

Staff Memo Attachment 2 - PacifiCorp 2021 IRP Progress to Date

| Legend |  |
|--------|--|
|        | No submission to date; PacifiCorp has not addressed this requirement in any form |
|        | Methodology provided or partial submittal, update needed                         |
|        | Submittal meets requirements   |
|        | Not applicable   |

| IRP Content  | Statute (RCW)  | Rule (WAC)  | Requirement  | Draft IRP filing   | April 1 filing  | Complete 21 IRP no later than Sep 1 |
|--|--|---|--|--|---|-------------------------------------|
| Timing   | RCW 19.280.030(1)  | WAC 480-100-625(1) and (4)  | Integrated resource plan updated every four years, with a progress report at least every two years.  |  | Data-deficient 2021 IRP filed within 4 years of 2017 IRP  |                                     |
| Planning horizon   |  | WAC 480-100-620(1)  | All assessments, evaluations, and forecasts comprising the plan should extend over the long-range (e.g., at least ten years), unless otherwise stated.   |  | 2021 IRP extends over a 20-year planning period between 2021-2040   |                                     |
| Load forecast  | RCW 19.280.030(1)(a)   | WAC 480-100-620(2)  | Plan includes range of forecasts of projected customer demand that reflect effect of economic forces on electricity consumption.   |  | Update needed to better address COVID-19 impacts  |                                     |
|  |  |   | Plan includes range of forecasts of projected customer demand that address changes in the number, type, and efficiency of electrical end-uses.   |  | Load forecast submitted w/out supporting data, analyses   |                                     |
| Demand-side resources, including distributed energy resources (DERs) | RCW 19.280.030(1)(b), RCW 19.285.040(1), RCW 19.405.050(3)(a)                          | WAC 480-100-620(3)  | Plan includes load management assessments that are cost-effective and commercially available, including current and new policies and programs to obtain:<br><br>- all cost-effective conservation, efficiency, demand response (DR), and load management improvements;<br><br>- ten-year conservation potential used in the concurrent biennial conservation plan consistent with RCW 19.285.040(1);   |  | Cost effectiveness determined thru portfolio modeling that has yet to occur   |                                     |
|  |  | WAC 480-109-100(2)  | - identification of opportunities to develop combined heat and power as an energy and capacity resource; and   |  | 2021 CPA completed and posted to Company website  |                                     |
|  | RCW 19.405.120(4)(b)   | WAC 480-100-620(3)(b)   | Plan includes assessments of distributed energy programs and mechanisms pertaining to energy assistance and progress toward meeting energy assistance need, including but not limited to the following:<br>- Energy efficiency and CPA,<br>- Demand response potential,<br>- Energy assistance potential   |  | 2021 IRP data and/or methodologies do not yet address energy assistance   |                                     |
|  | RCW 19.280.030(1)(h), RCW 19.280.100(2)  |   | Plan assesses a forecast of distributed energy resources (DER) that may be installed by the utility's customers via a planning process pursuant to RCW 19.280.100(2).<br>Plan includes effect of DERs on the utility's load and operations.<br>If utility engages in a DER planning process, which is strongly encouraged, IRP should include a summary of the process planning results.   | 2020 Private Generation Long-term Resource Assessment posted to Company website                    |   |                                     |
|  | RCW 19.280.100(2)  |   | Plan assesses wide range of conventional generating resources.   |  | PacifiCorp has not undertaken DER planning process for 2021 IRP cycle   |                                     |
| Supply-side resources  | RCW 19.280.030(1)(c)   | WAC 480-100-620(4)  | Plan assesses nonconventional generating, integration, and ancillary service technologies.   |  | 2021 Supply-side Resource Table completed and posted to Company website   |                                     |
|  |  | WAC 480-100-620(5)  | Plan assesses energy storage resources.  |  |   |                                     |
|  | RCW 19.405.040(6)(a), RCW 19.405.050(3)  | See WA-UTC energy storage policy statement (UE-151069 & UE-161024 consolidated) | In making new investments, plan considers acquisition of existing and new renewable resources at LRC.  |  | LRC determined thru portfolio modeling that has yet to occur  |                                     |
| Regional generation and transmission                                 | RCW 19.280.030(1)(f)   | WAC 480-100-620(6)  | Plan assesses the availability of regional generation and transmission capacity for purposes of delivery of electricity to customers.<br><br>Plan assesses utility's regional transmission future needs and the extent transfer capability limitations may affect the future siting of resources.  |  | Transmission chapter provides methodology and qualitative discussion  |                                     |
| Resource evaluation  | RCW 19.280.030(1)(c) and (e)   | WAC 480-100-620(7)  | Plan:<br>- compares benefits and risks of purchasing power or building new resources,<br>- includes methods for integrating renewables resources (e.g., battery storage), and<br>- addresses overgeneration events.  | Modeling and Portfolio Evaluation Approach chapter provides methodology and qualitative discussion |   |                                     |
|  | RCW 19.280.030(1)(d)<br>RCW 19.405.030,<br>RCW 19.405.040(6)(a),<br>RCW 19.280.020(11) |   | Plan compares all identified resources according to resource costs, including:<br>- transmission and distribution delivery costs;<br>- risks, including environmental effects and the social cost of GHG emissions;<br>- benefits accruing to the utility, customers, and program participants (when applicable); and<br>- resource preference public policies adopted by WA State or the federal government.  | Resource cost comparison occurs during portfolio modeling that has yet to occur                    |   |                                     |
| Resource adequacy metrics determination                              | RCW 19.280.030(1)(g)   | WAC 480-100-620(8)  | Plan assesses and determines resource adequacy metrics.  |  | PacifiCorp proposes assessing resource adequacy via two metrics: 1) capacity reserve margin (CRM), 2) loss of load probability (LOLP). Actual measurement will occur during portfolio modeling that has yet to occur. |                                     |
| Resource adequacy requirement identification                         | RCW 19.280.030(1)(i),<br>RCW 19.405.030,<br>RCW 19.405.040,<br>RCW 19.405.050          | WAC 480-100-620(8)  | Plan identifies an appropriate resource adequacy requirement.<br>Plan measures corresponding resource adequacy metric consistent with prudent utility practice in eliminating coal-fired generation by 12/31/2025 (RCW 19.405.030), attaining GHG neutrality by 1/1/2030 (RCW 19.405.040), and achieving 100 percent clean electricity WA retail sales by 1/1/2045 (RCW 19.405.050).   |  |   |                                     |
| Economic, health, environmental burdens and benefits, and equity     | RCW 19.280.030(1)(k), RCW 19.405.140   | WAC 480-100-620(9)  | Plan reflects the cumulative impact analysis conducted under RCW 19.405.140, and includes an economic, health, and environmental burdens and benefits current-state assessment.  |  | Incomplete assessment needs to address vulnerable populations and disparate impacts within WA service territory.  |                                     |
| Cases, scenarios, sensitivities                                      |  | WAC 480-100-620(10)   | Utility should include a range of possible future scenarios and input sensitivities for testing the robustness of the utility's resource portfolio under various parameters, including the following required components:<br><br><i>Climate change scenario</i> - incorporate the best science available to analyze impacts including, but not limited to, changes in snowpack, streamflow, rainfall, heating and cooling degree days, and load changes resulting from climate change.<br><br><i>CETA counterfactual scenario</i> - describe the alternative LRC and reasonably available portfolio that the utility would have implemented if not for the requirement to comply with RCW 19.405.040 and RCW 19.405.050, as described in WAC 480-100-660(1).<br><br><i>Maximum customer benefit sensitivity</i> - model the maximum amount of customer benefits described in RCW 19.405.040(8) prior to balancing against other goals. | Modeling and Portfolio Evaluation Approach chapter provides proposed methodology                   |   |                                     |
|  |  |   |  | Not addressed to date via proposed methodologies   |   |                                     |

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| IRP Content                                | Statute (RCW)   | Rule (WAC)  | Requirement  | Draft IRP filing   | April 1 filing   | Complete 21 IRP no later than Sep 1 |
|--|---|---|--|--|--|-------------------------------------|
| Portfolio analysis and preferred portfolio | RCW 19.280.030(1)(j),<br>RCW 19.405.030,<br>RCW 19.405.040,<br>RCW 19.405.050 | WAC 480-100-620(11)   | Plan must integrate demand forecasts and resource evaluations into a long-range IRP solution.  |  | Portfolio analysis and preferred portfolio determination has yet to occur due to PLEXOS modeling implementation issues             |                                     |
|  |   |   | IRP solution or preferred portfolio must describe the resource mix that meets current and projected needs.   |  |  |                                     |
|  |   |   | Preferred portfolio must include narrative explanation of the decisions made, including how the utility's long-range IRP solution:<br>- achieves requirements for eliminating coal-fired generation by 12/31/2025 (RCW 19.405.030);<br>- attains GHG neutrality by 1/1/2030 (RCW 19.405.040); and<br>- achieves 100 percent clean electricity WA retail sales by 1/1/2045 (RCW 19.405.050) at LRC,<br>- achieves 100 percent clean electricity WA retail sales by 1/1/2045 (RCW 19.405.050), considering risk.   |  |  |                                     |
|  | RCW 19.405.040(6)(a),<br>RCW 19.285.040(1)                                    | WAC 480-100-620(11)(c)  | Consistent with RCW 19.285.040(1), preferred portfolio shows pursuit of all cost-effective, reliable, and feasible conservation and efficiency resources, and DR.  |  |  |                                     |
|  |   | WAC 480-100-620(11)(d) and (e)  | Preferred portfolio considers acquisition of existing renewable new resources and relies on renewable resources and energy storage, insofar as doing so is at LRC.   |  |  |                                     |
|  | RCW 19.280.030(1)(e) and (j)  | WAC 480-100-620(11)(f)  | Preferred portfolio considers acquisition of existing renewable new resources and relies on renewable resources and energy storage, considering risks.   |  |  |                                     |
|  |   |   | Preferred portfolio maintains and protects the safety, reliable operation, and balancing of the utility's electric system, including mitigating over-generation events and achieving identified resource adequacy requirements.  |  |  |                                     |
|  | RCW 19.405.040(8)   | WAC 480-100-620(11)(g)  | Preferred portfolio ensures all customers are benefiting from the transition to clean energy through the<br>- equitable distribution of energy and nonenergy benefits; reduction of burdens to vulnerable populations and highly impacted communities;<br>- long-term and short-term public health and environmental benefits; reduction of costs and risks; and<br>- energy security and resiliency.  |  |  |                                     |
|  |   | WAC 480-100-620(11)(h)  | Preferred portfolio: assesses the environmental health impacts to highly impacted communities,   |  |  |                                     |
|  |   | WAC 480-100-620(11)(i)  | - analyzes and considers combinations of DER costs, benefits, and operational characteristics (incl. ancillary services) to meet system needs,<br>- incorporates the social cost of GHG emissions as a cost adder.   |  |  |                                     |
| RCW 19.280.030(3)                          | WAC 480-100-620(11)(j)  | Utility must develop a ten-year <b>clean energy action plan (CEAP)</b> for implementing RCW 19.405.030 through 19.405.050 at LRC, and at an acceptable resource adequacy standard.  |  |  |  |                                     |
| Clean Energy Action Plan (requirements)    | RCW 19.280.030(1)(l), RCW 19.405.030,<br>RCW 19.405.050                       | WAC 480-100-620(12)   | The CEAP will:   |  | CEAP development requires identification of preferred portfolio that has yet to occur due to PLEXOS modeling implementation issues |                                     |
|  |   |   | - identify and be informed by utility's ten-year CPA per RCW 19.285.040(1);  |  |  |                                     |
|  | RCW 19.280.030(2),<br>RCW 19.285.040(1)                                       | WAC 480-100-620(12)(b)  | - demonstrate that all customers are benefiting from the transition to clean energy;   |  |  |                                     |
|  |   | WAC 480-100-620(12)(c)  | - establish a resource adequacy requirement;   |  |  |                                     |
|  | RCW 19.405.040(8)   | WAC 480-100-620(12)(d)  | - identify the potential cost-effective DR and load management programs that may be acquired;  |  |  |                                     |
|  |   | WAC 480-100-620(12)(e)  | - identify renewable resources, nonemitting electric generation, and DERs that may be acquired and evaluate how each identified resource may be expected to contribute to meeting the utility's resource adequacy requirement;   |  |  |                                     |
| RCW 19.280.030(2)                          | WAC 480-100-620(12)(f)  | - identify any need to develop new, or expand or upgrade existing, bulk transmission and distribution facilities; and<br>- identify the nature and possible extent to which the utility may need to rely on alternative compliance options, if appropriate.   |  |  |  |                                     |
| RCW 19.405.040(1)(b)                       | WAC 480-100-620(12)(g)  |   |  |  |  |                                     |
| RCW 19.280.030(3)(a)                       | WAC 480-100-620(12)(i)  | Plan (both IRP and CEAP) considers cost of greenhouse gas emissions as a <b>cost adder</b> equal to the cost per metric ton of carbon dioxide emissions, using the two and one-half percent discount rate, listed in Table 2, Technical Support Document: Technical update of the social cost of carbon (SCC) for regulatory impact analysis under Executive Order 12866, published by the interagency working group on social cost of greenhouse gases of the United States government, August 2016, as adjusted by the Commission to reflect the effect of inflation. | Modeling and Portfolio Evaluation Approach chapter provides proposed methodology for considering the social cost of GHG emissions as a cost adder  |  |  |                                     |
| Avoided costs                              |   | WAC 480-100-620(13)   | Plan must include an analysis and summary of the estimated avoided cost for each supply- and demand-side resource, including energy, capacity, transmission, distribution, and GHG costs.<br>Listed energy and non-energy impacts should specify to which source party they accrue (e.g., utility, customers, participants, vulnerable populations, highly impacted communities, general public).<br>Plan provides information and analysis used to inform annual purchases of electricity from qualifying facilities, including:<br>- description of the avoided cost methodology used and<br>- resource assumptions and market forecasts used in utility's schedule of estimated avoided costs |  | Estimating avoided costs requires portfolio modeling that has yet to occur   |                                     |
|  | Qualifying facility electricity purchases                                     | WAC 480-106-040   |  |  |  |                                     |
| Data disclosure                            | RCW 19.280.030(10)(a)   | WAC 480-100-620(14)   | To maximize transparency, the utility should submit data input files supporting the plan in native file format (e.g., supporting spreadsheets in Excel, not PDF file format).  |  | PacifiCorp has <u>not</u> provided supporting data files in native file format with 2021 IRP filings to date                       |                                     |
| Report of substantive changes              |   | WAC 480-100-620(16)   | Plan must summarize substantive changes to modeling methodologies or inputs that change the utility's resource need, as compared to the utility's previous IRP.  | Partially addressed in the Modeling and Portfolio Evaluation Approach chapter (e.g., 2019 IRP progress report used planning reserve margin to assess resource adequacy versus 21 IRP's plan to use CRM and LOLP) |  |                                     |
| Public comments summary                    |   | WAC 480-100-620(17)   | Utility must summarize:<br>- public comments received on the draft IRP,<br>- utility's responses to public comments, and<br>- whether final plan addresses and incorporates comments raised.   | Draft IRP Attachment B provided PacifiCorp responses to stakeholder feedback forms to date, but <u>no summary</u> that is easily accessible to interested parties  |  |                                     |
|  |   |   |  | Depends on portfolio modeling that has yet to occur  |  |                                     |