
9 party risk, along with making more substantive comments on the other three  
10 risks, in a future part of Phase II.

11 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

12 A. Yes.

CASE: UM 1182  
WITNESS: ROBERT J. PROCTER

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 101**

**Witness Qualification Statement**

**November 16, 2012**

## WITNESS QUALIFICATION STATEMENT

**NAME:** ROBERT J. PROCTER  
**EMPLOYER:** PUBLIC UTILITY COMMISSION OF OREGON  
**TITLE:** SENIOR UTILITY ECONOMIST  
ENERGY RESOURCES AND PLANNING  
**ADDRESS:** 550 CAPITOL STREET NE SUITE 215, SALEM, OREGON  
97301-2115

### EDUCATION:

Ph.D., Michigan State University, Agricultural Economics

Dissertation research focused on the financial impact on the farm business from investing in a new plowing system to retain soil and increase future crop yields. I re-programmed an existing engineering model from FORTRAN to BASIC and developed a new model in BASIC to express those physical impacts in financial terms.

M.S., Purdue University, Agricultural Economics

Thesis research focused on the financial impact on the homeowner of investing in new solar heating and hot-water system. I built a production cost model using FORTRAN to optimize the solar collector size and express physical impacts in financial terms.

B.A., U.C. Berkeley, Economics

Summary of Coursework

Throughout both my under-graduate and graduate education, my coursework was primarily in micro-economic theory, math economics, calculus, dynamic optimization, linear programming, statistics, and econometrics. This is true even though my graduate degrees are in agricultural economics. My focus at the graduate level was in production theory as part of the economic analysis of the firm. That work dovetailed with the micro study of production costing and capital allocation using such tools as discounted cash flows for cost-effectiveness and cost-benefit analysis.

### EXPERIENCE:

Sr. Economist, Public Utility Commission of Oregon

Provide economic guidance to staff and others on the economics of fuel switching, including examining EXCEL models. I also provide expert guidance on smart grid and electric vehicles to Commissioners, staff, and stakeholders. Lead the updating of QF prices.

Guest Lecturer and Policy Panel Member, Portland State, Executive Leadership Institute

Engage professionals on economic issues and stakeholder politics related to federal and state smart grid policies. I also provided guidance as part of a Policy Review Panel draft state-level smart grid related policies.

Adjunct Faculty, Economics, PCC and Mt. Hood Community Colleges

Developed all aspects of the courses. including syllabus, lectures, and exams. Microeconomics courses placed significant emphasis on production costs of the business.

Consultant

Worked with management and staff in power & transmission business to develop an EXCEL model that calculated the PV cost of transmission line de-rating. I also prepared and delivered expert witness testimony explaining economic methodology.

Team Lead for LB CRAC power rate adjustment mechanism

Provided technical expertise in the development and review of the rate methods to convert power costs into rates and the math models implementing that rate solution. I also worked with staff on BPA's trading floor to address power cost calculations as part of resource costs. I prepared related reports and briefing papers for management and stakeholders, including rate case testimony. Finally, I led technical workshops twice annually to hear and respond to stakeholder comments and questions prior to determining final rate adjustments.

Rate Staff responsible for the pricing of capacity

My responsibilities included providing expert guidance on the pricing of capacity, including building the cost analysis to price capacity. I prepared and delivered rate case testimony.

Team Lead for developing the Surcharge Policy

Provided expert guidance on developing this regional power policy. I led the external working group of key stakeholders who helped with policy development and implementation. My duties included preparing related reports and briefing papers for management and staff on policy development and utility compliance.

Team Lead on the Evaluation of Bids for a Thermal Plant

Led the development of both quantitative and non-quantitative evaluation criteria. I also managed the implementation of those criteria and participated in the evaluation and bid selection process.

Team Lead on economic analysis and public involvement on development of regional residential energy code, Model Conservation Standards (MCS)

Developed the economic analysis of residential energy conservation building standards (still in place and called MCS). Worked with other staff to determine the sequencing of this resource with other competing resources as part of resource planning (an early form of IRP). I built a computer model to perform the NPV calculations and sensitivity studies.

Researcher and Teaching Assistant, Michigan State University

My primary responsibility was conducting my research. During several terms, I also lectured in an undergraduate public policy course, a graduate public policy course, and a graduate level linear and non-linear programming course. Also, my coursework included a variety of math model development in statistics, econometrics, and electrical engineering dynamic optimization.

Researcher, Purdue University

I conducted research, including building a FORTRAN-based math model to calculate the costs and benefits of solar energy in residential sector. That model was used to analyze how selected state and federal public policies affect the costs and benefits of active solar in single-family housing. It also took account of the impact of various tax and utility rate design public policies that impact the economics of residential active solar. That work resulted in both a presentation at the American Agricultural Economics Association annual meeting and a paper in the professional journal Land Economics.



CERTIFICATE OF SERVICE

UM 1182  
Phase II

I certify that I have, this day, served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-001-0180, to the following parties or attorneys of parties.

Dated this 16th day of November, 2012 at Salem, Oregon



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