2006 IRP General Meeting

Thursday, April 20, 2006
9:00 am – 3:30 pm (Pacific)

Meeting Summary

Idaho	Terri Carlock (IDPUC)
Oregon	Lisa Schwartz (OPUC), Phil Carver (ODOE), Elaine Prause (ETO)
Utah	Abdinasir Abdulle (DPU), Thomas Brill (DPU), Elizabeth Brereton (DPU), Mary Cleveland (DPU), Andrea Coon (DPU), Sam Liu (DPU), Cheryl Murray (CCS), Charles Peterson (DPU), Glade Sowards (UDAQ), Becky Wilson (PSC), Nancy Kelly (CCS), Sarah Wright (UCE), Sarah Baldwin (UCE), Glade Sowards (DAQ), Kathy Van Dame (WCAC), Betsy Wolf (SLCAP), Gary Dodge (Hatch, James & Dodge), Carol Revelt (UT-PSC)
Washington	Yohannes Mariam (WUTC), Hank McIntosh (WUTC), James Gall (Avista), John Klingele
Wyoming	Don Biederman (WY-PSC), Denise Parrish (OCA)
Regional	Ken Corum (NWPCC), Eric Guidry (WRA), Lowrey Brown (CUB), Natalie McIntire (RNP), Roger Hamilton (WWW), Steve Weiss (NWEC), Don Hendrickson (Energy Strategies)
PacifiCorp	In Portland: Mark Klein, Greg Duvall, Cathy Woollums, Kyle Davis, Michael Liljenwall, Betty Reed, Dan Swan, Stan Williams, Ken Dragoon, Dina Thompson, Teri Ikeda, Reed Davis, Mike Rife, Jim Henry, Elaine Biggs, Irene Heng, Stacey Kusters In Salt Lake City: Pete Warnken, Bill Whitney, Ian Andrews, Jim Lacey In Cheyenne: Bob Tarantola, David Mosier

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INTRODUCTION

PacifiCorp's objective for this public meeting was to inform participants on the company's assumptions and analysis strategies for addressing potential carbon dioxide (CO_2) regulatory costs and Integrated Gasification Combined Cycle (IGCC) plants, as well as present the new long term load forecast and preliminary load and resource balance. PacifiCorp also provided its view on climate change policy developments and an overview of consultant IGCC studies and summary conclusions to date.

CLIMATE CHANGE POLICY DEVELOPMENTS

Prior to the start of this presentation, Cathy Woollums, Vice President and Chief Environmental Counsel at MidAmerican Energy Holdings Company, introduced herself and Kyle Davis, the new Manager of Environmental Policy/Strategy at PacifiCorp.

PacifiCorp reviewed current climate change policy developments at the international, national, and state levels. At the international level, the status of Kyoto Protocol implementation was summarized, with a focus on European Union and Canadian activities. It was noted that the Canadian government was reexamining its compliance timetables and plans. At the federal policy level, several congressional proposals for CO_2 regulation were described. PacifiCorp characterized the progress on greenhouse gas (GHG) regulatory policy as slow, but noted that there is some bipartisan interest in the Senate to address GHGs, and that the focus of the debate has shifted from science to methods and costs of reducing GHGs. A participant requested that PacifiCorp commission a study to investigate scenarios for world-wide GHG emission reduction percentage targets intended to prevent catastrophic climate change, and to examine the impacts to PacifiCorp if the company followed such a scenario. PacifiCorp responded that the company does not have scientists to do the requested work and that perceived credibility might be an issue with a company-sponsored study. Finally, there are other more appropriate forums where these issues are being addressed.

PacifiCorp then summarized regional and state activities taking place in the northeast and western U.S. The company described the northeast's Regional Greenhouse Gas Initiative—currently covering Maine, New Hampshire, Vermont, Connecticut, New York Delaware, and New Jersey—as well as the California Public Utility Commission's proposed GHG load-base cap and plant performance standard. Participants discussed implementation issues, such as state cost allocation and emission leakage across state and international borders. Parallels with state Renewable Portfolio Standard implementation were discussed.

CO2 ANALYSIS IN THE 2006 IRP

PacifiCorp presented its proposed approach for modeling CO_2 costs and risks in the 2006 IRP. To provide context for the discussion, PacifiCorp first described how the 2004 IRP annual CO_2 cost adders compared to adders (or adder equivalents) from several federal congressional CO_2 proposals. The company noted that PacifiCorp's adder was in the middle of the pack. PacifiCorp also provided a brief summary on the history of CO_2 cost modeling for PacifiCorp's IRP. Cost adder values have been determined by scanning legislative and regulatory developments and coming up with values representative of a reasonable carbon tax future given substantial cost uncertainty.

Based on its recent CO_2 adder assessment for the 2006 IRP, the company decided to continue with a phased in $8/ton adder (in 2008 dollars) for its base case assumption. The adder will start in 2010 at half this value, reach the full value in 2012, and escalate at inflation thereafter. Due to the significant cost uncertainty, PacifiCorp intends to model a range of CO_2 adder values as part of its risk analysis effort, and will also compare portfolio CO_2 emission rates and Present Value of Revenue Requirements (PVRRs) to determine the CO_2 adder threshold at which the resource mix changes. No objections to this approach were raised by participants, although recommendations were made to analyze:

- alternative adder phase-in and escalation assumptions, including testing incremental one-percent escalation increases,
- alternative coal plant lifetimes and study periods (i.e., extend to 2050 to capture investment end effects),
- combinations of alternative adder values and variations in other variables (principally loads and natural gas prices), and
- alternative CO_2 emissions management approaches, such as early plant retirement.

PacifiCorp affirmed that it will develop and test scenarios with various combinations of CO_2 adder values and other variables, and will factor in CO_2 emission cost impacts in its modeled gas and wholesale electricity prices. Such scenarios will be discussed at a future public meeting. The company also emphasized that it needed to be careful with the number of scenarios to keep the modeling effort manageable and meet current deadlines.

INTEGRATED GASIFICATION COMBINED CYCLE (IGCC) ANALYSIS UPDATE

PacifiCorp's Resource Development and Construction Department presented preliminary results from an expanded contractor study on developing IGCC at existing plant sites—Jim Bridger in Wyoming and Hunter in Utah. The main conclusions to date are as follows:

- The cost spread between supercritical coal-fired plants and IGCC is substantial at 15-25%, depending on location, gasifier technology, and coal type.
- Accuracy of cost estimates are +/- 30 percent.
- IGCC resources located in southwest Wyoming are expected to be lower cost than Utah-based IGCC resources.

PacifiCorp indicated that additional IGCC study efforts will focus on financing, contracting, spare gasifier cost versus reliability tradeoff, CO_2 capture and sequestration, and turbine type. Further study results will be provided to the IGCC Working Group being organized as part of the MidAmerican Energy Holdings Company commitment to study IGCC resource options.

The main issues raised by participants included how PacifiCorp will coordinate the various IGCC study efforts and address cost versus risk tradeoffs for IGCC and conventional coal-fired resources. IGCC technical topics discussed included capacity loss due to carbon capture provisions and operational flexibility relative to conventional coal plants. PacifiCorp noted that the long start-up period for gasifiers makes baseload IGCC less suitable for load following than conventional coal units. Participants also recommended that PacifiCorp conduct sensitivity analysis for an IGCC unit with and without a spare gasifier, look into the market access impacts of California's proposed baseload plant GHG performance standards, and develop scenarios for evaluating transmission impacts as well as Enhanced Oil Recovery (EOR) carbon sequestration opportunities.

TREATMENT OF IGCC IN THE 2006 IRP

PacifiCorp presented its plan for assessing IGCC as a portfolio resource in its IRP models. The IRP Team will evaluate IGCC proxy resources on a comparable basis with other supply and demand-side resources using the Capacity Expansion Module (CEM). A number of scenarios designed to capture cost uncertainty and evaluate the tradeoffs between IGCC and other resources will also be developed and tested. A key scenario will estimate the cost premium to acquire IGCC with both carbon capture and sequestration capability.

LONG-TERM LOAD FORECAST

PacifiCorp summarized its new biennial long term load forecast to be used in the 2006 IRP. After providing its national and regional economic outlook, PacifiCorp presented sales growth forecasts for the system and each state for the period 2005 to 2017. Total company load growth is forecasted at 2.41 percent compared to 1.38 percent for the historical period 1994 to 2004. Commercial sector load growth declines relative to historical levels, while the residential and industrial sectors are expected to see increases in load growth. The eastern portion of the system continues to lead the growth in the service territory, with Utah and Wyoming sales growth expected to exceed 3 percent for the 2005 to 2017 period. (The company noted that it revised its Utah sales forecast upward after comparing the State's own in-migration forecast with that supplied by Global Insight as requested in an earlier public meeting on load forecasting). Wyoming load growth changes significantly due to growth in the oil and gas sector.

Summer coincident peak demand for PacifiCorp's system is expected to grow by 2.9 percent from 2005 to 2017, with the largest peak demand growth coming from Utah at 4.3 percent. Utah's gain reflects increased central air conditioning demand. Summer peak demand for the western states of Oregon, Washington, and California grows at less than 1 percent for the 2005 to 2017 period.

Some participants expressed concern about PacifiCorp adequately capturing the range of forecast uncertainty in IRP scenario analysis and stochastic modeling. International trends like overseas jobs/customer migration, volatile load growth conditions in areas such as the Wyoming oil and gas fields, and long term shifts in technology use (e.g., roof top coolers and heat pumps) were cited as examples contributing to long-term forecast uncertainty. One participant also mentioned that PacifiCorp's load growth range assumed for its 2004 IRP differed significantly from that used by the Northwest Power and

Conservation Council. PacifiCorp stated that load growth uncertainty will be discussed at a future public meeting that addresses portfolio scenario analysis.

PRELIMINARY LOAD & RESOURCE BALANCE

PacifiCorp presented its preliminary load and resource (L&R) balance for the 2007 to 2016 period, first summarizing the main assumptions and resource changes that support the derivation of the company's annual capacity positions. PacifiCorp noted that the L&R balance incorporates a 15 percent planning reserve margin and includes such new resources as the Blundell geothermal upgrades. Excluded from the balance are renewals of the 400 MW TransAlta and 575 MW Bonneville Power Authority Peaking purchase agreements (expiring in 2007 and 2011, respectively), and the 200 MW West Valley plant lease expiring in 2008. A methodological change from prior L&R balances is to exclude firm purchases from the Planning Margin calculation since such purchases are expected to carry sufficient reserves. This change lowers the Planning Reserve Margin requirement.

PacifiCorp reviewed L&R balance system capacity charts for both the 2004 IRP Update and the 2006 IRP, and showed a version of the 2006 IRP system capacity chart that excluded Planned Resources. (Planned Resources consist of Front Office Transactions and unsecured wind resources). With Planned Resources excluded, PacifiCorp's capacity deficit reaches 328 MW in 2008, 2,255 MW in 2012, and 3,259 MW in 2016. PacifiCorp stated its intention to reexamine its reliance on Front Office Transactions, and will evaluate Planned Resources on a comparable least-cost/risk-balanced basis. Although participants generally supported PacifiCorp's approach for assessing Front Office Transactions, one participant mentioned that sending a message that the company is retreating from Front Office Transactions as a resource option would be "problematic". PacifiCorp emphasized that it was seeking the level of Front Office Transactions that is in the best long term interest of customers. This approach was support by several of the participants.

Participants also discussed the impacts of transmission requirements and reliability standards on resource planning. PacifiCorp mentioned that it is tracking regional transmission planning initiatives, and is incorporating incremental transmission projects as resource options in its portfolio evaluation process. A number of participants expressed support for the company's transmission analysis approach.