- BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH -

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| In the Matter of PacifiCorp's 2011 Integrated Resource Plan | ) ) ) ) ) | DOCKET NO. 11-2035-01<br><br>REPORT AND ORDER |

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ISSUED: March 22, 2012

SHORT TITLE

**PacifiCorp 2011 Integrated Resource Plan**

SYNOPSIS

The Commission identifies deficiencies in Integrated Resource Plan 2011 and provides guidance herein to assist in the development of the next IRP.

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By The Commission:

# I. INTRODUCTION

On March 31, 2011, PacifiCorp ( or "Company") filed its eleventh Integrated Resource Plan ("IRP"), entitled "2011 Integrated Resource Plan" ("IRP 2011"), pursuant to the IRP Standards and Guidelines ("Guidelines") adopted in Docket No. 90-2035-01, *In the Matter of Analysis of an Integrated Resource Plan for PacifiCorp*, Report and Order issued June 18, 1992. Pursuant to the Commission's April 28, 2011, request for comments and scheduling order, and the June 21, 2011, approval of a filing date extension, on June 27, 2011, the Company supplemented IRP 2011 with an addendum. The addendum provided additional analysis of transmission alternatives, an energy efficiency avoided cost study, and an evaluation of the wind capital cost and capacity factor recommendations of Interwest Energy Alliance. The Company requested the Commission acknowledge IRP 2011 in accordance with Commission rules and fully support the IRP conclusions, including the proposed action plan.

## A. Summary of the 2011 Integrated Resource Plan Results

The IRP 2011 report, associated appendices, and addendum present PacifiCorp's plan to supply and manage growing demand for electricity in its six-state service territory over the next 20 years. The report identifies, as its least cost plan, investment in a portfolio of power plants and power purchases, coupled with customer energy efficiency programs and direct-control load management. The type, timing, and magnitude of resource additions are noted and an action plan is provided.

Based on its assumptions of existing generation capacity, generation plant life, length of existing purchase power contracts, transmission transfer capability, and its October

2010 load growth forecast, PacifiCorp identifies a deficit between existing resources and peak system requirements plus a 13 percent planning reserve[1] of 326 megawatts beginning in 2011. This deficit grows to 1,601 megawatts in 2012 and to 3,852 megawatts in 2020.[2] To meet these deficits, PacifiCorp identifies a resource investment schedule partly based on the portfolio of resources selected by the computer model, System Optimizer, as optimal in Case 3,[3] coupled with the full Energy Gateway transmission facilities investment schedule, as its least cost plan, adjusting for risk, or "Preferred Portfolio."[4] PacifiCorp manually modifies the Case 3 portfolio of resources by replacing all selected geothermal resources with wind resources, delaying the online date of a combined cycle combustion turbine ("CCCT") from 2015 to 2016, and distributing the acquisition of wind resources annually based on a number of factors.

PacifiCorp selects its Preferred Portfolio based on: its analysis of the 20-year present value of future revenue requirement ("PVRR"); variations in load growth, fuel and market price volatility; planned transmission transfer capability; hydro variability; thermal outages; customer rate impacts; expectations of potential costs associated with meeting existing and potential environmental regulations; lead time required for plant construction or bidding; fuel source diversity; supply reliability; production cost variability; geothermal development cost risks; resource acquisition and regulatory compliance risk; and public policy goals.

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[1] Planning reserve includes operating reserve; *See* PacifiCorp, "2011 Integrated Resource Plan, Volume 1," Chapter 5, at 99.
[2] *See* PacifiCorp, 2011 IRP, Volume 1, Chapter 5, Table 5.11, at 102.
[3] A case is a defined set of input values, and assumptions. Case 3 assumes a medium CO2 tax, low gas prices, medium economic growth, renewable production tax credit extension to 2015, current state renewable energy portfolio standards requirements, high achievable demand side management resources, current solar investment incentives, no coal plant shutdowns, and full Energy Gateway transmission facilities.
[4] The investment schedule for the Company's Preferred Portfolio is provided in IRP 2011, Chapter 8, Table 8.16, at 230.

To serve system-wide peak hour demand over the next ten years, cumulative supply additions and direct-control load management or energy efficiency programs in the Preferred Portfolio range from 484 megawatts in 2011 to 5,051 megawatts in 2020.[5] By 2020, this consists of 2,660 megawatts of intermittent, intermediate and base load power plant; 1,440 megawatts of direct-control load management or utility energy efficiency programs; and 350 to 1,429 megawatts of annual unspecified power purchases. The proportion of additional resources are 53 percent long-term generation plant[6] (34 percent gas, 17 percent renewable energy, 1 percent coal, 1 percent combined heat and power), 28 percent direct-control load management or energy efficiency utility programs, and 19 percent unspecified annual power purchases.

**B. Request for Comments**

On April 28, 2011, the Commission requested comments from interested parties on IRP 2011 by September 7, 2011, and reply comments by October 5, 2011.

Under the Guidelines, we consider whether to "acknowledge" IRP 2011. Acknowledgment of an IRP means it complies with the regulatory requirements of the planning process, but conveys no sense of regulatory approval of specific Company resource acquisition decisions; PacifiCorp management retains responsibility for its resource acquisition decisions. The integrated resource planning process is an open, public process through which all relevant supply-side and demand-side resources, and the factors influencing choice among them, are investigated in the search for the optimal set of resources to meet current and future electric

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[5] The total of 5,051 megawatts includes the average annual amount of 951 megawatts of unspecified power purchases rather than the cumulative amount of annual purchases over the ten year period, which is 9,511 megawatts.

[6] PacifiCorp notes it may either build the resource or acquire it through a long-term firm power purchase agreement.

service needs at the lowest total cost to the utility and its customers, in a manner consistent with the long-run public interest, given the expected combination of costs, risks and uncertainty.

Utah Code §54-17-302 now requires PacifiCorp to obtain Commission approval of any significant energy resource decision before it constructs or enters into a binding agreement to acquire the resource, unless a waiver is granted by the Commission. Further, Utah Code §54-17-301 requires the Company to file any action plan developed as part of its IRP to enable the Commission to review and provide guidance to the Company. The resource solicitation and acquisition decision approval processes are separate from the IRP acknowledgment process. Therefore, while we may acknowledge an IRP, and may provide guidance on an IRP action plan, any approval of the solicitation and acquisition of specific resources for the implementation of that action plan will be conducted in separate approval processes required under Utah Code §54-17-201 and §54-17-302.

## II. PARTIES' COMMENTS

On September 7, 2011, the following parties filed written comments and recommendations on IRP 2011: The Division of Public Utilities ("Division"), Office of Consumer Services ("Office"), Utah Association of Energy Users ("UAE"), Utah Clean Energy ("UCE"), Western Resource Advocates ("WRA"), Interwest Energy Alliance ("Interwest"), the Sierra Club, the joint comments of HEAL Utah, Utah Moms for Clean Air, and Physicians for a Healthy Environment (collectively "HEAL Utah et al."), and the joint comments of Christopher Thomas of HEAL Utah, Kevin Lind of Powder River Basin Resource Council, Benjamin Otto of the Idaho Conservation League, and Gloria Smith of Sierra Club National. Simplure, LLC filed comments on September 22, 2011, but did not address IRP 2011. On October 5, 2011, PacifiCorp filed a reply to these parties' comments, and the redacted and confidential versions of its supplemental coal replacement study. The Office also filed reply comments on October 5th. On October 7th UCE filed errata to its comments. On October 26, 2011, the Company filed supplemental responsive comments.

The comments and responsive comments are extensive and provide varying support for components of IRP 2011. The Division concludes IRP 2011 adequately adheres to the Guidelines and recommends the Commission acknowledge IRP 2011 and the action plan. All other parties argue IRP 2011 should not be acknowledged as filed. These parties contend IRP 2011 does not sufficiently adhere to the Commission's Guidelines for various reasons. The Company responds to these parties' comments, and argues the Commission should find the IRP to be in compliance with the Guidelines and grant acknowledgment. The Company also requests the Commission acknowledge specific Energy Gateway transmission projects scheduled to be in service in 2014 or sooner.

## III. DISCUSSION AND GUIDANCE

We have fully considered IRP 2011, the parties' comments and reply comments and find the Company has complied with many of the Guidelines and has implemented various improvements in comparison with past IRPs. However, we conclude IRP 2011 is deficient with respect to certain guidelines as described below and therefore we do not acknowledge IRP 2011. We provide the following guidance to the Company on the specific guidelines and issues requiring additional attention in the Company's IRP update or next IRP.

## A. Insufficient Adherence to Guidelines

### 1. Guidelines at Issue

We find IRP 2011 contains inadequacies with respect to the following guidelines. Guideline 1 defines integrated resource planning as "...a utility planning process which evaluates all known resources on a consistent and comparable basis, in order to meet current and future customer electric energy services needs at the lowest total cost to the utility and its customers, and in a manner consistent with the long-run interest. The process should result in the selection of the optimal set of resources given the expected combination of costs, risk and uncertainty."[7] Guideline 4.b. requires an evaluation of all present and future resources, including future market opportunities (both demand-side and supply-side), on a consistent and comparable basis.[8] Guideline 4.h. requires an evaluation of the financial, competitive, reliability and operational risks associated with various resource options. Guideline 4.j. requires an analysis of tradeoffs; for example, between such conditions of service as reliability and the acquisition of least cost. Guideline 4.l. requires a narrative describing how current rate design is consistent with the Company's integrated resource planning goals and how changes in rate design might facilitate integrated resource planning objectives.

### 2. Issues and Guidance

Parties persuasively argue the Company's IRP 2011 fails to completely meet the guidelines noted above due to insufficient treatment of the following issues.

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[7] *See* Guidelines, at 39.
[8] *See* Guidelines, at 40.

### *a. Preferred Portfolio Evaluation Criteria*

Based on information received from the Company in response to a data request, the Office shows the Preferred Portfolio ranks poorly in comparison to other core cases when evaluated for the following performance metrics: Risk-adjusted PVRR,[9] 10-year customer rate impact, and reliability. This, the Office argues, is because the Company changed its criteria at the end of the process and did not evaluate all portfolios using the same criteria. The Office recommends the Commission require the Company to evaluate all core cases using the set of assumptions collectively referred to as the "green resource" future,[10] and the additional constraints employed in developing the Preferred Portfolio, prior to a Commission decision to acknowledge IRP 2011. The Company argues its additional changes in the Preferred Portfolio account for public interest concerns and for "social concerns," as referenced in Guideline 4.g., and resource diversity.

We find IRP 2011 is deficient in providing sufficient analysis of the tradeoffs between costs, risks, customer rate impact, supply reliability, resource diversity, and the future uncertainty of greenhouse gas and RPS policies, particularly for the Preferred Portfolio. For acknowledgement in the future, the Company should provide all stochastic portfolio performance measures for the Preferred Portfolio and identify the additional cost associated with addressing the non-modeled objectives cited by the Company, e.g., social concerns, and cost recovery risk

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[9] Risk adjusted PVRR is calculated as the stochastic mean PVRR plus five percent of the 95$^{th}$ percentile PVRR, with the latter term representing a cost premium reflecting the tail risk for the portfolio. See PacifiCorp, IRP 2011, Volume 1 at 197.

[10] *See* PacifiCorp, IRP 2011, Volume 1 at 66.

of geothermal resources. As required by Guideline 4.h., the Company should identify who will bear this financial risk, shareholders or customers.

***b. Coal Plant Retirement***

Several parties argue the Company's IRP 2011 analysis inadequately evaluates coal-plant retirement versus continued coal-plant investment, either because it fails to fully account for all relevant costs, or because the models do not allow sufficient choice during the optimization process. This failure, the parties argue, leads to inconsistent treatment of resource alternatives and biases selection of resources towards coal. On October 5, 2011, along with its responsive comments, the Company filed confidential and redacted copies of its Supplemental Coal Replacement Study ("October Coal Study"). The Company represents the October Coal Study provides certain improvements to the coal utilization sensitivity analysis performed in its IRP 2011.

The Commission concludes the initial analysis in IRP 2011 is insufficient for determining the various costs and benefits of extending the lives of coal plants through continued investment versus retiring the plants and investing in alternative strategies for meeting customer demand. The Commission will request comments on the October Coal Study from interested parties in the upcoming IRP update proceeding. The Commission is interested in understanding the extent to which the October Coal Study addresses the concerns of the parties.

***c. Energy Gateway Transmission Analysis***

The Company conducted a separate analysis of various transmission options to evaluate and determine whether the full Energy Gateway transmission project is cost effective. Based on this analysis, the Company concludes the full Energy Gateway strategy is cost effective and the most prudent strategy given regulatory uncertainty, resource diversity benefits, and the long lead time required for adding transmission. The Company then incorporates the full Energy Gateway configuration in all core and sensitivity cases as part of its existing system.

We agree with certain parties the Company's analysis in IRP 2011 is insufficient to determine whether the full Energy Gateway project is cost effective, considering risk and uncertainty. We could not determine the costs or benefits of full Energy Gateway versus the base case which is referred to as "Limited Gateway"[11] due to the use of inconsistent sets of inputs and assumptions between the core cases, which are used to evaluate preferred portfolio candidates, and the alternative Energy Gateway cases. For example, the core cases assume the full Energy Gateway project is in place and relies on sets of assumptions which define what is referred to as an "incumbent resource future."[12] The incumbent resource future assumes current state renewable portfolio standards ("RPS") during the planning horizon. However, the Company shows full Energy Gateway is lowest cost, adjusting for risk, when compared to Limited Gateway only when a "green future" is assumed. The green future always assumes a high level, federally-mandated RPS, known as the Waxman-Markey proposal, beginning in 2018. No core case includes this assumption. While it is possible an aggressive RPS will be mandated by the federal government in the future, it is by no means certain. Therefore, this event, and its effect on the type, timing and magnitude of resource additions, should be evaluated accordingly.

[11] Limited Gateway consists of the Populus to Terminal, Mona to Oquirrh, and Sigurd to Red Butte segments of Energy Gateway.
[12] *See* PacifiCorp, IRP 2011, Volume 1 at 66.

IRP 2011 and its addendum also lack a full set of modeling and performance results for the alternative Energy Gateway expansion cases. The Company provides no stochastic results or other evaluation metrics, e.g., customer rate impact or reliability impacts, for the Limited Gateway scenario for either the incumbent resource or green futures. Thus, a comparison of the metrics which incorporate risk and include other evaluation criteria between Limited and full Energy Gateway cannot be made.

We conclude additional consistent and comparable metrics are necessary to reach general or meaningful conclusions about the benefits of the full Energy Gateway expansion. We remind the Company its existing system should represent only facilities which have already received a certificate of convenience and necessity (if required) or for which the Company has a binding contract in place. All other facilities should be included in core or sensitivity cases as options.

***d. Geothermal Resource Exclusion***

Over 100 megawatts of geothermal resources are selected in almost all cases as least cost, adjusted for certain risks. The geothermal cost assumptions include development costs which the Company states are 35 percent of the total cost. The Company removes geothermal resources from its Preferred Portfolio due to cost recovery risk to its shareholders. The Company replaces the geothermal resources with 2,100 megawatts of wind resource to be acquired in Wyoming after 2018 and which are dependent upon completion of the full Energy Gateway expansion. The Company maintains in its action plan the commitment to "continue to refine [geothermal] resource potential estimates and update resource costs in 2011-2012 for further economic evaluation of resource opportunities. Continue to include geothermal projects as eligible resources in future all-source RFPs."[13] The Company does not include an action item regarding addressing the cost recovery risk issue.

We find the Company has provided insufficient information in IRP 2011 regarding the cost impacts to customers associated with the change from geothermal to wind resources in its Preferred Portfolio. This incremental cost of replacing the geothermal resources with wind resources could be included by the Company in its IRP update, along with a statement regarding whether the customer or shareholder should bear this cost.

In its next IRP, the Company should evaluate the geothermal resource cost recovery risk directly. Since the geothermal cost already includes a development cost estimate, the Company in future IRPs could evaluate higher estimates, and compare this risk with the risks of other portfolios. Finally, we note the action plan contains no action item to address the cost recovery risk issue. The Company should also identify the actions it is taking to address this issue i.e., obtaining regulatory or legislative relief in other states, and include an action plan item in the IRP update to this end.

**e. *Rate Design***

UAE notes IRP 2011 provides no discussion of rate design as required in Guideline 4.g. The Company should include this information in future IRPs.

[13] *See* PacifiCorp, IRP 2011, Volume 1, at 254.

**B. Other Suggested Improvements for Future IRPs**

**1. Guidelines at Issue**

In addition to the Guidelines noted above, the following items require attention and improvement in future IRPs. Guideline 3 requires the IRP to be developed in consultation with the Commission, the Division, the Office, appropriate Utah state agencies and interested parties. The Company is required to provide ample opportunity for public input and information exchange during the development of its IRP. Guideline 4.a. requires the IRP to include a range of estimates or forecasts of demand and energy load growth. Guideline 4.f. requires a plan of different resource acquisition paths for different economic circumstances with a decision mechanism to select among and modify these paths as the future unfolds. Guideline 4.k. requires the Company include a range of estimated external costs in order to show how explicit consideration of them might affect selection of resource options.

**2. Issues and Guidance**

Parties either argue the Company inadequately addresses some or all of the guidelines noted above, or recommend the Company implement improvements in future IRPs. We are persuaded by parties the following issues require continued improvement in future IRPs.

***a. Public Input Process***

Parties contend the Company's public process does not allow for adequate public input and information exchange and the Company failed to complete a draft of the IRP with sufficient time for considering and incorporating public comment, as originally scheduled. Additionally, parties argue portfolio screening criteria were changed without adequate justification or opportunity for review. Some parties' recommend the Company devote more resources to the IRP effort and the Commission should take an active-directive approach to IRP to address the concerns raised.

Some parties argue the Commission-ordered IRP model training fell short of expectations, the IRP process should be revisited as it is too complex, and the Company should use more transparent models. The Company argues steps to address model transparency will be expensive and time consuming. Rather, the Company recommends stakeholders identify specific modeling or assumption development concerns which the Company could investigate based on a clearly defined scope of work, considering schedules and analytical priorities, in the next IRP. This could involve additional model runs. The Company argues this type of validation strategy would be on-going and makes sense given evolving models and study requirements. We generally concur with the Company's suggested approach for the next IRP.

We note some progress has been made by the Company in response to guidance contained in our April 1, 2009, order in Docket No. 09-2035-01 which addressed the Company's IRP filed in 2008 ("April Order"). The Company generally provided handouts before meetings and posted meeting summaries which included answers for issues raised at meetings. However, additional progress is required as shown by the numerous concerns and unresolved questions raised by parties. The Company should fully vet changes in methods or evaluation criteria with public participants. The public input process schedule needs to be better managed to fully consider comments provided on the draft IRP.

Going forward, the Company, in its next IRP, should spend more effort developing comparable cases and ensuring consistent and comparable evaluation of alternative resources. The Company should allow public input for developing a strategy to specify cases, and alternative "future" scenarios. The Company should also ensure this strategy provides a sufficient number of cases with common sets of inputs, with consistent assumptions, to perform meaningful comparisons of cases and scenarios. The next IRP should identify the cost tradeoffs to achieve different levels of performance with respect to the public interest criteria. The development of internally consistent, distinct scenarios, each with sufficient apples to apples cases for meaningful comparison of alternative resource portfolios, would provide a progressive step to the achievement of more transparent results. Criteria the Company previously identified and addressed by manually modifying a given portfolio at the end of the evaluation process should be identified at the beginning of the IRP process. Cases should then be developed and evaluated using all criteria to determine cost, risk and reliability consequences. Again, this step should ensure consistent and comparable treatment of alternative resources through to the identification of the Company's preferred portfolio. We will evaluate the success of this approach when the next IRP process concludes. If concerns with the public process persist, the Commission will consider hearings in connection with IRP review, and a more active-directive role.

***b. Renewable Resource Assumptions***

Parties argue the Company's assumptions regarding wind and solar resource costs are too high. UCE questions the annual limit of available rooftop solar resource in Utah, which appears to be based on a 2010 update to the 2007 study entitled "Assessment of Long-Term, System-Wide Potential for Demand-Side and Other Supplemental Resources," ("2010 Potential Study") prepared for PacifiCorp by the Cadmus Group, Inc. Parties also fault the Company's wind integration study and argue the costs are too high. Parties contend it is unreasonable to assume renewable energy credits have zero value. Further, parties note wind resources are not available in Wyoming until 2018 and prior to 2018, wind resources in other locations are too expensive and unavailable until 2016. Therefore, few wind resources are selected by core cases as least cost. In addition, parties argue the risk mitigating benefits of wind resources, shown in IRP 2008 to be valuable, are not apparent in the modeling results for a variety of reasons. Nevertheless, the Company manually adds 2,100 MW of wind resource after 2018 to its Preferred Portfolio in place of the geothermal resource which had been selected as least cost on a risk adjusted basis. Some parties questions whether this outcome is least cost.

We recognize there are differences of opinion, and some uncertainty, regarding renewable resource cost assumptions and we conclude sensitivity cases could explore this issue best. The Company should perform sensitivity and scenario analyses around key renewable resource cost assumptions in its next IRP. In addition, we agree with the Office the Company should prepare a new wind integration study in connection with the next IRP. This should include a technical review committee to direct and evaluate work related to the study and include expertise from Utah participants. Further, this committee should examine recent rate case values forecasted by the Company. Finally, any Potentials Study used to inform the IRP should be filed concurrently with the IRP.

***c. Discount for Combined Cycle Combustion Turbines***

Parties contend the Company has not justified its CCCT capital cost credit and argue the adjustment violates consistent and comparable evaluation of resources. Some parties also assert the CCCT capital cost credit undermines the Company's flexibility in adding and integrating wind or solar resources and argues this is a bias against wind, solar and Simple Cycle Combustion Turbine ("SCCT") resources.

The Company contends the system optimizer model which selects resources for inclusion in a least cost portfolio, undervalues CCCTs in comparison to SCCTs. The Company provides analysis demonstrating this point using the Planning and Risk ("PaR") model (comparing deterministic and stochastic runs produced by the PaR model) showing a given portfolio with a CCCT has much lower stochastic PVRR than a portfolio with an SCCT. The Company develops a CCCT capital cost credit based on this analysis which it applies to CCCTs such that the system optimizer model will select CCCTs rather than SCCTs.

Contrary to parties' comments, it appears the Company explained this capital cost credit and provided supporting analysis which parties did not address.[14] The Company should provide sensitivity analyses, including stochastic analyses, in future IRPs to examine the impact of this adjustment on the selection of wind and solar resources to confirm the cost credit adjustment is in the public interest. We observe this issue concerns whether it is lower cost, when adjusting for known risks, in a high-carbon-cost future to either build CCCTs which can be dispatched to displace coal generation to reduce $CO_2$ emissions cost, or to replace coal with renewable resources which are then integrated into the system with SCCTs. The Company should further examine this question explicitly in the next IRP.

[14] *See* PacifiCorp, IRP 2011, Volume 1, footnote 59, at 180 which refers the reader to the report for the April 28, 2010, public input meeting, available on PacifiCorp's IRP Web site.

***d. Range of Externalities***

Several parties argue the range of externalities considered is inadequate. The Company responds that the U.S. Environmental Protection Agency ("EPA") and other governing agencies are specifically tasked with addressing such costs and health impacts as part of their regulatory responsibilities. For example, EPA maintains National Ambient Air Quality Standards to protect human health and environment. In addition, the Company evaluates the risk of potential, uncertain $CO_2$ regulation. The Office suggests any valid externality values used by the Company should be agreed upon by parties or should be set by the Commission.

We recognize there are differences of opinion on specific externality values. We generally accept the Company's approach and suggest continued discussion in the IRP public input process to determine a reasonable and manageable range of values. This could also include the notion that once a permit has been obtained, the external costs addressed through the permit are internalized; all other values should be treated as uncertainties through scenario development and a range of potential values.

***e. Hedging Practice and Reliance on Wholesale Market Purchases***

As noted by parties, the Company partly addressed the Commission's directive in our April Order to: 1) include hedging costs for fuels with volatile prices, 2) perform sensitivity analysis to determine a hedging strategy which minimizes costs and risks for customers, and 3) include an analysis of the adequacy of the western power market to support the volumes of purchases planned.

Parties support continued evaluation of market depth and liquidity in support of the reliance on market purchases. However, with respect to hedging analysis, parties note the

Company includes only brokerage fees and not the total costs of hedging, and provides no sensitivity analysis to determine a hedging strategy to minimize costs and risks for customers. The Company argues hedging settlement costs cannot be included because they are unknown and argues other forums, like the collaborative process currently underway in Utah, are more appropriate for determining a low cost/risk hedging strategy.

We appreciate the progressive step the Company has generally made in this IRP on these issues which continue to be a concern for this Commission. The Company should continue to provide the western market analysis in support of its reliance on market purchases and explore ideas for addressing the remaining issues. For example, future settlement costs could be estimated by using an average of past settlement costs. Further, information developed from the collaborative process could be brought, as appropriate, to the IRP process for evaluation.

***f. Planning Reserve***

The Office argues the Company needs to support its 1.5 percent downward adjustment to the Loss of Load Probability (“LOLP”) study results and believes the 13 percent planning reserve used in IRP 2011 may be too low. UAE argues a 13 percent planning reserve is too high and the Company should provide cost/risk tradeoff analysis to evaluate this issue. The Company responds its tradeoff analysis also supports the 13 percent planning reserve over the 12 percent planning reserve and agrees with the Office to further test the reasonableness of the 1.5 percent adjustment to the LOLP study.

We accept a 13 percent planning reserve as reasonable for this IRP and recommend continued analysis of this issue, both through LOLP and tradeoff analysis, and the testing of the 1.5 percent adjustment.

***g. Load Forecasts***

The Office retained a consultant, GDS Associates, Inc., ("GDS") to evaluate the long-term load forecast used in IRP 2011. GDS contends the economic range forecasts prepared by PacifiCorp should have greater range and recommends the Company review the forecasts of other utilities and produce ranges that have greater uncertainty built-in as the forecast horizon expands. GDS makes four other recommendations associated with IRP 2011.

A key concern in IRP 2011 comments is the Company's decision to set its long-term load volatility parameter to zero in the stochastic analysis, thus eliminating the evaluation of long-term load-growth risk over time. The Company argues this parameter was producing unrealistically large load excursions in the out years of the production cost simulations, causing significant cost differences in alternative portfolios which the Company concluded were unreasonable and misleading. The Company argues the PaR model does not make capacity changes and thus its results ignore the fact that fundamental shifts in demand for energy would likely be met with adjustments to capacity through the planning horizon. After consideration of options and consultation with the software vendor, the Company set this parameter to zero.

The Office argues the Company should allow the long-term load volatility parameter to vary until it fully justifies the parameter should be set to zero. The Office recommends the Company obtain a technical statement from the software vendor endorsing the use of a zero value, explaining the implications of this change for risk analysis, and showing whether this change has been recommended to other clients.

In responsive comments, the Company suggests a better strategy for addressing large and permanent changes to loads would be to examine alternative scenarios using the System Optimizer model rather than evaluating the risk stochastically through PaR. In response to the GDS recommendation for the Company to review other economic range forecasts to produce ranges with greater uncertainty built into them, the Company replies it plans to solicit public input on the range of forecast scenarios to appropriately capture long-term uncertainty.

The Division notes the Company omitted historic load data from this IRP and recommends the Commission direct the Company to include this information in future IRPs.

It does not appear parties have a common understanding of the ability of the PaR model to calculate the stochastic risk associated with long-term load volatility. The Company should consider hosting a public input meeting to discuss the objectives of and options for addressing long-term load volatility and long-term load-growth uncertainty and to respond to the five GDS recommendations. The Company should provide interested parties with any analysis it performs regarding the five GDS recommendations in advance of the meeting. Finally, we have also found the state historic load information contained in IRPs to be valuable and prefer the Company include a ten year history of monthly energy, coincident peak, and non-coincident peak, by state, in all future IRPs.

***h. Reliability "Energy Not Served"***

The Office argues the Company should use the FERC price cap approach to value energy not served ("ENS") in comparing a portfolio's stochastic results. This raises ENS cost by

$158 million over 20 years. The Office believes the Company's tiered approach understates the cost of less reliability to consumers. The Company argues this topic should remain a discussion issue in integrated resource planning and it should not be a dictated value. Again, the Company argues the PaR model's Monte Carlo simulations generate outlier events in the out years which unrealistically influence portfolio costs.

We find the Company met the Commission's April Order directive in this IRP. The Company should continue to provide sensitivity analysis and to discuss this issue in future meetings. This reliability measure is intended to identify the cost differences between portfolios. The Company could host a discussion regarding this measure and the extent to which the ENS measure is accomplishing this goal.

***i. Resource Acquisition Paths and Decision Mechanism***

UAE suggests the next IRP include the cost increase of alternative acquisition strategies. The Company should explore this suggestion.

***j. Demand Side Management Resources***

UCE requests additional information regarding how the Company bundles demand side management ("DSM") resources for its supply curves. The Division recommends the Company closely monitor DSM resource acquisitions for adherence to forecasted amounts.

The Company should conduct a meeting to explain its development of DSM resource bundles. This meeting could be in an IRP technical conference, a DSM Advisory Group meeting or an IRP public input meeting. The Company should address its plans to closely monitor DSM resource acquisitions for adherence to IRP forecasts in its next IRP. Finally, as noted earlier, the Company should file any Potentials Study used to inform an IRP, concurrently with the IRP.

## IV. SUMMARY AND CONCLUSIONS

We recognize the substantial body of work completed by the Company in preparing its IRP and in implementing much of the guidance contained in our April Order. We also appreciate the hard work and thoughtful comments provided by state agencies and interested parties. These comments will serve to ensure continued improvement and usefulness of the IRP process. We acknowledge the growing complexity involved in the Company's preparation of the document and parties participation in the process and review stages. We recognize each IRP is measured by the next level of expectations and parties have identified issues requiring additional work as discussed herein.

While we view the IRP as an evolving process, we find the Company has not sufficiently complied with the Guidelines as discussed herein and therefore we do not acknowledge IRP 2011. While the IRP is adding complexity, it is also losing transparency. Rather than modify this IRP, we think it more efficient and a better use of everyone's time to continue forward. We provide guidance herein to assist in achieving greater transparency of IRP results. Specifically, we provide guidance to the Company for additional information to be filed in the IRP update proceeding or to address in its next IRP. Per Utah Administrative Code Rule 746-430-1, we will provide notice of a scheduling conference each time the Company submits an action plan related to an IRP in order to set a schedule for discovery and comments.

## V. ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED, that

1. The IRP 2011 as filed is not acknowledged.

DATED at Salt Lake City, Utah, this 22nd day of March, 2012.

/s/ Ted Boyer, Chairman

/s/ Ric Campbell, Commissioner

/s/ Ron Allen, Commissioner

Attest:

/s/ Gary L. Widerberg
Commission Secretary
D#219626

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on the 22nd day of March, 2012, a true and correct copy of the foregoing Report and Order was served upon the following as indicated below:

By U.S. Mail:

Cherise Udell
Utah Moms for Clean Air
P.O. Box 58446
Salt Lake City, UT 84158-0446

Gloria D. Smith
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HEAL Utah

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Administrative Assistant