ITEM NO. 1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: MARCH 31, 2008

REGULAR X **CONSENT** ___ **EFFECTIVE DATE** N/A

DATE: March 25, 2008

TO: Public Utility Commission

FROM: Lori Koho lgk

ls EB bbt

THROUGH: Lee Sparling, Ed Busch and Bonnie Tatom

SUBJECT: PORTLAND GENERAL ELECTRIC: (Docket No. LC 43) Acknowledgment of 2007 Integrated Resource Plan.

STAFF RECOMMENDATION:

Staff recommends that the Commission not acknowledge Portland General Electric's 2007 Integrated Resource Plan (IRP or plan), adopt requirements for the next plan and require the company submit a new plan within one year. Additionally, staff recommends that the Commission find the renewable resource actions in the plan are reasonable based on legislative requirements.

DISCUSSION:

Portland General Electric's (PGE or the Company) previous plan was filed on August 9, 2002 and acknowledged by the Commission on July 20, 2004. Public Utility Commission of Oregon (Commission) Order No. 07-002[1] directs all energy utilities to file an IRP within two years of Commission acknowledgment of the previous plan. In Order Nos. 05-1138 and 07-002, the Commission granted PGE an extension of that timeline and the Company filed its 2007 IRP on May 30, 2007. 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.

Staff's proposed order describes how PGE satisfied Oregon's procedural requirements for resource planning. However, staff concludes that the IRP does not satisfy a number of substantive requirements of the Commission's integrated resource planning process and other key guidelines as described in staff's initial comments and addressed further, below. Without the complete analysis, as specified by the Commission's guidelines, staff cannot conclude that the Action Plan is reasonable. Staff considered the option of

[1] As corrected in Order No. 07-047.

asking the company to address the areas of deficiency in its IRP with an update but concluded that the deficiencies were sufficient to require a new plan. Therefore, staff recommends the Commission not acknowledge PGE's 2007 IRP and direct the company to submit a new plan within one year. However, staff recommends that the Commission find the renewable resource actions in the plan reasonable as explained below.

Alternatively, the Commission could choose to not act on PGE's 2007 IRP. If the Commission takes no action on the IRP, staff recommends the Commission direct the company to submit a new plan within one year that is subject to the same requirements staff has identified in its final recommendations that follow.

Resource Needs

Electric utilities forecast incremental resource needs based on expected loads, reserve margin and existing resources – accounting for contract expirations and plant retirements. Following is a summary of the Company's resource needs assessment.

Energy - PGE targeted 2012 as the year when its load-resource gap becomes large enough (818 average megawatts, or MWa) that significant new supply actions are necessary. This is based on load growth and the fact that a number of contracts (approximately 300 MWa) are expiring by 2012. Staff believes that PGE's predicted growth rate of 2.2 percent is not well supported either from a historical perspective or by forecasts from others. The Company cites a favorable business environment, gains in productivity and emerging sectors creating new growth, and the continuing strong performance in the high tech sector as support for its robust growth predictions.

Capacity - The expiring contracts described above represent approximately 800 megawatts (MW) of capacity. The actions PGE proposes for meeting its energy deficit will provide approximately 904 MW of capacity on an annual average basis. The Company estimates it will need an additional 748 MW of capacity to meet winter needs and an additional 536 MW to meet its summer peak.

PGE's Preferred Portfolio

The Company's selected portfolio includes the following resource additions:

Energy actions total 903 MWa:
- 323 MWa of renewable resources by 2012
- 130 MWa of energy efficiency by 2012
- 70 MWa through renewal of existing contracts (hydro)

- 372 MWa through new contracts, including 180 MWa of power purchase agreements (PPAs) of up to five-year terms and 192 MWa of PPAs of 5- to 20-year terms
- 7 MWa through upgrades of existing generation

Capacity actions total 1,653 MW, including capacity value of the above energy actions plus the following:

- 80 MW of dispatchable standby generation, typically diesel-fired
- 35 MW from a curtailable tariff and critical peak pricing enabled by implementation of advanced metering infrastructure[2]
- 25 MW of direct load control
- 100 MW from dual-purpose simple-cycle combustion turbines (SCCTs)
- 299 MW of bi-seasonal demand and supply
- 210 MW of winter-only peak supply

The Company requests acknowledgment of its filed IRP Action Plan to implement the preferred portfolio.

<u>Parties' Recommendations</u>

RNP filed opening comments on October 19, 2007. PGE filed its reply on November 9, 2007. Staff filed initial comments and recommendations on January 4, 2008. On January 22, 2008, RNP filed additional comments responding to PGE and supporting staff's initial analysis and recommendations, and PGE submitted its reply to staff's comments.

Both RNP and staff would have preferred PGE use values for wind integration costs from an analysis of PGE's system. Unfortunately, PGE's consultant hadn't completed the study for use in this planning cycle and PGE used proxy values. Staff recommends the Commission require the following condition for the next planning cycle:

> *Include in the analysis a wind integration study that has been vetted by regional stakeholders.*

In addition to supporting staff's initial comments and recommendations, RNP stated that, pursuant to Guideline 1a, in the next planning cycle the Company should include a more thorough evaluation of both generation and direct use applications for solar energy resources. RNP stated an assessment of solar thermal water heating potential should also be included.

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[2] Under consideration in Docket UE 189.

Staff's Supplemental Comments

After further consideration, the deficiencies staff identified in initial comments lead staff to conclude that, because PGE did not satisfy a number of substantive requirements and guidelines of the Commission's integrated resource planning process, staff cannot recommend acknowledgment of PGE's 2007 IRP. Staff finds the following deficiencies:

1. The plan does not satisfy substantive requirements under Guidelines 1a and 1c. The Company did not consider all known resources or use a 20-year planning horizon. Portfolios were constructed to meet loads only through 2014, which represents the target end date for PGE's proposed actions. Further, the Company froze long-term resource additions after 2012 and only considered technologies expected to be commercially viable by that date. The Company did not meet the Commission's requirement to compare different technologies, lead times, in-service dates and durations.

   The plan also does not satisfy guidelines 4c, 4h, 4l and Guideline 11. But for the planning horizon guideline (1c), staff concludes that the plan meets guidelines 5 (transmission), 6 (conservation), 7 (demand response), and 12 (distributed generation).

2. The failure of the Company to perform sufficient analyses over a 20-year planning horizon makes it impossible to conclude that the Action Plan is reasonable. However, staff finds the renewable resource actions reasonable for two reasons: 1) The Oregon Renewable Energy Act (SB 838, 2007 Session) requires mandatory levels of renewable resources beginning in 2011 based on retail loads and 2) the Company's analysis of compliance with the Act shows that, based on the Company's long-term load forecast, current resources and planned acquisitions in the Action Plan are expected to meet the requirements of the Act through 2015.

3. To satisfy Guidelines 1c and 4l, the Company must demonstrate that the selected portfolio of resources represents the best combination of expected cost and associated risks and uncertainties for the utility and its customers. The Company did not conduct its analysis over the full 20-year planning horizon in order to make this demonstration for its preferred portfolio.

4. The plan does not satisfy the requirements of Guideline 13 (resource acquisition). This guideline has three components. The Company satisfied the first component by providing its acquisition strategy for its Action Plan.

> The second component directs the Company to evaluate the pros and cons of owning a resource instead of purchasing power "from the perspective of the utility and its customers and that this assessment should be rigorous enough to provide a basis for evaluation and scoring criteria in any subsequent RFP."[3] The Company discussed these issues in its IRP but did not do so with adequate rigor to use as a basis for scoring criteria in future RFPs.
>
> The third component is to identify any benchmark resources the Company plans to consider in a future RFP. The Company does not intend to include a benchmark resource in its energy RFP but does plan to "determine an internal benchmark resource" for its capacity RFP. *See* IRP at 244. PGE provided the size and general technology but did not state a specific site. It did state that the resource would be within PGE's system. The Commission states that a Benchmark Resource is "*a site specific,* self-build option that the utility commits to develop if it is selected through the RFP."[4] (Emphasis added.)

Staff considered various actions PGE might take to make this plan one that staff could recommend the Commission acknowledge.[5] The deficiencies staff has identified are extensive enough that the only path to a plan that can be acknowledged is for PGE to develop a new plan. Also, the market and business conditions PGE must consider for planning have changed markedly since the company submitted this plan. A few examples of conditions that might significantly impact the plan are: 1) treatment of the planning horizon, consistent with the requirements of Guideline 1, may result in a different set of portfolios for analysis, 2) there is more definition around the implementation of SB 838 which might modify the company's approach to meeting the required targets for renewables, and 3) recent legislative and regulatory actions have influenced resource costs and risks. Therefore, staff concludes that a new plan is necessary. The plan must be in accordance with Order No. 07-002[6] and the requirements staff summarizes in the final recommendations.

<u>Staff's Response to PGE's Reply Comments[7]</u>

1. In its reply to staff's initial comments regarding the requirements of a 20-year planning horizon, PGE asserted that freezing loads after 2014 and freezing resource additions after 2012 is reasonable because resource plans should be

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[3] *See* Commission Order No. 07-002 at 24
[4] Ibid, at 22-23
[5] Under Guideline 3d, "The Commission may provide the utility an opportunity to revise the plan before issuing an acknowledgment order."
[6] Including any subsequent amendments or updates
[7] *See* PGE's Reply Comments, January 22, 2008.

actionable and minimize uncertainty by focusing on portfolio decisions that require implementation in the next few years. Staff maintains that PGE did not treat the planning horizon as the Commission intended and that the resource acquisition period considered in the Company's IRP needs to be at least the first half of the planning horizon.

Staff recommends that the Commission require the following condition for the next planning cycle to make clear its intentions for the long-term:

Conduct portfolio analysis over a 20-year planning horizon, including:

a. *Applying the Company's 20-year load forecast*
b. *Determination of the levels of peaking capacity and energy capability expected over the 20-year planning horizon, given existing resources and accounting for retirements and contract expirations*
c. *Identification of capacity and energy needed to bridge the gap between expected loads and resources*
d. *Modeling of all supply-side and demand-side resources expected to become available to meet energy needs for at least the first 10 years of the planning horizon. (i.e. a minimum 10-year resource acquisition period)*
e. *Modeling of future transmission additions associated with the resource portfolios tested*

This condition also addresses staff's concern related to the planning horizon for analyses of conservation, demand response, reliability, distributed generation and transmission.

2. Staff's initial comments included the recommendation stated earlier relating to the need for a wind integration study. The Company agreed with this recommendation.

3. Staff's initial comments included a recommendation that the Company should provide a rank ordering of portfolios that considers all of the factors (costs, risks and uncertainties) used to choose the preferred portfolio. PGE replied that resource planning is not simply a mathematical optimization exercise. The Company cites the many qualitative risk and value considerations that do not lend themselves to a precise rank ordering analysis.

   Staff maintains the Company did not clearly demonstrate how it combines the components of the analysis (costs, risks and uncertainties) to decide on a preferred portfolio. The Company refers to the "flexibility" of a particular portfolio, and this appears to be a significant attribute to the Company. Yet the IRP provides no quantification or ranking of flexibility. The Company compares the different portfolios for a variety of metrics but it's not clear what weighting those metrics have in the ultimate selection.

Staff recommends the Commission require the following condition for the next planning cycle:

Present the results of all analyses relevant to portfolio selection in a tabular format, showing how well each portfolio did under each of the analyses. Explain how the analysis results support the conclusion that the preferred portfolio and resulting action plan represent the best combination of cost and associated risks and uncertainties for customers. In the event that alternative approaches for measuring risk yield disparate results, assess the relative merits of those approaches.

4. In response to staff's recommendation that the Company perform additional analysis related to potential CO_2 costs, and evaluate a portfolio that reduces the Company's CO_2 emissions consistent with Oregon House Bill 3543, PGE referenced Docket UM 1302. This docket will modify the requirements of Guideline 8 (environmental costs). Staff concedes that Docket UM 1302 will address both issues.

5. Staff recommended the Company provide specificity regarding timing and costs of potential transmission needs in its annual update for the 2007 IRP. Staff raised this concern because the Company stated there is potential need for transmission in 2012 and no firm projects have been identified. In its response, PGE states that based on findings from its 2008 energy RFP, the Company will provide an updated discussion of transmission requirements but doubts it will have enough information or detail related to its capacity RFP to provide any detail associated with transmission requirements for capacity resources. Staff contends that a potential transmission need in 2012 is urgent enough to warrant more definition than a "discussion" might provide. The Company's transmission analysis also needs to be aligned with a long-term planning horizon.
Staff recommends the Commission require the following related condition for the next planning cycle:

   Include an assessment of transmission resources needed to meet the Action Plan as well as estimates for cost and timing.

6. Staff recommended the Company assess conservation potential for at the least the first 10 years of the planning horizon. PGE views this as a part of the

discussion regarding the appropriate treatment of the planning horizon. Staff agrees this is covered by the recommendation under 1. above.

In initial comments, staff concluded PGE had not met the reliability guideline (Guideline 11) for three reasons: 1) the Company performed the analysis for only one year (2012); 2) the Company analyzed reliability only for the preferred portfolio, so there is no basis for comparison of reliability among even top-performing portfolios tested; and 3) the IRP did not include an assessment of costs associated with varying levels of reliability. In response to a staff data request, the Company provided a cost analysis for higher and lower reliability for the preferred portfolio. PGE stated in its reply that it believed its analysis provided sufficient insights regarding the potential risks of resource adequacy. Staff believes the requirements under Guideline 11 are self-evident and therefore require no explicit condition for the next planning cycle.

<u>Staff's Final Recommendations</u>

Staff recommends the Commission not acknowledge PGE's 2007 IRP, find that the renewable actions in the plan are reasonable, adopt the following requirements for the next plan, and require the company submit a new plan within one year.

1. Conduct portfolio analysis over a 20-year planning horizon, including:
    a. Applying the Company's 20-year load forecast
    b. Determination of the levels of peaking capacity and energy capability expected over the 20-year planning horizon, given existing resources and accounting for retirements and contract expirations
    c. Identification of capacity and energy needed to bridge the gap between expected loads and resources
    d. Modeling of all supply-side and demand-side resources expected to become available to meet energy needs for at least the first 10 years of the planning horizon. (i.e. a minimum 10-year resource acquisition period)
    e. Modeling of future transmission additions associated with the resource portfolios tested

2. Include in the analysis a wind integration study that has been vetted by regional stakeholders.

3. Present the results of all analyses relevant to portfolio selection in a tabular format, showing how well each portfolio did under each of the analyses. Explain how the analysis results support the conclusion that the preferred portfolio and resulting Action Plan represent the best combination of cost and associated risks

and uncertainties for customers. In the event that alternative approaches for measuring risk yield disparate results, assess the relative merits of those approaches.

4. Include an assessment of transmission resources needed to meet the Action Plan as well as estimates for cost and timing.

5. All assumptions used in development of next plan must be updated. These include but are not limited to:
    a. Load forecasts
    b. Resource costs
    c. Fuel forecasts
    d. Environmental assumptions
    e. Implications of recent research regarding emissions from the Boardman facility
    f. Legislative and regulatory changes since last plan
        i. Fossil fuel generation efficiency standard adopted in Order No. 07-499.
        ii. Updates to Guideline 8 of Order No. 07-002 as a result of docket UM 1302.

PROPOSED COMMISSION MOTION:

1) PGE's 2007 Integrated Resource Plan not be acknowledged, 2) the renewable resource actions in the plan be found reasonable, 3) requirements for the next plan be adopted and 4) the company be required to submit a new plan within one year.

Attachment

LC43StaffReport.doc