ITEM NO. 1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: February 2, 2010

REGULAR __X__ **CONSENT** ____ **EFFECTIVE DATE** __N/A__

DATE: January 26, 2010

TO: Public Utility Commission

FROM: Kelcey Brown

THROUGH: Lee Sparling, Ed Busch and Maury Galbraith

SUBJECT: PACIFIC POWER & LIGHT: (Docket No. LC 47) Acknowledgment of 2008 Integrated Resource Plan.

STAFF RECOMMENDATION:

Staff recommends the Commission acknowledge PacifiCorp's 2008 Integrated Resource Plan (IRP), with one exception, nine agreed-upon modifications, and the additional requirement that the Company file its 2008 IRP Update in compliance with Guideline 3[1], by adoption of the attached proposed order.

DISCUSSION:

PacifiCorp, dba Pacific Power & Light Company (PacifiCorp or the Company), filed its 2008 IRP on May 29, 2009. The filing was in accordance with Public Utility Commission of Oregon (Commission) Order No. 07-002[2] that directs all energy utilities to file an IRP within two years of Commission acknowledgment of the previous plan. The Commission "acknowledges" resource plans that satisfy the procedural and substantive requirements of the order, and that seem reasonable at the time acknowledgment is given.

The proposed order describes how PacifiCorp satisfied Oregon's procedural requirements for resource planning. The order also summarizes by guideline Staff's and parties' views on whether the IRP as filed meets the Commission's substantive requirements and whether the Action Plan seems reasonable.

Based on the analysis in the IRP as filed and responses to data requests, Staff recommends the Commission acknowledge PacifiCorp's 2008 IRP with one exception

---
[1] *See* Order No. 07-002.
[2] As corrected in Order No. 07-047.

and nine agreed-upon modifications. The Draft Order also addresses PacifiCorp's statement in its Reply Comments[3] that it intends to file the 2008 IRP Update on March 31, 2010, by requiring the Company to file its 2008 IRP Update approximately one year after the date of this Order. Staff believes that the Action Plan, with the exception, agreed-upon modifications, and additional requirements, satisfies all parties' concerns.

Resource Needs

Electric utilities forecast incremental resource needs based on expected loads, reserve margin and existing resources – accounting for contract expirations and plant retirements. PacifiCorp projects both energy and capacity growth to decline, as compared to historical averages. Due to the current economic climate, PacifiCorp also included a February 2009 load forecast in its 2008 IRP. The February 2009 load forecast was used only to perform sensitivity analysis on the Preferred Portfolio. Following is a summary of the Company's forecasted load growth.

Energy - PacifiCorp estimates that it will become short on energy on an average annual basis system-wide by 2012. According to its November 2008 load forecast, the Company projects energy consumption to grow 2.1 percent per year from 2009 through 2018. This rate is lower than the 10-year average rate of 2.4 percent in the Company's 2007 IRP.

Capacity - In its November 2008 forecast PacifiCorp forecasts coincident peak loads to grow annually by 2.4 percent system-wide from 2009-2018.[4] For comparison, the 2007 IRP forecasted coincident peak load to grow by 2.6 percent for the period of 2007-2016. By control area, the Company expects peak loads to grow by 2.7 percent in the east and 1.6 percent in the west. Total peak load growth is forecast to be 238 MW annually, with Oregon expected to contribute only 37 MW. The February 2009 forecast shows coincident peak loads to grow by 2.2 percent system-wide from 2009-2018 with load growth of 217 MW annually. PacifiCorp forecasts that it will become short on capacity in 2011.

PacifiCorp's Preferred Portfolio

As filed, the Company's selected portfolio includes the following resource additions from 2009 to 2018:

---

[3] *See* PacifiCorp Reply Comments, page 1.
[4] Coincident peak load occurs in summer driven by air conditioning.

- 1,400 megawatts (MW) of renewable resources by 2018, including 393 MW of wind resources expected to be on-line by year-end 2010
- Up to 1,400 MW of front office transactions on an annual basis as needed through 2013
- Procure a 570 MW Utah wet-cooled gas combined-cycle combustion turbine (CCCT) potentially on-line by the summer of 2014, and a 261 MW east-side intercooled aeroderivative simple-cycle gas plant (SCCT) potentially acquired by the summer of 2016
- Pursue 200 MW of expanded Utah Cool Keeper program participation by 2018 and 130 MW of additional class 1 Demand-side Management (DSM)
- Acquire 900-1,000 MW of cost-effective Class 2 programs by 2018 (peak capacity), equivalent to about 430 to 480 MWa
- Pursue 100 MW of distributed generation resources by 2018
- In 2010 permit and construct a 345 kV line between Populus to Terminal
- In 2012 permit and construct a 500 kV line between Mona and Oquirrh
- In 2014 permit and construct a 230 kV line between Windstar and Populus and permit and construct a345 kV line between Sigurd and Red Butte
- In 2016 permit and construct a 500 kV line between Populous and Hemingway
- In 2017 permit and construct a 500 kV line between Aeolus and Mona

To implement the preferred portfolio, the Company requests acknowledgment of its filed IRP Action Plan with agreed-upon modifications specified below.

Parties' Recommendations

Parties' concerns throughout this IRP process focused on the following topics: load forecast, resource acquisition timing, transmission, greenhouse gas emissions, wind integration analysis, coal plant retirement analysis, dynamic modeling, and outer-year modeling implications. For a full summary of parties concerns please see the attached Draft Order, Pages 4-6.

As discussed in the Draft Order, parties were able to reach agreement on changes to the IRP that would satisfy the majority of all parties concerns. The continued outstanding issue for the Renewable Northwest Project (RNP) and the Citizens' Utility Board (CUB) is associated with the timing of a new wind integration study. Specifically, RNP and CUB, with the support of the Northwest Energy Coalition (NWEC), have requested that the Commission require the Company to complete a new wind integration study within three months of the date of the Order in LC 47. Staff and the Company agree that August 2, 2010 is a reasonable date for the Company to complete a stakeholder process and produce a new wind integration study.

Staff continues to support the date of August 2nd as a reasonable time period for completion of the wind integration study for the following reasons: a known date at this time provides parties the opportunity to schedule workshops with an established deadline, ensures a completed study will be available for PacifiCorp's next power cost filing, and given the uncertain date of the Order in this proceeding, it's possible that the three month time period RNP, CUB and NWEC are recommending could become a later timeframe than the parties are seeking.

In its Reply Comments, NWEC does not recommend acknowledgement of PacifiCorp's 2008 IRP. Specifically, NWEC suggests that (1) PacifiCorp's scoring system artificially amplifies insignificant differences in costs, (2) the scoring system improperly combines cost and risk measures, (3) it provides additional scoring weight for increases in emissions, and (4) when faced with two portfolios that have insignificant cost differences, the Commission should acknowledge the portfolio which will result in lower emissions. In resolution, NWEC recommends that if the Commission is unwilling to not acknowledge the IRP, then it should only acknowledge the portfolio with lower emissions (portfolio 27). Additionally, NWEC urges the Commission to direct PacifiCorp to develop scoring criteria that "does not depend upon very small differences in rates and that instead reflect the true risks faced by ratepayers."[5]

NWEC filed these additional concerns in its reply comments on January 7, 2010; therefore, parties have not to date had an opportunity to comment or examine NWEC's claims. Due to the lack of timeliness of NWEC's discussion on the technical concerns associated with PacifiCorp's modeling Staff is unable to evaluate these arguments. However, with regard to the question that NWEC raises in recommending that the Commission direct the Company to incorporate scoring criteria, portfolio selection, and weights associated with the risk of "global warming," Staff does not support NWEC's recommendations.

In Staff's Investigation into the Treatment of CO2 Risk in the Integrated Resource Planning Process, UM 1302, parties asked the Commission to consider the "bigger picture" with regard to global warming and climate change. Specifically, the Joint Parties stated "that rate impacts are the least of humanity's concerns in regard to global warming, but that is the subject matter of utility regulation. It would be nonsensical to not reduce greenhouse gas emissions and instead make resource decisions based on incidental rate impacts, while ignoring the tremendous environmental, social, and economic externalities that will drive strong carbon regulation."[6] In resolution, parties reached the consensus that all of the financial risks associated with climate change comes from outside of the Commission's jurisdiction, with CO_2 costs or limits being

[5] *See* NWEC Reply Comments, Page 11.
[6] *See* Order No. 08-339, page 8.

imposed by federal or state mandates. With no clearly defined regulatory framework the Commission expected that the utility and its stakeholders would identify a variety of portfolios, some of which "would be more adaptable to changing CO_2 regulations than others."[7] To adopt NWEC's suggestion- that the utility always select the portfolio with the lowest emissions- does not follow with the Commission's expectations that the utility plan for changing regulatory circumstances.

In addition, NWEC's recommendation that the Commission more heavily weight CO_2 emissions would elevate deep cuts in emissions as the primary goal of the IRP, versus the existing primary goal of the IRP; a portfolio of resources which represents the best combination of expected cost and associated risk for the utility and its customers.[8] Therefore, Staff does not support NWEC's recommendations to the Commission.

In its Reply Comments, PacifiCorp stated its intent to file its 2008 IRP update on March 31, 2010. Staff does not believe that the substance of this intended filing meets the intent of Guidelines 3f and 3g. Specifically, Guideline 3f states that the Utility will file an update on its recently acknowledged plan within one year from the acknowledgement order date. Guideline 3g further clarifies that the update filing will describe what actions the utility has taken to implement the plan, and provide an assessment of what has changed since the acknowledgement order. Staff supports the Draft Order's conclusion that PacifiCorp is not barred from making its intended filing on March 31, 2010, and in addition, the Company is directed to make an additional filing approximately one year from the date of the acknowledgement order.

Staff's Final Recommendations

Based on Staff's review and the comments received, Staff recommends the Commission acknowledge PacifiCorp's 2008 IRP with one exception and nine agreed-upon modifications to the Action Plan. The exception is:

- PacifiCorp's wind integration analysis in its 2008 IRP.

The agreed-upon modifications to the Action Plan pursuant to staff's recommendations consist of three revised action items and six additional items as follows:

Revised Action Items[9]

---

[7] *Id,* page18.
[8] *See* Order No. 07-002, Guideline 1c.
[9] Agreed-upon changes to the filed IRP Action Plan are shown in mark-up mode.

1. Action Item 3 (Peaking/Intermediate/Base-load Supply-side Resources) - In recognition of the unsettled U.S. economy, expected volatility in natural gas markets, and regulatory uncertainty, continue to seek cost-effective resource deferral and acquisition opportunities in line with near-term updates to load/price forecasts, market conditions, transmission plans and regulatory developments. PacifiCorp will reexamine the timing and type of gas resources and other resource changes as part of a comprehensive assumptions update and portfolio analysis to be conducted for the next business plan and 2008 IRP update.

2. Action Item 9 (Planning Process Improvements) – For the next IRP planning cycle complete the implementation of System Optimizer capacity expansion model enhancements for improved representation of CO_2 and RPS regulatory requirements at the jurisdictional level. Use the enhanced model to provide more detailed analysis of potential hard-cap regulation of carbon dioxide emissions and achievement of state or federal emissions reduction goals. Also use the capacity expansion model to evaluate the cost-effectiveness of coal facility retirement as a potential response to future regulation of carbon dioxide emissions.

3. Action Item 9 (Planning Process Improvements) - In the next IRP planning cycle provide an evaluation of, and continue to investigate, ~~the formulation of satisfactory proxy~~ intermediate-term market purchase resources for purposes of portfolio modeling. ~~and contingent on acquiring suitable market data.~~

Additional Action Items

4. For future IRP planning cycles, include on-going financial analysis with regard to transmission, which includes: a comparison with alternative supply side resources, deferred timing decision criteria, the unique capital cost risk associated with transmission projects, the scenario analysis used to determine the implications of this risk on customers, and all summaries of stochastic annual production cost with and without the proposed transmission segments and base case segments.

5. By August 2, 2010, complete a wind integration study that has been vetted by stakeholders through a public participation process.

6. During the next planning cycle, work with parties to investigate carbon dioxide emission levels as a measure for portfolio performance scoring.

7. In the next IRP, provide information on total CO2 emissions on a year-to year basis for all portfolios, and specifically, how they compare with the preferred portfolio.

8. For the next IRP planning cycle, PacifiCorp will work with parties to investigate a capacity expansion modeling approach that reduces the influence of out-year resource selection on resource decisions covered by the IRP Action Plan, and for which the Company can sufficiently show that portfolio performance is not unduly influenced by decisions that are not relevant to the IRP Action Plan.

9. In the next IRP planning cycle, PacifiCorp will incorporate its assessment of distribution efficiency potential resources for planning purposes.

In addition, the Company will file its 2008 IRP Update approximately one year after the date of this Order, in compliance with Guideline 3.

PROPOSED COMMISSION MOTION:

PacifiCorp's 2008 Integrated Resource Plan, with one exception and nine agreed-upon modifications, be acknowledged by adoption of the attached proposed order.

Attachment

ORDER NO.

ENTERED

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

LC 47

In the Matter of PACIFICORP 2008 Integrated Resource Plan.	))))	PROPOSED ORDER

DISPOSITION: PLAN ACKNOWLEDGED WITH AN EXCEPTION AND AGREED-UPON MODIFICATIONS

INTRODUCTION

PacifiCorp, dba Pacific Power & Light Company (PacifiCorp or the Company) seeks acknowledgement of its 2008 Integrated Resource Plan (IRP). This filing is in accordance with Public Utility Commission of Oregon (Commission) Order No. 07-002, as corrected by Order No. 07-047, [1] which requires all regulated energy utilities operating in Oregon to engage in integrated resource planning.

We acknowledge the plan, as modified, with one exception. We also identify several requirements for PacifiCorp's next planning cycle.

Requirements for Integrated Resource Planning

The Commission requires regulated energy utilities to prepare integrated resource plans within two years of acknowledgment of the last plan. Utilities must involve the Commission and the public in their planning process, and prior to resource decision-making. Substantively, the Commission requires that energy utilities: (1) evaluate resources on a consistent and comparable basis; (2) consider risk and uncertainty; (3) make the primary goal of the process selecting a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers; and (4) create a plan that is consistent with the long-run public interest as expressed in Oregon and federal energy policies. *See* Order No. 07-002.

[1] The Commission originally adopted least-cost planning in Order No. 89-507 (Docket UM 180). The Commission updated the utility planning process in Docket UM 1056.

The Commission "acknowledges" resource plans that satisfy the procedural and substantive requirements, and that seem reasonable at the time acknowledgment is given.

PacifiCorp's 2008 IRP

PacifiCorp filed its 2008 IRP on May 29, 2009. Relative to its 2007 IRP, the Company projects its energy and capacity demand will decline, as compared to historical averages, due to the impact of the housing market slowdown and economic recession. Based on a November 2008 load forecast, PacifiCorp projects that its system will become short on capacity in 2011, and on an energy basis, the system begins to experience a short position by 2012.

PacifiCorp developed 57 resource portfolios using a capacity expansion model (CEM) that optimizes resource choice according to a variety of input assumptions and capacity planning criteria. Using a production cost model (PAR), the Company simulated the performance of these portfolios with stochastic variation in key variables. These stochastic variables include loads, natural gas prices, wholesale electricity prices, hydroelectric generation and thermal resource availability. The Company focuses on seven measures and a weighted composite scoring scheme to isolate the top-performing portfolios. The three measures given the most weight for scoring purposes include: Risk-adjusted Present Value of Revenue Requirement (PVRR) (45% weight), Customer rate impact[2] (20% weight), and Carbon dioxide cost exposure[3] (15% weight). PacifiCorp focused its final portfolio performance evaluation on the four portfolios with the best performance scores.

In contrast to the 2007 IRP, the Company has had additional planning challenges in the 2008 IRP due to the current economic recession and the continuation of significant industrial and commercial sector demand destruction. This change in demand will translate into a near-term reduction in resource need, but the depth of the economic recession and the pace of a recovery are uncertain. Prompted by actual loads through January 2009, PacifiCorp prepared a November 2008 and February 2009 load forecast. The February 2009 load forecast did not materially change the year in which PacifiCorp becomes capacity deficient. Using the preferred portfolio, the Company conducted additional sensitivity analysis using the February 2009 load forecast, but concluded that there were no significant changes in its near-term acquisition strategy.

Implementation Actions for PacifiCorp's Preferred Resource Strategy

Based on the analysis described below, PacifiCorp selected Portfolio 5B_CCCT_Wet as its preferred course of action. The portfolio includes the following resource additions from 2009 to 2018:

---

[2] The customer rate impact is the average annual change in the customer $/MWh price for the period 2010 through 2018.

[3] The carbon dioxide cost exposure reflects a portfolio's potential for avoiding worst-case cost outcomes given CO_2 regulatory cost uncertainty.

- 1,400 megawatts (MW) of renewable resources by 2018, including 393 MW of wind resources expected to be on-line by year-end 2010
- Up to 1,400 MW of front office transactions on an annual basis as needed through 2013
- Procure a 570 MW Utah wet-cooled gas combined-cycle combustion turbine (CCCT) potentially on-line by the summer of 2014, and a 261 MW east-side intercooled aeroderivative simple-cycle gas plant (SCCT) potentially acquired by the summer of 2016
- Complete plan efficiency improvements which are expected to add 128 MW in the east and 42 MW in the west with zero incremental emissions
- Pursue 200 MW of expanded Utah Cool Keeper program participation by 2018 and 130 MW of additional class 1 Demand-side Management (DSM)
- Acquire 900-1,000 MW of cost-effective Class 2 programs by 2018 (peak capacity), equivalent to about 430 to 480 MWa
- Pursue 100 MW of distributed generation resources by 2018
- In 2009-2011 obtain Certificates of Public Convenience and Necessity for Utah/Wyoming/Northwest segments of the Energy Gateway Transmission Project
- In 2010 permit and construct a 345 kV line between Populus to Terminal
- In 2012 permit and construct a 500 kV line between Mona and Oquirrh
- In 2014 permit and construct a 230 kV line between Windstar and Populus and permit and construct a345 kV line between Sigurd and Red Butte
- In 2016 permit and construct a 500 kV line between Populous and Hemingway
- In 2017 permit and construct a 500 kV line between Aeolus and Mona

The Company requests acknowledgment of the Action Plan to implement its preferred portfolio. The Action Plan includes activities for decisions the Company intends to make in the next one to ten years. PacifiCorp states that the Commission should not rigidly review the preferred portfolio selected resource types or acquisition time periods, but instead recognize that in the IRP are proxy resources representing the fuel type, operating characteristics, and time frames that PacifiCorp deems to best fit the deficit position at the time that the IRP was prepared; actual resource types and timing will be determined during the procurement process.

PacifiCorp issued a request to resume its 2008 Request for Proposals (RFP) in fulfillment of Action Item 3, or the third bullet listed above. *See* Docket UM 1360. The Company plans to issue an RFP at a later date for acquiring additional renewable resources.

The procedural history of Docket LC 47, PacifiCorp's 2008 IRP, is as follows: PacifiCorp filed its draft IRP for public review and comment on April 8, 2009, the Company filed its 2008 IRP with the Commission on May 29, 2009, at the September 8, 2009 Public Meeting the Company presented its IRP to the Commission, Staff and Intervenors filed Opening Comments on October 8, 2009, PacifiCorp filed Reply Comments on November 3, 2009, Staff filed Final Comments on December 8, 2009, and PacifiCorp and Intervenors filed Reply Comments on January 7, 2010.

Parties' Recommendations

In its Final Comments Staff's main concerns were the current economic climate and declining load, and their impact on the timing and type of resource selection in the preferred portfolio. The Company responded to Staff's concerns with regard to the timing and selection of the CCCT and SCCT, by reaffirming that the IRP was a flexible acquisition strategy, and that the Company will update its portfolios analysis as part of the 2008 IRP update cycle, and in the context of its 2008 all-source RFP. *See* Docket UM 1360.

Based on PacifiCorp's additional analysis, Staff supports the inclusion of PacifiCorp's proposed transmission segments in its preferred portfolio. Additionally, the Renewable Northwest Project (RNP) and the Citizens' Utility Board (CUB) believe that building new transmission capacity will decrease wind integration costs and accrue a benefit to Oregon customers over the entire useful life of the asset. PacifiCorp, RNP and CUB are supportive of Staff's recommendation for additional analysis of transmission options in future IRP cycles.

RNP and CUB expressed concerns with PacifiCorp's wind integration, greenhouse gas emissions and coal plant analysis. Additionally, in Opening Comments, RNP, CUB and Northwest Energy Coalition (NWEC) expressed a concern with PacifiCorp's out-year resource selections unduly influencing near-term resource decisions.

With regard to the Company's wind integration analysis, RNP, CUB, NWEC and Staff have criticized the Company for what they believe are obvious flaws in the analysis. Specifically, RNP and CUB point out that PacifiCorp's methodology does not take into consideration variability and uncertainty with regard to load, in addition to the variability and uncertainty with regard to the wind. On an actual basis, load variability and wind variability will offset, reducing reserve requirement and thus leading to lower costs of integration. Additionally, RNP and CUB believe that (1) PacifiCorp's representation of wind generation from new wind projects significantly overstates the reserve requirement, (2) the Company incorrectly assumes that all inter-hour balancing entails market transactions, (3) PacifiCorp incorrectly "rounds up" day-ahead balancing needs causing a systemic over-statement of market transactions, (4) PacifiCorp models the costs associated with an "extreme" level of wind penetration (reached in 2021), and incorrectly uses it to justify the wind integration cost ascribed throughout the study horizon, (5) the forecast relied upon in the PacifiCorp analysis, one to two hours prior to the beginning of each operating hour, leads to a significant overestimate of the hour-ahead forecast error, and (6) the wind integration analysis has significant ratemaking implications on the Company's power cost filing.

With NWEC's support, RNP and CUB recommend that a new study, involving a public stakeholder process, be completed within three months from the date of acknowledgement of the 2008 IRP. In the interim, RNP and CUB recommend that the

Commission require the Company to rely on its previous wind integration cost of $5.10/MWh from the 2007 IRP until a new study is completed. PacifiCorp agrees that an updated study is appropriate, and has committed to work with parties on a new study which it intends to complete by end-of-year 2010.

Staff and other parties also expressed concerns with the Company's level of conservation resources in the preferred portfolio, and the level of demand side management resources reflected in Oregon as opposed to the rest of PacifiCorp's territory. Staff recommended that the Company assess its serve area-wide study against the Northwest Power and Conservation Council's (Council) study in the 2008 IRP update and commission a new system-wide potential study for its next planning period. PacifiCorp provided a preliminary comparison of its study versus the Council's in its Response to Oregon Party Comments filed on November 3, 2009, and states that it will continue to evaluate the Council's methodology in more detail and will incorporate these findings in an updated study which will be provided in 2010.

RNP, CUB and NWEC all expressed concerns and suggested improvements with regard to PacifiCorp's modeling of greenhouse gas emissions. RNP and CUB suggest that PacifiCorp focuses too much on carbon "intensity" rather than actual carbon emissions. They believe that "since future carbon regulations of greenhouse will likely require reductions in emissions, rather than reductions in intensity levels, it would be helpful to see a similar chart which shows how the preferred portfolio will perform with regard to total emissions on a year-to-year basis."[4] Additionally, parties believe that including the impact of coal plant closures in its IRP analysis is important in order to sufficiently capture the least-cost approach in obtaining a certain level of carbon reduction.

RNP, CUB and NWEC believe that carbon dioxide emission levels should be included as specific and important risk factors. Parties state that the existing methodology penalizes a portfolio for its emissions, and does not adequately capture least cost portfolios that actually reduce carbon emissions. NWEC goes further, to state that PacifiCorp's scoring system places inappropriate emphasis on insignificant cost differences among portfolios, and instead should place greater emphasis on the actual carbon emission differences between the portfolios. RNP and CUB support Staff's recommendation- that the Company develop a more comprehensive evaluation of a hard-cap emissions standard and emission reduction plan, which includes the evaluation of coal plant closures. The Company agreed with parties- that CO_2 emissions as a measure for portfolio performance scoring has merit, and states that enhanced modeling will allow it to better incorporate and analyze hard-cap emission standards and agrees to incorporate this in its next IRP cycle.

In its Opening Comments, NWEC recommended that the Company value flexibility and look at incorporating a dynamic modeling methodology similar to the Council's. NWEC suggests that in a world of uncertainty, development of portfolios using known futures does not appropriately reflect real world decision-making. NWEC

[4] *See* Opening Comments of RNP and CUB, page 7.

believes that incorporating dynamic modeling will result in actions that "increase flexibility, or that have economic benefits regardless of future conditions (such as aggressive conservation), and that turn out to be more valuable than large capital-intensive and long-lead-time resources that reduce a utility's flexibility."[5] Specifically, NWEC recommended that PacifiCorp modify its test portfolios so that all resource decisions beyond the 8-10 year horizon would be replaced with a standard resource.

PacifiCorp disagrees with the NWEC assertions, and states that to value optionality, and assign a scoring weight, would violate the Commission's requirement to treat resources on a consistent and comparable basis. Similarly, the Company believes that the NWEC suggestion, that PacifiCorp replace all resource decisions beyond the 8-10 year horizon with a standard resource, would violate IRP rules requiring analysis of different resource options and the impacts of state and federal regulatory policies.

In its Reply Comments, NWEC does not recommend acknowledgement of PacifiCorp's 2008 IRP. Specifically, NWEC suggests that (1) PacifiCorp's scoring system artificially amplifies insignificant differences in costs, and the Company then relies upon those meaningless differences to choose a preferred portfolio, (2) the scoring system improperly combines cost and risk measures, (3) it provides additional scoring weight for increases in emissions, and (4) when faced with two portfolios that have insignificant cost differences, the Commission should acknowledge the portfolio which will result in lower emissions. In resolution, NWEC recommends that PacifiCorp be required to work with parties to develop scoring criteria that do not depend upon small differences in rates and to include the statistical analysis to justify its scoring metrics.

Staff's Final Recommendations

Staff recommends the Commission acknowledge PacifiCorp's 2008 IRP with one exception and nine agreed-upon modifications to the Action Plan. The exception is the wind integration analysis used in the 2008 IRP, cited above. The agreed-upon modifications consist of three revised Action Items and six additional items as follows:

Revised Action Items[6]

1. Action Item 3 (Peaking/Intermediate/Base-load Supply-side Resources) - In recognition of the unsettled U.S. economy, expected volatility in natural gas markets, and regulatory uncertainty, continue to seek cost-effective resource deferral and acquisition opportunities in line with near-term updates to load/price forecasts, market conditions, transmission plans and regulatory developments<u>. PacifiCorp will reexamine the timing and type of gas resources and other resource changes as part of a comprehensive assumptions update and portfolio analysis to be conducted for the next business plan and 2008 IRP update.</u>

[5] *See* NWEC Opening Comments, Page 3.
[6] Changes to the filed Action Plan shown in mark-up.

2. Action Item 9 (Planning Process Improvements) – For the next IRP planning cycle complete the implementation of System Optimizer capacity expansion model enhancements for improved representation of CO_2 and RPS regulatory requirements at the jurisdictional level. Use the enhanced model to provide more detailed analysis of potential hard-cap regulation of carbon dioxide emissions and achievement of state or federal emissions reduction goals. Also use the capacity expansion model to evaluate the cost-effectiveness of coal facility retirement as a potential response to future regulation of carbon dioxide emissions.

3. Action Item 9 (Planning Process Improvements) - In the next IRP planning cycle provide an evaluation of, and continue to investigate, ~~the formulation of satisfactory proxy~~ intermediate-term market purchase resources for purposes of portfolio modeling. ~~and contingent on acquiring suitable market data.~~

Additional Action Items

4. For future IRP planning cycles, include on-going financial analysis with regard to transmission, which includes: a comparison with alternative supply side resources, deferred timing decision criteria, the unique capital cost risk associated with transmission projects, the scenario analysis used to determine the implications of this risk on customers, and all summaries of stochastic annual production cost with and without the proposed transmission segments and base case segments.

5. By August 2, 2010, complete a wind integration study that has been vetted by stakeholders through a public participation process.

6. During the next planning cycle, work with parties to investigate carbon dioxide emission levels as a measure for portfolio performance scoring.

7. In the next IRP, provide information on total CO_2 emissions on a year-to year basis for all portfolios, and specifically, how they compare with the preferred portfolio.

8. For the next IRP planning cycle, PacifiCorp will work with parties to investigate a capacity expansion modeling approach that reduces the influence of out-year resource selection on resource decisions covered by the IRP Action Plan, and for which the Company can sufficiently show that portfolio performance is not unduly influenced by decisions that are not relevant to the IRP Action Plan.

9. In the next IRP planning cycle, PacifiCorp will incorporate its assessment of distribution efficiency potential resources for planning purposes.

DISCUSSION

I. Adherence of the Plan to Integrated Resource Planning Guidelines

In considering whether to acknowledge a resource plan, this Commission reviews the plan for adherence to our Guidelines for resource planning. We address each of the Guidelines separately, followed by the party's comments and our disposition.

Guideline 1: Substantive Requirements

Guideline 1a: *All resources must be evaluated on a consistent and comparable basis.*

In PacifiCorp's 2007 IRP, Staff and RNP cited concerns that the Company did not go far enough in its modeling of different types of renewable resources and new technologies such as carbon capture and sequestration (CCS) and integrated gasification combined-cycle coal plants (IGCC). PacifiCorp has expanded its supply-side resource options to include those resources cited by Staff and RNP. Staff finds that the Company met this requirement.

<u>Compliance with Guideline 1a by resource category:</u>

Demand-Side Management – Staff cites several concerns with the Company's evaluation of conservation and demand response resources. Specifically, PacifiCorp has not conducted a system-wide study to determine the potential, cost-effectiveness, and customer impacts of a distribution system efficiency (conservation voltage reduction) program, and has therefore not included it as a resource in its current DSM acquisition goal. The Company states it has not developed an implementation plan for distribution efficiency, and does not believe that the IRP is the proper forum for the development of such an action plan.[7]

Renewable Resources. The Company modeled wind, geothermal, biomass and solar. With regard to PacifiCorp's modeling of renewable resources, Staff, RNP, CUB and NWEC take issue with PacifiCorp's wind integration study presented in the 2008 IRP.

Specifically, RNP and CUB believe that PacifiCorp has overstated its reserve requirement on wind by assuming that existing and new wind resources are 100 percent correlated, and that the Company erroneously assumed that all day-ahead energy imbalances are settled through market transactions. PacifiCorp agrees the wind integration study requires more research, but is concerned that this represents a major undertaking for the Company due to not only the cited concerns of parties, but also taking into consideration other questions about the effect of transmission constraints and wind ramping events on integration costs.

Although Staff finds that Action Item 1 of the IRP adequately incorporates sufficient acquisition targets of wind resources,[8] RNP and CUB argue that with the existing wind

---

[7] *See* discussion under Guideline 6.

[8] PacifiCorp states that it will acquire an incremental 1,400 MW of renewable by 2018, for a projected renewable resource inventory of 2,540 MW.

integration study the Company risks under estimating the most cost-effective amount of wind to incorporate in its portfolio of renewable resources.

Staff recommends conditioning the Action Plan to require PacifiCorp to provide, by August 2, 2010, a wind integration study that has been vetted by stakeholders through a public participation process. RNP, CUB and NWEC recommend that the Company be required to complete a new study within three months of the close of the docket. Without knowing the timing of the acknowledgement Order, and with PacifiCorp agreeing to complete the new study with a public participation process by August 2nd, Staff believes that its proposal will accomplish the goal of all parties.

Market Purchases. In the current resource plan the Company has included in Action Item 2 up to 1,400 MW of front office transactions through 2013, taking advantage of favorable market conditions. As originally discussed in Staff Opening Comments, PacifiCorp's inputs into its IRP are out of date compared to what has actually occurred with regard to load, wholesale power prices and natural gas prices. PacifiCorp's stated intent is not to treat the IRP as a rigid schedule, but to allow flexibility in its procurement of not only market purchases, but more importantly, in timing resource acquisitions.

PacifiCorp recently requested to resume its 2008 All-source RFP,[9] which the Commission approved at its November 23, 2009 public meeting. The Commission adopted Staff's recommendation that the Company provide justification and analysis for the timing, type and location of the resource need based on its most current evaluation of loads, market prices and regulatory activity. Staff believes this condition should show whether market purchases are a more cost-effective means of supplying intermediate load as opposed to the acquisition of a new resource whose timing may need to better coincide with a protracted recovery from the current recession.

Staff recommends conditioning Action Item 9 to require PacifiCorp to provide an evaluation of intermediate-term market purchases, taking into consideration the most current evaluation of loads, market prices and regulatory activity, in order to determine the best resource option.

Distributed Generation. The company included dispatchable standby generation, combined heat and power (CHP) plants, and on-site solar as resources for the Capacity Expansion Model to select. Action Item 8 of the IRP states that the Company will pursue 100 MW of distributed generation resources by 2018.

Fossil-Fuel Resources. Due to the uncertainty of future carbon regulation, and the costs for large coal-fired boilers increasing approximately 50% - 60% since the 2007 IRP, the Company will not select coal as a resource before 2020.

PacifiCorp did include CCS and IGCC technologies for selection in the model at an existing coal plant. However, the Company does not believe CCS is a viable option

[9] *See* Docket UM 1360, PacifiCorp's request to resume the 2008 RFP, filed November 2, 2009.

before 2025 "due to risk issues associated with technological maturity and underground sequestration liability."[10] With regard to the IGCC technology, gasification plants have been built and demonstrated around the world. However, for the purposes of power generation, these facilities have been demonstration projects and cost significantly more than conventional coal plants. PacifiCorp is a member of the Gasification User's Association, and over the last two years has held a series of IGCC working group public meetings to "help provide a broader level of understanding for this technology."[11]

PacifiCorp has included in its 2008 IRP 170 MW of emission free, coal plant capacity gains. The Company is taking advantage of upgraded technology called the "dense pack" coal plant turbine upgrade initiative. This upgrade does not increase fuel consumption, heat input, or emission, and the capacity expansion modeling indicated that this upgrade initiative was cost-effective.

Both SCCT and CCCT gas plants were considered for capacity additions and both resources were chosen by the model and included in the preferred portfolio. In Action Item 3, the SCCT is shown as being added in 2016. However, in its IRP the Company discusses its additional analysis using the February 2009 load forecast, which caused the SCCT not to be selected by the model. PacifiCorp believes that since the relative resource impact of the February 2009 load forecast is minimal until 2016, it decided to retain the resource in the preferred portfolio.

Staff has cited several concerns with the timing and acquisition of the CCCT and SCCT in its Opening and Final Comments. Specifically, Staff is concerned that current economic conditions and a decline in load will have a significant impact on the decision to acquire these resources. PacifiCorp has responded to Staff's concerns, and states that the IRP is a "flexible acquisition strategy" rather than a specific resource on a specific date for which the Company is requesting acknowledgement. Staff agreed with the Company- that the resources identified in the plan act as a guide for resource procurement and should not be held to a rigid interpretation. Staff recommends an agreed-upon modification to the language in Action Item 3 of the IRP to better reflect this flexibility.

Transmission. PacifiCorp has stated it is moving forward with an expansion plan that will eventually construct transmission lines and substations required to provide 1,500 MW on the proposed Gateway West and 1,500 MW on the proposed Gateway South lines. The transmission system model topology map on page 138 of the IRP shows all segments that were included in the System Optimizer model used to derive optimal resource expansion plans for all portfolios. We will address this issue in more detail under Guideline 5.

Guideline 1b: *Risk and uncertainty must be considered.*

[10] *Id.*
[11] *See* IRP page 114.

The Company's stochastic modeling addresses the following sources of risk and uncertainty: load requirements, hydroelectric generation, plant forced outages, fuel prices, electricity prices and emission prices. To address the cost to comply with future regulation of greenhouse gas emissions, the Company conducted scenario analyses using 0, $45, $70, and $100 (2008 dollars) CO_2 tax, modeled both cap-and-trade and tax strategies, and analyzed a portfolio that would comply with a regional emissions performance standard. The Company also performed sensitivity studies with various combinations of low, medium and high levels of the following factors: load growth, natural gas and electricity prices, CO_2 compliance costs, renewable portfolio standards, renewable energy tax credit expiration, high plant construction costs, capacity planning reserve margin, and achievable market potential for demand response programs.

Capital costs, the level of achievable DSM potential, expiration of federal tax credits for renewable energy resources, capacity planning reserve margins and renewable portfolio standards are additional sources of risk and uncertainty identified in the plan.

Guideline 1c: *The primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers.*

In selecting its preferred portfolio, the Company considered both expected costs and associated risks and uncertainties. Additionally, the Company took into consideration the impact of its recent decision to defer the acquisition of a gas resource in 2012 and performed additional portfolio studies reflecting the removal of it as a planned resource in 2012.

PacifiCorp used a 20-year study period for portfolio modeling and a real levelized revenue requirement methodology for treatment of end effects consistent with past IRP practice. The Company used standard deviation of stochastic production costs as the measure of cost variability. For the severity of bad outcomes, the company calculates several measures, including stochastic upper-tail PVRR (mean of highest five Monte Carlo iterations) and the 95th percentile stochastic PVRR.

In its discussion of the preferred portfolio, the Company states it will be positioned to exceed current jurisdictional RPS requirements, and would potentially meet a 15 percent federal RPS requirement, such as the one contained in draft legislation proposed by U.S. Representatives Waxman and Markey.

In comments, NWEC, RNP and CUB raised concerns about PacifiCorp's modeling of the last 10 years of the 20 year cycle. Specifically, NWEC believes that the Company's approach in the last 10 years is not illustrative of real-world decision making, which would react to the constantly changing market conditions. NWEC believes that flexibility and optionality should be tested and valued in the Company's portfolio modeling approach. It has proposed the Company should either adopt the Power and Conservation Council's dynamic modeling approach or "fix" a resource in all portfolios for the latter half of the planning period.

NWEC suggests that PacifiCorp value "flexibility" in its modeling, with the statement that "in a world of uncertainty developing portfolios using known futures does not appropriately reflect real world decision making." NWEC believes incorporating dynamic modeling will result in actions that "increase flexibility, or have economic benefits regardless of future conditions (such as aggressive conservation), turn out to be more valuable than large capital-intensive and long-lead-time resources that reduce a utility's flexibility."[12] Specifically, NWEC recommended that PacifiCorp modify its test portfolios so that all resource decisions beyond the 8-10 year horizon would be replaced with a standard resource.

PacifiCorp disagrees with the NWEC assertions, and states that to value optionality and assess a scoring weight would violate the Commission's requirement to treat resources on a consistent and comparable basis. Similarly, the Company believes that the NWEC suggestion- that PacifiCorp replace all resource decisions beyond the 8-10 year horizon with a standard resource- would violate IRP rules requiring analysis of different resource options and the impacts of state and federal regulatory policies.

RNP and CUB also raise concerns associated with the Company's approach to the last 10 years of the planning period. They feel it is "appropriate to allow the system optimizer model to select the near term part of the portfolio and then fix those decisions, but allow for different choices in later years as necessary."[13] They are concerned that PacifiCorp is effectively freezing its decision making at the present time, and not allowing for the fact that it is likely the future will be different. RNP and CUB raise this issue as a concern that these later resource decisions may be unduly weighting the selection process by unduly weighting a portfolios performance.

RNP and CUB recommend PacifiCorp conduct capacity expansion optimizations in two passes: simulations to determine near-term resources to link to the IRP action plan, followed by simulations with the near-term resources fixed and allowing System Optimizer to optimize resources in the out years. PacifiCorp agrees that investigation of alternative approaches for out-year resource acquisition is desirable. However, the Company is concerned that such a modeling approach may involve a trade-off with respect to the number of alternative futures that can be accommodated.

Staff agrees with RNP, CUB, and PacifiCorp and recommends to the Commission the following additional agreed-upon Action Item: for the next IRP planning cycle PacifiCorp will work with parties to investigate a capacity expansion modeling approach that reduces the influence of out-year resource selection on resource decisions covered by the IRP Action Plan, and for which the Company can sufficiently show that portfolio performance is not unduly influenced by decisions that are not relevant to the IRP Action Plan.

---

[12] *See* NWEC Opening Comments, Page 3.
[13] *See* Opening Comments of RNP and CUB, at 8.

Guideline 1c states that the goal must be the selection of a portfolio of resources with the best combination of expected costs and risk for the utility and its customers. NWEC suggests PacifiCorp's preferred portfolio does not meet this goal. Specifically, NWEC states: PacifiCorp's scoring system artificially amplifies insignificant differences in costs and then relies upon those meaningless differences to choose a preferred portfolio. NWEC states the trade-off between cost and risk must be a subjective one, not a decision to be made in a scoring matrix. PacifiCorp states that its performance scoring methodology necessarily involves a subjective determination of what measures are most important for judging the overall merit of resource portfolios.

In addition, NWEC believes PacifiCorp improperly combines cost and risk measures, and provides additional scoring weight for increases in emissions. In resolution, NWEC urges the Commission to not acknowledge the 2008 IRP and to direct PacifiCorp to work with the parties to develop scoring criteria that do not depend upon very small differences in costs.

PacifiCorp strongly disagrees with NWEC's claim that its scoring system places inappropriate emphasis on insignificant cost differences among portfolios.

Guideline 1d: *The plan must be consistent with the long-run public interest as expressed in Oregon and federal energy policies.*

Staff finds reasonable the Company's response to how the plan meets Oregon's RPS requirements. The increasing mix of renewable and clean resources reflected in the 2008 IRP preferred portfolio reduces the carbon intensity of PacifiCorp's generation fleet and positions the Company well for meeting future climate change and renewable resource requirements. As it is proposed, the preferred portfolio exceeds current jurisdictional RPS requirements and would potentially meet a 15 percent federal RPS requirement currently proposed in "The American Clean Energy and Security Act of 2009" by Waxman/Markey recently passed through the House of Representatives.

Commission Disposition

We conclude that PacifiCorp's 2008 IRP meets the substantive requirements in Order No. 07-002 with the following exception:

RNP, CUB, Staff and NWEC have pointed out significant flaws in PacifiCorp's wind integration study in its 2008 IRP. Citing its own concerns, PacifiCorp agrees with the parties, and believes these issues should be addressed in the context of a new study. The timing of the proposed wind integration study has been commented on by all parties. Staff's proposal, and PacifiCorp's commitment, to complete the new study by August 2, 2010 is a reasonable compromise for all parties. Therefore, we do not acknowledge the wind integration study in the 2008 IRP and we adopt Staff's agreed-upon additional Action Item 5, above.

RNP and CUB have urged the Commission to direct the Company to rely on the 2007 IRP wind integration analysis results for its Transition Adjustment Mechanism (TAM) filing until it has completed a new wind integration study. However, in their comments RNP and CUB correctly point out that the Commission does not make ratemaking decisions in an IRP proceeding. Therefore, we do not adopt RNP and CUB's recommendation that the Company rely on its 2007 IRP wind integration analysis for the purpose of its TAM filings. This is a matter to be addressed in the TAM filings.

The Commission supports the agreed-upon Action Plan modifications 1 and 3, above, and the agreed-upon additional Action Item 8, above. We believe these changes adequately address the issues the parties raised about optionality and the influence of out-year resource selection on near-term actions. We commend parties on their diligence and review of the complex and complicated issue of modeling and risk analysis in the IRP. We support the continued investigation of new methodologies, appropriate risk analysis, and scoring criteria that all parties have conducted in this process.

NWEC asserts PacifiCorp makes its trade-off decision between cost and risk in the preferred portfolio based purely on the statistical outcome of the scoring matrix from PacifiCorp's risk analysis, and instead, believes this decision should be subjective. PacifiCorp refutes this claim, and comments that its performance scoring methodology involves subjective decision making throughout the process on what measures are most important for judging the overall merit of the portfolio. Both parties' arguments have merit, and we simply clarify- that the Commission recognizes the need for subjective judgment when reviewing the modeling and risk analysis results. In both its investigation of IRP Guidelines (UM 1056) and Competitive Bidding Guidelines (UM 1182), the Commission has stated that results are not intended to be followed lockstep without benefit of sound judgment. However, in recognition of this, it is equally important for the utility (and others) to explain that judgment as clearly as possible.

We do not agree with NWEC's recommendation that the Commission not acknowledge PacifiCorp's 2008 IRP based on scoring criteria concerns and other statistical issues.

For purposes of clarity, in future IRP filings the Commission requires the Company to label its IRP filings with the year in which the filing is made.

Guidelines 2 and 3: Procedural Requirements

Guidelines 2 and 3 lay out procedural requirements and specify procedures for filing and review of resource plans. Energy utilities must file an integrated resource plan within two years of the previous acknowledgement order. PacifiCorp filed this plan on May 29, 2009, approximately 13 months after the Commission entered its acknowledgement order on the Company's 2007 IRP.[14] PacifiCorp's filing was timely under Order No. 07-002.

[14] The Commission entered Order No. 08-232 in docket LC 42 on April 24, 2008.

The Commission and the public must be involved in the utility's planning process. PacifiCorp provided extensive opportunities for public input, and submitted a draft of its plan for comment by participants on April 8, 2009.

The Commission held a Public Meeting regarding PacifiCorp's plan on September 8, 2009. On October 8, 2009, RNP, CUB, NWEC and Staff submitted written comments to the Commission regarding the plan. PacifiCorp filed a reply on November 3, 2009. Staff filed its Final Comments on December 8, 2009. PacifiCorp, RNP, CUB and NWEC filed additional comments on January 7, 2010, responding to Staff's comments and recommendations.

In its Reply Comments to Staff, filed on January 7, 2010, PacifiCorp stated its intent to file a 2008 IRP update on March 31, 2010. The Company states this date will keep the "IRP filing cycle consistent across all state jurisdictions, recognizing that PacifiCorp has already received acknowledgment orders from a number of commissions."

Commission Disposition

We conclude PacifiCorp's 2008 IRP meets the Commission's procedural requirements with one exception: Its intent to file the 2008 IRP update on March 31, 2010, regardless of the date of issuance of this acknowledgement Order.

PacifiCorp's stated intent to file its 2008 IRP update is not in compliance with Guideline 3f: *each utility must submit an annual update on its most recently acknowledged plan*. A March 31st update following the issuance of this Order is not sufficient for meeting the intent of Guideline 3f and 3g. The update of the plan is intended to provide the Commission with an assessment of what has changed since the *acknowledgement* order, not simply an update of what has changed since the plan was filed. PacifiCorp states that it would like to achieve "consistency" among all state jurisdictions; however, Oregon's guidelines are clear on this issue and seem to contradict PacifiCorp's intent of aligning the state commission requirements.

Additionally, PacifiCorp's desire to align the IRP process across all of its state jurisdictions should not disproportionately impact the IRP process in Oregon. PacifiCorp chose to file its 2008 IRP in its other state jurisdictions prior to making its filing in Oregon. The combination of the late filing date in Oregon and the IRP update date set to meet timelines in other jurisdictions disadvantages the Oregon IRP process in two ways. First, many of the input assumptions and variables used in the modeling are now out of date at the time of IRP acknowledgment in Oregon. Second, although the IRP update is designed, in part, to address out of date assumptions and variables, the proposed alignment of the 2008 IRP Update across all jurisdictions is too early for the Oregon IRP process. This proposed alignment of the company's IRP filings results in a lack of timely and relevant information in Oregon.

In resolution, we direct the Company to file a 2008 IRP Update approximately one year after the date of this Order.[15] In addition, we direct parties to discuss and attempt to resolve these timing issues prior to PacifiCorp's next IRP filing. The Commission is confident that parties can satisfy both the Company's desire to coordinate its state jurisdictional requirements and our desire to have a more timely review process in PacifiCorp's next IRP.

Guideline 4: Plan Components

Guideline 4 identifies 14 separate elements that a plan must include to meet the Commissions IRP guidelines.

The Company included low, medium and high load growth forecasts for scenario analysis using the System Optimizer model for portfolio development. Stochastic variability of loads was also captured in the risk analysis. The company included loads among its stochastic risk parameters in testing all its Risk Analysis portfolios.

PacifiCorp made six major changes with regard to its sales and load forecasting method. First, PacifiCorp used load research data to model the impact of weather on monthly retail sales and peaks by state by class. Second, the time period used to define normal weather was updated from the previous period of 1971-2000 to a 20-year time period of 1988-2007. This time period change better captured the trend of increasing temperatures observed in both summer and winter. Third, the historical data period used to develop the monthly retail sales forecasts was updated to cover 1997-2007. Fourth, monthly peaks were forecasted for each state using a peak model with historical data from 1990-2007. This model allows the Company to better predict monthly and seasonal peaks. Fifth, system lines losses were updated to reflect actual losses for the five years ending December 31, 2007, as opposed to the previous IRP which was based on calendar-year 2001 data. Finally, PacifiCorp performed analysis and made adjustments to reflect current economic conditions by mirroring the load changes experienced in the previous recession (2001-2002).

PacifiCorp relied on a November 2008 load forecast for the development of the load and resource balance and portfolio evaluations. The Company also performed sensitivity analysis on the preferred portfolio using a February 2009 load forecast, which better took into consideration the current economic climate. Staff cited concerns associated with the use of the November 2008 load forecast in the development of the preferred portfolio. In its Opening Comments, Staff states that on an actual basis, loads have seen significant declines year after year, and does not support PacifiCorp's expectation of a rebound recovery from this recession, but instead- believes that a more protracted recovery may occur.

[15] The Company may choose to file its intended March 31, 2010 IRP Update in Oregon. However, as stated above, we do not believe this filing meets the intent of Guideline 3f and 3g and require the Company to file a subsequent update approximately one year after the date of this Order.

PacifiCorp states it was not able to calculate a complete refresh of its 2008 IRP using the February 2009 forecast due to the additional scope in this IRP model, which would have made it impossible for the Company to meet its IRP filing deadlines with the state commissions. However, PacifiCorp provided a sensitivity analysis of the load change on the preferred portfolio, inclusive of break-even points with regard to acquisition of the CCCT and the level of peak load change that would be required to defer the acquisition of the resource to later years. In its Final Comments, Staff agreed that re-doing the IRP portfolio analysis, taking into consideration large load and market price changes, would have been a major undertaking, and believes the additional analysis provided by PacifiCorp sufficiently justifies its preferred portfolio in the 2008 IRP.

Energy Needs. PacifiCorp projects energy consumption to grow system-wide at an average annual rate of 2.1 percent from 2009 through 2018. This rate is lower than the 10-year average rate of 2.4 percent in the Company's 2007 IRP. For the second half of the study period, the Company projects a 1.2 percent system-wide growth rate, and for the 20 year period an overall 1.6 percent growth rate. PacifiCorp projects that its system will become short on energy by 2012.

The Company's February 2009 forecast also shows a 2.1 percent growth rate for the period of 2009-2018, with the second half of the study period at 1.1 percent and an overall 20 year period growth rate of 1.6 percent.

Capacity Needs. In the November 2008 forecast PacifiCorp forecasts coincident peak loads to grow by 2.4 percent system-wide from 2009-2018.[16] For comparison, the 2007 IRP forecasted coincident peak load to grow by 2.6 percent for the period of 2007-2016. By control area, the Company expects peak loads to grow by 2.7 percent in the east and 1.6 percent in the west. Total peak load growth is forecast to be 238 MW annually, with Oregon expected to contribute only 37 MW. The February 2009 forecast shows coincident peak loads to grow by 2.2 percent system-wide from 2009-2018 with load growth of 217 MW annually. PacifiCorp forecasts that it will become short on capacity in 2011.

As compared to previous IRPs the Company projects both energy and capacity to grow, but at a lower rate than the historical average. Current economic conditions have had a significant effect on PacifiCorp's loads. However, a comparison of the November 2008 load forecast to the February 2009 load forecast shows that peak loads for the east side of the system actually increased relative to the November 2008 forecast. In its Final Comments, Staff remained skeptical that the Company's November 2008 or February 2009 forecast was able to capture the current economic climate. The Company has reiterated its statement in the 2008 IRP that it will do a more thorough analysis of the implications of a declining load and market price forecast, and the impact this may have on any resource acquisitions, in its 2008 IRP update.

Transmission. The Company modeled existing transmission rights and future transmission additions associated with the portfolios tested. In addition, the Company

[16] Coincident peak load occurs in summer driven by air conditioning.

included three transmission resource options in System Optimizer; however, none of these options was selected.

With regard to Guideline 4l, the selection of a portfolio that represents the best combination of cost and risk for the utility and its customers, the Company considers both stochastic and scenario risks in its decision on the preferred portfolio. Stochastic risk applies when probability distribution functions can be estimated. Such is the case with fuel and electricity market prices, hydro conditions, loads and thermal availability. Scenario risks represent abrupt changes in risk factors, such as sudden changes in natural gas prices, regulatory compliance costs and capital costs.

PacifiCorp conducts stochastic analyses to arrive at both its cost and risk determinations. One hundred stochastic runs over the 20-year study period are conducted for each of four modeled levels of CO_2 adders, ranging from zero to $100 per ton (levelized, in 2009 dollars) and assumes a 2013 implementation date. The Company calculates present value of revenue requirement (PVRR) assuming a direct tax adder and a cap-and-trade compliance strategy with trading values that are equivalent to the tax adders. Stochastic Mean PVRR, the average of 100 modeled PVRR outcomes, is the Company's primary cost metric.

Risk-adjusted Mean PVRR. The risk-adjusted PVRR is calculated as the stochastic mean PVRR plus the expected value of the 95th percentile PVRR. This metric expresses a low-probability portfolio cost outcome as a risk premium applied to the expected PVRR based on the 100 Monte Carlo simulations conducted for each production cost run. Other risk measures displayed in the IRP are the Upper-Tail PVRR, the 95th Percentile and 5th percentile PVRR, and the Production Cost Standard Deviation.

Guideline 4m requires the identification and explanation of any inconsistencies of the selected portfolio with any state and federal energy policies that may affect a utility's plan and any barriers to implementation

The Company included sensitivity case 40 to meet the Commission's requirement from the 2007 IRP, which stated that it should "develop a plan to meet the CO_2 emissions reduction goals in Oregon HB 3543."[17] Staff and intervening parties commented that they did not believe the Company went far enough with the inclusion of one sensitivity case, and that it should go further in modeling a cap-and-trade mechanism with a declining number of carbon allowances and hard-cap emission standards. PacifiCorp agreed to include this additional analysis and summarizes recent changes to its model which will facilitate this.

Commission Disposition

PacifiCorp's plan provides the required elements under Guideline 4.

[17] *See* Docket LC 42, Order No. 08-232 at 36.

Related to Guideline 4c, we share Staff's skepticism of the Company's projected load growth rates, and PacifiCorp's expectation of a rebound recovery from this recession. Staff's revision to Action Item 3 will provide the Commission with updated information that will provide better insight to the Company's near-term resource needs.

Related to Guideline 4m, we agree with Staff and intervening parties that modeling reductions in carbon emissions is important in light of potential stringent carbon regulation enactment in the near-term. Additionally, we believe it is necessary that PacifiCorp's modeling include the impact of early retirement of existing coal plants as a very real possibility. Therefore, we adopt Staff's agreed-upon Action Plan modification 2, above.

Guideline 5: Transmission

PacifiCorp is requesting Commission acknowledgement of key short term transmission issues: obtaining the Certificate of Public Convenience and Necessity for segments of Gateway Central and Gateway West and constructing Path C Upgrades including the Populus-Terminal and the Mona-Oquirrh segments. In its IRP the Company has described its expansion plans with regard to transmission[18] and the individual segments that make-up the Gateway transmission project. However, Staff comments the Company did not provide a cost/benefit analysis, or comparative analysis to other resource types, to show that these proposals, and specifically those currently being sought for acknowledgement, were in the best interest of PacifiCorp's customers.

PacifiCorp notes that the Energy Gateway development is a *transmission strategy,* which was developed to be flexible and scalable as conditions change over time. The overall strategy is financially assessed each year and each segment is also reviewed and justified individually. The Company considers multiple inputs in the decision-making process including: compliance and reliability, net power cost analysis, and least-cost analysis of alternatives.

In its Final Comments, Staff discusses PacifiCorp's additional analysis of the on-going Energy Gateway financial analysis and supporting work papers. Specifically, Staff notes that with regard to the Path C Upgrades, including Populus-Terminal and Mona-Oquirrh, the Company performed portfolio evaluation with and without the 300 MW Path C upgrade using the IRP stochastic production cost model. Portfolios with the Path C upgrade out-performed portfolios without the upgrade on the basis of stochastic cost, risk, and supply reliability measures. Therefore, after reviewing the analysis, Staff concluded that the proposed transmission segments provide increased reliability, additional transfer capability, and at the same time support integration with larger segments, for an overall benefit to Oregon customers that outweighs the proposed capital investment.

With regard to Guideline 5 and the requirement that the company treat the transmission facility as a resource option, Staff finds that the Company has met this

[18] *See* IRP Chapters 4 and 10.

guideline. In its response to Staff Data Request No. 32, the Company discussed its analysis of the Gateway transmission project with and without Wyoming resources. Using the preferred portfolio as the base case assumption, the analysis showed that the preferred portfolio was more cost effective with the inclusion of the transmission projects as opposed to incremental Wyoming resources. Staff recommends that for future IRPs the Company provides the on-going transmission analysis as part of its IRP.

Commission Disposition

We conclude that the plan complies with Guideline 5. In addition, we adopt Staff's agreed-upon additional Action Item 4, above.

Guideline 6: Conservation

Guideline 6 requires utilities to ensure that a conservation potential study is conducted periodically for its entire service territory. Guideline 6 also requires PacifiCorp to determine the amount of conservation resources in the best cost-risk portfolio and include in its Action Plan all best cost/risk portfolio conservation resources for meeting projected resource needs, specifying annual savings targets.

Under the Commission's updated planning guidelines, the utility should analyze potential conservation resources regardless of any limits on funding. The IRP included data provided from a system wide DSM potential study completed in June 2007, which were then converted for the first time into the prescribed supply-curve methodology. This study provided a broad estimate of the size, type, location and cost of demand-side resources.

Staff and intervening parties questioned whether the IRP understates the cost-effective potential outside of PacifiCorp's Oregon service territory based on a comparison with the Council's conservation potential study for the Northwest.

PacifiCorp provided a preliminary assessment of its IRP compared with the Council's conservation potential study for the Northwest in its Response to Oregon Party Comments filed on November 3rd. The preliminary assessment describes the high-level differences between these potential estimates. PacifiCorp comments that the main differences in potentials cited relate to study timing differences, distribution energy efficiency, and the cost-effectiveness methodology and thresholds applied. In its Response to Final Comments, PacifiCorp commits to continue its evaluation of the Council's methodology in more detail and will incorporate these findings in an updated demand side management potential study to be procured and delivered in 2010 as required by Guideline 6a.

More specifically, Staff faults PacifiCorp's 2008 IRP for not identifying savings from distribution efficiency measures (conservation voltage reduction measures). These conservation measures were highlighted in both the May 2006 and February 2009 conservation potential studies. Further, they have been identified as a major cost-effective resource in the Council's 6th Annual Plan. Therefore, Staff recommends the Company incorporate its assessment of distribution efficiency potential resources in the next planning cycle.

Commission Disposition

We share Staff and intervenor concerns with regard to PacifiCorp's modeling of cost-effective conservation resources in the Northwest. We support the agreed-upon additional Action Item 9, above and support PacifiCorp's ongoing analysis of the Council's potential study and conservation acquisition targets that can be directly applied in PacifiCorp's service areas.

Guideline 7: Demand Response

PacifiCorp categorizes demand response into two types: Class 1 DSM, which includes dispatchable load control, scheduled irrigation and thermal energy storage; and Class 3 DSM, which includes curtailable rates, critical peak pricing and demand buyback.

In the 2004 IRP, the Company took its first step toward comparable treatment of demand response and supply-side resources by allowing the CEM to choose Class 1 DSM and displace supply-side resources in the preferred portfolio. In its 2007 IRP the Company was required to include Class 1 and Class 3 DSM supply curves, modeling them as portfolio options that compete with supply-side options, and analyzing cost and risk reduction benefits. The Company complied with this requirement; however, Class 3 DSM as a supply-side option was not selected by the model into any of its portfolios. The model did select a small amount of Class 1 DSM capacity (2 to 7 MW) and a sizable amount of Class 2 DSM (1,537 MW to 2,183 MW).

With regard to Class 3 DSM, the Company explains that it requires more information on the extent to which these products could be sufficiently reliable to be classified as firm capacity resources, and has incorporated such research as part of IRP Action Item 7.

Staff believes that to the extent that Guideline 7 requires the Company to evaluate demand response resources on par with supply-side and demand-side resources, it has met this Guideline. However, Staff also comments that the Company needs to go further in evaluating the cost and amount of resources from curtailable rates, demand buybacks, and critical peak pricing programs.

In reply, PacifiCorp states that it made the commitment in Action Item 7 to continue to evaluate Class 3 DSM programs as potential firm resources for long term planning, and will also update its Class 3 DSM resource characterization as part of a new DSM resource potential study to be conducted in 2010.

Commission Disposition

We share Staff's concerns with regard to PacifiCorp's evaluation of the cost and amount of resources from curtailable rates, demand buybacks, and critical peak pricing programs. However, we believe PacifiCorp's commitment to continue its evaluation of Class 3 DSM resources and a new DSM resource potential study, as identified in the 2008 IRP Action Item 7, is a reasonable resolution.

Guideline 8: Environmental Costs

Guideline 8, as modified by Order No. 08-339, contains four requirements: a base case and other compliance scenarios, testing alternative portfolios against the compliance scenarios, trigger point analysis, and an Oregon compliance portfolio. The first requirement directs the Company to model what it considers to be the most likely regulatory compliance future for greenhouse gas emissions, as well as other possible credible scenarios. The second requirement discusses the treatment of these scenarios in its risk-analysis, PVRR cost and risk measures, and end-effect considerations. The third requirement directs the utility to identify a carbon dioxide compliance scenario, that would lead to the selection of a portfolio that is substantially different from the preferred portfolio. The final requirement discusses the need for a separate portfolio, consistent with Oregon energy policies, if none of the previous portfolios achieves that consistency.

In compliance with Guideline 8, PacifiCorp comments that no single CO_2 reduction compliance approach has emerged as a consistent front-runner for adoption; therefore, the Company considered a wide range of carbon cost outcomes. The Company modeled CO_2 tax for all core cases with an implementation date of 2013.

The Company's trigger analysis looks at the production cost impact of up to \$70/ton CO_2 tax. The resulting changes in the preferred portfolio resulted in greater acquisition of demand-side management programs and high-efficiency distributed generation to help minimize the carbon footprint. The greatest changes, however, would be the additional acquisition of 2,500 MW of wind and at least 70 MW of geothermal capacity or other base-load renewable resources with the timing and annual amounts tied to the start of the CO_2 regulations and a trajectory of the cost.

RNP, CUB and NWEC all expressed concerns and suggested improvements with regard to PacifiCorp's modeling of greenhouse gas emissions. RNP and CUB suggest that PacifiCorp focuses too much on carbon "intensity" rather than actual carbon emissions. RNP and CUB comment that since future carbon regulations will likely require reductions in emissions, rather than reductions in intensity levels, it would be helpful to see a similar chart which shows how the preferred portfolio will perform with regard to total emissions on a year-to-year basis. RNP, CUB and NWEC believe that including the impact of coal plant closures in PacifiCorp's IRP analysis is important in order to sufficiently capture the least-cost approach in obtaining a certain level of carbon reduction. Staff agrees with intervening parties and believes that the Company should further evaluate emission reductions, showing total emissions for each portfolio, and should incorporate the effect of the closure of coal facilities in its next IRP planning cycle.

PacifiCorp agrees with RNP and CUB that a graph showing carbon emissions for the preferred portfolio and possibly other portfolios would be helpful for the reader. In addition, the Company has agreed to include the effect of the closure of coal facilities, and additional analysis of hard-cap emission reduction portfolios in its next IRP planning cycle.

RNP, CUB and NWEC believe that carbon dioxide emission levels should be included as specific and important risk factors. Parties state that the existing methodology in fact penalizes a portfolio for its emission reductions, and does not adequately capture least-cost portfolios that actually reduce carbon emissions. NWEC goes further, to state that PacifiCorp's scoring system places inappropriate emphasis on insignificant cost differences among portfolios, and instead should place greater emphasis on the actual carbon emission differences between the portfolios.

The Company agreed with parties that CO_2 emissions as a measure for portfolio performance scoring has merit, and states that enhanced modeling will allow it to better incorporate and analyze hard-cap emission standards, and agrees to incorporate this in its next IRP planning cycle.

Commission Disposition

We conclude that PacifiCorp's IRP meets the current requirements under Guideline 8. We support Staff's agreed-upon additional Action Items 6 and 7, above, to PacifiCorp's Action Plan. As stated under Guideline 4m, we also adopt Staff's agreed-upon modification, Action Item 2 above, with regard to PacifiCorp's commitment to provide a more detailed analysis of hard-cap emission standards and incorporating the effect of the closure of coal facilities in its next IRP planning cycle. We believe these adopted provisions for PacifiCorp's next IRP will address NWEC's concerns with regard to additional emphasis on the actual carbon emission differences between the portfolios.

Guideline 9 and 10: Direct Access Loads and Multi-state Utilities

Guideline 9 requires an electric utility's load-resource balance to exclude customer loads that are effectively committed to service by an alternative service provider. Guideline 10 requires multi-state utilities, like PacifiCorp, to plan their generation and transmission systems on an integrated system basis that achieves a best cost/risk portfolio for their retail customers.

The Company does not offer a permanent opt-out program. Therefore, it plans for all Oregon loads, including those customers who have selected direct access or standard offer services. PacifiCorp plans on a system wide basis.

Staff finds the IRP complies with these Guidelines.

Commission Disposition

We conclude that PacifiCorp's 2008 IRP complies with Guidelines 9 and 10.

Guideline 11: Reliability

Under Guideline 11, electric utilities should:

a. Analyze reliability within the risk modeling of the actual portfolios being considered
b. Determine loss of load probability (LOLP), expected planning reserve margin, and expected and worst-case unserved energy by year, and
c. Demonstrate that the selected portfolio achieves the utility's stated reliability, risk and cost objectives

PacifiCorp analyzed reliability within the risk modeling of the actual portfolios being considered by evaluating a subset of portfolios at both a 12 percent and a 15 percent planning reserve margin and then evaluating loss of load probability and average and worst-case energy not served (ENS). Ultimately, the Company selected a portfolio with a 12 percent planning reserve margin and concluded that it is not cost-effective to invest in incremental generating capacity for reserves given that the cost premium for such investment is above the assumed ENS cost.

Staff finds that the selected portfolio achieves the Company's reliability, risk and cost objectives.

NWEC comments that it does not support the use of these metrics, LOLP and ENS, as measures that should be used to score the portfolios themselves. It believes there should be a separate determination of how much to invest in additional reserves in return for increased reliability.

Commission Disposition

We conclude PacifiCorp's 2008 IRP meets Guideline 11. With regard to NWEC suggestion of a separate determination of appropriate reserves, rather than the inclusion of these measures in scoring the portfolios, we direct the parties to discuss this issue in the next planning cycle.

Guideline 12: Distributed Generation

PacifiCorp evaluated combined heat and power (CHP, or cogeneration) and dispatchable customer standby (diesel) generation resources. The Company's Action Item 8 includes 50 MW of CHP and 50 MW of cost-effective customer standby generation. Additionally, the Company states that if the economic recession and market conditions continue to support elimination of simple-cycle gas units or other peaking resources, as indicated by the IRP portfolio modeling for the 2010 business plan, the Company will seek to acquire an additional 40 MW of customer standby generation.

Commission Disposition

We conclude PacifiCorp's 2008 IRP complies with Guideline 12. We continue to encourage the Company to pursue all types of distributed generation resources and account for all potential benefits.

Guideline 13: Resource Acquisition

Guideline 13 establishes requirements for acquiring resources in the utility's action plan. The company provided its acquisition strategy for its action plan and a brief assessment of the advantages and disadvantages of owning vs. purchasing resources. At the time of filing, the Company had suspended its 2008 RFP; under the now resumed 2008 all-source RFP, the Company has included a single benchmark resource which will be a CCCT at the Lake Side site.

Commission Disposition

We conclude that PacifiCorp's 2008 IRP meets Guideline 13.

Jurisdiction

PacifiCorp is a public utility in Oregon that provides electric service to the public as defined by ORS 757.005.

CONCLUSION

PacifiCorp is a public utility subject to the jurisdiction of the Commission.

PacifiCorp's 2008 Integrated Resource Plan, as modified in this order, reasonably adheres to the principles of resource planning set forth in Order No. 07-002 and should be acknowledged with the following exception, and nine agreed-upon modifications:

Exception:

PacifiCorp's wind integration analysis in its 2008 IRP.

Modifications agreed to by PacifiCorp pursuant to Staff's recommendations:

Revised Action Items

1. Action Item 3 (Peaking/Intermediate/Base-load Supply-side Resources) - In recognition of the unsettled U.S. economy, expected volatility in natural gas markets, and regulatory uncertainty, continue to seek cost-effective resource deferral and

acquisition opportunities in line with near-term updates to load/price forecasts, market conditions, transmission plans and regulatory developments. PacifiCorp will reexamine the timing and type of gas resources and other resource changes as part of a comprehensive assumptions update and portfolio analysis to be conducted for the next business plan and 2008 IRP update.

2. Action Item 9 (Planning Process Improvements) – For the next IRP planning cycle complete the implementation of System Optimizer capacity expansion model enhancements for improved representation of CO_2 and RPS regulatory requirements at the jurisdictional level. Use the enhanced model to provide more detailed analysis of potential hard-cap regulation of carbon dioxide emissions and achievement of state or federal emissions reduction goals. Also use the capacity expansion model to evaluate the cost-effectiveness of coal facility retirement as a potential response to future regulation of carbon dioxide emissions.

3. Action Item 9 (Planning Process Improvements) - In the next IRP planning cycle provide an evaluation of, and continue to investigate, ~~the formulation of satisfactory proxy~~ intermediate-term market purchase resources for purposes of portfolio modeling. ~~and contingent on acquiring suitable market data.~~

Additional Action Items

4. For future IRP planning cycles, include on-going financial analysis with regard to transmission, which includes: a comparison with alternative supply side resources, deferred timing decision criteria, the unique capital cost risk associated with transmission projects, the scenario analysis used to determine the implications of this risk on customers, and all summaries of stochastic annual production cost with and without the proposed transmission segments and base case segments.

5. By August 2, 2010, complete a wind integration study that has been vetted by stakeholders through a public participation process.

6. During the next planning cycle, work with parties to investigate carbon dioxide emission levels as a measure for portfolio performance scoring.

7. In the next IRP, provide information on total CO_2 emissions on a year-to year basis for all portfolios, and specifically, how they compare with the preferred portfolio.

8. For the next IRP planning cycle, PacifiCorp will work with parties to investigate a capacity expansion modeling approach that reduces the influence of out-year resource selection on resource decisions covered by the IRP Action Plan, and for which the Company can sufficiently show that portfolio performance is not unduly influenced by decisions that are not relevant to the IRP Action Plan.

9. In the next IRP planning cycle, PacifiCorp will incorporate its assessment of distribution efficiency potential resources for planning purposes.

In addition, the Company will file its 2008 IRP Update approximately one year after the date of this Order, in compliance with Guideline 3.

Effect of the Plan on Future Rate-making Actions

Order No. 89-507 set forth the Commission's role in reviewing and acknowledging a utility's least-cost plan as follows:

> The establishment of least-cost planning in Oregon is not intended to alter the basic roles of the Commission and the utility in the regulatory process. The Commission does not intend to usurp the role of utility decision-maker. Utility management will retain full responsibility for making decisions and for accepting the consequences of the decisions. Thus, the utilities will retain their autonomy while having the benefit of the information and opinion contributed by the public and the Commission….
>
> Acknowledgment of a plan means only that the plan seems reasonable to the Commission at the time the acknowledgment is given. As is noted elsewhere in this order, favorable rate-making treatment is not guaranteed by acknowledgment of a plan. *See* Order No. 89-507 at 6 and 11.

The Commission affirmed these principles in Docket UM 1056.[19]

This order does not constitute a determination on the rate-making treatment of any resource acquisitions or other expenditures undertaken pursuant to PacifiCorp's 2008 IRP. As a legal matter, the Commission must reserve judgment on all rate-making issues. Notwithstanding these legal requirements, we consider the integrated resource planning process to complement the rate-making process. In rate-making proceedings in which the reasonableness of resource acquisitions is considered, the Commission will give considerable weight to utility actions which are consistent with acknowledged integrated resource plans. Utilities will also be expected to explain actions they take which may be inconsistent with Commission-acknowledged plans.

ORDER

IT IS ORDERED that the 2008 Integrated Resource Plan filed by PacifiCorp on May 29, 2009, is acknowledged in accordance with the terms of this order and Order No. 07-002 as corrected by Order No. 07-047.

Made, entered, and effective ____________________________.

[19] *See* Order No. 07-002 at 24.

Lee Beyer
Chairman

John Savage
Commissioner

Ray Baum
Commissioner

A party may request rehearing or reconsideration of this order pursuant to ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-014-0095. A copy of any such request must also be served on each party to the proceeding as provided by OAR 860-013-0070(2). A party may appeal this order to a court pursuant to applicable law.