ITEM NO. RA1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
SPECIAL PUBLIC MEETING DATE: March 21, 2023

REGULAR X CONSENT ____ EFFECTIVE DATE N/A

DATE: March 14, 2023

TO: Public Utility Commission

FROM: Nick Sayen

THROUGH: Bryan Conway, JP Batmale, and Sarah Hall **SIGNED**

SUBJECT: IDAHO POWER COMPANY:
(Docket No. UM 2196)
Acceptance of 2022 Oregon Distribution System Plan.

STAFF RECOMMENDATION:

Accept the 2022 Oregon Distribution System Plan by Idaho Power as meeting the criteria and requirements of the Distribution System Planning Guidelines established in Order No. 20-485.

DISCUSSION:

Issue

Whether the Public Utility Commission of Oregon (Commission) should accept Idaho Power Company's (Idaho Power, Company, or IPC) 2022 Oregon Distribution System Plan (Plan or Part Two Plan) filed August 15, 2022, in UM 2196 as meeting the criteria and requirements of the Distribution System Planning (DSP) Guidelines established in Order No. 20-485.

Applicable Rule or Law

ORS 756.040 describes the general powers of the Commission to supervise and regulate every public utility, and to do all things necessary and convenient in the exercise of that authority.

Under ORS 756.105(1), "Every public utility or telecommunications utility shall furnish to the Public Utility Commission all information required by the commission to carry into effect the provisions of ORS chapters 756, 757, 758 and 759."

In Order No. 19-104, the Commission opened Docket No. UM 2005 to "develop a transparent, robust, holistic regulatory planning process for electric utility distribution system operations and investments."

In Order No. 20-485 the Commission suspended the Smart Grid Report filling cycle for 2021 in anticipation that Order Nos. 12-158 and 17-290 may be revised or superseded by new requirements adopted in UM 2005.

Order No. 20-485 established procedural and substantive DSP planning requirements, including Part One and Part Two DSP Plans as well as the process for Commission review of the Plans. The Part Two Guidelines require that utilities:

1. Document current load forecasting processes and build on that foundation with forecasts of distributed energy resource adoption and electric vehicle adoption by substation;
2. Document the process by which the Company compares the current capabilities of the system, and future demands on that system to infer future "grid needs;"
3. Document assessment of proposed solutions to address grid needs, and evaluate at least two pilot concept proposals utilizing non-wires solutions which are to be informed by a community needs assessment;[1]
4. Present a near-term action plan consisting of selected, proposed solutions to address grid needs.

Analysis

This memo provides brief policy context prior to Staff's review of the Plan, and next steps in distribution system planning. The memo integrates stakeholder feedback and concludes with Staff's recommendation to accept IPC's Plan. Throughout, Staff identifies opportunities for continued learning or improvement, shown in Appendix A. These observations are not intended as proposed conditions for Commission acceptance of the Plan. Rather, Staff intends to reference these insights while working in partnership with utilities and stakeholders moving forward in the evolution of DSP.

[1] See Guideline 5.3d. An electric utility that makes sales of electricity to retail electricity consumers in an amount that equals less than three percent of all electricity sold to retail electricity consumers may evaluate one pilot concept proposal.

Idaho Power Company's Part Two Plan provides a new level of insight into the Company's distribution planning practices. Readers gain increased understanding of forecasting practices, maintenance and diagnostic programs, and the processes used to identify grid needs. The Company demonstrates substantial capacity to analyze and implement non-wires solutions (NWS). Most significantly, the plan provides a transparent forecast of specific capital investments.

Background

The Part Two filing represents the culmination of more than three years of work and conclusion of the opening chapter of distribution system planning at the Commission. Staff's investigation into distribution system planning (UM 2005) began in March 2019. The key drivers behind the docket were to increase insight into utility planning processes and distribution-level investments, and optimization to ensure system operational efficiency and customer value.[2] These drivers led to the adoption of DSP Guidelines in 2020.[3] The Guidelines set forth an initial path to evolve utilities' legacy practices for distribution system planning through a transparent stakeholder process aimed at advancing legacy practices in new ways.

The Guidelines directed the utilities to file their first DSP in two parts. Idaho Power filed Part One in October 2021,[4] which included major components such as a baseline system assessment, community engagement requirements, and a long-term plan involving a five to ten-year roadmap of planned investments. The Commission accepted the Part One filing in March 2022.[5]

Policy Shift in Planning

Since the launch of the DSP process, Oregon has undergone a dramatic energy policy shift. In 2021 the Legislature passed into law House Bill (HB) 2021. The law established a clean energy framework for electric companies to decarbonize their retail electricity sales by 2040. While Idaho Power is not subject to HB 2021 requirements, the Company does have a 100 percent clean energy goal by 2045. Meeting that goal will

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[2] See Docket No. UM 2005, Staff Whitepaper: A Proposal for Electric Distribution System Planning, https://edocs.puc.state.or.us/efdocs/HAU/um2005hau15477.pdf.

[3] See Order No. 20-485 in Docket No. UM 2005, https://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=20-485.

[4] See Docket No. UM 2196, 2021 Oregon Distribution System Plan, https://edocs.puc.state.or.us/efdocs/HAA/um2196haa161347.pdf.

[5] The Guidelines call for the Commission to consider whether to accept the filed Plan (or Plan Part) as meeting the objectives of the Guidelines. As used, "acceptance" means the Commission finds the Plan meets the criteria and requirements of these Guidelines. Acceptance does not constitute a determination on the prudence of any individual actions discussed in the Plan. A decision to not accept a Plan means that the Plan does not meet the criteria or requirements of the Guidelines. See Order No. 22-083 in Docket No. UM 2196, https://apps.puc.state.or.us/orders/2022ords/22-083.pdf.

likely require the addition of distributed energy resources (DER). Adding those new resources to the grid in a reliable and least cost-least risk manner will require advancements in the distribution system itself, in distribution system planning, and in the integration of the IRP and DSP.

Wildfire mitigation planning has also advanced in Oregon, spurred in part by the fires the State has experienced since 2019. In 2021, Oregon utilities filed their first Wildfire Mitigation Plans detailing investments related to vegetation management and risk.[6] Further, the Commission recently examined resiliency opportunities based on industry standards and Commission guidelines. The Grid Modernization Laboratory Consortium (GMLC) of the U.S. Department of Energy developed the report, *Considerations for Resilience Guidelines for Clean Energy Plans*, to support the Commission's understanding of industry practices and standards.[7] The GMLC report revealed that resource planning is only one component of resiliency planning, and the majority of best practices and standards are even more applicable to other planning practices at the Commission, including DSP. At a technical conference on December 15, 2022, the Commission, stakeholders, and Staff highlighted the importance of continuing to incorporate the resiliency planning practices discussed in the GMLC report into the broader planning framework over time.

DSP Guidelines predate HB 2021 and do not address wildfire mitigation planning. However, the Guidelines do explicitly require that utilities develop DSPs and IRPs that inform one another. To this end, Staff envisions future IRPs being both informed by and informing DSPs and will work to make sure DSP Guideline revisions support this.

Idaho Power Company Part Two Plan and Staff Review
IPC hosted DSP workshops while preparing the Part Two Plan in 2022. The workshops involved the public in preparing the Part Two Plan, contributing information and ideas, and making inquiries and receiving information from the Company. On September 15, 2022, the Commission held a Special Public Meeting for the utilities to present their DSP Part Two Plans to stakeholders, Commissioners, and Staff.[8] Staff solicited stakeholder comment through the DSP dockets.[9] Renewable Northwest (RNW), and NW Energy Coalition (NWEC) provided over 20 comments on IPC's Plan.

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[6] See Docket No. UM 2209, Wildfire Mitigation Plan 2022, https://edocs.puc.state.or.us/efdocs/HAA/um2209haa10439.pdf.
[7] See Docket No. UM 2225, Staff's Resiliency Planning Standards and Practices, September 7, 2022, https://edocs.puc.state.or.us/efdocs/HAH/um2225hah113046.pdf.
[8] See Docket No. UM 2196, Meeting Agenda, https://edocs.puc.state.or.us/efdocs/HAH/um2196hah154426.pdf, Staff's Presentation, https://edocs.puc.state.or.us/efdocs/HAH/um2196hah133757.pdf, and IPC's Presentation, https://edocs.puc.state.or.us/efdocs/HAH/um2196hah16533.pdf.
[9] See Docket No. UM 2005, https://edocs.puc.state.or.us/efdocs/HAH/um2005hah135743.pdf.

Staff is grateful to these organizations for providing feedback and looks forward to additional discussions in the future. Broadly speaking, comments provided constructive feedback and common themes; Staff discusses this feedback throughout the memo.

Below, Staff discusses five key areas that increase insight into DSP or enable optimization of the distribution system: community engagement, load growth forecasts, including adoption of DERs and electric vehicles (EV); grid needs and solutions identification; NWS; and the near-term action plan. This discussion generally corresponds to the structure of Idaho Power's Part Two Plan.

1. Community Engagement

In the context of DSP, community engagement and consideration of equity include a variety of activities. Examples of these activities include public involvement in the preparation and implementation of the Plan and engaging community-based organizations (CBOs) to increase awareness of large upcoming projects, to inform utility forecasting, or to provide input on development and deployment of NWS. These activities represent new steps in traditional distribution planning practices.

Community engagement is important because it provides increased insight into both the distribution system itself and the planning processes utilities use to make decisions. Stakeholders and community members can examine outcomes such as the location of substations, or outage performance of feeders.

The DSP Guidelines required utilities to develop community engagement plans in Part One filings with the understanding that utilities would implement those plans in both preparing NWS proposals for the Part Two filings, and when beginning to construct large projects proposed in the Part Two filings. Idaho Power developed such a plan in preparing the Company's Part One filing.

Workshops – Idaho Power held two workshops in preparing the Part Two Plan. The first workshop in May 2022 provided background on the Company, how the electrical grid functions, the DSP process, and NWS examples. Idaho Power also presented identified grid needs and asked participants about their top three considerations regarding their electricity use.[10] The second workshop in June 2022 focused on NWS and provided content on NWS evaluation criteria, identified grid needs, and a discussion of possible solutions including community input on possible solutions.[11] Although

[10] See Idaho Power's Oregon Distribution System Plan webpage, May 18, 2022 meeting record: https://docs.idahopower.com/pdfs/AboutUs/PlanningForFuture/DistributionPlanningProcess.pdf.
[11] See Idaho Power's Oregon Distribution System Plan webpage, May 18, 2022 meeting record: https://docs.idahopower.com/pdfs/AboutUs/PlanningForFuture/OR_DSP_%234.pdf.

presentations from both meetings are available on the Idaho Power website, the Part Two Plan only briefly references the workshops. It does not appear that feedback from the workshops, or any Company response to that feedback, was included in the Part Two Plan. Staff notes an opportunity *to improve insight and transparency by including outcomes from community engagement such as capturing participant feedback and response to that feedback.*

Non-Wires Solution Pilots – The Guidelines call for utilities to perform a community needs assessment to inform development of a NWS pilot concept proposal.[12] Idaho Power implemented a battery energy storage system to address a grid need at the Company's Weiser Substation. The Part Two Plan also notes the Company is considering NWS for several other forecasted grid needs.

Idaho Power did present possible NWS and solicit participant input on community impact and possible project options or modifications at its June DSP workshop. However, it is not clear whether community members from any of the NWS project areas actually participated in the workshop. It is also not clear if any community needs were expressed at that workshop, or if those needs have been considered in the NWS development process. As such, Staff finds activities to date represent partial responsiveness to the Guideline requirement. Staff encourages the Company to more fully complete community engagement and needs assessment for future NWS.

Staff finds that Idaho Power's community engagement was sufficient to meet the Guideline requirements. However, Staff urges the Company to continue exploring new and additional ways to center communities in the distribution system planning process. Examples of this might include engagement of local community-based organizations or exploring inclusion of equity data in system maps or decision-making criteria.

NWEC noted that the Part Two Plan did not discuss community engagement for Part Two. For example, there was no summary of stakeholder feedback or the Company's current plans for ongoing community engagement.

2. <u>Forecasting of Load Growth, DER Adoption, and Electrical Vehicle (EV) Adoption</u>

Utility forecasting is a key element of the DSP Guidelines. It can play a critical part in achieving optimization of distribution system operational efficiency and customer value, especially over the long-term. This is because historically load growth has been one of the key factors determining traditional utility investments in the distribution system. In addition, increased adoption of DERs has led to new and expanded utility investments, and in the future increased adoption may do so to an even greater extent. Further,

[12] See Guideline 4.3a ii).

growth in the adoption of EVs over the coming years will play a major part in load growth. Staff finds that the Company's forecasts for load growth, DER adoption, and EV adoption by substation meet the Guideline requirements.[13] Staff notes opportunities for future forecasting improvements below.

Load Growth

The Plan notes that Idaho Power developed a tool to generate a 10-year forecast of peak loading for reach feeder. The forecast is based on a cubic regression on historical data, adjusted for extreme temperature impacts. Substation and feeder peak loadings are reviewed after each summer and winter season. The substation and feeder peaks are then used to update the 10-year forecasts. An in-depth forecasting review is conducted once every three years, or more frequently in areas with high growth. As far as Staff can tell, this method is unlike those used by Pacific Power or Portland General Electric to form their forecasts. Staff's concern with this approach is that its use of relatively sparse data allows for a single data irregularity or modelling technique to impact load predictions. While this is not of great concern in the short-term, continued reliance on this approach could create risk of a misinformed long-term plan. Staff notes that the importance of accurate forecasting in DSP and the newness of the load allocation methodology present an opportunity *and need for continuous refinement and consideration of risk*.

Staff also notes that the Plan does not discuss how DSP forecasting is integrated into IRP forecasting, for example utilization of a consistent forecast basis, (a "corporate load forecast"), or points of interaction between the processes' respective inputs and outputs. The importance of accurate forecasting in DSP and the newness of DSP processes present both an opportunity and need for *ongoing coordination in the functioning and accuracy of DSP and IRP interaction*. Staff finds that Idaho Power's method to forecast existing load growth and load additions at the substation level meets the Guideline requirements and appears to be an acceptable way to forecast load for the purposes of the DSP.

DER Adoption

Idaho Power estimates the growth rate for DER installations in its Oregon service territory by allocating a proportional amount of DER installations from its overall service territory to Oregon.[14] The Company's medium case is based on the values from its IRP, with the high and low cases based on factors such as cost of solar systems, potential

[13] See Guidelines 5.1a, 5.1b. and 5.1c.
[14] Idaho Power 2022 Oregon Distribution System Plan, page 16.

policy changes that might spur adoption, and consumer trends.[15] Much like PGE and Pacific Power, Idaho Power focuses on solar PV adoption.[16] Using geolocation techniques, the Company predicts the growth rate for the three scenarios at each feeder.

The Company's current level of DER installations may necessitate more sophisticated forecasting in the future, particularly with respect to growth rates for the high and low scenarios. However, Staff notes that the Plan's high/medium/low scenarios appear to be in line with values presented by other utilities, and the load impacts to each feeder appear to be realistic. Staff suggests future filings include additional discussion of the method to allocate DERs to each feeder.

EV Adoption

Idaho Power estimates the growth rate for EVs in its Oregon service territory by allocating a proportional amount of EVs from its overall service territory to Oregon.[17] Based on the Company's response to Information Requests, it appears that the medium scenario is based on the level of EV adoption used in its most recent IRP, the low scenario is half of the IRP value, and the high scenario is triple the IRP value.[18] The Company notes that as of year-end 2021, there were only 19 EVs registered in its Oregon service territory.[19] Given this low number, the Company applies the full Oregon systemwide load impact of EV growth to each Oregon feeder with 266 or more customers, and half of the load impact to feeders with fewer than 266 customers for DSP purposes.[20]

While Staff would have appreciated a more nuanced approach to estimated growth rates for high and low scenarios, Staff notes that the Company's growth rates appear to be in line with the other Oregon-regulated utilities. Staff is supportive of the Company's approach to load the entire EV load impact on each of the feeders at this time, as currently there are a small number of registered EVs in the Company's territory and EV ownership seems to spur positive network effects. Staff expects that there will eventually be a critical mass of data on EV ownership in the Company's territory, and that it will then make sense to directly forecast EV adoption at the feeder level.

[15] Idaho Power 2022 Oregon Distribution System Plan, page 17.
[16] Idaho Power 2022 Oregon Distribution System Plan, page 16.
[17] Idaho Power 2022 Oregon Distribution System Plan, page 18.
[18] Response to Information Request 10.
[19] Idaho Power 2022 Oregon Distribution System Plan, page 18.
[20] Idaho Power 2022 Oregon Distribution System Plan, page 21.

NWEC commented that recent heat waves suggest that peak estimation methods currently in use may need further refinement, with more comprehensive incorporation of climatology and meteorological data. RNW commented that it would have been helpful and improved clarity if the Plan included a more in-depth description of scenario modeling and the feeder allocation process.

3. Grid Needs and Solutions Identification

Grid needs and solutions identification are important because these processes drive the investment of millions of dollars annually and so play a major part in achieving optimization. A clear articulation of a system need, and possible solutions to that need, are fundamental to providing increased insight. Idaho Power's discussion of grid needs and solutions identification presents this material in an accessible manner, improving understanding and insight of this critical work. Staff finds that the grid needs and solutions identification discussion presented in the Company's Plan meets the Guideline requirements.[21, 22] Staff's review of IPC's solutions helped illuminate a need to clarify whether filings should include project specific information, and whether or how proposed projects are evaluated to meet the Guideline requirements. Staff also identifies an opportunity for future improvement below.

Grid Needs

The grid needs section discusses small area studies, various programs used to assess reliability and risk-based grid needs, maintenance and inspection procedures, and current prioritized grid constraints.

The cornerstone of the Company's grid needs identification process is the small area study. The Company completes these studies for each substation every three years or more frequently in areas with high growth. In these exercises a distribution planning engineer models the substation transformer and distribution feeders using DNV's Synergi Electric software. The model compares extreme-temperature forecasted load-growth over the next five to ten years against equipment planning limits. The planning limits are based on substation transformer nameplate rating and feeder voltage levels.[23] If a forecast exceeds a planning limit, an upgrade is needed.

[21] See Guidelines 5.2a, 5.2b, 5.2c, 5.2d.
[22] See Guidelines 5.3a, 5.3b, and 5.3c.
[23] Idaho Power has developed its own Extreme Temperature Forecasting Planning Limits guide which is included in the Part Two Plan as Appendix C. Idaho Power 2022 Oregon Distribution System Plan, page 29.

Idaho Power has several programs used to assess reliability and risk-based grid needs. One example is the Bottom Feeder Program which ranks the reliability of feeders and identifiers the worst performers for consideration of improvements.

The Company also employs several maintenance and inspection programs. These focus on transformers, circuit breakers, distribution line inspection, wood pole testing and treatment, vegetation management, and wildfire mitigation. Each of these programs play a part in identifying grid needs.

The Plan identifies six near-term grid needs (2022 to 2026). Five of the needs were identified through distribution modeling and can be addressed with low-cost traditional solutions (less than $60,000). One of the needs, the Weiser T061 substation transformer, was identified through the forecasting process and requires a more complex and expensive solution.[24] This transformer is fewer than three years from its load reaching rated capacity, making it the company's only prioritized grid need constraint. Idaho Power also looked beyond 2026 to identify any additional grid needs. Based on the most recent Transmission and Distribution Substation Loading Analysis (included in Appendix D), the Company identified long-term grid needs: three transformers serving Oregon that were medium-loaded, which the Company defines as estimated to reach full capacity within three to ten years. These nine grid needs were presented to stakeholders at the May workshop.

Solutions Identification

Idaho Power's solutions identification section presents a very brief summary of the Company's traditional solution review and NWS solution review. For forecast capacity or voltage-related grid needs, the small area study process includes initial identification of possible solutions. For reliability related grid needs, Idaho Power reliability engineers develop possible solutions based on the category of equipment.

Possible solutions are then evaluated on cost, expected duration until a second grid need is required, alignment with other system plans (such as the regional electrical plans), and potential impact on reliability and maintenance projects. The Plan notes that traditional solutions may be preferred if the grid need has any of some specific characteristics or conditions. Examples of these characteristics include rebuilding a feeder section to operate at a higher voltage, replacing the substation transformer with larger capacity transformer, adding a new feeder, substation transformer, or building a new substation.

[24] This transformer was identified in Idaho Power's 2021 Transmission and Distribution Substation Loading Analysis, filed in Docket No. UM 1911. Idaho Power 2022 Oregon Distribution System Plan, page 40.

Staff appreciates Idaho Power's work to present this complex and technical material as accessibly as possible. The Plan has increased insight to this critically important work. However, the discussion of solutions identification does not provide much specificity on how possible solutions are developed and evaluated, for example methodologies or criteria for scoring and ranking, benefit-cost quantification, or prioritization. Staff notes an opportunity *to increase insight through a more thorough discussion of the Company's solution identification processes.*

Review of Proposed Solutions

Idaho Power's Plan does not include project-specific data used by the Company to develop the solutions for each identified grid need. A key aspect of the Guidelines was documenting how solutions were assessed to meet grid needs. This is fundamental to enabling optimization of distribution system operational efficiency and customer value. Guideline 5.3b also prescribes that a Plan provide a project specific set of data used to develop solutions for each identified grid need. Despite the Guideline's lack of clarity about how to evaluate whether proposed solutions solve a respective grid need, Commission guidance was clear on documenting the link between grid needs and proposed solutions.[25]

Staff submitted project specific Information Requests to IPC to better understand how proposed solutions address the grid needs they were intended to resolve. The Information Requests prompted a useful dialogue that revealed clarity lacking from the Part Two Plan in several respects. First, at a practical level, because DSP is a forward-looking exercise, a utility may be prepared to propose a project in a DSP filing but may not have completed preparing all the engineering and analysis for the project. Further, the utilities expressed concerns surrounding confidentiality and duplicative effort in providing project specific information as part of a DSP proceeding, a general rate case, or both.

Ultimately Idaho Power provided project specific information as non-confidential and confidential responses to Staff's Information Requests. Staff appreciates IPC's willingness to provide a set of useful information and engage in productive dialogue. For now, project specific data will be included in general rate cases for projects predicted by utilities to be in service prior to the effective date for rates resulting from the general rate case filing. The clarity of Guideline 5.3b, including whether filings should include project

[25] See Guideline 5.3b. For each identified Grid Need provide a summary and description of data used for distribution system investment decisions including: discussion of the proposed and various alternative solutions considered, a detailed accounting of the relative costs and benefits of the chosen and alternative solutions, feeder level details (such as customer types on the feeder; loading information), DER forecasts and EV adoption rates.

specific information, and when Staff or stakeholders are to evaluate whether proposed projects meet the Guideline requirements, needs to be improved in the future.

RNW noted the absence of a discussion of grid needs prioritization processes, for example force ranking competing projects into one list and budget, and that this would have provided additional clarity. RNW also commented that Idaho Power did an excellent job discussing the various solutions and their costs, advantages, and disadvantages. NWEC commented that the discussions of the small area study process, inspection, diagnostic, and maintenance cycles, were very helpful.

4. Non-Wires Solutions

NWS are, in simple terms, the use of programs or investments, often focusing on DERs, to address grid needs. NWS are important because they present the possibility to both address a grid need, and to deliver additional benefits to customers. NWS are often pursued as a lower-cost alternative to traditional utility solutions, and so in this response may also play a part in optimization. Idaho Power addresses NWS in the Solutions Identification section. The Plan describes the NWS review process, presents the Company's screening of identified grid needs for NWS, discusses the Company's NWS pilot concept proposal, and a second possible NWS undergoing further evaluation.

The NWS review process begins after an optimal traditional solution has been identified. Idaho Power conducts an additional assessment to determine if a NWS may be a more cost-effective option. Idaho Power currently considers three NWS options: battery storage systems, solar PV, and a combo of solar PV and storage. The Plan states the Company considers these options as they are technically proven and commercially available, though as more NWS become viable and market-ready they will be included as options. IPC considers three characteristics to screen of whether a grid need may be solved with a NWS: low load growth, high-cost traditional solution, low-cost NWS.

Idaho Power screened the nine identified grid needs for suitability for a NWS. Five of the six near-term needs had traditional solutions with low-cost. However, the Weiser substation was identified as a potential NWS candidate, and ultimately selected as the pilot concept proposal. Two of the three long-term needs were poor NWS candidates while one is undergoing further evaluation.

The Plan states that the Weiser substation project was already underway before the Company's grid needs assessment for the Part Two Plan. However, it was the only near-term grid need suitable for NWS, and so the Company selected the project to demonstrate when NWS can be optimal.

The Plan provides key information about the project such nameplate capacity rating, planning capacity rating, average growth rate, and explains the grid need: in summer of 2023 in an extreme temperature event the forecasted peak load of 14.41 MW will exceed the planning capacity by five percent.[26] The Plan evaluates four possible traditional solutions, including for each a summary, benefits, drawbacks, duration, and cost. Traditional solutions included adding different sized transformers to the Weiser substation, and load transfers to two different substations. Cost estimates ranged from approximately $900,000 to $3.1 million.[27] The Company reviewed benefits, drawbacks, and approximate costs, and selected adding a transformer as the preferred traditional solution, at an estimated cost of $2.2 million.

The Plan evaluates a NWS, specifically a 3 MW, four-hour battery storage system, and provides the same of summary as the traditional solutions.[28] A key feature of the NWS was the ability to shave peak not just for the substation transformer, but also for the Idaho Power system. This IRP value stream had a substantial positive effect on the net cost, shifting it from approximately $4.8 million to approximately $365,000.[29] Ultimately, Idaho Power chose to implement the NWS; this project will serve as the Company's first distributed storage system.

Idaho Power continues to evaluate a grid need at the Juntura substation as a NWS candidate. The Plan presents a traditional solution and two NWS, including one microgrid. The grid need is forecasted for 2028, and so the Company will continue to analyze NWS possibilities as part of the normal solution evaluation process.

Idaho Power's current approach to NWS is limited to three options. While any of these options may provide better value to rate-payers than a traditional solution, they do not deliver additional benefits to customers, perhaps with the exception of improved reliability, if a combination solar PV and storage is the chosen NWS. Staff notes the opportunity to *further system optimization through future exploration of NWS which provide additional benefits.* Although Idaho Power did not conduct a community needs assessment to inform the development of this NWS pilot Staff finds that the NWS discussion overall meets the requirements of the Guidelines.

RNW commented that including quantitative screening metrics for NWS in the Plan, along with a discussion of the metrics, would have been valuable. NWEC recommends an expanded approach to screening and cost-effectiveness for traditional and NWS that incorporates more of the full value of NWS.

[26] Idaho Power 2022 Oregon Distribution System Plan, page 46.
[27] Idaho Power 2022 Oregon Distribution System Plan, pages 46-48.
[28] Idaho Power 2022 Oregon Distribution System Plan, page 48.
[29] Idaho Power 2022 Oregon Distribution System Plan, page 49.

5. Near-term Action Plan

The near-term action plan is important because it presents the utility's proposed investments in the next two to four years, as well as projected spending to implement those investments. A transparent presentation of planned projects, and a clear forecast of spending associated with those projects is vitally important in the pursuit of achieving long-term optimization of distribution system operational efficiency and customer value. From this perspective, the action plan may be the most important individual component of the Part Two filings. Staff finds that the action plan presented in the Plan meets the Guideline requirements.[30] However Staff's review of Idaho Power's action plan suggests the next action plan should provide a finer definition of its scope and financial impacts, including project-specific costs and descriptions. Staff also identifies an opportunity for future improvement below.

Idaho Power invested an average of approximately $4.4 million in Oregon annually on capital distribution system projects from 2016 to 2020.[31] Looking forward, the Plan estimates annual capital investments of $3.4 million from 2023 to 2026, with a total estimated cost of $13.7 million.[32] The investments are split into two categories: asset replacement, reliability, and maintenance projects, and growth projects.

The action plan first presents seven growth projects in Table 5.1.[33] Six asset replacement, reliability, maintenance, and growth projects are presented in Table 5.2.[34] Both tables include the substation name, the need date, the name of the solution, estimated costs during 2023 to 2026, and total estimated cost. The section also includes brief summaries of three of the projects.

The action plan provides greater insight and transparency in estimated distribution system investments than in the past. Staff appreciates the information provided, especially estimated project-specific costs. The need date serves as somewhat of a proxy for a timeline, however for projects with costs that extend beyond 2023 to 2026 it is unclear what actions are being taken when. It is also unclear why brief summaries were included for some of the projects but not others. This reveals an opportunity for *improved clarity and specificity in future action plans.*

[30] See Guidelines 5.4a, 5.4b, 5.4c, and 5.4d.
[31] See Docket No. UM 2196, 2021 Oregon Distribution System Plan, Table 1.5, page 22, https://edocs.puc.state.or.us/efdocs/HAA/um2196haa161347.pdf.
[32] Idaho Power 2022 Oregon Distribution System Plan, Table 5.1, page 52.
[33] Idaho Power 2022 Oregon Distribution System Plan, Table 5.1, page 52.
[34] Idaho Power 2022 Oregon Distribution System Plan, Table 5.2, page 54.

Staff notes the action plan includes only capital spending for discrete projects. While some of the projects are labeled as reliability and maintenance projects, it is unclear how additional utility spending on other operations and maintenance fits into the action plan. It is also unclear how other programmatic spending fits into the action plan. Staff also notes the action plan contained several more projects than were listed in the grid needs discussion, without explanation for their inclusion. The Guidelines do not provide direction on what projects are to be included in the action plan, and this lack of clarity about scope, including whether programmatic investments are to be included with discrete investments, needs to be improved in the future.

The presentation of the investment forecast as one four-year total is a missed opportunity to provide transparency about how the forecast may change over time. Staff does not suggest Idaho Power erred in its presentation of projected spending in the action plan. The Guidelines currently do not provide direction on what level of financial granularity is required in the action plan and should be improved in the future. Staff sees this as a missed opportunity and plans to address it in DSP guidance going forward so to impact the next plan.

Recommended Next Steps in Distribution System Planning
Staff recognizes there is much to be learned in exploring many conceptual areas moving forward. As DSP has evolved, and with the passage of HB 2021 it appears DSP will fill a key gap in an integrated planning framework. In the past, the majority of distribution system planning was conducted when certain thresholds were exceeded, such as loading limits or ages and types of equipment. This resulted in those network elements being examined for options to eliminate the exceedance, but on a very limited set of conditions, such as heavy or light loading cases, or when a certain element might be out of service. This practice was often called “deterministic planning.” In the future, more scenarios are anticipated, and Staff expects the impacts of policy, technology, and customer decisions to be profound. Staff sees DSP as the forum in which to vet these additional scenarios with network models, aligning assumptions made in other planning processes so that resource decisions, electrification expectations, and weather possibilities are all recognized when investment decisions are being made.

As clean energy goals and greater incorporation of behind-the-meter uses are incorporated into DSPs, increased clarity on scenarios, resilience and risks will be helpful to new planning processes in IRP/CEPs and even to wildfire mitigation plans. Identification of risks, historic and expected performance, along with the various credible scenarios should be considered as part of the analytical framework as they are instrumental in estimating the expected benefits for a given investment. Staff believes future DSP filings can build on the good work by Idaho Power to provide even better levels of information and insights.

Staff recommends several next steps in DSP. First, after the Commission acts on Part Two filings, Staff plans to turn to the process of revising and improving the Guidelines in collaboration with stakeholders and utilities. Parties have begun to flag topics for inclusion in the process. Staff proposes launching the effort in Q2 2023 as utilities are required to file their second distribution system plans in the first quarter of 2025.[35] Staff will propose changes both to update Guidelines and address gaps resulting from policy and legislation to better match the Guidelines with growing utility capabilities and the evolution of the grid, customers and communities, and their needs.

More broadly Staff believes the primary focus of DSP moving forward should be utility investment planning, The aim would be to improve transparency and consistency in evaluation of investments, to improve clarity around investments for grid improvements versus investments for regular operations, and to improve clarity around distribution planning and utility capital planning. Staff is exploring support from third party experts such as U.S. DOE National Laboratories to assist in developing understanding and approaches to investment evaluation. Staff also notes the following important related activities that could be included in DSP or may be more appropriate to move to other dockets:

- Improving grid transparency for different uses, such as connecting solar generation or adding EV charging, provides greater insight into the distribution system and how it serves different communities. Staff will engage utilities and stakeholders to consider approaches to, and standards for, improving transparency-related investments—for example through hosting capacity analysis.
- A cost-benefit analysis framework for multiple DERs, similar to what currently exists for energy efficiency, allowing for more informed and optimized utility investment decision making. Staff will work with stakeholders to develop such a framework to capture and include data and information related to locational value, equity, risk, resiliency, and other customer and system benefits.
- Community engagement for utility investments and actions impacting local communities should continue to be addressed in future DSPs.

Staff recommends the Commission accept Idaho Power's plan. Staff's review makes no judgement on reasonableness. Commission acceptance of the Plan does not constitute a determination on the prudence of any individual actions discussed in the Plan. Staff understands that those individual actions, including project specific data, will be reviewed in a general rate case for projects predicted by utilities to be in service prior to the effective date. Idaho Power will need to prove each project was prudent.

[35] See Guideline 1d): Each utility must file a subsequent Plan within two years of the Commission order for Part 2.

Conclusion

Idaho Power's Part Two Plan represents a step forward in DSP. It improves insight into utility planning practices and forecasted investments. While there are still areas for improvement, especially around forecasting and project selection transparency, the Plan also represents progress exploring NWS. The Plan provides value in supporting decarbonization, and other critical policy goals. Staff finds that Idaho Power's Plan meets the criteria and requirements of the Guidelines.

PROPOSED COMMISSION MOTION:

Accept the 2022 Oregon Distribution System Plan by Idaho Power as meeting the criteria and requirements of the Distribution System Planning Guidelines established in Order No. 20-485.

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Appendix A

The following table summarizes opportunities for continued learning and improvement in Idaho Power's DSP as noted in Staff's Memo.

Community Engagement
Staff notes an opportunity *to improve insight and transparency by including outcomes from community engagement such as capturing participant feedback and response to that feedback.*

Forecasting
(Load growth)
Staff notes that the importance of accurate forecasting in DSP and the newness of the load allocation methodology present an opportunity *and need for continuous refinement and consideration of risk*.

The importance of accurate forecasting in DSP and the newness of DSP processes present an opportunity and need for *ongoing coordination in the functioning and accuracy of DSP and IRP interaction*.

Grid Needs and Solution Identification
(Solution identification)
Staff notes an opportunity *to increase insight through a more thorough discussion of the Company's solution identification processes.*

Non-wires Solutions
Staff notes the opportunity to *further system optimization through future exploration of NWS which provide additional benefits.*

Improved Insight for Investment Planning
(Near-term action plan)
Staff notes uncertainty about project timing, and level of project summary, reveal an opportunity for *improved clarity and specificity in future action plans.*