

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: April 10, 2018**

REGULAR X CONSENT _____ EFFECTIVE DATE _____ Upon Commission's Approval

DATE: March 14, 2018

TO: Public Utility Commission

FROM: Nadine Hanhan *NRH*

THROUGH: Jason Eisdorfer and JP Batmale *JPB & JE* *JPB*

SUBJECT: IDAHO POWER COMPANY: (Docket No. LC 68) Acknowledgement of the 2017 Integrated Resource Plan.

STAFF RECOMMENDATION:

That the Commission acknowledge Idaho Power's 2017 IRP and that the Commission acknowledge in part and decline to acknowledge in part Idaho Power's 2017 IRP Action Plan. Staff recommends certain action and additional requirements for inclusion in an IRP update and the next IRP on pages 43-47 of this Staff Report.

SUMMARY OF STAFF RECOMMENDED ACTIONS:

Staff presents a summary of recommendations on each Action Item, in the order presented in the Action Plan.

1. Continue planning for western Energy Imbalance Market (EIM) participation beginning in April 2018.
Recommendation: Not Acknowledge
2. Investigate solar photovoltaic (PV) contribution to peak and loss-of-load probability analysis.
Recommendation: Acknowledge
3. Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations of North Valmy Unit 1 by year-end 2019. Assess import dependability from northern Nevada.

Recommendation: Acknowledge

4. Plan and negotiate with PacifiCorp and regulators to achieve early retirement dates of year-end 2028 for Jim Bridger Unit 2 and year-end 2032 for Jim Bridger Unit 1.

Recommendation: Not Acknowledge

5. Conduct ongoing permitting, planning studies, and regulatory filings for the Boardman to Hemingway (B2H) transmission line.

Recommendation: Acknowledge

6. Conduct preliminary construction activities, acquire long-lead materials, and construct the B2H project.

Recommendation: Acknowledge

7. Continue to coordinate with Portland General Electric (PGE) to achieve cessation of coal-fired operations at the Boardman coal plant by year-end 2020 and the subsequent decommission and demolition of the unit.

Recommendation: Acknowledge

8. Conduct ongoing permitting, planning studies, and regulatory filings for Energy Gateway.

Recommendation: Acknowledge

9. Continue the pursuit of cost-effective energy efficiency.

Recommendation: Acknowledge with conditions

10. Continue stakeholder involvement in CAA Section 111(d) proceedings, or alternative regulations affecting carbon emissions.

Recommendation: Acknowledge with modifications

11. Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations of North Valmy Unit 2 by year-end 2025.

Recommendation: Acknowledge

Following is a list of additional Staff recommendations:

Additional Recommendations

- Staff recommends that Idaho Power incorporate an enhanced IRP portfolio selection methodology for the 2019 IRP, either through capacity expansion modeling or a more robust portfolio design such as what was presented in the 2015 IRP.
- Staff recommends that Idaho Power present an outline of its new portfolio selection methodology in the 2017 IRP Update.
- Staff recommends that in the 2017 IRP Update, the Company detail what gas price forecast data it plans to use for the 2019 IRP.
- Staff recommends a more prudent approach to the gas price base case scenario by reverting back to the EIA reference case for the 2019 IRP.
- Staff recommends that in the 2019 IRP, the Company should incorporate greater granularity in its load forecasts. As an example, Idaho Power might find which region or industry new commercial customers are likely to come from.
- Staff recommends that the following questions on exceedance be addressed in the Company's next IRP:
 - What is the correlation between stream flows and peak load? For instance, if the peak load is in the summer and the 10 percent flow level isn't reached until later in the year, is 90 percent exceedance appropriate?
 - Historically, how often has inflow been at 90 percent exceedance, and when did this happen?
 - What is the worst inflow actually recorded?
 - Since Idaho Power continues to prepare hydro forecasts for 50th percentile exceedance, and since there are differences between capacity needs as demonstrated in IRP Appendix C, is there some kind of "trigger point" analysis the Company has done to determine when a new resource is needed?
 - Has Idaho done sensitivity studies around the 90 percent exceedance rate (like 80 percent, or 95 percent) to see the delta?
- Idaho Power should explore hedging in its IRP Update in preparation for the next IRP by including a discussion of the proposed use and impact on costs and risks of physical and financial hedging on resource portfolios.
- Continue to include a systematic evaluation of the qualitative benefits of the resource portfolios that Idaho Power analyzes in the 2019 IRP.

DISCUSSION:

Issue

Whether the Commission should acknowledge Idaho Power's ("the Company") 2017 Integrated Resource Plan (IRP), acknowledge specific portions of the IRP with or without certain conditions, or decline to acknowledge the IRP.

Applicable Rule or Law

The Commission adopted least-cost planning as the preferred approach to utility resource planning in 1989.¹ In 2007, the Commission updated its existing least-cost planning principles and established a comprehensive set of "IRP Guidelines" to govern the IRP process. The IRP Guidelines found in Order Nos. 07-002 (corrected by 07-047) and 12-013 clarify the procedural steps and substantive analysis required of Oregon's regulated utilities in order for the Commission to consider acknowledgement of a utility's resource plan.²

The IRP Guidelines and Commission rules require a utility to file an IRP with a planning horizon of at least 20 years within two years of its previous IRP acknowledgment order, or as otherwise directed by the Commission.³ Further, the IRP must also include an "Action Plan" with resource activities that the utility intends to take over the next two to four years.⁴ The ultimate goal of the IRP is to select the "portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers."⁵ This is often referred to as the "least cost/least risk portfolio."

The Commission reviews the utility's plan for adherence to the procedural and substantive IRP Guidelines and generally acknowledges the overall plan if it is reasonable based on the information available at the time.⁶ However, the Commission explains: "We may also decline to acknowledge specific action items if we question whether the utility's proposed resource decision presents the least cost and risk option for its customers."⁷

¹ Order No. 89-507.

² Order Nos. 07-002 and 07-047. Additional refinements to the process have been adopted: See Order No. 08-339 (IRP Guideline 8 was later refined to specify how utilities should treat carbon dioxide (CO₂) risk in their IRP analysis); Order No. 12-013 (guideline added directing utilities to evaluate their need and supply of flexible capacity in IRP filings).

³ Order No. 07-002 (Guidelines 1(c) and 3(a)) and OAR 860-027-0400.

⁴ Order No. 14-415 at 3.

⁵ Order No. 07-002 at 1-2.

⁶ Order No. 07-002 at 1.

⁷ Order No. 07-002 at 1.

Analysis

Procedural History

Idaho Power held eight IRP Advisory Council (IRPAC) meetings leading up to the submission of the 2017 IRP. IRPAC members represent various public agencies, public and private enterprises, and advocacy groups. The IRPAC covers aspects of the IRP development, particularly on the resource stack, resource portfolio considerations and risk analyses. The IRPAC played an integral role, and Staff appreciated the involved stakeholder process and Idaho Power's time and energy in fulfilling the public input component of the Company's IRP process.

Idaho Power filed its 2017 IRP on June 30, 2017. The Company's filing included the IRP and three appendices, with a fourth appendix filed on December 8, 2017.⁸ The Commission decided to hold a public comment hearing in Idaho Power's Oregon service territory on November 2, 2017, due to public concern over the acknowledgment of the Boardman to Hemingway (B2H) transmission line. The Commission hosted two additional workshops on November 7, 2017, and February 2, 2018.

On October 31, 2018, Commission Staff (Staff), the Citizen's Utility Board (CUB), Sierra Club, and the Renewable Energy Coalition (Coalition), filed Opening Comments. The STOP B2H Coalition (STOP B2H) filed Opening Comments on November 1 and amended comments on November 5.

On December 8, 2017, Idaho Power filed its Reply Comments in addition to an additional Appendix D: B2H Supplement upon Staff's inquiries after updates on the transmission line.

On January 18, 2018, Staff, CUB, Sierra Club, the Coalition, STOP B2H, and the Oregon Department of Energy (ODOE) filed Final Comments. The Lewis and Clark Trail Heritage Foundation (LCTHF) filed comments on January 19, 2018. Mr. Gail Carbiener filed comments throughout the proceeding on November 13, November 20, December 9, and March 12th.

On February 16, 2018, Idaho Power filed Final Comments.

At the February 2, 2018 Commissioner workshop, Commissioners Steve Bloom and Megan Decker indicated they would support an additional Staff-level workshop so parties could clarify any misunderstandings around the data, and possibly come to a

⁸ The appendices are the "Sales and Load Forecast," the "DSM Annual Report," the "Technical Report," and the "B2H Supplement."

more cohesive agreement about the assumptions behind the B2H transmission line. In response to this, Idaho Power made efforts to organize an additional Staff-level workshop at its headquarters on February 23, 2018. Key parties including STOP B2H were unable to make it work, and the workshop was subsequently canceled. STOP B2H later suggested a phone call instead, so Staff organized a phone call on March 9 to discuss concerns related to B2H.

One additional party, Citizens Advocating for Common Sense (CACS) submitted its only set of comments in a manner timely enough that Staff was able to include them in this Staff Report. CACS filed comments on March 14.

Staff also received a number of informal comments throughout the proceeding. Almost all of the informal comments Staff reviewed opposed the construction of the B2H line.

This Staff Report discusses the comments by the parties and the Company, the near-term Action Plan, long-term planning aspects of the preferred portfolio, and other IRP issues.

Action Item Discussion

Due to the circumstances surrounding the concerns and significance of the Boardman to Hemingway (B2H) project, Staff will address these Action Item issues first. The subsequent Action Item discussion follows in the order presented in Idaho Power's Action Plan.

Action item 5: Conduct ongoing permitting, planning studies, and regulatory filings for the B2H transmission line.

Action Item 6: Conduct preliminary construction activities, acquire long-lead materials, and construct the B2H project.

Early Project History

The Company identified the need for a transmission line to the Pacific Northwest electric market in 2006.⁹ Since then, the B2H project has been part of Idaho Power's preferred resource portfolio in every Idaho Power IRP since 2009. In prior IRPs, Commission Staff performed analysis of the need and justification for the line. Commission Staff was also involved in the original Commission open houses that occurred in Malheur and Baker Counties as far back as 2009.¹⁰ After a comprehensive review and analysis,

⁹ Idaho Power 2017 IRP, p.61.

¹⁰ "The PUC Open House." Stop Idaho Power Blog. Accessed at <http://stopidahopower.blogspot.com/2009/03/puc-open-house.html?m=0>.

Staff and the Commission expressed little uncertainty of the need for bulk electric system connectivity between the project endpoints, but there was uncertainty about best construction and energization dates.¹¹ Of the project, the Commission ordered, “[W]e consider it reasonable to proceed with the B2H Project based on the information available now and acknowledge it as part of the Company’s 2009 IRP.”¹² However, the Commission also required that the Company update its B2H assumptions, including but not limited to construction cost, equity partnership, or expected third-party subscription.¹³ At the time, project partners PacifiCorp and Bonneville Power Administration had not yet been identified.¹⁴ In 2015, the Commission acknowledged continuing with the ongoing permitting, planning studies and regulatory filings of the project.¹⁵

Public opposition to the B2H transmission line has been nearly a decade-long occurrence. In 2009, a group of affected landowners formed a non-profit organization called Stop Idaho Power¹⁶ as part of an attempt to re-route the B2H line. Some of those individuals in opposition to the project route indicated that “The goal...wasn’t to stop the line but to get it off private land and onto public BLM land,” with one of the mottos being “public good, public land.”^{17,18} After the initial scoping of the project, Idaho Power paused the B2H process and formed a Community Action Process (CAP) to work with affected parties and the Bureau of Land Management to re-route the line around affected areas.¹⁹ Idaho Power discussed this process in its Appendix D, notably highlighting that it had participated in over 250 public and stakeholder meetings with an estimated attendance of over 3,000 people in total.²⁰

In addition to this history of working with landowners and BLM, the Idaho Power IRPs over the years are not the only documents that have studied the line. Regional studies have also examined need. The Idaho Power IRP serves as the Company’s economic evaluation of B2H as a component of a least-cost portfolio, but B2H has not been

¹¹ Further, there was no electrical need driven preference for a particular route between project endpoints.

¹² Order No. 10-392 at 9.

¹³ Order No 10-392, page 10.

¹⁴ Docket No. LC 50. IRP page 115. Accessible at

<http://www.puc.idaho.gov/fileroom/cases/elec/IPC/IPCE0933/200912282009%20IRP.PDF#page=131>.

¹⁵ Order No. 16-160, page 6.

¹⁶ The organization’s blog can still be read online. The blog stopped posting in 2013. Accessible at

<http://stopidahopower.blogspot.com/?m=0>.

¹⁷ “Public Good, Public Land.” Stop Idaho Power Blog. Accessed at

<http://stopidahopower.blogspot.com/2009/03/public-good-public-land.html?m=0>.

¹⁸ “Public Lines on Public Land.” Boise Weekly. Accessed at <https://www.boiseweekly.com/boise/public-lines-on-public-land/Content?oid=1616920>.

¹⁹ For documentation of original proposed re-routing of the line, see

http://www.boardmanto hemingway.com/maps_archive.aspx.

²⁰ Idaho Power 2017 IRP, Appendix D: B2H Supplement, pages 17 and 18.

studied in isolation. A number of regional studies on the project have been performed by the Northern Tier Transmission Group (NTTG), the Western Electricity Coordinating Council (WECC), Columbia Grid, and others. B2H has been listed as a Foundational Transmission Project by WECC's Subregional Planning Group (SPG), a committee formed to create interconnection-wide transmission plans for the Western Interconnection.²¹ Foundational Transmission Projects can be thought of as "backbone" type projects and have been thoroughly studied by various in-state and out-of-state utilities, coordination groups, and regional entities.

Notably, B2H is also a federally recognized priority project. It was recognized by the Obama administration's Interagency Rapid Response Team as one of the few transmission projects to receive expedited approval in its siting and construction. In 2009, the White House Council on Environmental Quality, the Department of the Interior, the Department of Agriculture, the Department of Energy, the Department of Commerce, the Department of Defense, the Environmental Protection Agency, the Federal Electric Regulatory Commission, and the Advisory Council on Historic Preservation signed a Memorandum of Understanding to expedite and simplify building of transmission lines on Federal lands.²² B2H was one of these projects and has also been a continuity with the Trump administration. In 2017, the Department of Interior indicated that the B2H Project is a "national-level priority and an important component of the President's all-of-the-above-energy strategy."²³

As stated above, Staff was involved in the original public hearings in Eastern Oregon. Staff had performed analysis years ago on the need for the line and ultimately Staff recommended acknowledgment with various conditions.

Where We Are Today

Given the rich history above of B2H's role as a regional resource and Idaho Power's involvement with the project and community, Staff was surprised that in its capstone IRP request for specific B2H acknowledgment to satisfy the Energy Facility Siting Council (EFSC) need requirement,²⁴ the Company's 2017 IRP did not discuss such a history with landowners or the regional justification and need for the line, or provide substantive updates on the project as requested in previous orders. Staff had little to work with beyond the cost justification presented in the Company's portfolio analysis,

²¹ "Foundational Transmission Project List." SPG Coordination Group. Accessed at https://www.wecc.biz/Reliability/100811_SCG_FoundationalTransmissionProjectList_Report.pdf.

²² U.S. Department of Interior Press Release. October 5, 2011. Accessed at https://www.boardmantoohemingway.com/documents/RRTT_Press_Release_10-5-2011.pdf.

²³ "DOI Announces Approval Of Transmission Line Project In Oregon And Idaho." Bureau of Land Management. Accessed at <https://www.blm.gov/press-release/doi-announces-approval-transmission-line-project-oregon-and-idaho>.

²⁴ See Idaho Power 2017 IRP Cover Letter, p. 11.

which Staff already found to lack robustness in comparison to the 2015 IRP. As a point of clarification, before Idaho Power can begin construction on B2H, it must obtain a Site Certificate from EFSC. The process requires a route to be selected and fully evaluated to determine if the project meets established standards. Idaho Power must also demonstrate a “need” for the project before EFSC will issue a Site Certificate. Idaho Power can demonstrate “need” if the Oregon Commission acknowledges B2H in the IRP, which makes the 2017 B2H Acknowledgment a significant decision.²⁵

Idaho Power’s IRP filing did not include substantial discussion about the B2H line. Staff was frustrated with the lack of information and updates with B2H presented in the 2017 IRP given that over a decade has passed since the original proposition in 2006. Through discovery in this docket, Staff learned that cost updates were embedded into the modeling, but the filing lacked meaningful new data. Staff asked the Company to provide a comprehensive account of updates to the project, and Idaho Power produced Appendix D: B2H Supplement on short notice. Appendix D, filed alongside Idaho Power’s Reply Comments, delivered a thorough account of the history, reliability and capacity needs, public participation, benefits, costs and risks of the project, in addition to a timeline of project milestones.

Parties’ Comments on B2H

STOP B2H Coalition’s Opening Comments

STOP B2H’s primary point of discussion throughout its comments was that the B2H transmission line is not needed. Unlike the case with Stop Idaho Power, wherein there was more of a concern about location of the line, STOP B2H indicated that Idaho Power already has sufficient transmission capacity and that the line itself is not needed for firm transmission purposes.²⁶ STOP B2H also expressed concerns with the Company’s cost-estimates for the B2H transmission line.

For the issue of transmission need, STOP B2H expressed disagreement with treatment of transmission as a supply-side resource. STOP B2H stated that transmission should instead be considered as an option value only, and not as a resource in and of itself.²⁷ STOP B2H was also highly concerned with a recent asset swap between PacifiCorp and Idaho Power and characterized this as an expensive investment that allowed Idaho Power to add an additional 350 MW of firm transmission capacity that Idaho Power willfully omitted from the IRP.²⁸ STOP B2H’s objections to cost estimates of the

²⁵ Boardman to Hemingway Transmission Line First Amended Project Order, page 16. Accessed at http://www.oregon.gov/energy/facilities-safety/facilities/Facilities%20library/B2H%20First%20Amended%20Project%20Order_12-22-2014.pdf.

²⁶ STOP B2H Opening Comments, page 4.

²⁷ STOP B2H Opening Comments, page 4.

²⁸ STOP B2H Opening Comments, page 4.

transmission line cited the uncertainties of Pacific Northwest market power prices. In particular, STOP B2H opposed Idaho Power's inclusion of revenue credits from transmission sales as a cost offset to the transmission line.

STOP B2H also indicated that a centralized transmission system poses increased risk and is not in the public interest. Presumably, in the case of terrorism or forest fire, entire cities could potentially be blacked out due to system interconnectedness.

Overall, STOP B2H concluded that the B2H transmission line is not needed and requested that the Commission not acknowledge construction of the B2H project.

Gail Carbiener's Opening Comments

Mr. Gail Carbiener submitted two sets of comments—once on November 13 and once on November 20—prior to Idaho Power's Reply Comments. Mr. Carbiener also expressed strong opposition to building B2H. In his first round of Comments he stated that a decision on B2H was more appropriate for the 2019 IRP because EFSC is still in the process of analyzing Idaho Power's Site Application. Mr. Carbiener also expressed concern that at the time, a Record of Decision (ROD) had yet to be issued by the Bureau of Land Management (BLM) and also expressed concerns about co-participant PacifiCorp's risk of abandoning the project.

In Mr. Carbiener's second round of comments, he expressed his concern over the line's potential to damage the Oregon Trail. He cited the BLM ROD that had recently been issued and maintained that the Commission should not acknowledge Action Item 6 because it would conflict with the ROD and EFSC processes. Mr. Carbiener reiterated his concern with co-participant risk.

Staff's Opening Comments

Staff's Opening Comments lamented that the 2017 IRP did not reflect the history and resources dedicated to B2H, particularly as it related to updated costs, risks, ratepayer benefits, reliability benefits, co-participant risk, and resource need for the line. Regardless of how much progress has been made on advancing B2H, Staff stated that it is still incumbent upon the Company to demonstrate a current case to Staff of why the line is needed.²⁹

In addition to a more comprehensive record of need, Staff also requested that the Company should update the information around connectivity, resources, connected markets, and other benefits beyond the cost component and mere reference to improved reliability. Staff requested clarification on the level of market purchases the Company believes it can rely on for resource adequacy. Overall, Staff was seeking a

²⁹ This would also be consistent with prior Commission orders requiring updates to the project.

compelling case to the capstone acknowledgment request. Staff requested supplemental analysis through the Company's Reply Comments and additional appendix to the 2017 IRP.

Idaho Power's Reply Comments

The Company recognized that the stakes in this case were arguably higher than prior IRPs and acknowledged Staff's and intervenors' concerns.³⁰ The Company recognized its filing had not clearly justified its reasoning for need in the 2017 IRP and therefore filed Appendix D: B2H Supplement to the 2017 IRP to provide additional explanation and analytic support for the reasonableness of the project.

Idaho Power's Response to STOP B2H

Idaho Power objected to the idea that transmission lines are not supply-side resources and that the IRP did not consider the power resources B2H would draw upon. Idaho Power stated that this was both factually incorrect and misunderstood the Commission's requirements for modeling transmission resources in an IRP. Idaho Power indicated that it included market transaction cost as an energy cost in the overall portfolio modeling. The Company stated that STOP B2H was "wrong on all counts" regarding the asset exchange with PacifiCorp and asserted that it has been able to reduce wheeling costs associated with importing energy as a result of the exchange.³¹ Further, additional capacity was not gained through the asset swap, but rather Idaho Power was already utilizing that transmission capacity prior to the swap. Ultimately, Idaho Power explained that the asset swap affected system efficiency by reducing wheeling costs, not adding incremental capacity.

Idaho Power also addressed concerns around potential cost overruns by assuring that the cost estimate for B2H construction was prepared by HDR,³² who relied on experience and industry knowledge, with Idaho Power further calibrating HDR's estimates by comparing them to recent transmission line projects in the West, including recent projects for both BPA and PacifiCorp. Idaho Power also utilized a 20 percent contingency rate to mitigate cost.

The Company rebutted claims that a centralized transmission system is not in the public interest. While it acknowledged that a direct physical attack on B2H would remove the line's ability to deliver power to customers, it would also provide additional ability for generation resources to serve load if a physical attack were to occur on a specific resource or other location. Finally, Idaho Power acknowledged that the inclusion of

³⁰ Idaho Power's Reply Comments, page 2.

³¹ Idaho Power's Reply Comments, page 16.

³² Initials for Henningson, Durham, and Richardson, the Owner's Engineer for the B2H project.

revenue credits as a cost offset is new to this IRP but maintains that such an offset is reasonable.³³

Idaho Power's Response to Gail Carbiener

Because of the long lead time associated with permitting and constructing the B2H line, Idaho Power stated that it could not delay acknowledgment another IRP cycle. Due to the Company's capacity deficit, Idaho Power stated that the line would need to be in service to meet capacity needs in 2026.³⁴ Regarding co-participant risk, Idaho Power reiterated its permitting agreement with its co-participants and also reassured that, should a co-participant drop out, Idaho Power would re-evaluate its own participation in the project. Further, the Company stated that it must still obtain BLM and EFSC approval to begin preliminary construction and construction-related activities on federal and private lands, indicating that concerns about conflicting with BLM and EFSC are mistaken.

Idaho Power's Response to Staff

Idaho Power responded to Staff both in its Reply Comments and through Appendix D. Regarding regional planning, Idaho Power's Reply Comments summarized the WECC Path Rating process, its coordination with other utilities in the Western Interconnection to determine power flow limits under various stresses on the bulk power system, and the role of B2H in the ColumbiaGrid and NTTG planning processes. Notably, Idaho Power indicated that B2H is required for both its west-to-east and east-to-west capacity to meet the regional needs identified by NTTG and ColumbiaGrid.³⁵

Idaho Power reiterated the least-cost aspect of B2H in its Reply Comments, stating that while there would be an energy market price premium to operating B2H, "its dramatically lower capacity costs far outweigh the increased energy costs."³⁶ As stated above, Idaho Power indicated that it would address co-participant risk prior to construction. The bulk of Idaho Power's updates to Staff's request for more information were supplied in Appendix D. While Appendix D is too voluminous to summarize, Staff overall is satisfied with its conclusion and believes it answered many of Staff's questions regarding the current status of the project. For example, the Company included summaries of project history, route history, safety considerations, energy and capacity cost comparisons, project benefits to the region, risks, and project milestones, among other information.

³³ Idaho Power Reply Comments, page 42.

³⁴ Idaho Power Reply Comments, p. 21.

³⁵ Idaho Power Reply Comments, p. 20.

³⁶ Idaho Power Reply Comments, p. 23.

STOP B2H Final Comments

STOP B2H responded to Idaho Power's Reply Comments largely by raising new issues. Among the new points STOP B2H raised in its comments were claims that 1) Idaho Power biased the AURORA model by unreasonably restricting existing transmission access to power imports from the Northwest; 2) constructing B2H would result in a loss of existing transmission sales to BPA and PacifiCorp because of 710 MW of capacity that STOP B2H believes should not be assumed to continue; 3) the fixed cost of B2H over the 55-year life of B2H have been understated by Idaho Power due to a FERC 200 basis point incentive ROE; 4) the total Capacity Benefit Margin (CBM)³⁷ available for importing power from the Northwest should be reflected in the AURORA model inputs—STOP B2H suggests that CBM is equivalent to firm load and that Idaho Power should increase the existing Northwest to Idaho transmission constraint in the AURORA base case by at least 330 MW in all months; 5) market purchases are inflexible and non-dispatchable within the hour, making front office transactions (FOTs) a “bad strategy”;³⁸ 6) B2H will raise the cost of transmission for new renewables to unsupportive levels and B2H therefore serves as a “collateral attack on Oregon's carbon reduction goals;” 7) investing in B2H diverts capital away from storage; 8) the levelized cost of energy (LCOE) of B2H should be based on different cost assumptions; and 9) B2H will not reduce regional transmission losses.

Gail Carbiener Comments

Mr. Carbiener submitted a third round of comments following Idaho Power's Reply Comments. He voiced concerns regarding potential damages to the Oregon Trail as a result of geotechnical surveys and construction.

Oregon Department of Energy's Final Comments

ODOE stated that it was concerned that the Company had represented that all of its portfolios were exposed to similar siting and permitting risks. ODOE pointed out that the EFSC siting process puts several safeguards in place to reduce risk during construction and risk of non-performance of project partners. ODOE stated that 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.

Lewis and Clark Trail Heritage Foundation's Comments

LCTHF expressed concerns about B2H, stating that the power line has the potential for inflicting serious damage to the Oregon National Historic Trail. LCTHF stated that B2H does not adequately protect national trails resources because it crosses the Oregon

³⁷ CBM is non-firm transmission capacity Idaho Power sets aside for the purposes of recovering from severe unexpected generation outages.

³⁸ STOP B2H's Final Comments, page 3.

National Historic Trail multiple times, and that this would negatively impact natural, cultural, historic, and scenic resources.

Staff's Final Comments

Overall, Staff was pleased with the Company's response to Staff's request for more information, particularly with Appendix D. Staff believed that the Company's outline of the historic need and justification, regional context, and overall detail was important and helpful in understanding project need. Staff noted the project's strengths in areas of reliability, national and regional significance, and flexibility as a resource, among others. Despite these strengths, Staff was still concerned with the variable cost assumptions of B2H, particularly as it related to gas prices affecting the AURORA market prices. Staff also maintained its concerns about co-participant risk, specific benefits to Oregon and Oregon ratepayers, and the role of B2H in Energy Gateway. Staff requested that the Company address in its Final Comments any updates on the Notice of Completion, the role of the Energy Information Administration's (EIA) High Oil and Gas Resource and Technology Case (EIAHO) gas price forecast on the variable costs of B2H, more specification on Oregon ratepayer-specific benefits, clarification on the relationships among other co-participants and potential use of the line (i.e., the likelihood of participation and the likelihood the other partners will rely on asset swaps instead of forcing the Company to pay wheeling charges), and clarification of the role of B2H in Energy Gateway.

Idaho Power Final Comments

Idaho Power Response to STOP B2H

Regarding transmission restrictions, Idaho Power clarified that the information STOP B2H was using³⁹ to express its concerns was based on a single transmission path and not the entirety of AURORA's import capability. In addition, Idaho Power objected to the idea that CBM should be used as firm capacity and maintained that these resources should be used for emergency purposes only. Regarding the loss of revenues from PacifiCorp and BPA, Idaho Power noted that the loss of BPA's 200 MW contract was already modeled in the IRP analysis. However, Idaho Power's modeling assumed PacifiCorp would retain its 510 MW contracts and was confident that other third parties would be interested in this capacity should PacifiCorp not renew. Regarding the ratemaking treatment by FERC, Idaho Power stated that it was not a party to that case and will not receive the 200 basis point incentive ROE.⁴⁰ In addressing the issue of the inflexibility of market purchases, the Company countered this claim by explaining that Idaho Power can purchase power months, years, a day, hour, or even intra-hour ahead of time. Idaho Power maintained that these timeframes actually increase flexibility and allow access to inexpensive resources. In responding to renewable costs as it relates

³⁹ Based on Staff DR 56.

⁴⁰ Idaho Power's Final Comments, page 32.

to B2H, Idaho Power states that STOP B2H confuses the relationship between FERC-regulated transmission revenues, and the Company disagrees that transmission revenues will stifle new renewable energy development. Idaho Power also maintained that it did not use LCOE to determine the least-cost result of B2H, which would render STOP B2H's calculations irrelevant. Finally, Idaho Power states that measuring annual transmission losses is not useful because Idaho Power's analysis focuses on the benefits at peak production, when regional losses can be reduced.

Idaho Power's Response to Gail Carbiener's and LCTHF's Comments

Idaho Power assured that trail impacts will be appropriately considered as part of EFSC's siting process, and that B2H would minimize trail impacts. The Company indicated that it has already been working with federal and state agencies to identify impacts.

Idaho Power's Response to ODOE

Idaho Power acknowledged that permitting and siting requirements will vary between resources according to location and resource type but also believes that detailed, project-specific permitting risk assessments lie beyond the scope of an IRP portfolio analysis.

Idaho Power's Response to Staff

Regarding the issue of Energy Gateway and B2H, the Company stated that "the benefits to Idaho Power of B2H are independent from Gateway West,"⁴¹ and maintained that PacifiCorp's labeling of B2H as Segment H of Gateway West is nomenclature that Idaho Power does not use. Regarding co-participant risk, Idaho Power informed Staff that Idaho Power and co-participants BPA and PacifiCorp had amended the permitting agreement so that co-participants can now wait to begin negotiations once EFSC submits a Draft Proposed Order in May 2018.⁴² Further, Idaho Power stated that because PacifiCorp submitted a \$23 million payment to Idaho Power in 2018 to further the project's development, and because PacifiCorp and BPA have spent \$68 million in project expenses to date, this demonstrates the co-participants' commitment to the project. Idaho Power also explained that the co-participants, particularly BPA, have demonstrated support for the use of asset swaps instead of imposing wheeling charges and that asset swaps were cited as a "fundamental aspect" of BPA's interest in B2H.⁴³ Further, Idaho Power cited an announcement by BPA that identified "Boardman-to-Hemingway with Transmission Asset Swap as its top priority for pursuit." In responding to Staff's questions about Oregon ratepayer-specific benefits, the Company states that B2H will allow more flexibility to access various generation because it would be

⁴¹ Idaho Power's Final Comments, page 2.

⁴² Idaho Power's Final Comments, page 3.

⁴³ Idaho Power's Final Comments, p. 6.

“agnostic to generation,” thereby including increased access to renewable generation. Finally, regarding the interaction of gas prices with the economics of B2H, Idaho Power maintains that a history of “consistent overestimation” of gas prices in previous IRPs and presents a graph reflecting this.

Citizens Advocating for Common Sense’s Comments

In addition to these comments, one other party, CACS, submitted additional comments.⁴⁴ Idaho Power did not respond to CACS. CACS alleges that the ODOE and EFSC processes are widely recognized as corrupted by industry influence and urges the Oregon Commission to use its decision-making powers to refuse to acknowledge the construction of B2H.⁴⁵ CACS alleges that Idaho Power has “cooked the books” on B2H, an outdated project.⁴⁶ CACS argues that if Boise or Portland children had to suffer through extreme blackouts, only in that case would there be a need to consider “fast-tracking” new transmission lines as part of a reasonable solution.⁴⁷ CACS cited risks that B2H would allegedly be unable to address, such as the Cascadia subduction zone earthquakes, hacking, terrorism, and electromagnetic pulses (EMPs).⁴⁸ CACS also expressed concerns about B2H crossing the Oregon Trail, alleging that it would “deface” the view of the Oregon Trail Interpretive Center, that no opportunity for changing the route was provided, and that Idaho Power disregarded BLM in its route selection.⁴⁹ Overall, CACS vehemently opposes B2H construction.

Additional Notes and Comments

In addition to these formal filed comments, various informal comments were sent to Staff regarding B2H. Almost all expressed strong opposition to building B2H and generally aligned with statements made by STOP B2H, LCTHF, Mr. Carbiener, and CACS.

⁴⁴ STOP B2H filed two additional rounds of comments, and Idaho Power responded to them, but these comments were not submitted in a manner timely enough for Staff to meaningfully include them in this Staff Report.

⁴⁵ CACS Comments, page 1.

⁴⁶ CACS Comments, page 2.

⁴⁷ CACS Comments, page 3.

⁴⁸ CACS Comments, page 4.

⁴⁹ CACS Comments, page 5.

Staff's Analysis of B2H

B2H as a Unique Case

B2H is a unique case in that it is the first 500 kV line in decades to be brought to the Commission for which acknowledgment in an IRP will serve as a showing of EFSC need.⁵⁰ Because the Company specifically requested in its cover letter to the IRP that the Commission acknowledge the B2H Action Item for EFSC need determination, the analysis warranted an in-depth and thorough review by Staff. Staff thus examined prior Idaho Power IRPs, prior orders, third-party studies, contacted co-participants, contacted the Oregon Trail Interpretive Center—a key cultural property where the B2H line will cross—requested an additional Appendix to B2H, responded to stakeholder requests to conduct an additional workshop via telephone, read stakeholder formal final comments and informal comments sent to the OPUC, and employed Staff's own institutional history with the B2H project dating back to the original proposal.

With Staff's comprehensive review of the project, Staff believes that Idaho Power has presented a convincing case and recommends **acknowledging** the Boardman to Hemingway transmission line. Staff will relate its findings and context below.

Analysis of Criticism

Staff can sympathize with concerns around a major economic investment like B2H. Staff itself has highlighted in this Staff Report and in previous comments to the Commission its own concerns regarding cost, risk, benefits, updates, and need. The STOP B2H Coalition has filed voluminous comments —summarized above—that object to building the project, but ultimately Staff does not agree with the conclusion that the project should not be acknowledged.

Staff believes the Company adequately addressed most of the criticisms of B2H in its Reply Comments, Final Comments, Appendix D, and the additional phone workshop held on March 9. Under sharp criticism from STOP B2H, Idaho Power respectfully elucidated the assumptions behind its analysis and attempted to address concerns from STOP B2H. As a result of the phone call and additional analysis, Staff would like to address specific criticisms against the B2H project.

Staff disagrees that third-party wheeling revenue credits should not be included as a cost offset. In both Opening and Final Comments, STOP B2H objected to the inclusion of third-party wheeling revenue credits as a cost offset. However, inclusion of these credits in the estimation of costs and benefits is consistent with previous Commission

⁵⁰ In this way, B2H differs materially from PacifiCorp's recent Populus to Terminal transmission project running about 135 miles from Idaho to the Salk Lake City, UT area.

orders and Staff recommendations.⁵¹ Staff still believes it is appropriate to include these offsets as part of the analysis.

Other criticisms raised against B2H involved transmission capacity as it was modeled in AURORA. In Final Comments, STOP B2H alleged that Idaho Power artificially restricted transmission capacity in AURORA and also that CBM should have been treated as firm capacity. Idaho Power clarified that STOP B2H extrapolated transmission constraints based on a single transmission path and did not consider the entirety of AURORA's import capability. Staff accepts Idaho Power's clarification, but more importantly, Staff is not convinced by the idea that all of CBM should be used as firm capacity. While STOP B2H may be correct that relaxing the assumptions would provide some additional flexibility, Staff does not agree that this capacity should be treated as firm capacity for a planning document like the IRP. In IRPs, utilities are generally planning to meet peak load when the system is stressed or during an emergency condition. Idaho Power cannot plan for reliable delivery based on non-firm transmission capacity. Thus, Staff believes that reserving CBM for emergencies is a prudent practice.

Staff also disagrees with the idea that market purchases are inflexible because they are non-dispatchable within the hour. Staff does not agree that front-office transactions constitute a "bad strategy." Rather, Staff believes that one of the merits of B2H is that it connects to a major power hub like the Mid-C market, which Staff agrees has sufficient market depth and liquidity, allowing Idaho Power to utilize it as a long-term resource. This would increase capacity not only for Idaho Power, but for the region as well, creating a channel for bulk electric system connectivity. While Staff can certainly appreciate concerns about cost overrun risk and long-lead times, B2H's role as a "many-to-many"⁵² resource, increasing access to market, and filling a unique regional role, greatly increases the resource's potential for usefulness. In addition, the ability to access low-cost hydro power or wind and connect to a major market hub contributes substantially to the flexibility value of B2H.

Staff does not agree that B2H will raise the cost of renewables to unsupportive levels nor that it is inconsistent with Oregon's carbon reduction goals. Rather, as Staff has highlighted above and will highlight below, Staff agrees with the Company that B2H will allow for the ability to transport carbon-free resources such as wind and hydro because

⁵¹ Order No. 10-392.

⁵² This phrase is more commonly used in software systems analysis, but it is a useful metaphor. Another example of a "many-to-many" relationship is in a university with many students and many classes. Each student can enroll in a large number of classes. Each class might have a large number of students. Likewise with transmission systems, many-to-many relationships can exist between customers and suppliers of electricity.

it will serve as a key connector between the Mid-C market and the Intermountain West resources. Staff does not agree that increased transmission will suppress the development of renewable resources—rather, Staff believes the opposite is likely to happen.

Staff has spent significant resources considering intervenor concerns and Idaho Power's justification of B2H. Staff agrees with Idaho Power that the stakes are higher⁵³ in this IRP. While a dearth of recent Oregon projects complicates the analysis, Staff also recognizes that the regional studies on B2H have consistently placed it as a "backbone" resource throughout the years. While Idaho Power actively participates in some of these regional groups such as NTTG, more independent groups such as WECC and ColumbiaGrid have also performed studies on the line. B2H has been recognized as a project that retains its value as a "many-to-many" resource that connects a major power center, the Mid-C market, to loads in the Intermountain West. Staff believes that B2H would be bi-directionally useful in providing connectivity for many sources of power, including carbon-free power, to be connected to many loads. Currently, there is no major transmission resource⁵⁴ connecting the Mid-C market to load in the Intermountain West.

Staff also notes that over the years of planning, Idaho Power, at public request, removed earlier planned substations that would have facilitated economic development along the proposed transmission line.

Resource Need

In the context of an IRP, a critical component of any resource proposition is resource need. Idaho Power has forecasted a capacity shortfall in 2026, the year B2H is projected to be energized. The shortfall starts at 34 MW in July of 2026 and grows without the inclusion of B2H. Idaho Power has forecasted a shortfall of 986 MW in July of 2036 with no additional resources being built.⁵⁵ Thus, Idaho Power is relying on B2H to meet capacity shortfall. Given the long-lead time for transmission lines, Idaho Power is requesting acknowledgment now to meet its capacity need, effectively treating B2H as a substitute for generation. Idaho Power has included B2H as a resource in its preferred portfolio for years and has received Commission acknowledgement in the past for its IRPs, so this is not new.

To a certain degree, Staff agrees with STOP B2H that it may be inappropriate to treat a transmission line in the same way as a generation resource, but Staff also agrees with Idaho Power that as the IRP guidelines are currently written, transmission is to be

⁵³ Idaho Power Reply Comments, p. 2.

⁵⁴ i.e., 500 kV or above.

⁵⁵ Idaho Power 2017 IRP, Technical Appendix C, pages 49 and 59.

considered on an “apples-to-apples” basis with generation resources. Staff reiterates its statement in Final Comments that the functions of a transmission line and a generation resource are fundamentally different.⁵⁶ As a result, the IRP transmission guidelines may eventually need to be revisited as the usefulness of a transmission line depends on where it is located, what resources it is connected to, and the two points it connects.

For the purposes of this docket, Staff believes Idaho Power acted consistently with the IRP guidelines regarding treatment of B2H. The primary justification for B2H in this IRP was to meet a capacity need as a least-cost/least-risk resource, but because of Staff’s initial reservations with the portfolio analysis,⁵⁷ additional investigation into the updated benefits of the line was necessary.

The primary goal of using B2H to satisfy a capacity shortfall takes precedence, but if the line is pushed out an additional two, four, six years or possibly more, Staff is not convinced that the system will experience major blackouts or shortages. Staff believes this was partly what STOP B2H was trying to say when it introduced the idea of relaxing the capacity restrictions in the AURORA model. While Idaho Power may likely have additional flexibility, overall Staff agrees with Idaho Power that at least some capacity must be reserved for emergencies and “maxing out” firm transmission capacity assumptions does not constitute prudent planning. In addition, acknowledgement of B2H would present additional benefits to Oregon and Oregon ratepayers, which Staff highlights above and below.

Reliability

In contrast to comments made by intervenors in this docket, Staff does not agree with the idea that B2H will decrease grid reliability because of interconnectedness. While Staff can and does recognize the value in microgrid systems, distributed generation, storage, and other unconventional resources, Staff must also recognize the value of adding 1,000 MW of east-to-west transmission capacity, particularly for an emergency situation. Additional connectivity and resources will serve as a valuable emergency resource in the case of a natural disaster. While Staff cannot recommend acknowledgment on this basis alone, safe and reliable power is consistent with the mission of the PUC.

Cost

Various parties, including Staff, expressed concern about cost overrun risk. While Idaho Power included a 20 percent contingency in its analysis and used conservative assumptions throughout, increased cost overruns are always a risk with a project of this magnitude.

⁵⁶ Staff’s Final Comments, page 7.

⁵⁷ See Staff’s Opening and Final Comments.

In Final Comments, Staff explained that while not ideal, the portfolio analysis in this IRP was sufficient to determine that the preferred portfolio P7 was the best combination of least-cost, least-risk, out of the twelve analyzed. The NPVRR analysis initially supplied by the Company in Chapter 9 of the IRP showed that under normal operating parameters, all of the portfolios with B2H ranked highest. In non-B2H portfolios, the Company replaced B2H with either combined cycle combustion turbines (CCCTs) or solar resources paired with reciprocating engines.⁵⁸ The Company's Reply Comments clarified that, even under scenarios where gas prices increased by a significant margin, portfolios with B2H still outperformed against portfolios without B2H.⁵⁹ B2H is also the lowest-cost resource on a long-term \$/kW basis as compared to other generating resources such as the CCCT. The Company's issuance of the new Appendix D after Staff's Opening Comments provided much more extensive analysis of the merits and benefits of B2H relative to other resources and provided more convincing information that a least-cost, least-risk portfolio was being selected in this IRP process.

Staff reviewed STOP B2H's alternative analysis on the cost of B2H compared to other resources⁶⁰ but did not find them compelling for the reasons explained above: 1) Third-party transmission revenues are appropriate to include; 2) Idaho Power does not receive the 200 basis point incentive ROE; 3) Staff is not convinced of the loss of transmission revenues STOP B2H claims will occur; 4) Staff believes transmission capacity was appropriately modeled in AURORA; 5) Staff believes B2H will serve as a key regional resource and thus will not reduce regional transmission losses at peak times.

Finally, Staff would like to point to a key element regarding the cost of the transmission line. While it is true that cost overruns are a risk, one point Idaho Power failed to stress in its IRP and comments in terms of Oregon benefits is that the cost of B2H will be socialized across many states. Oregon ratepayers will thus benefit from 1000 MW of an emergency resource and additional access to a more diverse blend of renewable resources while paying a fraction of the total cost. Only 5 percent of Idaho Power's service territory is in Oregon, only about 25 percent of PacifiCorp's service territory is in Oregon, and BPA's service territory includes Idaho, Oregon, Washington, Montana, California, Nevada, Utah and Wyoming.⁶¹ While this can be said of any system resource, the unique case of a 500 kV transmission line that has been federally recognized, deemed as a backbone resource by regional planners, benefits from broadly socialized costs, and improves access as a many-to-many resource should be

⁵⁸ Idaho Power 2017 IRP, Chapter 8.

⁵⁹ Idaho Power Reply Comments, page 23.

⁶⁰ STOP B2H Final Comments, pages 18-27.

⁶¹ "About Us." BPA. Accessed at <https://www.bpa.gov/news/aboutus/Pages/default.aspx>.

considered as data points for acknowledgment. While Staff cannot recommend acknowledgment on this basis alone, low-cost resources are consistent with the mission of the PUC.

Carbon Goals

While safe and reliable power and filling a capacity gap would be the primary priority of B2H, a secondary goal would be to facilitate Oregon's low-carbon goals. For example, Staff agrees that B2H would afford connectivity from more types and profiles of variable renewable generation to places like the Willamette Valley, allowing for more targeted renewables to be available at a given time and at more competitive prices.⁶² While Staff cannot recommend acknowledgement on this basis alone, meeting carbon reduction goals and facilitating flexibility with flexible resources is consistent with Oregon energy goals.

Energy Gateway

Related to the issue of Oregon carbon reduction goals and socialized costs is the role of B2H in Energy Gateway and the 1200 MW of Wyoming wind PacifiCorp has recently requested for acknowledgment in its own 2017 IRP.⁶³ Idaho Power alluded to this idea in the phone call on March 9th when it addressed STOP B2H's skepticism that PacifiCorp will retain its 510 MW of transmission capacity after B2H construction. A map of Energy Gateway and B2H is represented below:⁶⁴

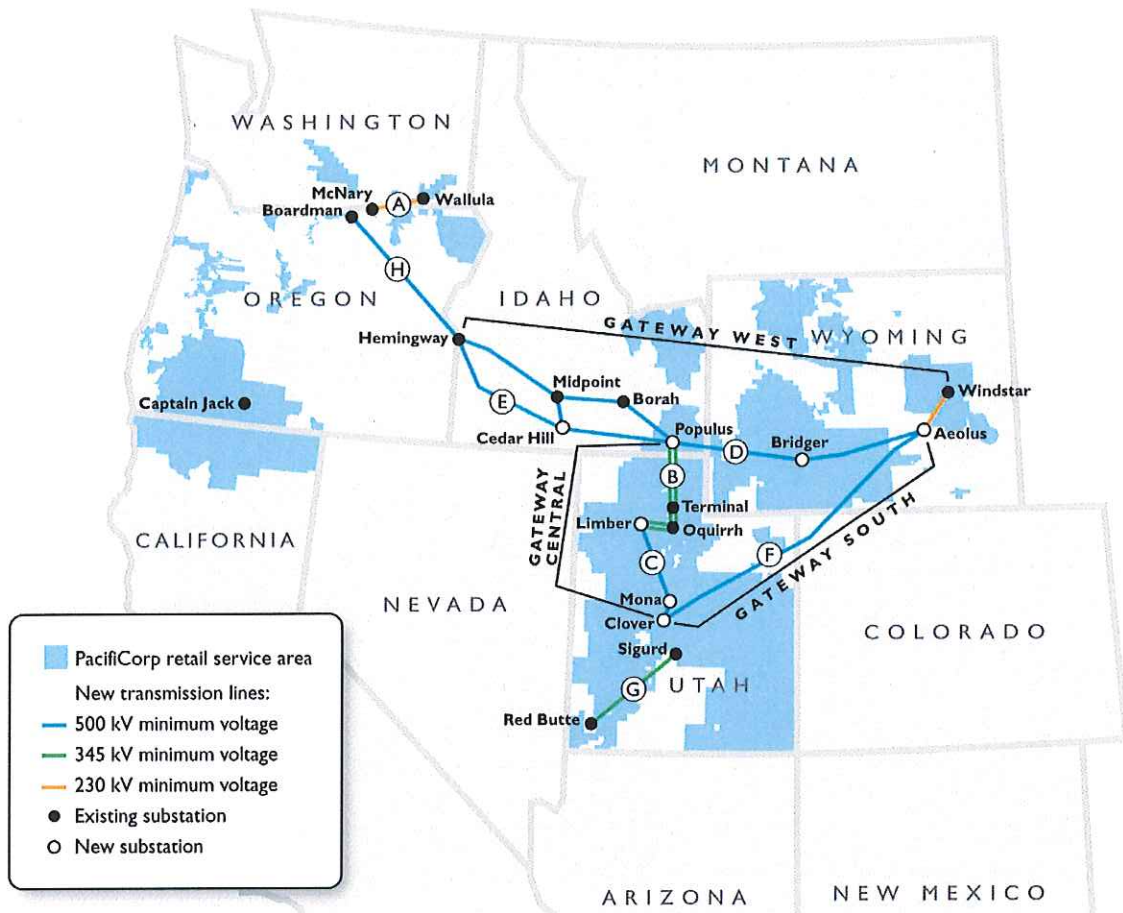
⁶² As a more specific example, PacifiCorp's Populus to Terminal transmission line is the connectivity that allowed Utah Associated Municipal Power Systems (UAMPS) to complete the purchase of 57.6 MW of Idaho wind with a deal closing March 5, 2018. That gives UAMPS a varying profile of wind that can be combined with local renewable generation in Utah for a more reliable aggregated resource, making it less likely to need backup by thermal generation.

⁶³ Docket No. LC 67.

⁶⁴ PacifiCorp graphic from 2015. See

http://www.pacificorp.com/content/dam/pacificorp/image/Transmission/Transmission_Projects/EG%20Map_April2015Large.jpg.

Figure 1 – Map of Energy Gateway



Under the current regulatory structure, a high-level perspective recognizes that without a key artery like B2H, represented by Segment H above, a renewables future with a diverse blend including Wyoming wind is unlikely. While ratemaking treatment may ultimately lead to a different outcome, it is a possibility that without B2H, Oregon ratepayers may not see any Wyoming wind but may still be required to pay for it. While Staff cannot recommend acknowledgement on this basis alone, used and usefulness, meeting carbon reduction goals, and facilitating flexibility with flexible resources is consistent with Oregon energy goals.

Despite the benefits of importing a diverse blend of renewable energy from places such as Wyoming, Staff reiterates its Final Comments that if the construction of B2H is acknowledged and consequently satisfies the EFSC need requirement, this does not

guarantee that an investor-owned utility (IOU) co-participant of the B2H project will automatically gain acknowledgement or approval. Any Idaho Power co-participant regulated by the Oregon Public Utility Commission must demonstrate its own thorough and independent IRP analysis with a demonstrated record of B2H serving as the least-cost, least-risk resource for its system. Acknowledgement for Idaho Power does not guarantee acknowledgment for PacifiCorp.

Related to this issue is the Company's co-participant risk. The Company stated in its Final Comments that the co-participants have recently amended the permitting agreement so that they can wait to begin negotiations once EFSC submits a Draft Proposed Order. PacifiCorp has submitted a \$23 million payment to Idaho Power in 2018 to further the project's development, and because PacifiCorp and BPA have expended \$68 million in project expenses to date, Idaho Power states that this demonstrates the co-participants' commitment to the project.⁶⁵ While Staff would have preferred direct statements from PacifiCorp and BPA in front of the Commission, Staff recognizes that it is a sign of continued participation and committal that the parties re-negotiated the funding agreement and have paid substantial sums of money to the permitting of the project. Staff also notes that documentation Idaho Power has cited from BPA on the importance of asset swaps, while somewhat dated, does provide evidence that economically prudent arrangements are seriously being contemplated.⁶⁶

Oregon Trail

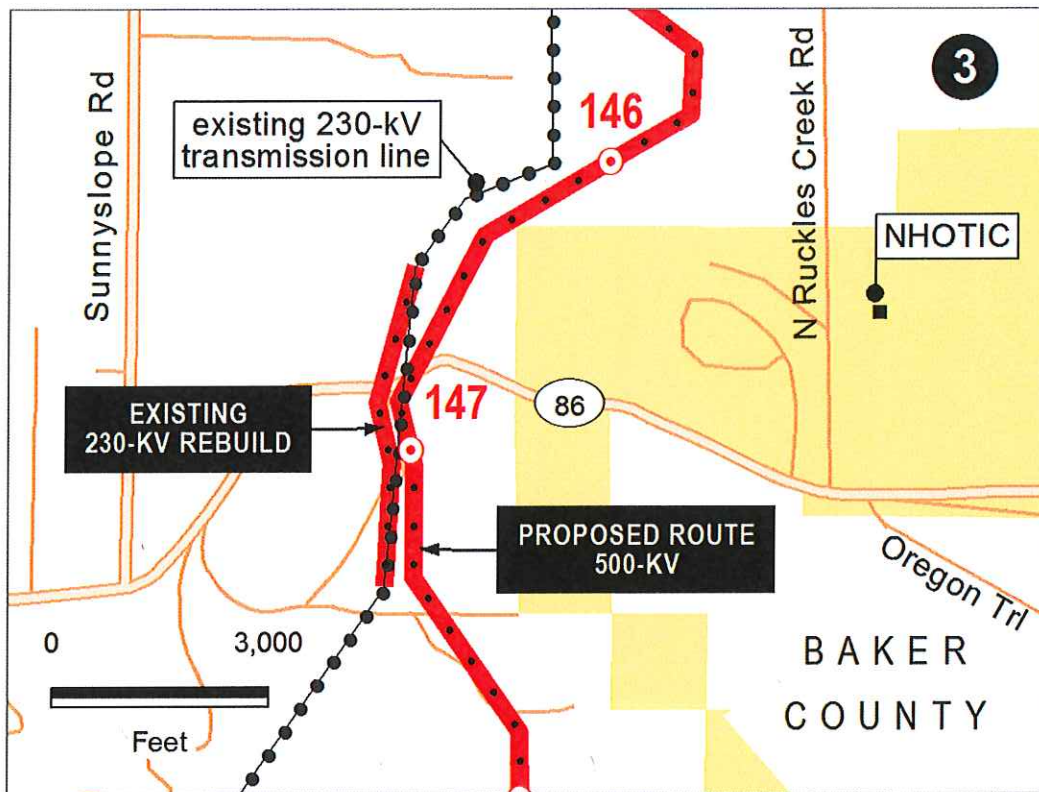
Staff recognizes that public opposition to the line is closely related to apprehension about impacts to the Oregon Trail, in addition to scenic views and property values along the transmission line. Staff is very sympathetic to these concerns but also disagrees with the notion that Idaho Power has ignored landowner concerns or has not worked with BLM towards a feasible route that minimizes impacts to communities, the Oregon Trail, and public and private land. As mentioned already, Commission Staff contacted, via a phone call, the Bureau of Land Management's Oregon Trail Interpretive Center, a main site where the B2H line would presumably cause impact to panoramic views. BLM informed Commission Staff that BLM, along with Idaho Power, took measures to minimize the impact to the Interpretive Center, including making use of the topography of the region (such as obscuring the line using a surrounding hill), painting the towers a certain color to blend in with the topography, and other such measures. BLM informed Commission Staff that Idaho Power had worked with BLM to minimize Oregon Trail impacts. Further, BLM also informed Commission Staff that the Oregon Trail, as a

⁶⁵ Idaho Power's Final Comments, page 4.

⁶⁶ Letter to Regional Customers, Stakeholders, and Other Interested Parties. Bonneville Power Administration. Accessed at https://www.bpa.gov/transmission/CustomerInvolvement/SEIdahoLoadService/Documents/SILS_Prioritization_Letter_10-01-12.pdf.

federally protected resource through Section 106 of the National Historic Preservation Act, is subject to certain protections in which construction around it is federally mandated to mitigate impacts. Below is a graphic of where the final route would cross the National Historic Oregon Trail Interpretive Center (NHOTIC). The proposed 500-kV red line in the graphic is B2H.

Figure 2 – Intersection of NHOTIC and B2H



Conclusion and Next Steps in B2H

In concluding this analysis on B2H, given the Company's thorough responses to stakeholders, the information provided in Appendix D, and Staff's own examination of the record to date, Staff recommends acknowledging the B2H transmission line.

For next steps, Staff does not recommend granting a waiver for the 2017 IRP Update. Rather, in these moments after acknowledgment, the Company should be updating the Commission on any material changes to costs and risk.

Staff Recommendation

Staff recommends acknowledging Action Item 5: Conduct ongoing permitting, planning studies, and regulatory filings.

Staff recommends acknowledging Action Item 6: Conduct preliminary construction activities, acquire long-lead materials, and construct the B2H project.

Contrary to the Company's request for an IRP Update waiver, Staff believes it is more appropriate for Idaho Power to present to the Commission an Update on where the B2H project is, including a project milestone and decision-points calendar. Staff's recommendation for acknowledgment only applies to Idaho Power based on this filing. Staff also observes that this acknowledgement is based on the information Idaho Power has provided. To the extent that circumstances in the future prove different, i.e., with respect to co-participants, acknowledgment of this action item will have little effect on the Commission's ratemaking decisions. The Company should provide the Commission with any material changes, including but not limited to information regarding co-participants and cost inputs. Staff notes that new tariffs on steel and aluminum might impact the economics of B2H. The Company should timely communicate any material cost changes.

As Idaho Power gets closer to acquiring long-lead materials, Idaho Power should be regularly updating the Commission on all aspects of the project, such as type and cost of conductors, towers to fit terrain, drilling pilot holes to clarify foundation and anchoring costs, and hydrology. In addition, the Commission should start receiving contracts (inclusive of any change orders) and methods to mitigate cost and other risks including performance risks, and breakouts of turnkey vs. Idaho Power supervised components, particularly regarding substations. Updates to the Commission should clearly call out avian protections and other wildlife harmonization methods, as well as methods used to minimize impact on cultural and heritage resources. Land restoration and remediation costs post-construction should be clearly broken out, including costs for any bonds or letter of credit guarantees required. All costs should show granular unit costs as well as aggregate costs.

At the next update to the Commission, Idaho Power should present a summary of acquired and still needed permits necessary to construct B2H and associated substations. This acknowledgement is predicated upon prudent cost control and contractual protections both direct and reciprocal for ratepayers. An example of a reciprocal contract provision is one that ratchets cost downward if metal prices fall, rather than allows just for cost escalation.

Such acknowledgement does not relieve Idaho Power from due diligence in both component and aggregate cost, risk and quality control regarding the metals, other

materials, and engineering designs deployed. Idaho Power is further expected to apply for and to avail itself of any federal infrastructure grants and other prudent public private partnership opportunities so as to reduce the cost and risk of financing and constructing B2H and associated substations, seeking usual Commission approvals where applicable. Nor should acknowledgement be misconstrued as acceptance by the Commission of any particular overhead or indirect costs.

Other Action Items

In the interest of time and organization, for the rest of the Action Items presented in the Action Plan, Staff will condense all party comments and issues and analyze accordingly.

Action Item 1: Continue planning for western EIM participation beginning in April 2018.

Only Staff submitted comments noting concern with this Action Item, primarily because Staff had indicated that the Company did not provide analysis in the IRP about the benefits, costs, risks, or additional details as to how this will relate to its current pool of resources. In Reply Comments, Idaho Power noted that Staff had requested this same analysis during its review of Idaho Power's 2015 IRP and that the Company had successfully argued that EIM participation "should not be evaluated within the context of an IRP."⁶⁷ Staff subsequently dropped this request for analysis in its 2015 Staff Report. The Company also explains that it included EIM in its 2017 IRP Action Plan for "informational purposes" only.⁶⁸ As a result of this, Staff still did not feel it appropriate to acknowledge. Though Idaho Power attached its February 2016 Energy Imbalance Market Analysis as an attachment to Final Comments, it did not address Staff's recommendation directly in its Final Comments.

It is curious to Staff that, given Idaho Power's statement that EIM should not be evaluated within the context of an IRP, and that the EIM Action Item was included for informational purposes only, the Company would include it as an Action Item. While Staff is not opposed to the Company's participation in the EIM, Staff believes its inclusion as an IRP Action Item is inappropriate.

Staff Recommendation

Staff recommends not acknowledging Action Item 1: Continue planning for western EIM participation beginning in April 2018.

⁶⁷ Idaho Power Reply Comments, p. 41.

⁶⁸ Idaho Power Reply Comments, p. 41.

Action Item 2: Investigate solar photovoltaic (PV) contribution to peak and loss-of-load probability analysis.

No party submitted comments on this topic. Staff notes that the Company's inclusion of this Action Item is consistent with Order No 16-326, which determined that Idaho Power's contribution to peak methodology should add an LOLP analysis that is based on all hours in a year. The Company stated in its IRP that this analysis would be conducted in the interim between the 2017 and 2019 IRPs.⁶⁹ Staff anticipates that an updated methodology will be included in the 2019 IRP.

Staff Recommendation

Staff recommends acknowledging Action Item 2: Investigate solar photovoltaic (PV) contribution to peak and loss-of-load probability analysis.

Action Item 3: North Valmy Unit 1 — Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations by year-end 2019. Assess import dependability from northern Nevada.

In Opening Comments, Staff noted its concern with Idaho Power's plan for early retirement of North Valmy Unit 1 in 2019 because of the lack of comparison to other end-of-life dates. Staff noted that the preferred portfolio in Idaho Power's 2015 IRP included retirement of North Valmy Units 1 and 2 in 2025. In November 2016, Idaho Power asked the Commission to allow Idaho Power to accelerate the depreciation of both units and to increase rates consistent with its plan to retire both units in 2025 and the Commission granted the request.⁷⁰ Although the Commission has noted that Idaho Power will evaluate alternative retirement dates for North Valmy in its 2017 IRP, there is no order in Oregon that contemplates North Valmy unit 1 shut down in 2019.⁷¹

Idaho Power's initial filing includes no analysis of its proposal to move its retirement date for North Valmy Unit 1 from 2025 to 2019. Accordingly, there is no way of determining if Idaho Power's claim of "favorable economics" associated with early retirement of Valmy Units 1 and 2 is accurate.⁷² Staff asked that Idaho Power include an analysis of the 2019 and 2025 end-of-life dates in its Reply Comments.⁷³ In addition, Mr. Carbiener suggested that the Company consider retiring both Valmy units in 2025.⁷⁴

⁶⁹ Idaho Power 2017 IRP, page 132.

⁷⁰ Staff Opening Comments, page 11, citing Order No. 17-186 (UM 1801).

⁷¹ Staff Opening Comments, page 11, citing Order No. 17-235 (UE 316).

⁷² Staff Opening Comments, page 12.

⁷³ Staff Opening Comments, page 12.

⁷⁴ Gail Carbiener's Final Comments, page 3.

Idaho Power provided additional analysis in support of early retirement of North Valmy Units 1 and 2 in 2019 and 2025. Idaho Power stated that in its 2015 IRP, the Company anticipated retiring both units 1 and 2 in 2025, in part to shield the resource plan from certain risk factors. These risks included (1) the possible failure of PURPA solar projects to come online; (2) uncertainties surrounding development of the B2H line; and (3) the feasibility of arriving at a mutually agreeable retirement date with Valmy co-owner, NV Energy. Idaho Power states that each of these risks, with solar development in particular, have sufficiently progressed to support an earlier retirement date for Valmy unit 1.⁷⁵

In Final Comments, Staff asked Idaho Power to 1) explain why it is reasonable to believe that Idaho Power and NV Energy, will reach an agreement in the next two years about the closure of Valmy, 2) clarify why variable costs decrease if Valmy Unit 1 closed in 2019 rather than 2025; and 3) address Staff concerns regarding intergenerational equity of the rate impacts from an early Valmy retirement.⁷⁶

In Final Comments, Idaho Power explained that it and NV Energy had executed a Term Sheet laying out initial provisions regarding Idaho Power's "intent to shut down its ownership share of coal-fired operations at North Valmy unit 1 by December 31, 2019, and North Valmy unit 2 by December 31, 2025" and are in the process of finalizing a Definitive Agreement providing for Idaho Power's conclusive exit from both Valmy units.⁷⁷ Idaho Power provided additional clarification regarding the variable cost impact of early closure and with respect to Staff's intergenerational equity concern and noted that there are demonstrable benefits associated with exiting Valmy Unit 1 at year-end 2019, which effectively serves both future and present customers.⁷⁸

Staff Analysis

Staff recommends acknowledgment of Idaho Power's Action Item 3 related to North Valmy. Idaho Power provided analysis supporting its plan to exit from its ownership of North Valmy Unit in 2019. Notably, Idaho Power does not assert that its partner, NV Energy, plans to retire Unit 1 in 2019. Instead, Idaho Power's plan contemplates exiting from its ownership of North Valmy Unit 1, rather than physically retiring the plant. For this reason, concerns related to NV Energy's plan for when it plans to retire North Valmy is of limited relevance. NV Energy's plans could become more relevant if Idaho Power's and NV Energy's negotiations break down. But, Idaho Power has procured a Term Sheet laying out initial provisions and Idaho Power is in the process of negotiating a Definitive Agreement.

⁷⁵ Idaho Power Reply Comments, pages 51-52.

⁷⁶ Staff Reply Comments, page 13.

⁷⁷ Idaho Power Final Comments, page 37.

⁷⁸ Idaho Power Final Comments, page 37.

Staff is satisfied that this progress toward Idaho Power's plan to exit from North Valmy units 1 and 2 in 2019 and 2025, respectively, supports the conclusion the plan is feasible and reasonable. Staff is also satisfied that Idaho Power has shown its plan related to North Valmy is least-cost and least-risk.

Staff Recommendation

Staff recommends acknowledging Action Item 3: Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations by year-end 2019. Assess import dependability from northern Nevada.

Action Item 4: Jim Bridger Units 1 and 2 Plan and negotiate with PacifiCorp and regulators to achieve early retirement dates of year-end 2028 for Unit 2 and year-end 2032 for Unit 1.

Staff pointed out that in the 2015 IRP, the Company considered a different retirement date for Jim Bridger Unit 1 in 2023, among other options for Jim Bridger Units 1 and 2. Staff noted that the Company assumed a mass-based approach, and that there had been a number of recent indications that the Clean Power Plan may be repealed. However, the economics of early shutdown dates are also impacted by lower gas prices and selective catalytic reduction (SCR) investments, which are both independent of the Clean Power Plan.⁷⁹ Staff asked Idaho Power to provide an explanation for its analytical change and its impact to ratepayers. CUB also asked Idaho Power to explain the risk of having different retirement dates for Bridger than the principal owner.⁸⁰

Sierra Club recommended that the Commission not acknowledge Idaho Power's Action Item related to Bridger, assertion that Idaho Power's IRP "relies on a deeply flawed analytical structure, multiple analytical errors, and implausible assumptions regarding the costs and benefits of continuing to operate the Bridger units." In support of this assertion, Sierra Club points out that Idaho Power's analysis is based on 1) a portfolio construction scheme renders comparative assessment of Bridger retirement options virtually useless, (2) comparison of portfolios, and the selection of a preferred portfolio, that are "illegal"; 3) underrated costs of SCR retrofits, and 4) other flawed assumptions.⁸¹ With respect to its assertion that the preferred portfolio and alternate scenarios are illegal, Sierra Club points to requirements of the Clean Air Act's Regional Haze program and explains that under regulatory requirements associated with the Regional Haze Rule, Idaho Power is required to either install selective catalytic reduction (SCR) systems at Bridger Units 1 and 2 or cease operation of those units by

⁷⁹ Staff Opening Comments, p. 15.

⁸⁰ CUB Opening Comments, page 3.

⁸¹ Sierra Club Comments, page 2.

2022 and 2021, respectively.⁸² Sierra Club points out that notwithstanding this requirement, Idaho Power's preferred portfolios contemplate that Idaho Power will continue to operate both units without SCR past 2022 and 2021 and retire Unit 1 two years early in 2032 and retire Unit 2 six years early in 2028.⁸³

Sierra Club acknowledges that Idaho Power attempts to mimic the Regional Haze program's "better than BART" approach used for Boardman and other coal-fired resources. Sierra Club notes that Idaho Power has not offered an emissions or visibility analysis to support the viability of better than BART compliance.⁸⁴

In response to Staff's inquiry regarding the basis for its analytical change, Idaho Power pointed to the impact of substantially lower natural gas price forecasts, asserting lower gas prices emphasized the need for careful review of possible SCR investments.⁸⁵ Idaho Power explained that retirement of Units 1 and 2 2032 and 2038 correspond to the majority owner's target dates. Idaho Power noted that it has expressed an objective of transitioning away from coal-fired capacity and states that declining to pursue SCRs at Jim Bridge Units 1 and 2 is consistent with a future of increased emission regulation — wherein coal-fired generation will fare worse and face likely retirement.⁸⁶ Idaho Power asserts that a decision to not pursue investment in SCRs in no way precludes shutting down the units at a revised date, depending on the outcome of ongoing discussions Idaho Power and PacifiCorp are having with the Wyoming Department of Environmental Quality.⁸⁷

With respect to Sierra Club's assertions that more than half of Idaho Power's resource portfolios, including the preferred portfolio are illegal, Idaho Power pointed out that its plan for early retirement in lieu of installation of SCRs has precedent, including in Oregon. Idaho Power points out that to the extent Sierra Club disagrees with the likelihood of achieving such a settlement, this is a difference of opinion concerning regulatory behavior rather than a legal or statistical argument.⁸⁸

In response to Idaho Power's disagreement, Sierra Club asserts that Idaho Power's preferred portfolio plan for compliance with RHR — to retire the units prior to the end of their useful lives — would not decrease emissions below what they would be with the installation of SCR, and therefore Idaho Power cannot show that their plan is "better

⁸² Sierra Club Comments, pages 7-8.

⁸³ Sierra Club Comments, page 8.

⁸⁴ Sierra Club Comments, page 8.

⁸⁵ Idaho Power Reply Comments, pages 56-57.

⁸⁶ Idaho Power Reply Comments, page 58.

⁸⁷ Idaho Power Reply Comments, page 58.

⁸⁸ Idaho Power Reply Comments, page 51.

than BART.”⁸⁹ Sierra Club also asserted that despite IPC’s claim to the contrary, Jim Bridger Units 1 and 2 are not economic resources.⁹⁰

The Oregon Department of Energy (ODOE) points out that there is a small cost difference between Idaho Power’s preferred portfolio that contemplates closing Bridger Units 1 and 2 in 2028 and 2032 would result in very small cost savings compared to other portfolios that have earlier retirements.⁹¹ In light of this, ODOE recommends that Idaho Power do a more comprehensive assessment of the risk of carbon pricing increases over the planning period prior to the 2019 IRP.⁹² In contrast, CUB states that it is satisfied with the Company’s general direction on coal power generation, including its plan to eventually retire its share of Jim Bridger 1 and 2.⁹³

In Final Comments, Staff continued to maintain that Idaho Power has not shown that the retirement dates for Bridger Units 1 and 2 are least cost and least risk. Staff noted its concern with Idaho Power’s portfolio design, its reliance on PacifiCorp’s IRP for its selection of retirement dates, and its assumption that the current trend of increasing coal prices will not continue.⁹⁴

In Final Comments, Idaho Power stated, “Sierra Club continues to argue that Idaho Power cannot include portfolio options that fail to comply with the Wyoming State Implementation Plan (“SIP”)” and responds that Sierra Club has failed to recognize that Idaho Power’s portfolios are explicitly contingent on receiving an alternate compliance plan.⁹⁵ Idaho Power states that Sierra Club’s arguments that Idaho Power will not successfully obtain a better than BART alternative are premature.⁹⁶

In response to Sierra Club’s assertion that continued operation of Jim Bridger is uneconomic, Idaho Power pointed out that Sierra Club did not take into account the fact that the cost of early retirement of a resource must include the full cost of recovery through an accelerated depreciation schedule as well as the cost of any new resource. Idaho Power states that accounting for the recovery of these costs, the 2017 financial modeling shows that keeping the Jim Bridger units in the Company’s resource portfolio, without investing in additional SCRs, is lower cost on a NPV basis than replacing with natural gas or solar resources.⁹⁷

⁸⁹ Sierra Club Reply Comments, page 5.

⁹⁰ Sierra Club Reply Comments, pages 6-7.

⁹¹ Reply Comments by the Oregon Department of Energy, page 2.

⁹² Reply Comments of the Oregon Department of Energy, page 2.

⁹³ CUB Final Comments, page 4.

⁹⁴ Staff Final Comments, page 15.

⁹⁵ Idaho Power Reply Comments, pages 39-40.

⁹⁶ Idaho Power Reply Comments, page 40.

⁹⁷ Idaho Power Final Comments, pages 39-40.

Staff Analysis

As Sierra Club noted in previous comments, Idaho Power's plan to operate Bridger Units 1 and Unit 2 until 2028 and 2032, without installing SCRs, does not on its face comply with the requirement that Idaho Power install BART (in this case determined to be installation of SCRs) by 2022 and 2021. Staff acknowledges that it is Idaho Power's plan to obtain authority to use early retirement in lieu of installation of SCRs to comply with the RHR and that there is precedent for this plan. However, as pointed out by Sierra Club, Idaho Power has presented no information showing that it has taken steps to obtain this authority or that its plan is reasonable or has any chance of success.

Furthermore, in addition to pointing out that Idaho Power has provided no information to show that obtaining authority to implement a better than BART alternative at Bridger Units 1 and 2 is feasible, Sierra Club points out that a simple analysis shows that it is very likely infeasible. Sierra Club states,

IPC proposes to substitute 10 years of operation without SCR for 12 years of operation with SCR at Unit 1, and seven years of operation without SCR for 13 years of operation with SCR at Unit 2. Even if SCR were to reduce emissions by only 50 percent – far lower than typical SCR emission reduction achievements – IPC's proposed plan would result in increased lifetime emissions at both units relative to the baseline plan. It would not be possible for IPC to show that the proposed plan is "better than BART," and therefore worthy of a waiver of the current Clean Air Act deadlines.⁹⁸

Given that Idaho Power has not established that its plan to retire Bridger Units 1 and 2 in 2028 and 2032 in lieu of installing SCR in 2021 and 2022 is feasible, Staff recommends that the Commission not acknowledge Idaho Power's proposed Action Item for Bridger Units 1 and 2.

Staff Recommendation

Staff recommends not acknowledging Action Item 4: Plan and negotiate with PacifiCorp and regulators to achieve early retirement dates of year-end 2028 for Jim Bridger Unit 2 and year-end 2032 for Jim Bridger Unit 1.

Staff recommends that Idaho Power work with its operating partner PacifiCorp to identify and pursue the most cost-effective retirement dates for these units.

⁹⁸ Sierra Club Reply Comments, pages 4-5.

Action Item 7: Continue to coordinate with PGE to achieve cessation of coal-fired operations by year-end 2020 and the subsequent decommission and demolition of the unit.

No parties submitted comments on this topic. Staff notes that the Company's inclusion of this Action Item is consistent with previous Commission orders to allow early closure of the Boardman coal plant.⁹⁹

Staff Recommendation

Staff recommends acknowledging Action Item 7: Continue to coordinate with PGE to achieve cessation of coal-fired operations by year-end 2020 and the subsequent decommission and demolition of the unit.

Action Item 8: Conduct ongoing permitting, planning studies, and regulatory filings for Energy Gateway.

Staff is not aware of any objections to this Action Item. Staff does not take issue with the Company moving forward with this, but in light of the discussion above regarding the relevance of B2H with Energy Gateway, and in particular the role of the co-participants in B2H, Staff recommends that, moving forward in additional IRPs, the Company ought to provide updates on the status of Energy Gateway beyond what has been presented in the 2017 IRP. The Company, as a co-participant, should be able to provide a more enlightening summary of the project accomplishments to date. While Staff is not requesting an extensive appendix like in the case of B2H, the Company should provide additional information to keep the Commission abreast of Energy Gateway's progress, Idaho Power's inclusion of it as part of a least-cost/least-risk portfolio, the status of co-participants, and role in the IRP.

Staff Recommendation

Staff recommends acknowledging Action Item 8: Conduct ongoing permitting, planning studies, and regulatory filings for Energy Gateway.

In the 2019 IRP, the Company should provide additional information to keep the Commission abreast of Energy Gateway's progress, Idaho Power's inclusion of it as part of a least-cost/least-risk portfolio, the status of co-participants, and role in the IRP.

Action Item 9: Continue the pursuit of cost-effective energy efficiency.

Sierra Club, STOP B2H, and Mr. Carbiener all expressed the idea that Idaho Power does not pursue enough energy efficiency. Specifically, Sierra Club indicated in

⁹⁹ Order No. 12-235.

Opening and Final Comments that the Company must evaluate scenarios in which its energy efficiency savings are consistent with “economic potential” estimates, rather than with “achievable potential” estimates that it feels are too low. Overall, both parties indicated that Idaho Power has the ability to achieve more energy efficiency and should strive harder to do so.

Staff was also concerned about the Company’s energy efficiency procurement, specifically the decline in savings between the 2015 and 2017 IRPs. Staff’s Final Comments requested two things from Idaho Power in order to recommend acknowledging the Company’s energy efficiency action item. The first was a more transparent explanation for the decrease in savings between the past two IRPs. The second was a description, with examples, of how the Company makes modeling decisions regarding technology adoption rates and how it treats retrofit vs. replacement opportunities.

Idaho Power’s Final Comments included a memo by its contractor Applied Energy Group (AEG) that directly addressed the two concerns raised by Staff in its Final Comments.¹⁰⁰ AEG produced the energy efficiency potential study used by Idaho Power in this IRP. Staff found the explanation for the reduction in savings – especially for the drop in residential savings – helpful. Staff also found the modeling practices described by AEG reflect industry standards.

Based on the Company’s response, Staff recommends acknowledging Idaho Power’s energy efficiency action item. Staff requests that the IRP update detail any energy efficiency opportunities given the decline in residential sector savings (e.g., new measures or programs), especially given projected rates of residential load growth. Staff also notes that Idaho Power agreed to work with other utilities in the region to explore an update to the Company’s methodology and values used for transmission and distribution system deferral values for its energy efficiency avoided costs by its next IRP.¹⁰¹ Staff also requests a report on the Company’s progress to address this issue in its IRP update.

Staff Recommendation

Staff recommends acknowledging Action Item 9: Continue the pursuit of cost-effective energy efficiency.

Staff also requests a report on the Company’s progress detailing energy efficiency opportunities and improvements to its avoided cost methodology.

¹⁰⁰ Idaho Power Final Comments, Attachment 4, AEG Response, page 65.

¹⁰¹ Idaho Power Reply Comments page 75.

Action Item 10: Continue stakeholder involvement in CAA Section 111(d) proceedings, or alternative regulations affecting carbon emissions.

Staff does not oppose the Company's involvement in proceedings related to carbon regulations, but Staff reiterates that the Company did not include carbon risk analysis as outlined in revised IRP Guideline 8, which requires a base case carbon risk scenario in addition to alternative carbon portfolios.¹⁰² As stated in Final Comments, Staff recognizes the Company attempted to plan consistently with what was expected to be federal policy at the time and modeled a mass-based approach to the Clean Power Plan. With a potential sunset of the Clean Power Plan, the Company must find other ways to address the risks and uncertainties related to carbon policy risk in its next IRP. Staff believes the Company should commission a report for the next IRP to assess the risks and uncertainties associated with climate change to Idaho Power and its customers.

Staff Recommendation

Staff recommends acknowledging Action Item 10: Continue stakeholder involvement in CAA Section 111(d) proceedings, or alternative regulations affecting carbon emissions.

With a potential sunset of the Clean Power Plan, the Company must find other ways to address the risks and uncertainties related to carbon policy risk in its next IRP. Staff recommends that the Company commission a report for the next IRP to assess the risks and uncertainties associated with climate change to Idaho Power and its customers.

Action Item 11: Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations at North Valmy Unit 2 by year-end 2025.

In the 2015 IRP, Idaho Power's preferred portfolio included retirement of both North Valmy Units 1 and 2 in 2025. In November 2016, Idaho Power asked the Commission to allow Idaho Power to accelerate the depreciation of both units and to increase rates accordingly, and the Commission granted the requests. Although Idaho Power's 2017 IRP includes Idaho Power's plan to exit from coal-fired operations at Unit No. 1 by 2019, Idaho Power's plan for Unit 2 continues to be stopping its coal-fired operations by 2025.

No party noted any concerns regarding this action item. Staff recommends acknowledgment.

¹⁰² Order No. 08-339.

Staff Recommendation

Staff recommends acknowledging Action Item No. 11: Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations at North Valmy Unit 2 by year-end 2025.

Other Issues Raised by Parties

Portfolio Design

Staff, Sierra Club, and CUB all expressed concern with the lack of diversity exhibited in Idaho Power's portfolio design analysis structure. Idaho Power's analysis utilized a "factorial design approach" that compared B2H to natural gas sources with utility solar as key components of each portfolio and few other resources as part of its portfolio mix. CUB indicated that future IRPs should include emerging technologies, even if the technologies are not currently the most cost effective options, they should still be included in the analysis.¹⁰³ Sierra Club and CUB lamented that Idaho Power's methodology failed to account for the changes occurring within a series rows or columns of portfolios that ultimately do not allow for a uniform comparison. Staff agrees. CUB also stated that preferred portfolio P7 is not least cost because the difference between P7 and other portfolios with earlier Jim Bridger retirement dates are not statically significant. Staff, Sierra Club, and CUB all supported using capacity expansion modeling in future IRPs.

Staff agrees with parties' overall analysis on portfolio design, but Staff does not necessarily agree that statistical significance between preferred portfolios should be a final determinant of least-cost/least-risk decision making. Rather, overall combination of cost and risk and analysis of nuances are more traditional approaches to IRP acknowledgment.

Staff maintains that the factorial design approach is no longer an appropriate methodology for Idaho Power's IRP. Staff has reviewed the Company's previous IRPs and reiterates that the 2015 IRP included additional resources, and in Staff's view, more robust portfolios. The portfolio analysis in this IRP determined that the preferred portfolio P7 was the best combination of least-cost, least-risk, but the Company's Appendix D: B2H Supplement was more helpful in helping Staff understand the updated costs and risks as B2H's role in a preferred portfolio. The NPVRR analysis initially supplied by Company showed that under normal operating parameters, all of the portfolios with B2H ranked highest, but Staff would have been more comfortable with P7 under a more robust portfolio design.

¹⁰³ CUB's Final Comments, pages 2-3.

In Final Comments, the Company indicated that it was open to “evaluating” capacity expansion modeling in the 2019 IRP.¹⁰⁴ Staff appreciates the Company’s willingness to explore a more comprehensive approach to analysis.

Staff Recommendation

Staff recommends that Idaho Power incorporate an enhanced IRP portfolio selection methodology for the 2019 IRP, either through capacity expansion modeling or a more robust portfolio design such as what was presented in the 2015 IRP.

Staff recommends that Idaho Power present an outline of its new portfolio selection methodology in the 2017 IRP Update.

Natural Gas Price Base Case Forecast

Staff, Sierra Club, and Renewable Energy Coalition all expressed concerns with the Company’s use of EIA’s low gas price scenario to forecast fuel prices in its IRP. In summary, parties expressed concern that the Company’s fuel price forecast was too low. The Company broke from the approach it took in its 2013 and 2015 IRPs of using the EIA “Reference” case. For its 2017 IRP, Idaho Power’s base case was essentially the bottom tier of EIA’s projected gas prices. Moreover, Staff noted concerns that the Company appeared to have determined that ICE contracts were more accurate predictors of gas prices over the past few IRP cycles and decided to choose an EIA forecast based on that judgement.

The Coalition expressed worry that Idaho Power will use the EIAHO Case in its next Energy Efficiency Potential Study. If Idaho Power gains acknowledgement of this IRP, the Coalition fears what implication this would have on avoided costs.

In Final Comments, Idaho Power defended using ICE data because it “is based on actual market transactions.” The Company also expressed that it understood parties’ concerns and will work with stakeholders to determine the appropriate natural gas price forecast for the 2019 IRP.

While Staff appreciates that the Company is willing to work with stakeholders, Staff reiterates its Final Comments that the IRP is a planning document. To Staff, the low gas base case approach by the Company contradicts Idaho Power’s usual practice of planning for conservative scenarios, such as using 90 percent exceedance and 95 percent peak conditions. A low gas price case can be considered too optimistic and does not constitute conservative, least-cost planning. This would allow Idaho Power to

¹⁰⁴ Idaho Power Final Comments, page 24.

plan for gas-friendly resources, thereby shifting the risk of higher gas prices onto customers.

Staff Recommendation

Staff recommends that in the 2017 IRP Update, the Company detail what gas price forecast data it plans to use for the 2019 IRP

Staff recommends a more prudent approach to the gas price base case scenario by reverting back to the EIA reference case for the 2019 IRP.

Demand Response

STOP B2H included suggestions for a “Citizen Alternative” portfolio and generally insisted that Idaho Power’s demand response (DR) programs could use improvement. In contrast, while Staff generally believes Idaho Power’s demand response programs, particularly the ones directed towards large customers, have been very successful, Staff raised two concerns. First, the overall levels of DR did not appear to increase over time despite forecasted load growth. Second, Staff sought clarification as to any plans the Company plans might undertake to address the apparent slowdown in DR procurement.

In the Company’s Final Comments, Idaho Power confirmed it did not plan to secure any additional DR because its system does not experience a capacity deficit until 2026 and that the current DR capacity is in excess of 11 percent of their all-time peak need.¹⁰⁵ Staff finds this position satisfactory and looks forward to monitoring Idaho Power’s capacity needs and related activities in the next IRP.

Load Forecast

In Opening Comments, STOP B2H stated that Idaho Power is overestimating load.¹⁰⁶ In Opening and Final Comments, Staff expressed that as the Company garners more granular information over the years, it should work to incorporate greater granularity into its load forecasts. Idaho Power’s current forecast is useful to capture broad trends that affect load. However, a more detailed forecast can provide the Company additional insight into the causes of load growth. As an example, Staff indicated that Idaho Power might find which region or industry new commercial customers are likely to come from. With the state of Idaho listed as the fastest growing state in the U.S.,¹⁰⁷ Staff expects the Company to keep abreast of such trends and any growth associated with this, in addition to any potential trends in its Oregon service territory.

¹⁰⁵ Idaho Power Final Comments, page 50-51.

¹⁰⁶ STOP B2H Opening Comments, page 3.

¹⁰⁷ “Idaho is Nation’s Fastest-Growing State, Census Bureau Reports.” United States Census Bureau. Accessed at <https://www.census.gov/newsroom/press-releases/2017/estimates-idaho.html>.

Idaho Power did not respond to Staff's comments on load forecasting in its Final Comments. For the 2019 IRP, the Company should explain how it worked to incorporate additional granularity in its load forecasts.

Staff Recommendation

Staff recommends that in the 2019 IRP, the Company should incorporate greater granularity in its load forecasts. As an example, Idaho Power might find which region or industry new commercial customers are likely to come from.

LOLE and Exceedance

In Final Comments, Staff noted that the Company has been conducting its capacity deficit analysis the same way since the early 2000's¹⁰⁸ and that this analysis was inspired by high market prices in the summer of 2001.¹⁰⁹ As a result, Staff believes the IRP process warrants taking a fresh look at the conservative peak-hour assumptions in the 2019 IRP. In Final Comments, Staff posed some initial questions:

- What is the correlation between stream flows and peak load? For instance, if the peak load is in the summer and the 10 percent flow level isn't reached until later in the year, is 90 percent exceedance appropriate?
- Historically, how often has inflow been at 90 percent exceedance, and when did this happen? From the Company's Reply Comments, the Company adopted these conservative assumptions to account for high market prices after the summer of 2001 but does not clarify whether this is due to low inflow conditions or whether it was possibly due to the energy crisis of 2000-2001.
- What is the worst inflow actually recorded?
- Since Idaho Power continues to prepare hydro forecasts for 50th percentile exceedance, and since there are differences between capacity needs as demonstrated in IRP Appendix C, is there some kind of "trigger point" analysis the Company has done to determine when a new resource is needed?
- Has Idaho done sensitivity studies around the 90% exceedance rate (like 80 percent, or 95 percent) to see the delta?

Idaho Power did not object to Staff's questions its Final Comments. Staff believes that the reasoning behind the Company's conservative peak-hour assumptions and answering the questions above warrant exploration in the 2019 IRP.

¹⁰⁸ Idaho Power Reply Comments, page 13.

¹⁰⁹ Idaho Power Reply Comments, page 11.

Staff Recommendation

Staff recommends that the questions posed above on exceedance be addressed in the Company's next IRP.

Distributed Resource Cost Assumptions

Staff, Sierra Club, and STOP B2H expressed reservations with the way Idaho Power forecasted distributed resource costs, particularly solar costs. Parties were concerned that recent declines in the cost of solar resources serve as evidence against Idaho Power's cost assumptions. Rather, Idaho Power assumed in its IRP analysis that solar costs will increase over time rather than decrease as the current record demonstrates.

Idaho Power conducted a solar tipping point analysis in its Reply Comments to address concerns about solar costs. The tipping point analysis indicated that currently, a stand-alone single-axis solar PV system would be more cost effective than a CCCT when capital cost declines over 35 percent, that a solar system would be more cost effective than reciprocating engines after capital costs decline 65 to 70 percent, and finally that a solar system would be more cost effective than B2H after a 90 percent decrease in solar capital costs.¹¹⁰

Sierra Club did not find the Company's analysis compelling, stating that while it did not dispute the current cost assumptions, it was more concerned about the future trajectory of solar capital costs in Idaho Power's analysis. Staff had indicated that it was satisfied with the Company's tipping point analysis since it incorporated lower costs.

Staff is still sympathetic to concerns regarding the future trajectory of solar costs. While Staff appreciates the Company's updated tipping point analysis, Staff does not expect future solar costs will remain flat or increase over time. In the next IRP, Staff would greatly prefer that the Company take a more realistic approach to the falling costs of solar.

Compliance with IRP Guidelines

Staff believes that Idaho Power has complied with most of the IRP guidelines. Specifically, Staff is referencing Orders 89-507, 07-047, 08-339, and 12-013. The two guidelines Staff believes the Company failed to either meet or address were Guideline 1(c)(2), pertaining to hedging, and Amended Guideline 8,¹¹¹ pertaining to carbon.

¹¹⁰ Idaho Power Reply Comments, page 48.

¹¹¹ Order No. 08-339.

Guideline 1(c)(2)

In Opening Comments, Staff expressed concern that the Company did not discuss the proposed use of and impact on costs and risks of physical and financial hedging as contemplated by the IRP guidelines.¹¹² In its Reply Comments, the Company referenced its Risk Management Policy and only explained that its financial and physical hedging takes place in a “near-term time frame.” The Company said little else related to hedging. Idaho Power also did not respond to Staff in its Final Comments on this topic. Because an explicit hedging strategy was not outlined, Staff does not believe the Company sufficiently met this guideline.

Staff Recommendation

Idaho Power should explore this topic further in its IRP Update in preparation for the next IRP. Idaho Power should include a discussion of the proposed use and impact on costs and risks of physical and financial hedging on resource portfolios.

Amended Guideline 8

As explained in the section above pertaining Action Item 10, Staff does not believe that the Company included a carbon risk analysis as outlined in revised IRP Guideline 8, which requires a base case carbon risk scenario in addition to alternative carbon portfolios.¹¹³ However, Staff recognizes that the Company attempted to plan consistently with what was expected to be federal policy at the time and modeled a mass-based approach to the Clean Power Plan. With a potential sunset of the Clean Power Plan, the Company must find other ways to address the risks and uncertainties related to carbon policy risk in its next IRP. See Staff’s comments above regarding Action Item 10 for a recommendation.

Compliance with Order No. 16-160

In Order No. 16-160, the Order acknowledging Idaho Power’s 2015 IRP, the Commission adopted three Staff Recommendations:

- 1) Analyze alternative Section 111(d) compliance paths’ impacts on Idaho Power’s respective liabilities in North Valmy and Jim Bridger generation stations with stochastic analysis for each compliance path in the 2017 IRP.
- 2) Calculate the cost of compliance with these paths for Idaho Power, and the impact of these costs upon Idaho Power’s ratepayers.
- 3) Include a more systematic evaluation of the qualitative benefits of the resource portfolios that Idaho Power analyzes in the 2017 IRP.

¹¹² Order No. 07-002, Guideline 1.C Bullet 2, Subsection 2, page 6: “[U]tilities are to include, at a minimum, “[d]iscussion of the proposed use and impact on costs and risks of physical and financial hedging.”

¹¹³ Order No. 08-339.

With respect to Recommendations 1 and 2, Idaho Power indicated in its cover letter to the IRP that because a final 111(d) rule has now been implemented, modeling alternative paths is not necessary. Idaho Power also modeled compliance in each portfolio by assuming a state-by-state mass-based approach in all portfolios.

Staff believes it has already sufficiently addressed the issues of carbon risk in its discussion of the North Valmy and Jim Bridger plants, the Company's portfolio design, and the discussion on Guideline 8. Staff also realizes that under the Trump Administration, the Environmental Protection Agency has announced a proposal to repeal the Clean Power Plan.¹¹⁴ With a potential sunset of the Clean Power Plan, the Company must find other ways to address the risks and uncertainties related to carbon policy risk in its next IRP.

With respect to Recommendation 3, the Company included a more systematic evaluation of qualitative benefits in its 2017 IRP. Staff recommends including such an evaluation in the 2019 IRP.

Staff Recommendation

Continue to include a systematic evaluation of the qualitative benefits of the resource portfolios that Idaho Power analyzes in the 2019 IRP.

Conclusion

Staff appreciates the hard work of Idaho Power and each of the parties in this case. Staff has presented a series of recommendations above. Below is a summary of Staff's recommendations in this proceeding.

Summary of Staff Recommendations

Action Plan Item 1: Continue planning for western Energy Imbalance Market (EIM) participation beginning in April 2018.

Recommendation: Not Acknowledge

Additional Recommendation: None.

Action Plan Item 2: Investigate solar photovoltaic (PV) contribution to peak and loss-of-load probability analysis.

Recommendation: Acknowledge

Additional Recommendation: None.

¹¹⁴ "EPA Takes Another Step To Advance President Trump's America First Strategy, Proposes Repeal Of 'Clean Power Plan'". EPA. Accessed at <https://www.epa.gov/newsreleases/epa-takes-another-step-advance-president-trumps-america-first-strategy-proposes-repeal>.

Action Plan Item 3: Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations of North Valmy Unit 1 by year-end 2019. Assess import dependability from northern Nevada.

Recommendation: Acknowledge

Additional Recommendation: None.

Action Plan Item 4: Plan and negotiate with PacifiCorp and regulators to achieve early retirement dates of year-end 2028 for Jim Bridger Unit 2 and year-end 2032 for Jim Bridger Unit 1.

Recommendation: Not Acknowledge

Additional Recommendation for Action Item 4: Staff recommends that Idaho Power work with its operating partner PacifiCorp to identify and pursue the most cost-effective retirement dates for these units.

Action Plan Item 5: Conduct ongoing permitting, planning studies, and regulatory filings for the Boardman to Hemingway (B2H) transmission line.

Recommendation: Acknowledge

Action Plan Item 6: Conduct preliminary construction activities, acquire long-lead materials, and construct the B2H project.

Recommendation: Acknowledge

Additional Recommendations for Action Items 5 and 6: Staff recommends acknowledging Action Item 5: Conduct ongoing permitting, planning studies, and regulatory filings.

Staff recommends acknowledging Action Item 6: Conduct preliminary construction activities, acquire long-lead materials, and construct the B2H project.

Contrary to the Company's request for an IRP Update waiver, Staff believes it is more appropriate for Idaho Power to present to the Commission an Update on where the B2H project is, including a project milestone and decision-points calendar. Staff's recommendation for acknowledgment only applies to Idaho Power based on this filing. Staff also observes that this acknowledgement is based on the information Idaho Power has provided. To the extent that circumstances in the future prove different, i.e., with respect to co-participants, acknowledgment of this action item will have little effect on the Commission's ratemaking decisions. The Company should provide the Commission with any material changes, including but not limited to information regarding co-participants and cost inputs. Staff notes that new tariffs on steel and aluminum might impact the economics of B2H. The Company should timely communicate any material

cost changes. As Idaho Power gets closer to acquiring long-lead materials, Idaho Power should also be regularly updating the Commission on all aspects of the project, such as type and cost of conductors, towers to fit terrain, drilling pilot holes to clarify foundation and anchoring costs, and hydrology. In addition, the Commission should start receiving contracts (inclusive of any change orders) and methods to mitigate cost and other risks including performance risks, and breakouts of turnkey vs. Idaho Power supervised components, particularly regarding substations. Updates to the Commission should clearly call out avian protections and other wildlife harmonization methods, as well as methods used to minimize impact on cultural and heritage resources. Land restoration and remediation costs post-construction should be clearly broken out, including costs for any bonds or letter of credit guarantees required. All costs should show granular unit costs as well as aggregate costs.

At the next update to the Commission, Idaho Power should present a summary of acquired and still needed permits necessary to construct B2H and associated substations. This acknowledgement is predicated upon prudent cost control and contractual protections both direct and reciprocal for ratepayers. An example of a reciprocal contract provision is one that ratchets cost downward if metal prices fall, rather than allows just for cost escalation.

Such acknowledgement does not relieve Idaho Power from due diligence in both component and aggregate cost, risk and quality control regarding the metals, other materials, and engineering designs deployed. Idaho Power is further expected to apply for and to avail itself of any federal infrastructure grants and other prudent public private partnership opportunities so as to reduce the cost and risk of financing and constructing B2H and associated substations, seeking usual Commission approvals where applicable. Nor should acknowledgement be misconstrued as acceptance by the Commission of any particular overhead or indirect costs.

Action Plan Item 7: Continue to coordinate with Portland General Electric (PGE) to achieve cessation of coal-fired operations at the Boardman coal plant by year-end 2020 and the subsequent decommission and demolition of the unit.

Recommendation: Acknowledge

Additional Recommendation: None.

Action Plan Item 8: Conduct ongoing permitting, planning studies, and regulatory filings for Energy Gateway.

Recommendation: Acknowledge

Additional Recommendation for Action Item 8: In the 2019 IRP, the Company should provide additional information to keep the Commission abreast of Energy Gateway's progress, Idaho Power's inclusion of it as part of a least-cost/least-risk portfolio, the status of co-participants, and role in the IRP.

Action Plan Item 9: Continue the pursuit of cost-effective energy efficiency.

Recommendation: Acknowledge with conditions

Additional Recommendation for Action Item 9: Staff requests a report on the Company's progress detailing energy efficiency opportunities and improvements to its avoided cost methodology

Action Plan Item 10: Continue stakeholder involvement in CAA Section 111(d) proceedings, or alternative regulations affecting carbon emissions.

Recommendation: Acknowledge with modifications

Additional Recommendation for Action Item 10: With a potential sunset of the Clean Power Plan, the Company must find other ways to address the risks and uncertainties related to carbon policy risk in its next IRP. Staff recommends that the Company commission a report for the next IRP to assess the risks and uncertainties associated with climate change to Idaho Power and its customers.

Action Plan Item 11: Plan and coordinate with NV Energy Idaho Power's exit from coal-fired operations of North Valmy Unit 2 by year-end 2025.

Recommendation: Acknowledge

Additional Recommendation: None

Additional Recommendations

- Staff recommends that Idaho Power incorporate an enhanced IRP portfolio selection methodology for the 2019 IRP, either through capacity expansion modeling or a more robust portfolio design such as what was presented in the 2015 IRP.
- Staff recommends that Idaho Power present an outline of its new portfolio selection methodology in the 2017 IRP Update.
- Staff recommends that in the 2017 IRP Update, the Company detail what gas price forecast data it plans to use for the 2019 IRP.
- Staff recommends a more prudent approach to the gas price base case scenario by reverting back to the EIA reference case for the 2019 IRP.
- Staff recommends that in the 2019 IRP, the Company should incorporate greater granularity in its load forecasts. As an example, Idaho Power might find which region or industry new commercial customers are likely to come from.
- Staff recommends that the following questions on exceedance be addressed in the Company's next IRP:
 - What is the correlation between stream flows and peak load? For instance, if the peak load is in the summer and the 10 percent flow level isn't reached until later in the year, is 90 percent exceedance appropriate?
 - Historically, how often has inflow been at 90 percent exceedance, and when did this happen?
 - What is the worst inflow actually recorded?
 - Since Idaho Power continues to prepare hydro forecasts for 50th percentile exceedance, and since there are differences between capacity needs as demonstrated in IRP Appendix C, is there some kind of "trigger point" analysis the Company has done to determine when a new resource is needed?
 - Has Idaho done sensitivity studies around the 90 percent exceedance rate (like 80 percent, or 95 percent) to see the delta?
- Idaho Power should explore hedging in its IRP Update in preparation for the next IRP by including a discussion of the proposed use and impact on costs and risks of physical and financial hedging on resource portfolios.
- Continue to include a systematic evaluation of the qualitative benefits of the resource portfolios that Idaho Power analyzes in the 2019 IRP.

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PROPOSED COMMISSION MOTION:

That the Commission acknowledge Idaho Power's 2017 IRP and that the Commission acknowledge in part and decline to acknowledge in part Idaho Power's 2017 IRP Action Plan. Staff recommends certain action and additional requirements for inclusion in an IRP update and the next IRP on pages 43-47 of this Staff Report.