

**Meeting Report**  
**2011 Integrated Resource Plan**  
**Fourth Public Input Meeting, October 5, 2010**

**Meeting Date:** Tuesday, October 5, 2010,

**Meeting Time:** 9:00 am – 3:00 pm (Pacific) / 10:00 am – 4:00pm (Mountain)

**Location:** Portland, Oregon; Salt Lake City, Utah; and telephone conference

**Organizations Attending**

- Alpern Myers Stuart LLC (Interwest Energy Alliance)
- Bella Energy Inc.
- Encana
- General Electric
- Idaho Public Service Commission (ID-PSC)
- Northwest Energy Coalition (NVEC)
- Northwest Pipeline GP (NWPGP)
- Northwest Power and Conservation Council (NWPPCC)
- Oregon Public Utility Commission (OPUC)
- PacifiCorp
- Portland General Electric (PGE)
- Renewable Northwest Project (RNP)
- Utah Association of Energy Users (UAE)
- Utah Clean Energy (UCE)
- Utah Division of Public Utilities (DPU)
- Utah Office Of Consumer Services (OCS)
- Utah Public Service Commission (UT-PSC)
- Wasatch Clean Air Coalition
- Washington Customer (WA Customer)
- Washington Utilities and Transportation Commission (WUTC)
- West Wind Wires (WWW)
- Western Resource Advocates (WRA)
- Wyoming Office of Consumer Advocates
- Wyoming Public Service Commission (WY-PSC)

*The list of individual meeting attendees is provided as Appendix A.*

**Meeting Overview**

The integrated resource planning topics covered at this meeting included updates to the IRP schedule, Energy Gateway Transmission construction update and financial evaluation, load forecast, hedging strategy analysis, market reliance analysis, the preliminary capacity load & resource balance, and continued discussion on the portfolio development cases.

Pete Warnken, Manager of Integrated Resource Planning, provided an update on the remaining IRP schedule, presented as a Gantt chart. Participant comments centered on further wind integration study activities and public meeting follow-up for PacifiCorp's geothermal potential study.

Cory Scott and Bill Cunningham, PacifiCorp Transmission Department, presented an update on planning, permitting, and construction of Energy Gateway Transmission project segments, as well as past and currently ongoing economic evaluation of Gateway project scenarios. Mr. Scott

also summarized the key strategic principles behind the Energy Gateway project and the signing of the Memorandum of Understanding (MOU) with Portland General Electric. Participants inquired as to the regulatory status of the Gateway segments, such as granting of Certificates of Public Convenience and Necessity.

Romita Biswas, Director of Load and Revenue Forecasting, presented the September 2010 load forecast being used for the 2011 IRP. Ms. Biswas provided a system and state-level overview of the forecast through 2020, with comparisons to the 2008 IRP Update load forecast (October 2009) and associated assumption changes driving the forecast differences. On a system basis, average annual peak load growth for 2011-2020 is projected at 1.9% compared to 2.1% for the 2008 IRP Update load forecast, although peak load growth is higher than the October 2009 forecast in the early years.

Brian Osborn of the IRP group presented the preliminary initial capacity load & resource balance used to determine the resource need for the 2011 IRP. Changes relative to the capacity balance developed for the 2008 IRP Update were highlighted. Significant capacity is still needed beginning in 2012 (1,354 MW), but the need is slightly less than projected after 2012 relative to the capacity balance used for the 2008 IRP Update.

John Fritz, Director of Risk Management, presented PacifiCorp's perspectives on risk hedging analysis and led a discussion on complying with the Utah Public Service Commission's 2008 IRP acknowledgement order requirement pertaining to natural gas price hedging strategies. This requirement is to include hedging costs in the IRP analysis and perform sensitivity analysis of hedging strategies that minimize customer costs and risks.

Mr. Warnken presented an overview of the proposed approach for analyzing market reliance risk. The strategy involves developing an illiquid market scenario with high market prices and sharply curtailed firm market purchase availability. PacifiCorp will use its stochastic production cost model to simulate resource portfolios with differing firm market purchase levels under the scenario conditions, and focus on evaluating tail outcomes of the Monte Carlo portfolio simulations.

Finally, Mr. Warnken provided an updated version of the portfolio development case list, highlighting changes prompted by stakeholder comments and further consideration by the Company. The updated list included an additional 16 cases for evaluating Energy Gateway scenarios that would be developed prior to locking down Gateway transmission topology assumptions for the remaining portfolio development cases.

## **Discussion Highlights**

### ***IRP Schedule Update***

1. Mr. Warnken noted that slippage of the portfolio modeling schedule has occurred due to ongoing bid evaluation work for the all-source Request for Proposals issued in December 2009.

2. Participants wanted to know if the wind integration cost values were being used in the 2011 IRP and are considered final. PacifiCorp responded that the wind integration study is final, and that the resulting integration cost, \$9.70/MWh, is being applied for portfolio development while incremental wind reserves will be reflected in the production cost simulations. The Company noted that it will evaluate stakeholder comments on the methodology.
3. Participants requested additional public discussion on the geothermal resource potential study and resource modeling prior to the next public meeting being scheduled for December 2015. PacifiCorp agreed to schedule a conference call to discuss the study and geothermal resource modeling.
4. One of the participating organizations requested that parties be given an opportunity to inspect the solar photovoltaic resource data to determine if PacifiCorp incorporated stakeholder comments [Note: PacifiCorp distributed an updated solar PV input assumptions memo prepared by the Cadmus Group on August 16, 2010 in response to verbal and written comments received on the original memo dated July 28, 2010.]

### ***Energy Gateway Transmission Construction Update and Evaluation***

1. PacifiCorp covered construction status, expected in-service date ranges, and regulatory process status for the five main transmission segments: Populus-Terminal (Gateway Central), Mona-Oquirrh (Gateway Central), Sigurd-Red Butte (Gateway South), Aeolus-Mona (Gateway South), and Windstar-Hemingway (Gateway West). A status report on west-side projects and initiatives—the Wallula-McNary line and Memorandums of Understanding with Idaho Power and Portland General Electric—were also provided.
2. PacifiCorp re-iterated that Gateway transmission project discussions and associated planning activities have been conducted in other forums including sub-regional and regional transmission organizations, specifically the Northern Tier Transmission Group (NTTG) and WECC Transmission Expansion Planning Policy Committee (TEPPC)
3. Confirmed that PacifiCorp is moving forward with the transmission expansion plan that will provide 1,500 MW on Gateway West and 1,500 MW on Gateway South (Stage 1).
4. Participants asked for the status of Certificate of Public Convenience and Necessity (CPCN) requests for the various transmission projects. Gateway Central segments, with the exception of the Limber-Terminal segment under Stage 2, now have CPCNs granted. A CPCN request has been filed for the Wallula-McNary project in Washington.
5. PacifiCorp asked Utah commission staff to clarify the criteria by which transmission projects may be incorporated as part of the topology base case as opposed to treatment as a resource option. Commission staff reaffirmed that granting of a CPCN should be sufficient and that the modeling should be able to distinguish incremental costs/benefits of the transmission project. Participants then debated whether the Sigurd-Red Butte line and Harry Allen substation upgrades constituted a base topology addition given that they are reliability/grid reinforcement investments necessary for serving southwestern Utah loads.
6. PacifiCorp discussed the history of Energy Gateway financial evaluation beginning in 2007, including assessment of single-circuit versus double-circuit 345 kV investment options.

### ***September 2010 Load Forecast***

1. PacifiCorp summarized the main forecasting assumption and methodological changes with respect to the October 2009 forecast used for the 2008 IRP Update. Changes included (1) forecast driver updates from Global Insight and the U.S. Energy Information Administration, (2) incorporation of additional retail sales, normalized weather history, and load research data, (3) industrial forecast updates from the Company's customer account managers, and (4) line loss updates.
2. Participants asked about the line loss study methodology and the state-by-state line loss percentages. PacifiCorp provided the percentages, but committed to describe the line loss study methodology as a parking lot item.
3. PacifiCorp summarized the key load growth drivers by state. Positive drivers included new data centers in Oregon and Utah, a positive outlook for the residential sector and food product industry in the west side, and new industrial customers in Utah and Wyoming. Negative drivers included pessimism in the wood product industry in several states (due to continued weakness in the housing market) as well as a pessimistic outlook for industrial loads for Utah and Wyoming in the out years of the forecast.
4. Participants discussed the impact of projected data center additions on some of the state load forecasts presented. PacifiCorp described how it treats announced commercial and industrial facility additions for load forecasting purposes: it assigns a probability of going forward with interconnection because commitment levels are not always known or the estimated online date is uncertain. This forecast information is confidential.
5. Washington participants asked if the energy efficiency forecast methodology is consistent with that used by the Northwest Power and Conservation Council. PacifiCorp responded that it is. PacifiCorp's demand-side management potential study, being prepared by The Cadmus Group, reflects updated assumptions and closer alignment to the Council's methodology.

### ***Preliminary Capacity Load & Resource Balance***

1. PacifiCorp summarized the primary changes to the capacity load & resource balance relative to the one used for the 2008 IRP Update. These changes included updates to turbine upgrade project capacity, changes in status of two wind projects from planned to existing in 2010 (Dunlap I and Top of the World), a modeling change for the Monsanto curtailment contract (47 MW reduction in peak hour capacity), and a shift in the timing of the planned Klamath dam removal from year-end 2020 to January 2020. The final balance will reflect an updated hydroelectric forecast.
2. PacifiCorp clarified that east-west capacity transfers are determined as part of the capacity expansion optimization solution by the System Optimizer model rather than fixed amounts determined outside of the model.
3. Participants inquired as to the treatment of operating reserves in the load & resource balance. These are included as part of the planning reserve margin.

### ***Hedging Strategy Analysis***

1. PacifiCorp provided an overview of the IRP team's modeling capabilities for investigating hedging. The Planning and Risk (PaR) model can potentially be used, but

the Company has not tested or performed such analysis before. The System Optimizer capacity expansion model is not an appropriate tool because it is a deterministic model.

2. John Fritz summarized the company's current hedging strategy and outlined key tenets of risk management: that hedging is intended to reduce risk and not cost, that cost and risk cannot be reduced simultaneously, that market prices cannot be predicted, and that the optimal hedging level is a subjective determination and dependent on risk tolerance.
3. PacifiCorp described hedging costs, which are classified into post-settlement outcomes (gain or loss on a hedged position) and program costs (broker fees, bid/ask spreads, collateral funding costs). Utah regulatory staff clarified that their interest is in capturing hedging gains and losses in the IRP, and what outcomes are expected to arise from alternative hedging strategies.
4. Participants debated whether the IRP is the proper forum for evaluating gas price hedging strategies; i.e., whether hedging influences resource selection.
5. Participants discussed the mechanics of modeling hedging impacts on gas prices and volumes using the PaR model. PacifiCorp will consider the input received in determining its hedging analysis approach.
6. A number of participants thought it appropriate to focus on evaluating the trade-off between hedging cost and risk. PacifiCorp proposed an approach where the current hedging strategy and transaction costs—and the range of resulting hedging outcomes using the 95<sup>th</sup> percentile as the worst case and 5<sup>th</sup> percentile as the best case—is compared against the expected outcomes and transaction costs from alternative hedging strategies.
7. Utah commission staff emphasized the connection between the hedging strategy analysis conducted via the IRP and the pending Utah Energy Cost Adjustment Mechanism proceeding.

### ***Market Reliance Analysis***

1. Pete Warnken summarized the purpose of market reliance analysis: to determine the risk of relying on various market purchase levels given a worst-case market scenario (high prices, reduced liquidity). PacifiCorp earlier sought clarification from Utah parties on the desired analysis approach.
2. PacifiCorp outlined details on the market reliance analysis. The Company will evaluate several top-performing portfolios with significantly different levels of front office transaction (FOT) levels. Sharp curtailment of FOT availability for a two-year period, along with steep FOT price escalation, will be reflected in the PaR stochastic production model. Mobile gas generators will also be included in the model to simulate short-term emergency supply acquisition. The Company will evaluate and compare upper-tail costs and cost distributions for the modeled portfolios.
3. Utah regulatory staff reiterated that the study should address who bears the risk for market transactions (shareholder or customers) and the regulatory implications.
4. Participants discussed the impact of CO<sub>2</sub> regulation on market transactions. PacifiCorp cited its recent study prepared for the Oregon Commission on the rate impact of meeting state greenhouse gas emission reduction goals. This study incorporated market sales and purchase assumptions tied to carbon emission constraints.

5. For a western market assessment, Utah participants recommended that PacifiCorp evaluate entities that it transacts with, such as examining changes in utility load & resource balances.

### *Portfolio Development Cases*

1. Pete Warnken reviewed the changes made to the portfolio development case definition list in response to earlier participant comments and PacifiCorp refinements. For example, additional CO<sub>2</sub> hard cap cases were added to the list based on alternative natural gas price scenarios.
2. Participants inquired as to how the coal plant utilization cases would be modeled and results used for subsequent resource decision-making. PacifiCorp reiterated that these cases would factor in incremental emission control and fuel supply costs, and are intended for sensitivity analysis only. The IRP analysis will serve as one data point for continued company evaluation of coal plant utilization options.
3. Participants offered recommendations on cases to add or remove. For example, cases with high load growth and high CO<sub>2</sub> cost are least probable and could be removed to make room for others. [Note: a paper documenting changes to the case definition list made subsequent to this meeting was distributed to IRP participants on November 18, 2010. This paper also includes written comments from participants and a table summarizing how the Company addressed the comments.]
4. Participants discussed treatment of state and federal renewable portfolio standards and renewable energy credits (RECs) in the portfolio modeling.
5. Participants reiterated that the case definitions should result in a wide variety of resources among the portfolios. PacifiCorp affirmed that this was a primary goal in constructing the case definition list.
6. A number of participants expressed dissatisfaction with the handling of the wind integration cost value in the case definitions. One organization was disappointed in not seeing many core cases with their lower suggested value (\$5.38/MWh, in contrast to PacifiCorp's \$9.70/MWh value).

## **Responses to Parking Lot Questions IRP Public Meeting – August 4, 2010**

### *Load Forecast*

1. **Please describe the methodology for line loss calculation used for the September 2010 Load Forecast.**

#### **Response:**

PacifiCorp measures line losses based on the difference between actual system input energy and actual consumption by customers as measured at the retail meter. Percentages are updated every year using a 5-year rolling average. The line loss calculation for the September 2010 load forecast used the 5-years ending December 31, 2009.

2. Please explain the bumps in Washington state loads, such as in years 2012 and 2018 (Slide #21)

**Response:**

The Company forecasts system coincident peak using peak producing weather. The weather calendar is developed with peak producing weather occurring in the latter half of July. However, the Washington jurisdiction peaks earlier -- in the week with the 4th of July. To reflect the possibility that the Washington peak producing weather could occur on the 4th of July, in 2012 and 2018, Washington's peak producing weather was rotated to the 4th of July. The Washington jurisdictional peak then shifts to the second hottest peak producing weather condition (i.e. July 20th). This shift causes bumps in 2012 and 2018 for Washington's contribution to coincident peak.

### **Action Item Follow-up**

1. **Utah Clean Energy requested that PacifiCorp provide the distributed solar PV data being used for portfolio modeling.**

**Response:**

An Excel workbook (Dispersed Generation Resource Attributes.xlsx) with The Cadmus Group's solar resource data and inputs to the System Optimizer model have been provided as an accompanying file to this meeting report.

2. **Provide participants the Oregon Commission's greenhouse gas emissions reduction goal report provided to the Oregon state legislature when available.**

**Response:**

The report is now available for download from the Oregon Commission's Web site. The Web address is:

[http://www.puc.state.or.us/PUC/2020\\_Greenhouse\\_Gas\\_Emission\\_Reduction\\_Goals.shtml](http://www.puc.state.or.us/PUC/2020_Greenhouse_Gas_Emission_Reduction_Goals.shtml)

PacifiCorp's report submission is provided in the appendix volume.

## Appendix A: Meeting Attendance List, Individuals

Organization	Name
Alpern Myers Stuart LLC (Interwest Energy Alliance)	Lisa Tormoen Hickey
Bella Energy Inc.	Ron Barness
Encana	Roger Belland
General Electric	Dave Johnson
Idaho Public Service Commission (ID-PSC)	Rick Sterling
Northwest Energy Coalition (NVEC)	Steve Weiss
Northwest Pipeline GP (NWPGP)	Teresa Hagins
Northwest Power and Conservation Council (NWPCC)	Michael Schilmoeller Ken Corum
Oregon Public Utility Commission (OPUC)	Kelcey Brown Erik Colville
PacifiCorp	Romita Biswas Eric Arzola Greg Duvall Brian Osborn Brian Fritz Irene Heng Dan Swan Jim Lacey Michael Liljenwall Brian Osborn Mark Tallman Pete Warnken Connie Clonch John Fritz Jeff Ihle Eric Chung James Campbell Bill Cunningham Shane Sims Shay LaBray Dennis Desmarais Cory Scott Ken Houston Yvonne Hogle

<b>Organization</b>	<b>Name</b>
Portland General Electric (PGE)	Ted Drennan
Renewable Northwest Project (RNP)	Ken Dragoon Megan Decker
Utah Association of Energy Users (UAE)	Gary Dodge Don Hendrickson
Utah Clean Energy (UCE)	Sophie Hayes Sarah Wright Brent Collins
Utah Division of Public Utilities (DPU)	Artie Powell Charles Peterson Sam Liu Phil Powlick Doug Wheelwright Joni Zenger
Utah Office Of Consumer Services (OCS)	Dan Gimble Bela Vastag
Utah Public Service Commission (UT-PSC)	Joseph Holland Carol Revelt Becky Wilson Jerry Maio
Wasatch Clean Air Coalition	Kathy Van Damm
Washington Customer (WA Customer)	John Klingele
Washington Utilities and Transportation Commission (WUTC)	David Nightingale
West Wind Wires (WWW)	Roger Hamilton
Western Resource Advocates (WRA)	Nancy Kelly
Wyoming Office of Consumer Advocates	Denise Parrish
Wyoming Public Service Commission (WY-PSC)	Don Biederman Marci Norby Dave Walker