

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 68

In the Matter of)	
)	
)	REPLY COMMENTS BY THE
IDAHO POWER)	OREGON DEPARTMENT OF ENERGY
2017 Integrated Resource Plan)	
_____)	

Introduction

The Oregon Department of Energy (ODOE or department) appreciates the opportunity to submit these comments on Idaho Power’s (company) 2017 Integrated Resource Plan (IRP or plan). The department’s reply comments are framed by the state’s overarching energy and climate change goals and the impact that energy resource decisions made pursuant to this IRP could have on achieving those goals.

These comments focus on three major elements in the plan:

1. Preferred portfolio selection and alternate portfolios, specifically regarding retirement of coal-fired generation units 1 and 2 at the Jim Bridger plant
2. Forecasted renewable resources: company analysis and tools that support continued deployment of renewable energy resources, including renewable projects that are Qualifying Facilities (QFs) under the federal PURPA law, and integration of solar and wind energy
3. Boardman to Hemingway transmission line risks

Comments on Specific Elements in the 2017 IRP

Preferred Portfolio Selection and Early Coal Retirement

The IRP portfolios are constructed to analyze two major resource decisions: (1) retirement of the Jim Bridger coal-fired generating units, and (2) construction of the Boardman to Hemingway (B2H) transmission line. Twelve portfolios are developed in the plan, with retirement dates for the Jim Bridger units ranging from 2021/2022 to 2036 (end of the planning period). The company’s preferred portfolio is labeled P7 and includes building B2H and retiring the Jim Bridger units in 2028 (Unit 2) and 2032 (Unit 1).

Opening comments from the Oregon Citizens’ Utility Board point out the very small cost difference between P7 and alternate portfolios with earlier retirement dates for Jim Bridger¹. The Jim Bridger units

¹ CUB Opening Comments, October 31 2017, p. 2

would be retired four years earlier in portfolio P4. The economic analysis of P4 vs. P7 results in a total portfolio increase of only \$3M out of a \$6.4B total portfolio cost, a 0.04 percent difference in cost. The department notes that in portfolio P10 the Jim Bridger units would be retired eight to ten years earlier compared to preferred portfolio P7. The economic analysis of P10 vs. P7 results in a total portfolio increase of only \$64M out of a \$6.4B total portfolio cost, a 1.0 percent difference in cost.²

CUB notes in its opening comments that PacifiCorp's 2017 IRP indicates a retirement date of Jim Bridger Unit 1 at the end of 2028 and Jim Bridger Unit 2 at the end of 2032.

Since PacifiCorp is the principal owner of Jim Bridger, Idaho Power likely has reason to retire the coal unit at the same time as PacifiCorp. Portfolio 7 could be preferred compared to Portfolio 4 due to the retirement dates of Jim Bridger matching PacifiCorp's expected retirement dates³.

Coal powers three plants Idaho Power co-owns. The three coal-fired plants are the Jim Bridger Power Plant in Wyoming, the Boardman Coal Plant in Oregon and the North Valmy Generating Station in Nevada⁴. Idaho Power currently envisions the following retirement schedule for these three plants:

Boardman plant, Boardman Oregon

Idaho Power share = 10% Portland General Electric = 90%

Idaho Power capacity = 57.5 MW

The Boardman plant is scheduled to cease coal-fired operations in 2020.

Jim Bridger plant, Rock Springs, Wyoming

Idaho Power share = 33% PacifiCorp = 67%

Idaho Power capacity = 704 MW

As described in the 2017 IRP, Idaho Power will work with PacifiCorp and state regulators to achieve early retirement dates in 2028 and 2032 for two of the plant's four units.

North Valmy Generating Station, Battle Mountain, Nevada

Idaho Power share = 50% NV Energy = 50%

Idaho Power capacity = 260 MW

Idaho Power has committed to work with NV Energy to end its participation in North Valmy unit 1 by 2019 and unit 2 by 2025.

By reviewing the data above on the Idaho Power coal fleet, it is clear that early retirement of the Jim Bridger units 1 and 2 would have a large impact on the composition of Idaho Power's electricity resource mix.

Given that selection of the preferred portfolio compared against the two portfolios P4 and P10 results in significantly later retirement dates for major coal-fired resources and results in very small cost savings, the department recommends that Idaho Power do a more comprehensive assessment of the risk of carbon pricing increases over the planning period. The department looks forward to seeing the carbon price risk assessment in the 2019 IRP.

² 2017 Idaho Power Integrated Resource Plan, June 2017, Table 9.3, p. 111

³ CUB Opening Comments, October 31 2017, p. 3

⁴ <https://www.idahopower.com/energy/delivering-power/power-plants/#tab-1-2>

Forecasted Renewable Energy Resources and Tools for Integration of Renewable Energy

The treatment of renewable resources, particularly solar PV, in the IRP is inconsistent with the exemplary track record of Idaho Power in interconnecting and integrating renewable resources in recent years.

PUC Staff's opening comments indicate a concern that Idaho Power's assumptions do not adequately take into consideration falling costs of solar technology, which would mean the IRP does not take into account decreasing capital costs over time⁵. Indeed the solar cost assumptions show increasing cost per installed kW for solar PV. Idaho Power explains in its reply comments that the total resource cost curve is driven by assumptions around added costs for integration of the variable solar energy resource⁶.

The department acknowledges the company's significant experience integrating into its electric system many projects that are Qualifying Facilities (QFs) under federal PURPA law. The QF projects in Idaho Power's system represent a wide variety of resource types. Idaho Power is a leader in the region with 1,135 MW of nameplate capacity QFs on the system (1,115 MW nameplate online as of April 1, 2017), an amount that the department notes is especially significant in relation to the company's peak load of approximately 4000 MW.

The 2017 IRP does not include a scenario of continued growth in QFs during the planning period:

Idaho Power cannot predict the level of future PURPA development; therefore, only signed contracts are accounted for in Idaho Power's resource planning process. Generation from PURPA contracts is forecasted early in the IRP planning process to update the load and resource balance. The PURPA forecast used in the 2017 IRP was completed in December 2016.⁷

Appendix C, Qualifying Facility Data (PURPA), includes data for several solar projects sized at 20 MW to 40 MW that came online in 2017.⁸ The quality of the solar resource across much of the company's service territory is excellent, and installed costs for utility-scale solar are expected to continue to decrease. As such, the department seeks a more robust assessment of the potential for continued solar resource growth, from QF and non-QF projects, across the IRP planning period. ODOE understands that Idaho Power is not able to guarantee development of QF projects, and as such is hesitant to include those resources as generation in an IRP portfolio. Other Oregon utilities analyze these types of projects as private generation and account for the resource as a *decrease* in load. ODOE supports this approach by the company in considering solar resource growth, as it is likely to be more realistic than the current approach in forecasting the total load and resource balance across the planning period.

ODOE recommends that the company analyze QF trends and installed costs for utility-scale solar and then produce a resource estimate encompassing a range of development for solar projects. The department recommends that Idaho Power use this range as an input to a sensitivity analysis for levels

⁵ PUC Staff Opening Comments, October 31 2017, p. 14

⁶ Idaho Power Reply Comments, December 8 2017, p. 62

⁷ 2017 Idaho Power Integrated Resource Plan, June 2017, p. 32

⁸ 2017 Idaho Power Integrated Resource Plan, Appendix C, June 2017, p. 113

of solar resource build-out over the planning period. ODOE looks forward to this enhanced solar resource analysis in the 2019 IRP.

With existing wind and solar resources in excess of 1,000 MW on the company's system, integration of these variable renewable resources must be carefully managed.

The variable and uncertain production from wind and solar resources requires Idaho Power to provide additional balancing reserves from existing dispatchable generating resources, which results in opportunity costs and corresponding increases in power-supply expenses. Idaho Power completed the most recent wind integration study in 2013 and the most recent solar integration study in 2016. The costs found by these studies are the basis for renewable integration costs as provided in Idaho Schedule 87 and Oregon Schedule 85.⁹

ODOE appreciates the detail provided by the company in the schedules for renewable integration costs. In particular, the department is intrigued by the varying solar integration costs (per MW installed) at high solar penetrations (1,000 MW+).

The department recommends including a narrative in the 2017 IRP to describe the drivers for integration costs, accompanied by specific costs for various integration solutions (e.g., reciprocating engines, flexibility of hydro generation, market purchases).

Among the long-term integration solutions is energy storage. The department is pleased to see that the company is tracking storage options, including battery storage of various chemistries, thermal storage and pumped hydro storage. The reference costs included in the IRP are helpful to stakeholders in understanding the opportunities presented by storage as well as the barriers to adding storage to the company's resource mix. The department recommends that the company stay connected to activities of the Northwest Power and Conservation Council's Generating Resource Advisory Committee (GRAC) for timely information on costs, valuation, and regional demonstrations of energy storage. The department anticipates an enhanced evaluation of energy storage in the 2019 IRP.

Idaho Power is scheduled to begin participation in the western Energy Imbalance Market (EIM) in April 2018. Northwest utilities that are participants in the EIM have shown significant savings to date addressing short-term variability (within the hour). The department recommends for the 2019 IRP that the company assess results of participation in the regional EIM and include any savings realized by Idaho Power in the integration of variable renewable resources.

Boardman to Hemingway Transmission Line Risks

⁹ 2017 Idaho Power Integrated Resource Plan, June 2017, p. 14

Idaho Power requests acknowledgement in the 2017 IRP for an action item to conduct preliminary construction activities, acquire long-lead materials, and construct the Boardman to Hemingway (B2H) transmission line. In previous IRPs, the company has asked for acknowledgement of development, siting and permitting activities. With the request to begin construction activities, parties have an increased focus on several aspects of the B2H project including risks.

PUC Staff comments that the 2017 IRP stands out in that the Company filed a cover letter with the IRP on June 30th, notably requesting that “the Commission specifically acknowledge Idaho Power's acquisition of B2H in the Action Plan to satisfy EFSC's ‘Need’ standard under its Least Cost Plan Rule.” PUC Staff further notes the manner in which Idaho Power assesses risk for B2H¹⁰. Regarding qualitative risks, Staff notes that “the Company indicates portfolios that include B2H are the least risky. In considering permitting and siting risk, for example, the Company writes the following:

Significant challenges are often encountered during permitting and siting for energy resources. While these challenges are not uniform for all resources or for all proposed resource locations, it is nevertheless reasonable to assume all portfolios are exposed to permitting/siting risk, and no portfolio is markedly less exposed than P7; B2H planners have been collaborating with stakeholders for several years on resolving permitting/siting issues, and while challenges remain, much progress has been made.”

ODOE has reviewed the reply comments of the Company and Appendix D: B2H Supplement to the 2017 Integrated Resource Plan. Regarding the risk of relative portfolios, ODOE is concerned with the company’s characterization that all portfolios that include new generation or transmission assets are exposed to a similar permitting and siting risk.

ODOE wishes to point out that the EFSC siting process puts several safeguards in place to reduce risk during construction and risk of non-performance of project partners. Specifically, the EFSC process provides that the site, taking into account mitigation, can be restored to a useful, non-hazardous condition at the end of the facility’s useful life, or if construction of the facility was not completed. This is achieved by proof of bonding capabilities provided to EFSC. Applicants in the EFSC process must provide a retirement plan that outlines all the necessary activities that must be completed to return the site to a useful, non-hazardous condition. These activities may include construction bonding, the removal of infrastructure, revegetation and site access restoration. The retirement conditions and bonding help protect Oregonians from incurring facility retirement costs or other potential impacts.

ODOE recommends the company consider the different timelines, processes and associated risk with energy facility siting and permitting in different states and include these topics in the 2017 IRP.

Conclusion

¹⁰ PUC Staff Opening Comments, October 31 2017, p. 9

The department appreciates the range of scenario analysis performed by the company for potential coal retirements. The department looks forward to an updated analysis in the next IRP, to ensure the preferred portfolio is least-cost, least-risk given the potential for policy developments at the state level and the federal level for carbon pricing. The department is pleased with the clear and concise manner in which the company has analyzed, planned and delivered on the integration of a significant amount of variable energy resources, including QF resources. Developments in technology and markets warrant a closer look at the company's current tools and assumptions for renewable resource expansion and costs of integration. Finally, the company asks for acknowledgement in the 2017 IRP of construction activities for the B2H transmission line, and the department generally views the assessment of risk as the most pressing issue facing the B2H project.