Report of the Utah Independent Evaluator

Evaluation and Selection of the Draft Final Conditional Short List

PacifiCorp 2012 Base Load Request for Proposals

Public Version

November, 2008

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I. Introduction

As Independent Evaluator, Merrimack Energy is required to prepare a detailed report on the bid evaluation and selection process (Task B12 of Merrimack Energy's Scope of Work). The report is to include a summary list of bids, ranking of the bidders based on the evaluation of all the bids, the evaluation of bids relative to the criteria selected, summary of the documentation on the scoring and evaluation process, status of individual bids at each step of the evaluation process and a description of the basis for selection and elimination of bids. Merrimack Energy has previously filed this report as a Highly Confidential Report. This Report is the public version of that report which removes references to specific bids and bidders. The objective of this report is to meet the above requirements as well as provide the basis for the selection of the conditional short-list and final selection of bids.

On December 27, 2007, PacifiCorp presented a copy of a report summarizing the results of its evaluation and selection of the draft final conditional[1] short list of bids from its 2012 Base Load RFP to the Utah and Oregon Independent Evaluators (IE) and the Division staff. The selection of the short list marked the results of nearly a month (i.e. December 2007) of detailed and intensive evaluation, review and discussions between the Company and the above parties pertaining to Step 2 and Step 3 of PacifiCorp's bid evaluation methodology and process as outlined in the RFP. The modeling steps identified above use PacifiCorp's integrated resource planning modeling tools/systems as well as resource portfolio development principles applied for the 2007 Integrated Resource Plan. These steps are also consistent with the methodology identified in the 2012 Base Load Request for Proposals document for assessing resource options. The portfolios of resource options were assessed based on the principles of robustness[2] of the resource performance and the overall system cost associated with each portfolio. In addition, the modeling methodologies used allow the Company to assess risk associated with each portfolio under a number of input assumptions and cases.

During the month of December, PacifiCorp provided a number of memoranda to the IEs summarizing the results of the evaluation undertaken at each step in the process. These documents served as the basis for review and discussions as supporting information for the selection of the conditional final short list. PacifiCorp presented the results to the IEs at each step of the process (i.e. Step 2, Step 3a and Step 3b). A conference call was then held with the parties to discuss the results and address any questions. The results

[1] The term "conditional" short list was chosen by PacifiCorp since there were still issues with the selected bids that needed to be addressed before the bids were qualified for inclusion on the short list.

[2] According to the description of robustness presented by PacifiCorp, a bid resource is considered robust if it appears in the most cost-effective resource portfolios developed under a reasonably wide range of potential futures, and after adjusting portfolio costs for sources of risk.

presented in these memoranda will be discussed in general throughout this Report. All of these documents were marked as "Confidential – Subject to Protective Order".

The results of the analysis led to a two tiered short list selection process for the bids proposed. Three bids were included in the Top Tier based on the fact that these bids were included in the highest ranking portfolios under a number of scenarios. [3] The Bottom Tier bids were included in a limited number of scenarios. PacifiCorp decided to select the Top Tier bids for the draft final conditional short list and address the Bottom Tier bids at a later date.[4] Bids selected for the draft final conditional shortlist would be required to address any deficiencies in their proposals prior to initiating contract negotiations. Bids which met all requirements would then be subject to negotiations. The Top Tier resources included only gas-fired options. Two of the three bids on the back-up list were third-party coal projects. The Utah and Oregon IE's were involved in reviewing and assessing the results of PacifiCorp's analysis and concurred with the evaluation and selection results.

This Report provides an assessment of the evaluation and selection process for the 2012 RFP. While the report includes a review of the key steps and processes along the way from the receipt of the bids to selection of the draft final conditional shortlist, the focus of the discussion will be on the Step 2 and Step 3 process undertaken during the month of December, 2007. However, it is important to "set the stage" leading up to the Step 2 and Step 3 process. As a result, this report will also provide a description of the implementation of the bidding process from receipt of pre-qualification information to selection of the Final Conditional Short List. [5] Merrimack Energy also presents its conclusions and recommendations at the end of this report.

At the current time, contract negotiations with selected resources for the 2012 RFP are still ongoing. The Final Report of the IE will address the contract negotiation process along with an assessment of the entire competitive bidding process.

II. Background

PacifiCorp's 2012 RFP for Base Load Resources was approved by the Utah Public Service Commission on April 4, 2007 after undergoing several months of review and development. The RFP identified twelve different eligible resource alternatives that could be bid. The Company also identified three different benchmark options, all of which were coal-based resources. The eligible resource alternatives included:

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[3] The Top Tier and Bottom Tier bids include only third-party bids. PacifiCorp decided to withdraw all benchmarks from consideration, although the analysis included the benchmarks in portfolio optimization runs..

[4] The IEs and PacifiCorp had preliminary discussions about the Bottom Tier bids. It was Merrimack Energy's opinion that these bids should not be eliminated but could serve as back-up resources. However, PacifiCorp did not initiate any discussions with bidders on the back-up list and decided not to consider any back-up bids at this time.

[5] Merrimack Energy has provided short discussion papers to the Division and Commission staff describing the status of the process since selection of the Draft Final Conditional Short List and any outstanding issues. This information will be included in the Final Report on the RFP process.

- Power Purchase Agreements
- Tolling Service Agreements (Gas or Coal)
- Asset Purchase and Sale Agreement on PacifiCorp sites
- Asset Purchase and Sale Agreement on Bidder's Site
- EPC Contract for Currant Creek
- Purchase of an Existing Facility
- Purchase of a Portion of a Facility Jointly Owned by and/or Operated by PacifiCorp
- Restructuring of an Existing Power Purchase Agreement or Exchange Agreement and/or Buyback of an Existing Sales Agreement
- IGCC Options
- Geothermal and/or Biomass Power Purchase Agreement
- Load Curtailment
- Qualifying Facility

In the RFP, PacifiCorp proposed a multi-phase bid evaluation and selection process for the proposals received. In Phase 1 bidders were required to meet the Pre-Qualification requirements outlined in the RFP. Bidders were required to meet certain credit requirements and capability and experience requirements as described in the RFP. Bidders who did not meet the pre-qualification requirements would not be provided with a bid number and would not be allowed to submit a proposal. [6]

In Phase 2, bids that met the pre-qualification requirements would be eligible to submit a proposal. Once the proposals were received, they would be subject to several evaluation steps. All proposals were initially required to provide basic information[7] and meet specified minimum eligibility requirements. Eligible bids would then be subject to the established evaluation process.[8]

As noted in the RFP, the analysis would be focused on finding the best combination of resources to meet customer requirements at the least cost, on a risk adjusted basis. The evaluation process would utilize a screening process to derive an initial shortlist of bids (Step 1) which would be placed in a system-wide production cost model to determine the

[6] As noted in Merrimack Energy's August 25, 2007 Status Report, only one bidder was qualified to submit a proposal based on meeting all pre-qualification requirements, with credit requirements proving to be the primary stumbling block. Both the Utah and Oregon IE's strongly recommended that the Company allow the IE's to provide bid numbers to bidders even though they did not specifically meet the credit requirements and allow bidders the opportunity to meet the pre-qualification requirements on or after bid submission to ensure the opportunity for a competitive procurement process.
[7] Page 30 of the RFP listed the information requirements and page 31 listed the minimum eligibility requirements.
[8] As will be discussed, proposals were received and the Company initially attempted to develop term sheets for each third-party proposal based on the information contained in the proposals submitted. This involved several discussions between the Company, bidders and IE's to ensure that the information included in the term sheets was accurate. The information on the term sheets was to be used (along with the pricing input sheets) as the basis for undertaking the initial shortlist price evaluation. However, as will be discussed later in this report, PacifiCorp decided to put the evaluation process "on hold" and sought a motion to amend the RFP on October 2, 2007 prior to completing the initial shortlist assessment.

final short list (Steps 2 and 3). One of the roles of the IE with regard to the evaluation and selection process was to ensure the process was applied consistently with regard to the methodology and objectives outlined in the RFP or the Company had a valid reason to deviate from the stated approach.[9] As will be noted later in this report, the Company did deviate from the stated approach on a few occasions. In this report, we will identify those cases and opine on whether such changes were reasonable and consistent or served to bias or skew the results of the evaluation and selection process to the detriment of customer interests.

According to the RFP document, Step 1 of the evaluation process (i.e. Initial Short List) involves a price and non-price analysis of the eligible bids to determine an initial short list. PacifiCorp would use the PacifiCorp Structuring and Pricing RFP Base Model[10] to screen the proposals and to evaluate and determine the price ranking for the eligible bids received. Price was proposed to be weighted at 70% and non-price at 30%. From a price perspective, the Company would compare the bid price to its adjusted market price projections (forward curve) and determined a price factor weighting based on the relationship between the two prices. As identified in the RFP, the comparison metric identified by the Company for this analysis was the projected net present value revenue requirements (PVRR) per kilowatt month (Net PVRR/kW-month). The net PVRR component views the value of the energy and capacity from the proposal as a positive (market value of the power based on projected price curves) and the offsetting costs (bid prices and other costs) as a negative. The larger the net PVRR, the more valuable a given resource is to the Company's customers. The net PVRR/kW-month metric is the annuity value, which, when applied to the nominal kilowatts on a monthly basis and present-valued, will result in the same net PVRR as a straight NPV calculation.

The RFP also defines the non-price factors that would be considered in the evaluation and the weights for each. After completion of both the price and non-price factors, the scores would be combined and the bids ranked. The initial shortlist would be established using the combined price and non-price results. According to the RFP, the initial shortlist will include the top bids in each Eligible Resource Alternative category, up to two times the approximate megawatt needs for each year during the term.

As noted in the RFP, in Step 2, Global Energy Decision's Capacity Expansion Model (CEM) would be used to develop optimized portfolios under various assumptions for future emission expense levels and market prices based on the initial shortlist. The objective in this step is for CEM to develop a number of optimized portfolios – one for each combination of emission and wholesale electric market and natural gas price assumptions – based on the bids in the initial shortlist and the Company benchmarks. An optimal portfolio will be established for each combination of emission and wholesale electric market and natural gas price assumptions. Each portfolio from the CEM

[9] One of the roles and functions of the IE as identified in the RFP includes access to all important models in order to analyze, operate and validate all important models, modeling techniques, assumptions and inputs utilized by the Soliciting Utility in the Solicitation Process, including evaluation of bids.
[10] The RFP Base Model is contained in a Microsoft Excel workbook that includes a number of proprietary Visual Basic macros, custom add-ins, and computational code written in C++.

scenarios will be a candidate for the optimum combination of resources to be selected through the RFP process and will therefore be advanced to the stochastic/deterministic analysis step.

In Step 3 (Risk Analysis), stochastic and deterministic analyses will be performed on each optimized portfolio in order to identify the resources in the highest performing (least cost, adjusted for risk) portfolios. Step 3 includes both a Step 3(a) Stochastic analysis (PaR model) [11]and Step 3(b) Deterministic Scenario Analysis (CEM model). [12]Consistent with the IRP, the Company will use the Planning and Risk Model (PaR) and Capacity Expansion Model (CEM) to assess the risks of each Eligible Resource Alternative. The Planning and Risk Model will model hydro conditions, thermal outages, gas prices, electricity prices, and load on a stochastic basis. The Capacity Expansion Model will model CO2, fuel prices (natural gas and coal) and electricity prices on a scenario basis.

As identified in the RFP, the three steps described above constitute the formal evaluation process and will lead to the compilation of the final shortlist of resources for further negotiation. After completing the formal evaluation process described above, but before making the final resource selections to be submitted for approval or acknowledgement, the Company will take into consideration, in consultation with the IEs, certain other factors that are not expressly or adequately factored into the formal evaluation process, but that are required by applicable law or Commission order to be considered. The Utah Energy Resource Procurement Act requires consideration of at least the following factors in determining whether a resource selected by the Company should be approved as in the public interest:

- Whether it will most likely result in the acquisition, production, and delivery of electricity at the lowest reasonable cost to the retail customers of an affected electrical utility located in this state;
- Long-term and short-term impacts;
- Risk;
- Reliability;
- Financial impacts on the affected electrical utility; and
- Other factors determined by the Commission to be relevant.

[11] The PaR model will be used in stochastic mode to develop expected PVRR and PVRR volatility parameters. PaR is an hourly dispatch model that varies loads, wholesale gas prices, wholesale electricity prices, hydro variations and thermal unit performance to reflect uncertainty. Stochastic representations of these variables include specific volatility and correlation parameters. The model dispatches resources to meet load with given markets and transmission access to minimize PVRR using linear programming techniques. The resulting distribution of PVRR, typically over 100 draws of the variables, can be evaluated for the expected PVRR, tail risk PVRR, and PVRR volatility. According to PacifiCorp's 2007 IRP, PaR makes time path dependent Monte Carlo draws for each stochastic variable based on the input parameters. The Monte Carlo draws are a percentage deviation from the expected forward value of the variables.

[12] The optimal portfolios will be subject to a more in depth deterministic dispatch model using CEM with each portfolio being assessed for each of the future scenarios described in Step 2. This step is intended to identify portfolios with especially poor performance under certain future scenarios and used to inform the selection of final resource options.

The RFP also notes that the Company will further negotiate both price and non-price factors during post-bid negotiations. The Company will continually update its economic and risk evaluation until a definitive agreement acceptable to the Company in its sole and absolute discretion is executed by both parties. The Company will allow bidders to negotiate final contract terms that are different from the Proforma Agreements including, but not limited to, CO_2 risk to the extent the bidder enters into a CO_2 indemnity or equivalent.

III. Implementation of the Bid Evaluation and Selection Process

This section of the report will provide an overview and assessment of the implementation of the bid evaluation and selection process from receipt of the pre-qualification information to selection of the draft final conditional short list. In addition, the role of the IE throughout this process will be identified and described. Since the August 27, 2007 Status Report of the IE prepared by Merrimack Energy and follow-up comments submitted to the Utah Commission by the IE in response to PacifiCorp's request to amend the RFP addressed the period from receipt of the pre-qualification information in May 2007 through November 2007, the report will focus on the detailed evaluation of bids undertaken by PacifiCorp after the Company withdrew its request to amend the RFP in late November, 2007. However, to provide perspective throughout the bid evaluation and selection process, this assessment will begin with the receipt of pre-qualification information.

Receipt of Pre-Qualification Information/RFQ Process

On May 7, 2007 PacifiCorp received responses from bidders with regard to the Request for Qualifications (RFQ), as the initial phase in the evaluation process. A total of approximately 30 resource alternatives were submitted, with most bidders offering multiple options. However, virtually all the RFQ responses had deficiencies, with the vast majority of responses failing to meet the credit assurance requirements that PacifiCorp deemed necessary. As a result of discussions with the IEs (as described in detail in the August 27, 2007 Status Report), PacifiCorp held a Technical Conference for bidders to explain the credit requirements included in the RFP. The Company also submitted a letter to the Utah Commission on May 21, 2007 outlining suggested clarifications to the RFP. Among other issues, the Company decided to allow existing bidders to provide any deficient or missing information to their pre-qualification submissions by May 25, 2007 and also extended the date for filing proposals from June 19, 2007 until June 29, 2007. As a result, on May 25, 2007 one new bidder provided its RFQ response and other bidders reassessed their positions. For example, three prospective bidders subsequently withdrew from the process and one prospective bidder opted to seek another alternative. Exhibit 1 provides a summary of the number of bidders who provided responses to the RFQ, the number of projects and the number of options originally proposed.

Exhibit 1: Project Submittal Summary

Stage in the Process	Number of Bidders	Number of Projects	Number of Options
Pre-Qualification	10	16	30

Credit continued to be an issue during the RFQ process. Nevertheless, the company with the encouragement of the IEs decided to allow bidders to submit proposals on June 29, 2007 even though the vast majority of the bidders had not met the RFQ requirements, as intended by PacifiCorp.[13]

Test Bid Assessment

As a means of testing the evaluation and selection process, the Utah IE prepared two test bids[14] for the Company to evaluate using the RFP Base Model in Step 1 of the bid evaluation process. The Utah IE completed the Pricing Input Sheets from the RFP (Form 1) as well as other information requested about the technical and operational aspects of the proposal including siting, transmission access, technology, fuel, financing, etc. In essence, the IE created projects and completed the bid forms and exhibits as an actual bidder would.

The Company conducted its evaluation of the test bids and the IEs and Company staff met on June 7, 2007 to review the evaluation of the bids. Company analysts explained the basis of the evaluation as an example of the process that would be undertaken when actual bids were received. Non-price criteria were also discussed and reviewed to ensure the criteria could be locked down prior to receipt of bids. The IEs were comfortable with the evaluation methodology and process the Company intended to implement based on previous discussions with the Company about the methodology and also on the basis of the test bid process. In addition, the test bid process provided insight to the IEs how the Company interpreted the pricing proposals for the test bids as an example of how actual bids would be treated as well as the details of the price evaluation methodology in Step 1 of the process.

On June 7, 2007, the Company also held a Technical Conference for Bidders to provide a walk through of the Pricing Input Sheets and address any Bidder questions regarding the information required on the Pricing Input Sheet.

Input Assumptions

At the meetings held in conjunction with the review of the test bid evaluation, the Company also provided the IEs with their proposed input assumptions and a detailed assessment which served as the basis for the assumptions. In addition, the Company

[13] The original objective of PacifiCorp was to allow only bidders who met the RFQ requirements to be eligible to receive a bid number and submit a proposal. However, only one bidder had met PacifiCorp's requirements during the RFQ stage. Since the RFQ stage was effectively not completed at the time bids were received, the IE did not submit a Status Report on the bidding process at that time.

[14] The two test bids were for the same resource but were for different contract structures (i.e PPA and APSA).

provided the IEs with a table that included the basis for Carbon Dioxide prices and natural gas prices for 9 scenarios that would be used to evaluate candidate portfolios under various assumptions for future emission expense levels and market prices.[15]

Access to Assumptions/Models

PacifiCorp also agreed to provide the IEs access to a secured website on PacifiCorp's system devoted to the RFP. The input assumptions, benchmark resources, and bid evaluation results were included on the website. While the IEs would not be given unfettered access to independently run the models due to the complexity of accessing a number of files on the Company's computer system, the Company agreed to provide all the input and output results for review and audit by the IE's. The IE's were given directions and a password for accessing the website to review the results of the analysis or appropriate documents. The IEs were comfortable with this approach given the complexities and difficulties for independently running the Company's models. The IEs concluded that it would be more effective and consistent for Company analysts to run the models at the IEs direction, with review of the results and discussions with the Company.

The process undertaken by the IEs to validate the inputs and assumptions was based on reviewing the sources of the inputs and assumptions, the methodologies and approaches used by the Company to develop the assumptions, and the reasonableness of the assumptions and inputs based on market forecasts and the forecasts and assumptions used by other utilities and power buyers. After review of the input assumptions and based on discussions with the Company, the IEs validated the input assumptions as being reasonable, which were then "locked down" prior to receipt of the bids, consistent with the requirements in the IE Scope of Work.

Benchmark Resources

Another requirement for the IEs was to review and validate the assumptions and calculations of any benchmark resource options and analyze the Benchmark options for reasonableness and consistency with the solicitation process prior to submission of third-party bids. To undertake this task the IEs held several meetings and phone calls with PacifiCorp's Benchmark team to review and assess the benchmark resources.

An initial meeting was held with the Benchmark team on June 8, 2007. At that meeting the Benchmark team described the benchmark resources in general, including a description of the important aspects of each of the three projects. The Benchmark team provided the IEs with slide presentations on each project. The Benchmark team also described the detailed back-up data from the Engineering, Procurement and Construction (EPC) vendors that served as the basis for the cost estimates.

On or around June 19, 2007 the Benchmark team presented its detailed cost and overall proposal for each benchmark resource to the IEs in the same form and substance in which other bidders were required to submit to their proposals. The Benchmark team provided

[15] The matrix included a combination of three gas price scenarios (low, base and high) combined with three Carbon Dioxide price cases (low, base and high). The matrix fully described the basis for the case for each variable and the source of the information.

the IEs copies of disks with the benchmark resources included for review and assessment. Also, the benchmark options and back-up information was posted on the secured website for review by the IEs. On June 27, 2007, the Benchmark team and the IEs held a conference call to discuss any outstanding questions from the IEs.

On June 28, 2007, the Utah IE and Division Staff met with the Benchmark team to conduct a final review of the detailed cost data for each benchmark resource. On June 29, 2007 the Utah IE completed and submitted its report on the Benchmark resources to the Division, as required. The IE provided an update with minor changes on July 2, 2007. In summary, the IE was of the opinion that the cost of the benchmark resources was certainly not a low ball estimate and was overall a reasonable assessment relative to our experience with the cost of other similar projects.

Receipt of Bids

Bids were received as scheduled on June 29, 2007. At that time, six bidders submitted proposals consisting of nine projects and twelve options.[16] One alternative offered three mutually exclusive options of different sizes from the same project. The one bid that had previously met the credit requirements in the RFQ process decided not to submit a proposal.[17] As previously noted, one new bidder submitted a proposal. In addition, one of the bidders submitted a proposal that was not identified in its pre-qualification filing.

Evaluation of Bids

After the bids were received and blinded by the IE's, the first major step in the evaluation process after ensuring bids met the minimum eligibility criteria was to review the proposal, notably the Form 1 Pricing Input Sheet. PacifiCorp then developed a term sheet that would initially serve as the basis for evaluation of the bids. PacifiCorp developed the initial term sheets for distribution to the bidder for review and sign off. PacifiCorp intended that it would confer with the bidders to ensure that all parties were in agreement with the term sheets, which included all bid evaluation details and confirmation of the offer, before initiating the first step of the bid evaluation process. The IE was supportive of this process since it served to ensure all bids would provide the same information and would be consistently evaluated. At the same time, PacifiCorp continued to work with the bidders to secure the credit commitment letters deemed necessary by PacifiCorp.

One of the bidders withdrew from the process shortly after submitting its proposal. The remaining eight proposals (i.e. projects) were eventually subject to the evaluation.

As noted in Merrimack Energy's 2012 RFP Status Report submitted initially on August 10, 2007 and in final form on August 27, 2007, at the beginning of the week of August 6, 2007, PacifiCorp expressed a sense of urgency to resolve outstanding RFQ and eligibility issues (notably credit and transmission issues) with bidders before proceeding with the evaluation. At that time, PacifiCorp targeted August 9, 2007 as a "drop dead" date for

[16] While the same project development firm offered multiple proposals, we treated each project as a separate bid because the bid actually identified a separate special purpose entity.
[17] This bidder was a power marketer who was expected to offer a power purchase agreement. The bidder was not expected to construct a resource to support the offer.

bidders to submit the final information required in order to qualify the bidders to move forward in the evaluation. By August 9, 2007 several bidders still did not qualify. During a conference call between the IEs and the Company on August 9, 2007 several options were identified and discussed regarding the possible steps going forward. Four options, in particular, were addressed:

1. PacifiCorp would withdraw the IPP3 benchmark due to legal complications associated with the Los Angeles Department of Water and Power (LADWP) withdrawing support for the project. As a result, PacifiCorp believed IPP3 was no longer a viable option. PacifiCorp proposed issuing a new RFP for 2012 and 2013;

2. Freeze the proposals as they exist and evaluate the bids based on the best information available;

3. Continue to attempt to accommodate bidders to ensure bidders meet qualification requirements (including credit and transmission issues); and

4. Begin negotiation with the three bids that qualified or are expected to qualify. Instead of comparing bids against the benchmark resources, PacifiCorp could compare the bids against its forward curve.

During discussion about the options the Company did discuss the option of amending the RFP. However, no action was taken for several weeks. In fact, little communications between the Company, IEs and Bidders occurred during September, 2007.

Motion to Amend the RFP

On October 2, 2007, PacifiCorp, through its Rocky Mountain Power division, moved the Public Service Commission of Utah for an order authorizing the Company to amend its 2012 Request for Proposals for Base Load Resources that was previously filed March 26, 2007. PacifiCorp filed a supporting memorandum on October 16, 2007, which provided information concerning the reasons PacifiCorp sought to amend and the amendments proposed. The supporting memorandum was submitted pursuant to the additional protective terms provided in the Revised Protective Order issued in this docket. The October 16 memorandum provided a status report on the proposals received and included the Step 1 evaluation results of the proposals as requested on several occasions by the IEs. The analysis compared the cost of the current proposals to the Company's forward price curve. The analysis included several metrics for each proposal including the Net Present Value Revenue Requirements difference between the bid price and forward price curve, the nominal levelized delivered cost, the break-even nominal levelized delivered cost, and the ratio of the cost to the break even market price. [18] All third-party bids had a calculated price which exceeded the forward price.

[18] While the Step 1 shortlist process was designed to include a price evaluation of the bid price relative to the forward price as well as a non-price analysis of the bids, PacifiCorp did not conduct the non-price analysis. In addition, the price analysis results were not used as a basis for developing a short list. Instead,

On November 8, 2007, Merrimack Energy filed comments on the proposals of PacifiCorp requesting the Motion to Amend the RFP. Merrimack Energy generally opposed the Company's motion. Merrimack Energy was concerned that the Company's proposals would not lead to increased competition and lower rates as the Company had indicated but instead would be unfair to existing bidders and could lead to decreased competition if bidders feel they do not have a fair opportunity to compete in the process after having spent considerable time, money and effort to this point. The specific positions of the Company and Merrimack Energy (based on the Comments of Merrimack Energy Group, Inc. as Independent Evaluator in Docket No. 05-035-47) are summarized in Exhibit 2 below.

Exhibit 2: Summary of the Positions of PacifiCorp and Merrimack Energy

PacifiCorp Position	Merrimack Energy Position
Modify the schedule in Section 2, whereby the proposal response date would change from June 19, 2007 to January 18, 2008, permitting new and existing bidders an opportunity to submit new bids or refresh their existing bids.	PacifiCorp should attempt to conform existing bids (with proposed in-service dates of 2012 and 2013) to the RFP requirements. PacifiCorp should then evaluate the conforming bids consistent with the requirements of the RFP. This would include a comparison of the bids against the Company's forward curve in Step 1 of the evaluation process and the more detailed portfolio evaluation, including the benchmarks, in Steps 2 and 3. Since no third-party bids were received for 2014, Merrimack Energy supported PacifiCorp's proposal to modify the schedule to allow for new or refreshed bids but only for resources proposing a 2014 in-service date.
Require bidders to post acceptable commitment letters or letters of credit within ten business days following notification of their selection to the initial shortlist.	Merrimack Energy proposed delaying the date for bidders to submit their commitment letter until ten days after announcement of the winning bidder(s) as a compromise position as a minimum time requirement for submission of the commitment letter. The Company's proposal for requiring bidders to submit commitment letters within 10 days after notification of selection to the short list is not reasonable and would result in the same

all proposals submitted were eventually subjected to the Step 2 and Step 3 analysis as will be discussed later in this report.

	issues faced in this RFP.
PacifiCorp proposed to update the 2012 benchmark resources by including resources located at the existing Lake Side site and/or the existing Currant Creek site.	Merrimack Energy was opposed to PacifiCorp's proposal to update the 2012 benchmark resources for several reasons. First, there are third-party bids for projects on the two sites and allowing the company to offer benchmarks at those sites could reduce competition. Second, allowing PacifiCorp the time to develop new benchmarks at this time will penalize existing bidders who already have spent considerable resources and costs to develop their proposals. Third, the presence of the existing bids for 2012 and the opportunity for new proposals for 2014 (as suggested by Merrimack Energy) should result in a reasonably competitive process for new resources.
Eliminate the upfront request for qualification procedure and instead require submission of an intent to bid form	While Merrimack Energy did not address this issue in its comments, we are supportive of this proposal in future RFPs.

Withdrawal of Motion to Amend the RFP

Subsequent to receipt of the comments of the IEs and other interested parties in Utah (the Utah Division of Public Utilities, the Utah Committee of Consumer Services, and the Utah Association of Energy Users), on November 28, 2007, PacifiCorp decided to withdraw its Motion to Amend the RFP and proceed with the 2012 RFP including evaluation of the bids received. PacifiCorp also sought expedited approval for a new incremental Request for Proposal for additional capacity in the 2012 through 2017 time frame.

In its Withdrawal of the Motion to Amend, PacifiCorp announced its intention to complete the evaluation of all bids (except bids that present significant risk due to the pendency of bankruptcy proceedings), [19] identify a final shortlist, and negotiate with the bidders who presented the most beneficial bids after all bidders have had the opportunity to cure any credit or minimum eligibility requirements. The approach recommended by PacifiCorp was consistent with the recommendations by Merrimack Energy as Independent Evaluator.

[19] On December 18, 2007 the Bidder in question submitted a letter to the Utah and Oregon IEs advising that it is withdrawing its bids and does not wish any further consideration given them. One of the reasons given was that each of the bids was subject to a contingency related to proceedings before the United States Bankruptcy Court for the District of Nevada and the contingency was not fulfilled. In addition, the bidder stated that given the delays in the bid process and the resulting uncertainties associated with timing of the process, with the attendant cost changes, the bidder cannot further maintain those bids.

On November 28, 2007 the Company initiated a call with the IEs and Division to provide a status update on the process and announce the timing for the next steps in the process.

IV. Overview of the Bid Evaluation Process

According to the RFP document, the bid evaluation process for the RFP will be focused on finding the best combination of resource opportunities to meet customer requirements at the least cost on a risk adjusted basis. The evaluation process would utilize a screening process to derive an initial shortlist of bids which would then be placed in a system wide production cost model to determine the final shortlist.

Step 1 – Selection of the Initial Shortlist of Bids

As stated in the RFP, the selection of the initial shortlist of bids was designed to be based upon price and non-price factors taking into account resource diversity of the term and fuel source. The price factor would be derived in the initial shortlist analysis using the PacifiCorp Structuring and Pricing RFP Base Model. The price and non-price factors would be evaluated separately and combined to determine a bid ranking in each category. The price factor would be weighted up to 70% and non-price factor will be weighted up to 30%. The price and non-price evaluation results would be added together and used to determine the initial shortlist. The initial shortlist would be made up of the highest scoring proposals for each of the Resource Alternative Categories.

With regard to the price factor evaluation, the RFP contains a description of the methodology to be used for allocating price weights. The Company's objective was to compare the bid price to the forward price with the comparison metric being established as the projected net present value revenue requirement (net PVRR) per kilowatt month (Net PVRR/kW-month). According to the RFP, three categories were established for allocating price factor weights. Bids that had a price less than or equal to 80% of the adjusted price projections (e.g. forward curve) would receive the full 70% of the weight. Bids with a price equal to or greater than 120% of the adjusted price projection would receive 0% of the weight. Bids that were between 80% and 120% would be linearly interpolated.[20] The net PVRR component views the value of the energy and capacity as a positive (market value of the power based on projected price curves) and the offsetting costs (bid prices and other costs) as a negative. The larger the net PVRR, the more valuable a given resource is to the Company's customers. The net PVRR/kW-month metric is the annuity value, which when applied to the nominal kilowatts on a monthly basis and present-valued will result in the same net PVRR as a straight NPV calculation.

[20] In discussions with PacifiCorp and in comments, Merrimack Energy suggested that the weighting scale be revised if bid prices were at the upper end of the scale with little distinction on weights. We were concerned that actual bid prices would be higher than the forward curve and result in very low price factor weightings. For example, under the company's proposed methodology, the majority of bids would likely have received 0 points. If no price weight adjustments are added, it could lead to bid selection being driven by non-price weights even though the objective of the weighting system was to weigh price much more highly than non-price.

Since there were a manageable number of eligible bids, PacifiCorp conducted a price only evaluation of the bids and effectively included all the bids (with the exception of the bids affiliated with an entity in bankruptcy) on the short-list. This analysis was undertaken during the period in which the process was delayed during the October timeframe. PacifiCorp did not undertake a non-price evaluation of the bids since the short-list would be comprised of all remaining projects.[21]

Furthermore, the initial price analysis undertaken by PacifiCorp did not conform to the methodology outlined in the RFP. First, the comparison metric developed by PacifiCorp in a Highly Sensitive document to compare the bid results against the forward curve was based on Nominal Levelized Delivered Costs in $/Mwh and not on Net PVRR/kW-month as described in the RFP. Second, the Company did not compile any non-price weightings for the bids evaluated. While the Company did present a ratio of the costs of the bids to the break even market price, it is not clear whether the results would exactly match the results had PacifiCorp utilized the original methodology outlined in the RFP. [22]

Given the status of the process and the fact that PacifiCorp had completed the initial price analysis during the delay in the bidding process, the IE's did not have access to the evaluation results and did not undertake a detailed review and assessment of the results. However, since the purpose of this phase of the process was to determine an initial short-list and all remaining bids were selected for the short-list, we did not think that it would be time well spent to conduct a detailed review and assessment of the initial short-list selection process and instead decided to focus on the evaluation associated with Steps 2 and 3 of the evaluation process.

For the next RFP, it is our view that the initial price and non-price evaluation should be conducted consistent with the methodology outlined in the RFP.

Technical Conference

On December 3, 2007 PacifiCorp submitted a discussion paper to the IEs identifying a proposed schedule for undertaking the Step 2 and Step 3 evaluation of the bids and completing the Final Shortlist. In addition, the discussion paper also confirmed the proposed Technical Conference with remaining eligible Bidders scheduled for December 7, 2007. In addition to the schedule, the discussion paper included a brief description of the Step 2 and Step 3 processes for completing the evaluation of the bids, including the methodology, input assumptions, and scenarios. These include the following three steps in the evaluation process, which are discussed in more detail below.

1. Step 2: Portfolio Development/Optimization to be undertaken by the IRP Group using the Capacity Expansion Model (CEM).
2. Step 3a: Stochastic Analysis using the Planning and Risk Model (PaR)

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[21] At the time the initial price analysis took place, only two proposals had satisfied the minimum eligibility and credit requirements.

[22] While we would expect the results would be the same or similar in terms of bid ranking, PacifiCorp has not verified the results under both approaches. Since no bids were eliminated from consideration at this stage of the evaluation, the IE did not contest the inconsistency in the evaluation process.

3. Step 3b: Deterministic Scenario Analysis using the CEM model.

On December 4, 2007 a conference call was held with the Company to discuss the December 3rd discussion paper. Information to be presented during the Technical Conference was discussed as well as the schedule for December. PacifiCorp announced that its goal was to complete Steps 2 and 3 during December and compile a final shortlist by the end of the month. Also, during the call Merrimack Energy requested a conference call to discuss each bid to be evaluated including the assumptions and inputs for each bid to be used in the Step 2 and Step 3 analysis to ensure the Company and IE's were in agreement on the input assumptions and bid information.[23]

Merrimack Energy also requested a conference call with PacifiCorp Transmission to discuss the revised transmission cost estimates for each bid. This request was based on the fact that the estimated transmission costs as included in the revised Attachment 13 PacifiCorp Costs Associated With Integration (revised on 9/25/2007) were substantially higher than the original values included in Attachment 13 to the RFP. The updated Attachment 13 costs were posted on the Company's Oasis website for review. In some cases, these costs were double or triple the original values. Based on the magnitude of the cost increases, the Utah IE wanted a detailed description of the basis of the cost increases because of our concern that transmission costs would be a key determinant in the evaluation and ranking of the bids.

A conference call with PacifiCorp's evaluation team was held on December 6, 2007 and a call with the Transmission Group was held on December 10, 2007. During the conference call on December 6, 2007, PacifiCorp described the methodology it used to develop inputs necessary for use in the CEM model and addressed a number of questions from the IEs about the sources of data and information from the proposals and consistency in the application of the information. Both the Utah and Oregon IEs were satisfied that the methodology used by PacifiCorp was reasonable and consistent.

As noted, the Technical Conference was held on December 7, 2007. PacifiCorp's representatives described the Company's original amendments, the reasons for withdrawing the Motion to Amend, the basis for continuing the RFP bid evaluation, the evaluation methodologies to be used going forward, and a proposed schedule. Also, bidders were notified that once Step 3 is completed, the selected bids will be included on a conditional final shortlist and bidders would need to cure any outstanding contingencies in order to be accepted for the final shortlist. It was estimated that the evaluation would be completed by January 2, 2008 and bidders would be given 15 days to cure any deficiencies.

[23]The modeling methodologies for Steps 2 and 3 require that data and information for each proposal be presented in a certain format for the capital-related costs of the project (i.e. real levelized costs) for input into the CEM model. The IEs therefore requested that PacifiCorp's evaluation team review how such data was prepared for each bid to ensure that the methodology was consistently applied. The IEs asked a number of questions and the Company provided thorough and consistent responses. Also, the Compny agreed to post the analysis on its secure website.

Transmission Assessment

According to the RFP document, in the evaluation process the Company would add the cost of integration to the analysis results. The integration costs associated with ten possible Points of Delivery in Attachment 13 of the RFP would be used, on a prorated basis, as a proxy cost in the initial shortlist. Bidders were required to identify the Points of Delivery for their project. If the Bidder cannot determine if the Point of Delivery corresponds to one of the Points of Delivery in Attachment 13 then the Bidder must request clarification with the Utah IE who will seek determination from PacifiCorp Transmission.[24] The initial analysis conducted by PacifiCorp used the proxy transmission costs included in Attachment 13 in the RFP (i.e. Original Analysis) as part of the initial evaluation presented in Exhibit 6.[25]

The RFP further defines the transmission analysis requirements for later stages of the evaluation. According to the RFP, after the initial shortlist is determined, the Structuring and Pricing Group will provide the results of the initial short list to the IRP Group by bid number. Pursuant to a consulting agreement between the IRP Group and PacifiCorp Transmission, PacifiCorp Transmission will determine the actual costs associated with integrating the short-listed resources into PacifiCorp's system. The IRP Group will seek updated costs from PacifiCorp Transmission to integrate only the short-listed bidders, by bid number. These integration costs will be used as inputs into the IRP model with the short-listed proposals in order to determine the final short list as well as for the benchmarks.

PacifiCorp Transmission updated Attachment 13 (PacifiCorp Costs Associated With Integration) as required and provided the results to the IRP Group. However, the cost differences associated with the original Attachment 13 included in the RFP and the revised Attachment 13 (with new delivery points based on the actual bids submitted) was quite significant.

As noted, Merrimack Energy was concerned that the magnitude of the transmission cost assessment could have a major impact on the evaluation of the proposals and asked for a conference call with PacifiCorp Transmission, who was responsible for independently developing such estimates. The representative from PacifiCorp Transmission who participated on the conference call with the IEs and staff indicated that the methodology used by the PacifiCorp Transmission was to assess the high level costs of getting the power from the project into the main load area on the system (i.e. Wasatch Front). Each project was looked at independently, not as a portfolio, from a transmission perspective.

The representative indicated that the reason why the costs increased so dramatically was because steel and right-of-way costs have escalated significantly and longer transmission lines are required. Costs were also expected to increase due to increased voltage

[24] The Utah IE did not receive any requests for clarification from any bidders with respect to transmission.

[25] However, it is our understanding that the analysis of short listed project results presented by PacifiCorp to the Commission on February 14, 2008 included the updated transmission costs as opposed to the transmission costs included in the RFP which served as the basis for undertaking the original Step 1 evaluation.

requirements. In addition, all projects required transmission upgrades and a new, dedicated transmission line is generally required. Also, the Company was able to specifically use better information since the project locations were identified. Finally, the representative noted that the costs were allocated on a pro-rata basis to each project based on the size of the project relative to the size of the transmission line proposed, which should lead to consistent results for each project. It is our understanding that the analysis did not assume the cost of major planned transmission projects referenced in Appendix A in the 2007 IRP. The revised Attachment 13 illustrated that estimated costs to upgrade transmission was substantially lower for projects located within the Utah area (i.e. Lake Side and Currant Creek)

The IRP Group also described the methodologies it uses for assessing transmission costs in the evaluation. The IRP Group also indicated in a separate discussion that transmission assets have an asset life of 57 years, a cash flow stream for 57 years was developed, and costs are applied on a real levelized cost basis over the asset life.

Given the magnitude of the transmission integration costs for various delivery points and the change in such costs over a short period of time, it is obvious that transmission cost differentials will have a significant impact on the relative cost of a project. In addition, if Bidders have a better understanding of such costs, it could aid in their project location decisions. For future solicitations, the IE suggests that PacifiCorp hold a transmission workshop for bidders. In addition, we also feel it may be valuable for the IEs to request a more detailed review of the cost analysis with PacifiCorp Transmission to determine a potential range of such costs under a high level of confidence. If the range of potential transmission costs appears wide, the IE reserves the right to request that PacifiCorp undertake sensitivity analysis around the range of transmission costs rather than use a single point estimate for such costs.

V. Bid Evaluation Process

<u>Step 2 Analysis: Capacity Expansion Model – Production Cost Runs</u>

PacifiCorp submitted its Step 2 analysis results to the IEs and Division on December 7, 2007 and a conference call was held on the results of the CEM analysis for Step 2 on December 11, 2007.[26] For the Step 2 assessment, the objective of the model was to solve for the optimal portfolio of resources to ensure the company meets its planning reserve margin under a range of alternative cost assumptions (i.e. natural gas and CO2 costs primarily). The model evaluates both bids and benchmarks.

In addition to screening portfolios for the Step 3 analysis (i.e. stochastic production cost analysis), the results derived in Step 2 will indicate the frequency with which bids and benchmarks are selected in the various optimized portfolios. Another objective of this analysis, therefore, is to identify unique sets of portfolios to use in Step 3a, as discussed later in this section.

[26] At the beginning of the call, PacifiCorp informed the IEs that they had made minor changes to the input assumptions for two bids based on comments raised by the IEs during the December 6th conference call.

As identified in PacifiCorp's supporting documentation, the model includes some specific resources in the base case including 2000 MW of wind and certain long and short-term contracts. In addition, the model is allowed to select front office transactions up to specified limits based on the amount of front office transactions that could be sourced. The limits on front office transactions were set at 1,200 MW from 2012 through 2018 (in the 15% reserve margin case) based on the Company's view of market depth at different market hubs. Prior to 2012, the CEM model could select an unlimited quantity of market purchases, with no restrictions. For the 12% reserve margin case, the model was allowed to choose annual quantities of firm market purchases up to the 2007 IRP levels from 2007 through 2018.

The model starts with a set of IRP resources. Three resources, totaling about 1415 MW, are removed as resource options to create a capacity deficit that the model must fill with a combination of bids and benchmarks.[27] Inputs to the CEM model were based on the June 2007 assumptions which were reviewed and locked down by the IEs. The model then considers the bid resources and benchmarks to develop portfolios to fill the gap.[28] For this analysis, the Company initially considered 20 cases and developed optimal portfolios for each case. The 20 cases included:

- A combination of low, medium and high CO2 cost adders and gas/electricity prices at both a 12% and 15% planning reserve margin (total of 18 cases) [29]

- Low and high coal commodity price levels for new resources at a 12% planning reserve margin.

According to PacifiCorp's analysis, the low and high variable values were derived from 2007 IRP assumptions applied to the medium or base case values. The specific cases are described below.

<u>CO2 Adder</u>
- Low value – No adder
- Medium value - $8/ton in 2008 dollars, beginning in 2010 with costs phased in at 50%, escalating to 75% in 2011 and 100% in 2012
- High value - $37.90/ton in 2008 dollars ($25/ton in 1990 dollars), beginning in 2010 with costs phased in at 50%, escalating to 75% in 2011 and 100% in 2012.

<u>Natural Gas/Electricity Prices</u>

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[27]The three baseload resources, totaling 1,415 MW, removed from the portfolio include: (1) a 340 MW Utah pulverized coal project in 2012; (2) a 548 MW combined cycle in 2012; and (3) a 527 MW pulverized coal project in Wyoming in 2014.

[28] Eligible resources at this stage included three third-party coal bids, three third-party gas-fired combined cycles, one gas-fired peaking unit), and three coal benchmarks (IPP3, Jim Bridger 5 supercritical coal, and Jim Bridger 5 IGCC).

[29] PacifiCorp's 2007 IRP considers resource portfolios at 12 and 15 percent reserve margin levels. In the IRP, PacifiCorp states that it views this percentage range as a prudent and reasonable range for planning purposes when considering both supply reliability and economic impact to customers.

- Low value – 32% lower than the medium prices on an average annual basis for 2007 through 2016 (associated electricity prices are 14% lower than the medium prices)
- Medium value – June 22, 2007 forward price curve
- High value – 86% higher than the medium prices on an average annual basis for 2007 through 2016 (associated electricity prices are 25% higher than the medium prices).

Coal Commodity Prices

- Low value – 12% lower than the PacifiCorp Fuels Marketing & Supply Group price forecast by 2026
- Medium value – PacifiCorp Fuels Marketing & Supply Department price forecast
- High value – 20% higher than the PacifiCorp Fuels Marketing & Supply Group price forecast by 2026.

In addition, PacifiCorp developed 8 additional cases that did not include any benchmark resources. According to PacifiCorp, in order to account for benchmark resource ineligibility in defining the range of portfolios for risk analysis, the company benchmarks were removed as resource options from the portfolios for which at least one benchmark was included. The CEM model was then re-run with that portfolio in order to force the model to fill the resulting capacity deficit with remaining bid resources.
The results of the analysis illustrate that two resources dominate[30] the portfolios. One of the proposals, a gas-fired peaking unit was included in 17 of the 20 portfolios (and 21 of 28 cases) and a gas-fired combined cycle unit at a Company site was included in 14 of the 20 portfolios (and 22 of 28 cases). This gas-fired combined cycle was included in every case in which there are no benchmarks considered (i.e. cases 21-28). For the Company benchmarks, IPP3 appeared in 60% of the cases (12 of 20) and Jim Bridger 5 supercritical coal project appeared in 55% of the cases (11 of 20). The Jim Bridger 5 IGCC option did not appear in any case.

While the frequency of occurrence for each of the resource options illustrates the dominance of a resource in a number of portfolios, the important aspect for the Step 3 analysis is to include a wide range of resource options for consideration. As noted above, only the Benchmark IGCC option failed to show up in any of the portfolios/cases.

As noted by PacifiCorp in its analysis, to select the CEM portfolios for the stochastic production cost analysis using the Planning and Risk Model, the number of cases was condensed to a group of cases with unique sets of bid and benchmark resources.

The following presents a brief summary of the results of the evaluation.

[30] The term “dominate” is used to indicate that the particular resource appears in a number of portfolios, essentially displacing other competing resources.

- The only three cases in which the gas-fired peaker does not appear is in the low gas cases under a 12% reserve margin. In these cases, a combined cycle unit replaces the peaking unit.

- The highest ranked gas-fired combined cycle is not selected in any high gas case. Coal units are selected in the high gas cases, including the benchmark resources. The gas-fired peaking unit is the only non-coal unit selected in these cases.

- IPP3 and Bridger are generally selected in the high gas cases as well as in the medium gas cases for low, medium and high CO2 adders under both a 12% and 15% reserve level. As a result, higher gas costs appear to be a more significant driver than CO2 cost levels when assessing the cases favorable to the benchmark coal units.

- Benchmark coal resources are selected more frequently than other coal units. For example, IPP3 is selected in 12 of 20 cases and Bridger in 11 of the 20 cases. The Bridger IGCC unit was not selected in any case.

Once the cases were assessed and evaluated, PacifiCorp identified cases that did not include an overlap of resources for the Step 3a analysis. Seven sets of bids were selected that did not contain an overlap of resource options, including third-party bids and benchmarks. The cases selected along with the overlap options are identified as follows:

- Case 2 (overlap with cases 1 and 3)
- Case 5 (overlap with cases 4 and 19)
- Case 6 (unique case)
- Case 8 (overlap with cases 7, 9, 16, 17 and 18)
- Case 11 (overlap with cases 10, 12, and 15)
- Case 14 (overlap with case 13)
- Case 20 (overlap with cases 22 and 24)

In addition, PacifiCorp analyzed four additional cases that did not include any benchmark options. These are Cases 25, 26, 27 and 28. The total amount of resources (in MW) differed by case and ranged from a low of 1,553 MW to a high of 2,078 MW. These unique cases will be the ones analyzed in Step 3a of the evaluation process.

Of the cases selected, the highest ranked combined cycle is included in 10 of 11 cases while the gas-fired peaking unit appears in 8 of 11 cases.

The IE has reached the following conclusions with regard to the Step 2 assessment:

- The use of both a 12% and 15% reserve margin to assess the various cases and scenarios is a reasonable approach for conducting the analysis since the use of different reserve margins will produce a range of resource requirement scenarios.

- The objectives of the Step 2 analysis were met given that all resource options, with the exception of the benchmark IGCC option, were included in a reasonable number of scenarios and are subject to the Step 3 analysis.

- All unique price scenarios for the input assumptions are reflected in the evaluation.

- The eleven portfolios selected ranged from a portfolio that included nearly 100% coal resources (Case 8 included over 90% coal) to two portfolios that were 100% gas. The other portfolios included ranges of resource options. In total, there was a very reasonable distribution of resource options for inclusion in the Step 3a analysis.

<u>Step 3: Risk Analysis</u>

According to the RFP document, "in order to identify the resources in the highest performing (least cost, adjusted for risk) portfolios[31], stochastic and deterministic analyses will be performed on each optimized portfolio. Consistent with the IRP, the Company will use the Planning and Risk Model (PaR)[32] and the Capacity Expansion Model (CEM) to assess the risks to each Eligible Resource Alternative. The Planning and Risk Model will be performed for the following stochastic variables:

- Hydroelectric generation;
- Thermal outages;
- Gas prices for the Company's western and eastern control areas;
- Electricity prices; and
- Load.

The Capacity Expansion Model will model CO2, fuel (natural gas and coal) and electricity prices on a scenario basis."

There are two sub-steps to the Step 3 risk analysis in this process. Step 3a is the stochastic analysis and Step 3b is the deterministic scenario analysis. Each of these sub-steps is discussed below.

Step 3a: Stochastic Analysis

PacifiCorp notes that the purpose of this step is to formulate stochastic cost and risk profiles for each of the 11 portfolios identified in Step 2 above, and then identify the

[31] The key risk metric used to assess least cost adjusted for risk is identified by PacifiCorp to be the risk adjusted PVRR.

[32] Global Energy Decision's Planning and Risk model will be used in stochastic mode to develop expected PVRR and PVRR volatility parameters. PaR is an hourly dispatch model that varies loads, wholesale gas prices, wholesale electricity prices, hydro variations, and thermal unit performance. The model dispatches resources to meet load with given markets and transmission access to minimize PVRR using linear programming techniques. The resulting distribution of PVRR, typically over 100 draws of the variables, can be evaluated for the expected PVRR, tail risk PVRR, and PVRR volatility. In addition, PaR's stochastic model is a two factor (a short-run and a long-run factor) short-run mean reverting model. Variable processes assume normality or log-normality as appropriate.

resources that appear consistently in the top performing portfolios based on cost and risk measures. The eleven portfolios from Step 2 included a mix of portfolio options including one portfolio comprised of nearly all coal, two portfolios that were all gas, and portfolios that included a mix of gas and coal options. The 11 portfolios were simulated using the Planning and Risk (PaR) model in stochastic mode. According to PacifiCorp, the PaR simulation produces a dispatch solution that accounts for chronological unit commitment and dispatch constraints. Stochastic risk is captured in the PaR production cost estimates by using Monte Carlo random sampling of the five variables noted above: loads, commodity natural gas prices, wholesale electricity prices, hydro energy availability, and thermal unit availability. The simulation is conducted for 100 model iterations using the sampled variable values. PacifiCorp states that the model set-up is identical to the stochastic simulations conducted for the 2007 IRP.

The portfolios or sets were evaluated based on four CO2 cost adder cases:[33]

- Low case of $0 per ton in 2008 dollars
- Medium case of $8 per ton
- High case of $38 per ton
- High plus case of $61 per ton (or $40/ton in 1990 dollars)

The PaR model results include net variable costs for each simulation. These costs are added to the capital and fixed costs from the CEM portfolio analysis to derive a real-levelized PVRR. For each simulation, the stochastic and risk measures calculated include the following metrics:

- Mean PVRR for the 100 simulation iterations
- 95th percentile PVRR – the PVRR of the simulation iterations that represent the 95th percentile for the 100 simulation iterations
- Risk-adjusted PVRR – calculated as the mean PVRR plus the expected value (EV) of the 95th percentile PVRR, where EV = Prob(PVRR)95 x 5%
- Variable cost standard deviation – a measure of production cost variability risk, calculated as the standard deviation of annual variable costs for the 100 simulation iterations.
- Average Annual Energy Not Served [34]
- CO2 Emissions (1,000 tons)

[33] Merrimack Energy focused on the first three cases for assessing the results of the evaluation but is reporting results for the four case for completeness purposes.

[34] As illustrated in the 2007 IRP, risk exposure is the stochastic upper-tail mean PVRR minus the stochastic mean PVRR. The upper-tail mean PVRR is a measure of high-end stochastic risk, and is calculated as the average of the five stochastic simulation iterations with the highest net variable cost. Risk exposure is somewhat analogous to Value at Risk (VaR) measures. The fifth and 95th percentile PVRR's are also reported. These PVRR values correspond to the iteration out of the 100 that represents the fifth and 95th percentiles respectively. These measures represent snapshot indicators of low-risk and high-risk stochastic outcomes.

In addition to the above metrics, other analysis provided by PacifiCorp to the IEs included PVRR data on stochastic average for each portfolio, 5th percentile, 95th percentile, Upper Tail (mean of the 5 highest cost cases) and upper tail less stochastic average. This assessment also provides cost/risk diagrams for the four CO_2 scenarios and the seven original cases analyzed.

While the Company used the upper tail mean in its assessment of risk exposure in the 2007 IRP, the Company proposed a different risk measure for this analysis. The Company was of the opinion that the use of the upper tail mean PVRR can skew the results of the risk assessment given the wide range and dispersion of results. The Company and IEs discussed the appropriate risk measures to consider in evaluating the portfolios. The risk-adjusted PVRR was considered as the key stochastic performance measure to assess each resource set.[35] The IEs were in general agreement with PacifiCorp on the use of this risk measure as being an appropriate and reasonable metric for this analysis, keeping in mind that subjective assessment would still be required in the resource selection process. The results derived in this assessment would serve to guide the resource selection decision. It is important to note that the IEs also considered the other risk metrics provided by PacifiCorp in assessing the risks associated with each portfolio.

The results from the analysis were provided for each set of resources for the four CO_2 cases.[36] This allowed the Company and IEs to rank the sets and assess the frequency with which each resource is included in the highest ranking sets. A high relative frequency among the top-performing portfolios is indicative of a robust resource under a range of stochastic futures and CO_2 cost scenarios.

Based on the results of the rankings and analysis of the bids the Company and IEs came to the conclusion that the third-party bids could be grouped into two tiers. Three bids, two gas-fired combined cycles and the gas-fired peaking unit would be included in the Top Tier since these bids were included in the highest ranking portfolios.[37] The Bottom Tier would consist of two third-party coal projects and a gas-fired combined cycle unit. One third-party coal project did not appear in any of the top ranked portfolios and therefore was not even considered in the bottom tier. These bids are not consistently included in the highest ranked portfolios but appear in various portfolios. While the benchmark resources (notably IPP3, which appeared in several of the top performing portfolios under a range of scenarios) appear in a few portfolios under the low and medium CO_2 cost cases, they are not included in the final assessment since PacifiCorp withdrew these benchmark options.

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[35] According the PacifiCorp, the risk-adjusted PVRR is calculated as the mean PVRR plus the expected value (EV) of the 95th percentile PVRR, where EV=Prob(PVRR)95 x 5%. Adding the average cost to the probability weighted (i.e. 5%) 95th percentile cost (Prob(PVRR)95) results in the risk-adjusted PVRR.

[36] The analysis covers a 20-year planning horizon and reflects the costs for the entire utility system including existing and proposed resources from this RFP.

[37] The six bids reflect the bids that are included in the three portfolios considered in the final evaluation. Three projects, Bids 980, 520 and 480 appear in all portfolios. Arguably, these bids would represent the lowest cost portfolio if PacifiCorp had limited its evaluation to fewer total megawatts since these three projects are included in all final portfolios.

Step 3b: Deterministic Scenario Analysis

According to the RFP document, "as an additional risk analysis step, the optimal portfolios will be subjected to a more in depth deterministic dispatch model using CEM, with each portfolio being assessed for each of the future scenarios described in Step 2 above. For example, Portfolio 1 will have been optimized for Scenario 1, but in this step Portfolio 1 will be reevaluated under Scenarios 2 through N in order to assess the consequences of choosing a portfolio under non-optimal futures. This step is intended to identify portfolios with especially poor performance under certain future scenarios and used to inform the selection of final resource options."

For the final step in the process, PacifiCorp simulated three non-benchmark resource sets in the CEM model to determine the PVRR's for the top-performing resource sets under alternative cases based on various input parameters (low, medium and high CO2, low, medium and high gas and medium and one high coal case) assuming a 12% reserve margin. Three cases were considered, all of which included the three Top Tier bids. Each set included a different Bottom Tier resource. A PVRR cost (billion dollars for the system) was provided for each resource set.

PacifiCorp provided four metrics for each set of resources based on the eleven cases:

- PVRR, minimum
- PVRR, maximum
- PVRR, range
- PVRR, mean (excluding high and low coal price cases)

Based on these results, there was no consistent pattern that would lead one to conclude that one of the three Bottom Tier resources would perform best if a fourth or back-up resource was selected. Due to the fact that none of the three cases performed consistently well under a range of cases and input assumptions, the Company decided to select the three resources that performed best in most of the scenarios and not select a coal resource based on risk concerns.

VI. Conclusions

The analysis conducted by PacifiCorp was generally consistent with the methodology identified in the RFP. The analysis incorporated the impact of risk in the analysis based on different fuel and electricity price cases and CO2 cost cases. The assessment of resource options was based on the principle of robustness, which reflected the frequency with which the bids were included in high ranking portfolios. The methodology applied by PacifiCorp and assessed by the IEs encompasses both quantitative and subjective analysis to assess resource options. The results of this evaluation clearly illustrated that three resources were dominant in the analysis (based on their frequency of occurrence in a number of portfolios) and generally appeared in the highest ranking portfolios, and therefore the selection of these three resources for the final conditional short list should be in the public interest. These three resources (two gas-fired combined cycles and a gas-fired peaking unit) were classified as Top Tier resources and were selected for the draft final conditional short list. Three other bids were included in the Bottom Tier (two third-party coal projects and one gas-fired combined cycle). One eligible bid was not included in either tier.

The three Step methodology applied by PacifiCorp can be classified as a rigorous and detailed assessment which accounts for a range of fuel and CO2 cost cases under both deterministic and stochastic scenarios. The analysis accounts for both uncertainty and risk associated with different resources and portfolios. However, with regard to the appropriate risk metrics to use in the evaluation and selection process, the IE believes that further assessment and review needs to be completed in this area to test whether the risk metric initiated in this RFP process, Risk-Adjusted PVRR, is the most appropriate measure, recognizing that there are a number of risk metrics that can be considered. In addition, based on PacifiCorp's objective to complete the evaluation and selection process for Steps 2, 3a and 3b by the end of 2007, the analysis was completed in less than four weeks over the December holidays. While PacifiCorp provided sufficient information for the IEs to opine on the selection process, future processes with a larger number of bids and resource options will likely take longer to complete. While we would have also preferred to conduct a preliminary discussion with PacifiCorp prior to undertaking the Step 2, 3a and 3b processes to better gauge the information that was to be presented, we would recommend that such a meeting occur in any future RFP processes. In addition, the portfolio evaluation process conducted by PacifiCorp proved to create challenges for effectively comparing different portfolios with different capacity and energy amounts.

The Utah IE (and the Oregon IE) generally concurred with the overall methodology used by PacifiCorp, the selection of the draft final conditional shortlist and the classification of bids into the Top Tier and Bottom Tiers. While we agree that PacifiCorp should proceed to address remaining contingencies with Top Tier bids, we have recommended that the Bottom Tier bids should not be eliminated at this point but should serve as back-up resources to maintain a competitive threat or option and/or could be addressed at a later date.[38]

In conclusion, in our view the results of the analysis highlight the importance of three factors in the evaluation process: (1) CO2 costs; (2) transmission costs; and (3) gas/electricity prices. In particular, the impact of transmission costs is important, particularly for projects located in the Utah area or on Company sites. For example, the estimated transmission upgrade costs for Lake Side and Currant Creek were low compared to other resources located outside Utah. Projects located in Nevada and Wyoming were subject to much higher transmission costs. The transmission cost advantage for sites in PacifiCorp's Utah service area was highlighted to bidders in Attachment 13 in the RFP.

[38] PacifiCorp, however, did not consider any back-up bids.