BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of Pacific Power and Light Company **Draft 2021 Electric Integrated Resource Plan**	**DOCKET UE-200420**

COMMISSION STAFF COMMENTS REGARDING PACIFIC POWER AND LIGHT COMPANY'S DRAFT INTEGRATED RESOURCE PLAN SUBMITTED IN COMPLIANCE WITH RCWs 19.405, 19.280 and WACs 480-100-600 through -630 <AND UNDER CONSOLIDATED DOCKETS UE-191023 AND UE-190698, Order R-601 >

February 5, 2021

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Introduction

Washington statute and newly revised rules direct electric investor-owned energy companies (IOUs) to develop an integrated resource plan (IRP) every four years.[1] The passage of the Clean Energy Transformation Act (CETA) during the 2019 Washington Legislative Session significantly increased the required rigor and complexity around IRPs.[2]

PacifiCorp d/b/a Pacific Power & Light Company (PacifiCorp or company) filed its draft of the 2021 integrated resource plan (Draft IRP) with the Washington Utilities and Transportation Commission (Commission) in Docket UE-200420 on January 4, 2021. The company will file its completed 2021 IRP (Final IRP) with the Commission by April 1, 2021.[3] On January 5, 2021, the Commission served a Notice of Opportunity to File Written Comments on PacifiCorp's Draft IRP due by February 5, 2021, and notice of recessed Open Meeting to review the draft plan on February 22, 2021.[4]

Staff does <u>not</u> believe PacifiCorp's Draft IRP filing meets the requirement for a draft IRP.[5] PacifiCorp's filing lacks the data and supporting analytics to determine even a preliminary IRP solution (i.e., preferred portfolio). The company only provided its load forecast and conservation potential assessment (CPA) data inputs in its filing. Even these data are high level and, in the case of the CPA, lack explanatory narrative.

PacifiCorp filed a motion on January 25, 2021, requesting a one-time exemption from the draft IRP filing requirement.[6] The company's motion also requests the Commission re-schedule the recessed Open Meeting from February 22 to a date *after* the Final IRP filing and open a second comment period on the final plan. **Staff supports this motion and agrees that re-scheduling the recessed Open Meeting and opening another comment period to review a complete 2021 IRP aligns with the Commission's intent to be flexible during the 2021 planning cycle.**[7]

Staff comments focus on PacifiCorp's load forecast and demand-side management (DSM) preliminary results, which the company provided limited data to analyze. Additionally, Staff outline questions and recommendations for PacifiCorp regarding their Final IRP consistent with CETA, focusing on the following key topic areas: IRP modeling, resource adequacy, clean

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[1] RCW 19.280.030(1), WAC 480-100-625(1).
[2] Definition of an integrated resource plan per WAC 480-100-605.
[3] *In re Petition for an Order Granting Exemption from the Requirements of WAC 480-100-238(4) and (5)*, Docket UE-180259, Order 03, p. 6, ¶ 26 (Nov. 7, 2019).
[4] *See* Notice of Opportunity to File Written Comments and Notice of Recessed Open Meeting, Docket UE-200420 (Jan. 5, 2021).
[5] WAC 480-100-625(3).
[6] PacifiCorp's Motion for Exemption from WAC 480-100-625(3) in Docket UE-200420 will be heard at the February 11, 2021 recessed Open Meeting.
[7] *In re Adopting Rules Relating to Clean Energy Implementation Plans and Compliance with the Clean Energy Transformation Act and Amending or Adopting rules relating to WAC 480-100-238, Relating to Integrated Resource Planning*, Dockets UE-191023 & UE-109698 (*Consolidated*), General Order 601, pp. 58-59, ¶ 168 (CETA Rulemaking Order) (Dec. 28, 2020).

energy action plan (CEAP), nonenergy impacts, public participation, and data disclosure. In the Matter of Adopting Rules Relating to Clean Energy Implementation Plans and Compliance with the Clean Energy Transformation Act
Figure 1 illustrates how these data inputs, models, tools, and outputs or applications fit within the broader electric IRP analyses landscape. In developing these comments, Staff consulted with Jeremy Twitchell from Pacific Northwest National Laboratory. Tom Eckman also provided helpful technical assistance to Staff in its review of the Draft IRP.

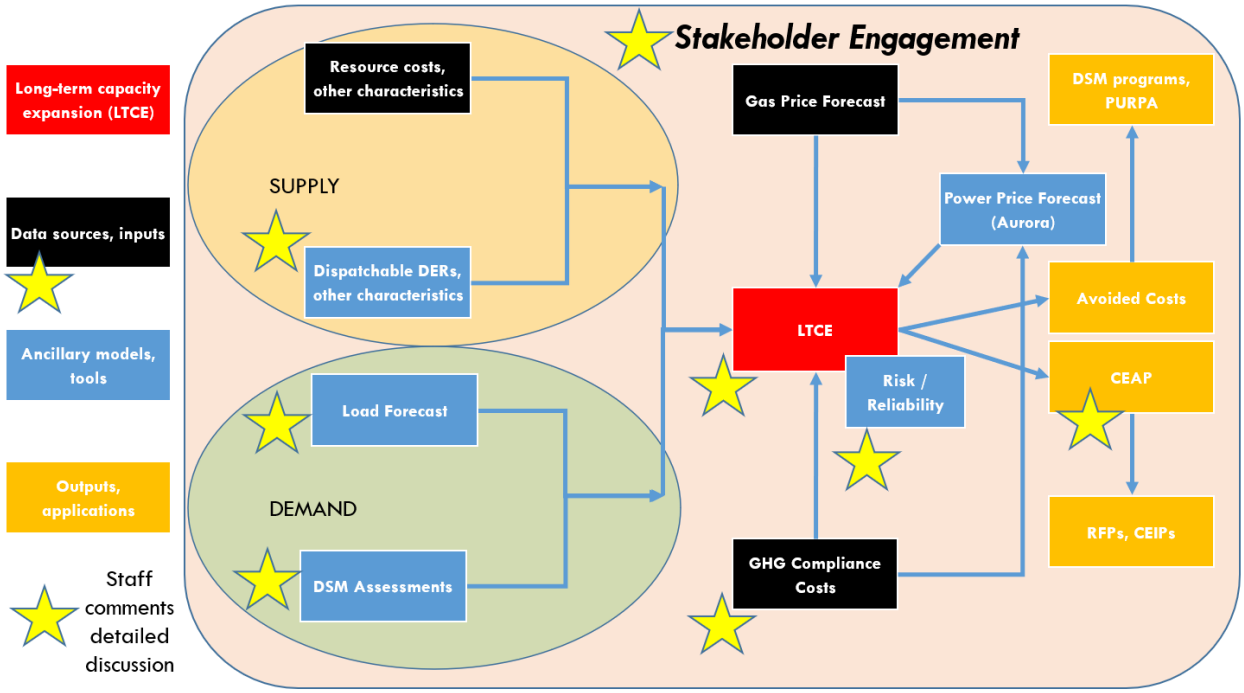

Figure 1. Electric IRP analyses landscape highlighting Draft 2021 Staff comments focus areas.

Staff filed an Appendix 1 to these comments, which identifies and explains relevant statutes and rules. The remainder of these comments describe Staff's assessment of whether PacifiCorp's Draft IRP has satisfied regulatory obligations set forth in statute and rule.

Staff Assessment of 2021 Draft Electric Integrated Resource Plan (Docket UE-200420)

Load Forecast and Climate Change Impacts

PacifiCorp's Draft IRP shows a system-wide *load reduction* of approximately 1.89 million MWh during the first two years of the company's ten-year forecast compared to the 2019 IRP progress

report.[8] Beyond 2022, PacifiCorp's 2021 load forecast is higher than 2019 driven primarily by increased demand in Utah later in the 2020s. The ongoing COVID-19 pandemic drives the downward shift in years 2021 and 2022. In contrast to long-term system-wide growth, the company is forecasting a *decreased* Washington load requirement compared to the 2019 IRP progress report, driven primarily by lower anticipated population growth in PacifiCorp's Washington service territory, which covers central and eastern portions of the state around Yakima and Walla Walla.[9]

Table 1 – PacifiCorp's Annual Load Change: 2021 load forecast less 2019 forecast (MWh)[10]

Year	PacifiCorp System	WA
2021	(1,364,520)	(179,560)
2022	(522,110)	(117,740)
2023	241,120	(84,140)
2024	531,590	(75,690)
2025	761,200	(74,580)
2026	430,710	(77,670)
2027	473,910	(78,870)
2028	739,260	(76,650)
2029	988,930	(74,230)
2030	1,390,000	(66,880)

Three preliminary results and methodology elements in the 2020 load forecast raise concern, namely PacifiCorp's approach to:

1. modeling COVID-19 impacts,
2. informing the load forecast with meteorological data that does not consider climate change, and
3. decrementing distributed generation (DG) from the load forecast but not otherwise considering DG as a modeled resource option.

PacifiCorp's 2020 load forecast increased 2.09 percent system-wide when compared to the load forecast the company developed for its 2019 IRP progress report.[11] Staff questions the utility's decision to base its 2021 IRP load projections on the October 2019 release of IHS Markit's economic driver forecast which precedes the current, ongoing COVID-19 pandemic and associated recession.[12] Basing a load forecast on 17-month-old economic data would be concerning under normal circumstances, let alone when conditions have changed dramatically in

[8] For preliminary load forecast results, *see* *PacifiCorp Draft 2021 IRP*, Docket UE-200420, pp. 93-108, Appendix A (PacifiCorp Draft IRP) (Jan. 4, 2021).
[9] PacifiCorp Draft IRP at 98, Appendix A (Load Forecast Details, Washington detail).
[10] *Id*. at 95, Appendix A (Load Forecast Details, Table A.3). Note: load forecast change is measured at point of generation and is prior to any DSM decrement.
[11] *Id*. at 93 (Summary load forecast). The increase is concentrated in four of the six states served by the company.
[12] *Id*. at 96. PacifiCorp did update the 2019 data based on a March 2020 release from IHS Markit.

the interim due to the COVID-19 pandemic. Staff contends that PacifiCorp's assumptions that stay-at-home impacts lasted only between March and June 2020 represent too short of a timeframe. Beyond June 2020, the company appears to depress commodity prices over the longer-term as a surrogate for the stay-at-home impacts on load (i.e., through June 2023).[13] By its own account, regional lockdowns and other economic headwinds continue to affect both Walla Walla and Yakima.[14]

PacifiCorp bases its load forecast on normal weather as defined by the *previous* twenty-year period, consistent with previous IRP cycles.[15] Staff fears this approach is inadequate to address climate change impacts as required by Commission rule.[16] PacifiCorp's *backward-looking* analysis has little to no consideration as to how temperature (e.g., heating and cooling degree days) and precipitation trends may evolve during the 2020-2040 planning period.[17] Staff worries PacifiCorp's claim that "peak-producing weather does not change significantly" over the preceding five, ten, or twenty-year horizons could infer the company expects this consistent weather regime to continue into the future.[18] Consensus of the scientific community simply does not agree as found by the State of Washington.[19] Regardless, PacifiCorp has not included the underlying data that informs this no-change-in-weather assertion with its Draft IRP, thus preventing Staff from reviewing this claim.[20]

The utility indicates its Final IRP will include the newly required climate change scenario, which may forecast various variables, including temperature, precipitation, streamflow, and severe weather duration. If the climate change scenario appropriately considers load impacts, this modeling exercise may satisfy Staff's concerns.[21] PacifiCorp has committed to analyze global climate models developed by the Intergovernmental Panel on Climate Change,[22] which would generally align with the climate change approach taken by Washington's other two electric IOUs and the Northwest Power and Conservation Council (NWPCC) in their development of the 2021 Power Plan.[23]

PacifiCorp's characterization of distributed energy resources (DERs) in the Draft IRP is too limited for a CETA-compliant IRP.[24] Other than the new energy efficiency and demand response resources PacifiCorp has identified in its CPA, the company claims its private generation study

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[13] *Id*. at 105.
[14] PacifiCorp WA Demand-side Management (DSM) Advisory Group Meetings, Nov. 30 and Dec. 21, 2020.
[15] PacifiCorp Draft IRP at 100, Appendix A.
[16] WAC 480-100-620(10)(b). Utility must consider load changes resulting from climate change.
[17] PacifiCorp Draft IRP at 107-08, Appendix A (Alternative load forecast scenarios).
[18] *Id*. at 99-100, Appendix A.
[19] RCW 19.405.010(1)-(3).
[20] CETA Rulemaking Order at 60, ¶ 173.
[21] *See infra,* the IRP Modeling section of these Staff comments, pp. 10-13, for a more detailed discussion of the IRP scenarios and sensitivities CETA requires.
[22] PacifiCorp Draft IRP at 82-3 (Modeling and Portfolio Evaluation Approach).
[23] NWPCC, "Update on Climate Scenario Selection for the 2021 Power Plan" *available at* https://www.nwcouncil.org/sites/default/files/2020_04_p2.pdf.
[24] WAC 480-100-620(3)(b)(iv) requires electric IOUs to, "assess other DERs that may be installed by the utility or the utility's customers including, but not limited to, energy storage, electric vehicles, and photovoltaics." WAC 480-100-620(11)(i) further expects utilities to "analyze…DERs to meet system needs" (i.e., as resource options).

forecasts of customer DG (e.g., behind-the-meter installed solar PV) accounts for the remainder of its DER potential. The utility is planning to treat this private generation as a decrement to its load forecast but not otherwise value this DG as a modeled resource.[25] PacifiCorp's Draft IRP makes no mention of DG over which the utility has control (e.g., community solar). Conversely, PacifiCorp is increasing its load forecast to include increasing penetration of electric vehicles (EVs), citing approximately two percent of customers system-wide currently report having such vehicles.[26] The company has no plans to consider any vehicle-to-grid capabilities for the 2021 IRP, whereby EVs could function in a DG capacity.

For its **Final IRP, Staff makes the following load forecast recommendations**. PacifiCorp should:

- Update its load forecast, especially for late 2020 thru 2022. The company should discuss whether and how continuing COVID-19 impacts add risk to the load forecast.
- Augment its load forecasting chapter and supporting appendices with significantly more details. Staff expect to see the estimated regression equations and the data inputs used in the calculation.

    - The detailed narrative should include the use of charts, graphics, and accompanying text and show the following results:
    - Alternative load forecast scenarios, including climate change impacts;
    - "Optimistic" and "pessimistic" assumptions in the low and high growth models and how these alternative forecasts differ from the base forecast; and
    - Electrification adjustments made to the load forecast.

For **load forecasting during future planning cycles, Staff recommends** PacifiCorp:

- Conduct a back cast of its load forecast model using actual values for independent variable inputs to the load forecast. This validation exercise would assess whether the company's models have a systematic bias.
- Include a section in future load forecast chapters that "assess[es] the effect of distributed energy resources on the utility's load", as per Commission rule.[27] The company must go beyond its current approach showing DERs as simply a load forecast decrement.[28]
- Expand its treatment of DERs to address potential increases in DG opportunities and requirements. For example, develop future load growth sensitivities showing more community solar sited in Washington. Such modeling sensitivities would reflect possible new legislation.[29]

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[25] PacifiCorp Draft IRP at 58 (Private generation). Navigant's Private Generation Long-term Resource Assessment (2021-2040) is included as Appendix O (pp. 158-242).
[26] PacifiCorp Draft IRP at 106, Attachment A.
[27] WAC 480-100-620(3).
[28] *See infra* IRP Modeling section of PacifiCorp Draft IRP Staff comments, pp. 10-13, for additional discussion.
[29] Community solar programs, HB 1046, 2021 WA Regular Session would require "investor-owned utilities to enter into a 20 year or longer power purchase agreement with a certified community solar project" (Sec. 2 (1)(a)(iii)).

Demand-side Management, including Energy Efficiency and Demand Response

Completed in November 2020, PacifiCorp's 2021 CPA is the most complete data component of its Draft IRP. It provides the technical achievable potential for select energy efficiency (EE) and demand response (DR) measures. Staff notes PacifiCorp posted its 2021 CPA final results in native file (i.e., spreadsheet) format on its website but neglected to file the CPA as an appendix to its draft filing.[30]

The company's final technical achievable potential EE supply curves yield a total cumulative 20-year potential savings of 14,005,825 MWh[31] across PacifiCorp's six-state territory with 1,107,464 MWh attributed directly to Washington.[32] The 2021 EE technical achievable potential for Washington represents a 265,731 MWh (32 percent) increase compared to PacifiCorp's 2017 IRP[33] and a 3,164 MWh (0.3 percent) *decrease* compared to the company's 2019 IRP progress report.[34] Several counteracting factors explained why PacifiCorp's Washington EE technical achievable potential essentially remained flat between 2019 and 2021, including:

- lighting savings declined due to LEDs continuing their rapid market transformation (*negative trend*),
- water heating savings declined due to standards and codes improvements (*negative trend*), and
- increased potential associated with behavioral measures (e.g., strategic energy management) and compressed air measures (*positive trend*).

As the company moves to incorporate these CPA measures into portfolio development, cost bundling according to energy (i.e., MWh) savings as well as summer and winter capacity (i.e., MW) contributions look promising.[35] However, Staff will need Final IRP results to verify the validity of this approach.

PacifiCorp's 2021 CPA included a parallel DR potential assessment that primarily considered measure-based programs controlled or rather called by the utility. For Washington, the company's DR potential assessment surveyed ten program bundle categories ranging from electric vehicle direct load control (DLC) to grid interactive water heaters across the residential, commercial & industrial, and irrigation sectors.[36] PacifiCorp's proposed approach to incorporating DR into its 2021 portfolio development continues a best practice Staff have

[30] 2021 Conservation Potential Assessment results posted November 2020 to PacifiCorp's 2021 IRP support and studies website.
[31] Summation of EE technical achievable potential from 2021 CPA Final ETO EE Measure Results for PacifiCorp's Oregon service territory and 2021 CPA Final EE Measure Results for PacifiCorp's remaining five-state service territory, including WA. Savings from the residential, commercial, industrial, and irrigation sectors inform these results. Both on-line workbooks accessed January 2021.
[32] WA cumulative EE savings by sector, 2021 CPA Final EE Measure Results, January 2021.
[33] Volume 1 – Demand-side Resource Potential Assessment for 2017-2036 Executive Summary, p. 9.
[34] Volume 1 – Conservation Potential Assessment for 2019-2038 Executive Summary and Introduction, p. 11.
[35] PacifiCorp Draft IRP at 72 (Modeling and Portfolio Evaluation Approach).
[36] WA DR Potential and Costs, 2021 CPA Final DR Results, November 2020.

observed since the 2017 IRP where DR directly competes with other resources.[37] For the 2021 IRP, both summer and winter levelized capacity costs ($/kW), as well as the capacity contributions specific measures afford, will determine DR's cost-effectiveness during portfolio optimization.[38] Staff commends the company for considering ancillary service benefits like ramp rate and notification requirements associated with select DR measures.[39]

Staff notes that for a potential assessment to determine all cost-effective DR accurately it should reconcile measure interaction effects with EE. PacifiCorp's consideration of DR in parallel to traditional EE measures within its 2021 CPA enables the company to reconcile and account for interaction effects between DR and EE, otherwise referred to as Class 1 DSM and Class 2 DSM, respectively.[40] For example, the adoption of connected thermostats, which fall under the EE purview, creates opportunities for bring-your-own thermostat DR programs. Similarly, adoption of EE grid-interactive heat pump water heaters creates opportunities for bring-your-own water heat DR programs.

Staff elaborate two DSM methodology elements that raise concern, namely:

1. capturing DSM resource benefits within the CPA vs. during portfolio optimization and
2. harmonizing CPA technical achievable potential with the load forecast.

One weakness of the 2021 CPA is that the analyses do not delineate or specify the EE and DR resource grid benefits that will be captured within the PLEXOS long-term capacity expansion (LTCE) model and the benefits that are estimated outside that optimization. For example, outside the LTCE model, the CPA does not indicate the amount of any state specific "cost credit" PacifiCorp indicated it would assign to measures that provide grid benefits (e.g., distribution and transmission capacity deferral).[41]

Another alignment issue PacifiCorp should address concerns its CPA and underlying load forecast, both of which will serve as data inputs to the company's LTCE model. The amount of EE potential should vary by load forecast (e.g., greater forecast demand should have more associated candidate EE). Such data input linkage "safeguards" are not evident within the Draft IRP. PacifiCorp appears to base its estimated technical achievable potential on a single load growth forecast. Hence the company risks understating and overstating its EE potential in its high and low load forecast, respectively.[42]

For its **Final IRP, Staff makes the following DSM recommendations**. PacifiCorp should:

- File the CPA as an appendix or attachment to its final IRP and specifically provide the:
    - CPA model and underlying data (i.e., LoadMAP files)

[37] Pacific Power & Light Company 2017 IRP Staff comments attachment, Docket UE-160353, p. 8 (May 7, 2018).
[38] PacifiCorp Draft IRP at 72 (Modeling and Portfolio Evaluation Approach).
[39] *Id*. at 38, Attachment B.
[40] *Id*. at 72.
[41] *Id*. at 39, Attachment B.
[42] *Id*.

    - DR potential model and underlying data (i.e., LoadMAP files)
- Identify the DSM grid benefits that are "endogenously determined" within LTCE portfolio optimization. Also identify benefits that are separately determined during the CPA process.
- Describe whether the PLEXOS LTCE model has internal logic or uses inputs that account for differences in technical achievable potential when the optimization process applies different load growth forecasts.

IRP Modeling

PacifiCorp undertook a significant revamp of its modeling tool suite for the 2021 IRP development process, transitioning from System Optimizer (SO) to PLEXOS for its LTCE optimization, arguably an electric IRP's core modeling analysis.[43] The company's rationale for such a change was persuasive. Among other advantages, PLEXOS would enable the company to consider reliability in its LTCE optimization endogenously.[44] The PLEXOS tool suite also features a medium-term (MT) model simulation phase that can run ***sub-hourly dispatch*** and readily integrate resources offering more granular grid services (e.g., DERs) into portfolio development. Additionally, PacifiCorp claimed they could leverage PLEXOS to consider coal retirements systematically instead of unit-by-unit.[45] Staff applauds the company for updating its modeling software and endeavoring to model at a more granular level but note that the decision has significantly delayed the 2021 IRP development process.[46]

As with many technology migrations, the necessary "learning by doing" PacifiCorp has had to undertake to become proficient with PLEXOS appears to have created its own set of delays in developing the 2021 IRP. PacifiCorp's 2021 IRP work plan filed with the Commission on May 7, 2020, indicated portfolio discussion would commence with its September 2020 public interest meeting.[47] As of PacifiCorp's Draft IRP filing, no modeling runs or results have been released to the advisory group. While Staff is sympathetic to the IRP modeling hurdles facing the company, PacifiCorp knew of the Draft IRP filing deadline for over a year and received detailed guidance from Staff regarding the draft's expected contents, including modeling expectations, over six months ago.[48]

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[43] RCW 19.280.030(1)(j), WAC 480-100-620 (11).
[44] PacifiCorp Draft IRP at 32, Attachment A. During previous IRP cycles, the PacifiCorp team needed to validate the results of its legacy SO LTCE platform using the separate Planning and Risk (PaR) tool.
[45] *Id*. at 30.
[46] PacifiCorp's Motion for Exemption from WAC 480-100-625(3) filed in docket UE-200420 on January 25, 2021 acknowledges the company "has been working to implement new modeling software for the 2021 IRP…[and] has not completed any model runs…at this time" (par. 5).
[47] PacifiCorp 2021 Integrated Resource Plan Work Plan, p. 7.
[48] *See In re Petition for an Order Granting Exemption from the Requirements of WAC 480-100-238(4) and (5)*, Docket UE-180259, Order 03, p. 6, ¶ 26 (Nov. 7, 2019) (Establishing a Draft IRP filing date of January 4, 2021). At the time, the Commission discussed that scheduling draft electric IRP deadlines more than a year out would, "promote [PacifiCorp's] compliance with the new [CETA IRP] statutory requirement[s]" (see pp. 4-5, ¶ 17 of Order 03). Staff communicated to PacifiCorp their expectation the Draft IRP should include the company's base case,

Staff views the lack of modeling results, even preliminary portfolio results, as the single biggest weakness of the Draft IRP. Without these data, Staff can only critique whether the company's narrative explaining its proposed modeling path forward **appears** to comply with CETA statute and rule.

As discussed in greater detail within Staff's regulatory landscape Appendix 1, appropriately handling the social cost of greenhouse gases (SCGHG) within IRP analyses is likely the most critical modeling consideration for utilities during the 2021 cycle as this adder applies across the range of resource strategies considered.[49] PacifiCorp proposes a two-step portfolio evaluation approach to this issue. PacifiCorp also intends to run *at least one sensitivity* that prices the SCGHG into company operations by applying a cost adder at dispatch to thermal resources, which will help align planning and operational decisions as transactional market prices (e.g., Mid-Columbia spot market) do not currently reflect the SCGHG.[50]

Staff acknowledge PacifiCorp's proposed SCGHG modeling methodology that considers this adder both from a resource selection and operations perspective appears to align both with the intent of the new CETA IRP rule as well as the SCGHG modeling approaches already undertaken by Washington's other two electric IOUs.[51] The Draft IRP's modeling methodology continues to emphasize PacifiCorp's CEAP will specifically address the SCGHG when, in fact, PacifiCorp's broader portfolio development must reflect this adder.[52]

Staff believe PacifiCorp's modeling approach conveyed in its Draft IRP partially addresses expectations as to how DER assessments and their resulting potential should impact portfolio development. New EE and DR resources identified via PacifiCorp's 2020 CPA should get bundled according to both energy savings and capacity contributions and compete as candidate resources during LTCE optimization within PLEXOS.[53] However, PacifiCorp's handling of DG alternatives appears to fall short of rule requirements.[54] PacifiCorp claims its private generation study that forecasts customer DG (e.g., behind-the-meter installed solar PV) accounts for the remainder of its DER potential. The utility is planning to treat this private generation as a decrement to its load forecast but not otherwise symmetrically value this distributed generation as a modeled resource.[55]

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preferred portfolio, and supporting model output on June 10, 2020. This Staff guidance preceded PacifiCorp's 2021 IRP public interest meeting kick-off.

[49] RCW 19.280.030(3)(a), WAC 480-100-620(11)(j).

[50] PacifiCorp Draft IRP at 81-2 (Modeling and Portfolio Evaluation Approach).

[51] *See* IRP Modeling sections of Avista and PSE Draft IRP Staff comments within Dockets UE-200301 and UE-200304, respectively.

[52] Per WAC 480-100-620(11)(j) the IRP portfolio analysis and preferred portfolio need to incorporate the SCGHG as a cost adder.

[53] PacifiCorp Draft IRP at 72 (Modeling and Portfolio Evaluation Approach).

[54] WAC 480-100-620(3)(b)(iv) requires electric IOUs to, "assess other DERs that may be installed by the utility or the utility's customers including, but not limited to, energy storage, electric vehicles, and photovoltaics." WAC 480-100-620(11)(i) further expects utilities to "analyze…DERs to meet system needs" (i.e., as resource options).

[55] *See supra* Load Forecasting section of PacifiCorp Draft IRP Staff comments, pp. 4-7, for more detail.

PacifiCorp is not realizing the full potential of PLEXOS's sub-hourly modeling capability. The company's planned approach to limit grid services that battery storage might provide to ramping, reserves, and supporting renewable resources overlooks PLEXOS's ability to run at hourly and sub-hourly time steps to estimate the value of other ancillary services.[56]

Of the two scenarios and one sensitivity required by CETA, PacifiCorp's Draft IRP only articulates a modeling path forward for the future climate change scenario.[57] The same cannot be said for PacifiCorp's Draft IRP's lack of attention to developing the CETA counterfactual scenario and the maximum customer benefit sensitivity.[58]

For its **Final IRP, Staff makes the following modeling recommendations**. PacifiCorp should:

- Provide a narrative illustrating step-by-step how the SCGHG cost adder is applied throughout its modeling logic. The SCGHG impact on the company's modeling and portfolio analyses should be addressed in numerous variables, including PacifiCorp's imports and contracts and forward price curves.
- Undertake more granular modeling of its storage resources. PacifiCorp should consider the potential value of storage for frequency regulation, reducing transmission losses, peak shaving, transmission and distribution capacity deferral, and as spinning reserves.[59]
- Provide precise analyses and an explanatory narrative describing the alternative lowest reasonable cost and reasonably available portfolio in the absence of CETA.[60] Staff encourages PacifiCorp to exercise its professional judgment regarding many scenario details. However, for additional guidance, PacifiCorp could consider how its peer Washington IOUs have approached this scenario. For example, Puget Sound Energy's CETA counterfactual scenario has decidedly fewer transmission constraints to serve Washington load since the utility would not need to meet GHG neutral nor 100 percent clean energy targets in 2030 and 2045, respectively.[61] The Commission expects this CETA counterfactual scenario will (1) yield a baseline portfolio that includes the SCGHGs and (2) differs from the CETA-compliant PP according to rule.[62]
- Adjust variables specific to its Washington service territory to develop a more robust maximum customer benefit sensitivity. For example, the company could consider what level of DER penetration within PacifiCorp's Washington service territory would be sufficient to preclude, or at least postpone high-voltage transmission buildout between Walla Walla and Yakima and/or between Yakima and Southern Oregon.[63] Forgoing

[56] PacifiCorp Draft IRP at 77 (Modeling and Portfolio Evaluation Approach).
[57] WAC 480-100-620(10)(b).
[58] The company only restates the WAC 480-100-620(10)(a) and (c) requirements on p. 79 of the PacifiCorp Draft IRP.
[59] Report and Policy Statement on Treatment of Energy Storage Technologies in Integrated Resources Planning and Resource Acquisition, Dockets UE-151069 & UE-161024, ¶¶ 41, 43 & 52 (Oct. 11, 2017).
[60] WAC 480-100-620(10)(a).
[61] *See* Puget Sound Energy's Draft 2021 IRP, Docket UE-200304, p. 6-43, Figure 5-26 (2021 IRP Electric Portfolio Sensitivities).
[62] WAC-480-100-605, see definition of "Alternative lowest reasonable cost and reasonably available portfolio."
[63] PacifiCorp Draft 2021 IRP at 393, Attachment A.

constructing such transmission could significantly reduce eminent domain actions that can disproportionately impact vulnerable populations. This modeling exercise intends to maximize the *hypothetical* benefit for PacifiCorp's Washington customers. For the 2021 IRP, this sensitivity's primary result is additional data and analyses the utility could further refine for its 2022 CEIP and subsequent planning cycles.

For **modeling during future planning cycles, Staff recommends** that PacifiCorp:

- Expand its current, limited treatment of DG and evaluate DG on equal footing with DSM alternatives, renewable, and more traditional fossil resource options. Specifically, PacifiCorp should input DG attributes into PLEXOS's MT model to appropriately value the sub-hourly benefits of these resources. The company could then use these MT model results to better characterize DG as a resource option within LTCE optimization. PacifiCorp should not assume future IRPs that handle DG via a private generation study that simply yields a load forecast decrement will be CETA compliant.

Resource Adequacy and Uncertainty Analysis

PacifiCorp expects the migration to the more sophisticated PLEXOS LTCE platform for the 2021 IRP will enable the company to expand its resource adequacy (RA) metric treatment compared to previous planning cycles. The Draft IRP explains PLEXOS will model RA endogenously during the portfolio-development process. The company will assess RA according to two metrics: capacity reserve margin (CRM) and loss of load probability (LOLP). PacifiCorp will apply a CRM metric calculated at each load carrying location within the company's transmission topology. CRM is modeled as having a 13 percent minimum requirement.[64] The company has not yet identified a target LOLP.

Although PacifiCorp's RA treatment within its Draft IRP has yet to occur, Staff appreciates this two-metric approach as a more holistic assessment of RA compared to the company's previous planning cycles. In both its 2017 IRP and 2019 IRP progress report, the company performed its LTCE optimization and then vetted the resulting portfolios for RA by applying a planning reserve margin (PRM) of 13 percent.[65] While PacifiCorp's previous Planning and Risk reliability model (PaR) measured LOLP, the company only reported LOLP statistics rather than assessing its portfolio against this metric.[66] The former PRM approach only ensured an estimated firm capacity contribution met the utility's peak load capacity. In contrast the CRM ensures adequate resource availability across all periods. Furthermore, modeling RA directly within PLEXOS instead of ex post facto to LTCE optimization should enable resource options, which satisfy CRM and LOLP requirements, to also meet operating contingency spin and non-spin reserve

[64] PacifiCorp Draft IRP at 70 (Modeling and Portfolio Evaluation Approach).
[65] *See* PacifiCorp 2017 IRP, Docket UE-160353, Appendix I – Planning Reserve Margin Study; PacifiCorp 2019 IRP progress report, Docket UE-180259, Chapter 5 – Load and Resource Balance.
[66] PacifiCorp 2019 IRP progress report, Docket UE-180259, p. 194, Chapter 7 – Modeling and Portfolio Evaluation Approach.

requirements.[67]

PacifiCorp contends assessing its resource portfolio across all periods using CRM and LOLP thresholds will allow its forthcoming 2021 IRP to account for the declining capacity contributions caused by the increasing penetration of renewable resources having similar dispatch patterns.[68] Staff questions how PacifiCorp will quantify the peak capacity contribution of renewable (i.e., wind, solar, hydropower) and energy limited (i.e., batteries, pumped storage hydropower, DR) resources to assess the amount of peak capacity each resource can reliably provide.

Finally, Staff briefly distinguish resource acceptability as opposed to RA in these comments. If clean energy resource acquisition does not imply clean energy operations, there is concern power purchases of unspecified electricity would continue to play a significant role in PacifiCorp's Washington resource-load balance. How this energy is getting used and whether such "use" meets the intent of CETA remains a topic of discussion during Washington clean energy legislation implementation.[69]

Due to the incomplete nature of the Draft IRP's RA analysis, Staff highlights several key elements of interest and requests additional narrative going into the Final IRP or next planning cycle.

For its **Final IRP, Staff makes the following RA recommendations**. PacifiCorp should:

- Identify an appropriate RA requirement (i.e., LOLP) and complete the assessment, as required by rule.[70]
- Provide resource assumptions and market forecasts used in the utility's schedule of estimated avoided costs required in WAC 480-106-040 including, but not limited to:
    - cost assumptions,
    - production estimates,
    - *peak capacity contribution estimates* and *annual capacity factor estimates*.[71]
- Develop a detailed narrative describing the logic used in the PLEXOS LTCE and MT model that determine whether low-cost (i.e., below wholesale market prices or existing resource dispatch cost) EE or DR are developed or dispatched. Staff makes this request because PacifiCorp's RA will be evaluated as a core model function, where each portfolio is obligated to meet reliability requirements including varying degrees of operating reserve quality. The company requires the PLEXOS model to maintain a 13

[67] PacifiCorp Draft IRP at 70 (Modeling and Portfolio Evaluation Approach).
[68] *Id*.
[69] *See* "Use" discussion docket notice relating to Clean Energy Implementation Plans and Compliance with the Clean Energy Transformation Act, Docket UE-191023, (June 12, 2020).
[70] WAC 480-100-620(8).
[71] This includes providing PacifiCorp's methodology used to calculate estimates of the avoided cost of energy, capacity, transmission, distribution, and emissions averaged across the utility per WAC 480-100-620(15).

percent CRM within each of its transmission topology bubbles to satisfy system reliability. However, some EE and DR resources produce energy savings and capacity savings at a levelized cost below the dispatch cost of some existing resources and forecast wholesale market prices. EE and DR can be economic to develop or dispatch, independent of the need for new capacity to maintain a 13 percent CRM.

- Provide additional information regarding the treatment of uncertainty in the IRP, including whether the company plans to incorporate the following uncertainties into the RA assessment:

    - market availability in the form of front office transactions (FOT),
    - storage efficiency,
    - construction.[72]

For **RA during future planning cycles, Staff recommends** PacifiCorp should:

- Treat resource cost, particularly for utility-scale and distributed battery storage, as a source of uncertainty. Expanding this uncertainty treatment will deepen the company's 2021 stochastic risk analyses that consider load growth, natural gas and wholesale electricity prices, hydropower generation, and unplanned thermal outages as sources of risk.[73]

Clean Energy Action Plan

PacifiCorp does not provide a CEAP in a traditional sense. Rather, the company provides a general template with references to future planning action, essentially "forecasting" how it expects to meet the requirements set forth in CETA. Not publicly releasing CEAP results at the draft IRP stage of the planning process puts stakeholders at a distinct disadvantage to review and comment on the utility's proposed actions until the last month or two of the resource planning process. While this 2021 planning reality is less than ideal, Staff understands that PacifiCorp may not have prioritized CEAP development during the 2021 planning process because the company believed that the statutory requirements regarding a 2021 CEAP due date were somewhat ambiguous.[74] However, Commission rule adopted on December 28, 2020 now requires a company's draft IRP to include a CEAP per WAC 480-100-625(3).

For the **CEAP in its Final IRP**, PacifiCorp must file a final CEAP that fully complies with statute and the new IRP/CEAP Commission rule.[75]

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[72] Juan Pablo Carvallo et al., *Implications of a regional resource adequacy program on utility integrated resource planning - Study for the Western United States*, Energy Analysis and Environmental Impacts Division, Lawrence Berkeley National Laboratory, p.19 (November 2020).
[73] PacifiCorp Draft IRP at 74 (Modeling and Portfolio Evaluation Approach).
[74] Staff agrees with PacifiCorp that RCW 19.280.030(5)(d), which required development of an inaugural CEAP by December 31, 2020, does not apply to Washington electric IOUs.
[75] RCW 19.280.030(1)(l) and (2); WAC 480-100-620(12).

For **CEAPs in future planning cycles**, PacifiCorp needs to initiate its advisory group and IRP development process earlier so it can file a CETA-compliant draft IRP, including CEAP.[76]

Nonenergy Impacts and Customer Benefit Considerations

PacifiCorp indicates the company will analyze nonenergy impacts when selecting the 2021 preferred portfolio to comply with Washington CETA statute and rule.[77] However, as currently filed, the Draft IRP makes no mention of specific nonenergy impact (NEI) categories or proxy values the company is currently considering. PacifiCorp's 2021 CPA does leverage values of NEIs, which are well documented in the region, particularly those vetted by the NWPCC's Regional Technical Forum (RTF).[78] However, Staff has conveyed to the company that this traditional consideration of NEIs related to DSM measures inadequately addresses the current CETA requirement.[79]

PacifiCorp did indicate the 2021 IRP would apply a 2017 U.S. Environmental Protection Action (EPA) public health proxy NEI of $28.70 per MWh to all Washington EE measures in cases which assume the SCGHG modeling assumptions.[80] Staff agrees this proxy approach to "layering on" NEIs to CPA results during subsequent portfolio development is acceptable for the 2021 planning cycle. While PacifiCorp's plans to address NEIs within the context of EE is a step in the right direction, Staff note this intention falls short of the Commission's rules that all candidate resources consider NEIs, when applicable.[81] At minimum, it would appear the EPA public health proxy currently applied to EE measures should also apply to renewable energy resource options.

Further, PacifiCorp's draft "CEAP," which is better characterized as a template within the Draft IRP to be populated in the final deliverable, indicates the company *will perform* an assessment of economic, health, and environmental burdens and benefits as they relate to utility planning. Among other criteria, the company's assessment will be structured according to four distinct environmental health categories: environmental exposures, environmental effects, socioeconomic factors, and sensitive populations.[82]

As with other CETA required IRP components, PacifiCorp's Draft IRP has provided a future roadmap for developing an economic, health, and environmental burdens and benefits

[76] WAC 480-100-625(3).
[77] PacifiCorp Draft IRP at 3-4, Attachment C.
[78] PacifiCorp has completed its 2021 Conservation Potential Assessment. The technical achievable potential for energy efficiency (EE) and demand response (DR) measures are housed on PacifiCorp's 2021 IRP support and studies website.
[79] PacifiCorp Draft IRP at 176, Attachment B.
[80] *Id*. at 175, Attachment B.
[81] WAC 480-100-620(11)(g).
[82] PacifiCorp Draft IRP at 250-59, Appendix R (CEAP, Part 3: Working Toward an Energy Future that Benefits All Customers).

assessment that has the potential to satisfy Commission rule.[83] However, Staff are unable to validate this approach without at least draft assessment results or data.

For its **Final IRP, Staff makes the following NEI and customer benefit recommendations**. PacifiCorp should:

- Demonstrate a wider incorporation of NEIs associated with all candidate resources during portfolio development. Staff reminds the company simply following established RTF guidelines to account for a limited number of NEIs during CPA development will not comply with CETA.
- Accurately cite and justify use of NEI proxy values, if 2021 planning constraints will prevent PacifiCorp from undertaking the data collection and analyses required to establish company specific NEI metrics. Staff strongly encourages the company to apply NEI proxy values to all candidate resources when determining cost-effectiveness, if appropriate, instead of only to EE measures.
- Provide the current-state assessment of economic, health, and environmental impacts within the utility's Washington service territory**.** PacifiCorp will need to then use assessment results to develop customer benefit indicators required for the company's 2022 CEIP.[84] A Final IRP that continues to provide just a plan for future assessment work risks not complying with CETA.

To facilitate Final IRP development, but especially critical for PacifiCorp's 2022 CEIP due to the Commission by October 1, 2021, Staff strongly recommends PacifiCorp:

- Create a Washington-based equity advisory group by May 1, 2021, to provide useful and timely input for the planning cycle. This advisory group must be Washington-focused, comprised of Washington stakeholders, and include representatives from highly impacted communities and vulnerable populations. A multi-state utility cannot simply use a systemwide advisory group to also serve as the company's equity advisory group to comply with CETA. This stakeholder group will inform the company's forthcoming 2022 CEIP.[85]

For **NEIs during future planning cycles, Staff recommends** PacifiCorp:

- Undertake the data collection and analyses required to develop company specific NEIs for all candidate resources, not just select EE and DR measures, considered during portfolio development. Staff advises using proxy NEI measures will not be adequate for future IRPs.

Public Participation

[83] WAC 480-100-620(9).
[84] WAC 480-100-640(4)(c).
[85] *Id*.

Through the end of 2020, the utility has held six public interest meetings (PIMs) open to any party across the company's six-state service territory, four technical workshops devoted to CPA synthesis and refinement, and one meeting devoted to Washington-specific stakeholder concerns.[86] These forums have enabled PacifiCorp and its contractors to provide status updates regarding various IRP interim deliverables, while generally affording adequate time for verbal discussion. Stakeholders could submit written comments via a two-step process on PacifiCorp's IRP stakeholder feedback website.[87] A given party can submit a 2021 IRP feedback form posted to the website. The company subsequently develops a response to the given stakeholder feedback that, when complete, replaces the initial posted online query.

This stakeholder feedback process presumes timely responses on behalf of PacifiCorp. While PacifiCorp began its 2021 IRP development targeting a two- to three-week turnaround, Staff observe the company's response time has steadily increased. As of Draft IRP filing, the company had yet to respond to Staff's PIM feedback provided six weeks before on November 25, 2020. Timely response by the company to its respective stakeholders is a prerequisite for effective, transparent public participation.[88]

With most advisory groups held virtually and related COVID-19 public health crises challenges in mind, Staff contend PacifiCorp has fallen short when it comes to some portions of the public participation 2021 planning cycle.

PacifiCorp's draft IRP submittal stands in stark contrast to other Washington electric IOUs, where each provided a draft IRP and CEAP, noting deficiencies. Aside from meetings specifically regarding the CPA, PacifiCorp's first PIM was on June 18, 2020, over six months after the Commission accepted the company's 2019 IRP as a progress report. PacifiCorp's utter failure to discuss any modeling scenarios and sensitivities with the advisory group were major contributing factors to Staff's conclusion that the Draft IRP does not comply with the rule.[89]

For PacifiCorp's **Final IRP, Staff makes the following public participation recommendations**:

- Request PacifiCorp communicate to Staff and interested stakeholders via the company's advisory group its progress updating the draft to achieve a CETA-compliant final IRP.
- Hold the IRP open meeting after the final draft is submitted.
- Add a 30-day comment period after PacifiCorp's final IRP filing.

For **public participation during future planning cycles, Staff recommends** PacifiCorp further refine its public participation process to account for CETA and:

[86] PacifiCorp Draft IRP, at 151-57, Appendix C.
[87] PacifiCorp stakeholder feedback website. *Available at* Stakeholder Feedback (pacificorp.com).
[88] CETA Rulemaking Order at 61, ¶ 178.
[89] WAC 480-100-625(3).

- Solicit advisory group input on modeling assumptions, and present results sooner in the IRP development process, adjusting the next work plan as needed.
- Expand its core IRP team to include additional modeling and administrative support to assist with public outreach, such as developing timely written responses to stakeholder questions.[90]
- Facilitate a meaningful public engagement process by filing a draft IRP that meets rule and includes:

    - the preferred portfolio,
    - CEAP,
    - supporting analysis, and to the extent practicable,
    - all scenarios, sensitivities, appendices, and attachments.[91]

Data Disclosure

As discussed within the public participation section of these comments, PacifiCorp's approach to posting and then responding to stakeholder feedback via the company's website could satisfy CETA's overarching ethos – one of accessibility, transparency, responsiveness, and clarity – if properly executed.[92] However, Staff have observed ***chronic lateness*** by PacifiCorp in responding to stakeholder feedback throughout the 2021 IRP process. The increasing lag in company response, if not corrected, will inevitably increase opaqueness around the decisions the utility ultimately makes concerning its portfolio development.

PacifiCorp has not filed with the Commission data input files in native format as appendices to its Draft IRP.[93] PacifiCorp claims its established process of providing public and confidential data disks in conjunction with its final IRP should satisfy this requirement. Staff points out that the rule has changed, and this information must be provided with the Draft IRP.[94]

Staff notes PacifiCorp's inclusion of all stakeholder feedback and, when available, company responses posted to its stakeholder feedback website by year-end 2020 as an attachment to its Draft IRP.[95] Unfortunately, this 205-page PDF is decidedly lacking in terms of the ease of accessibility contemplated by Commission rule.[96] This attachment is a quintessential "data

[90] WAC 480-100-625, -630, and –655.
[91] WAC 480-100-625(3). This recommendation mirrors the future planning cycle draft IRP recommendation called out in the CEAP section of the PacifiCorp Draft IRP Staff comments, p. 15.
[92] RCW 19.405.040(8).
[93] WAC 480-100-620(14) requires utilities undertake IRP data disclosure actions suggested in RCW 19.280.030(10)(a).
[94] PacifiCorp has completed its 2021 Conservation Potential Assessment. The technical achievable potential for energy efficiency (EE) and demand response (DR) measures are housed on PacifiCorp's 2021 IRP support and studies website. However, the company made no attempt to incorporate this CPA data into the Draft IRP filing as a supporting appendix.
[95] PacifiCorp Draft IRP Attachment B.
[96] WAC 480-100-620(14) is further discussed and elaborated in CETA Rulemaking Order at 60-61, ¶¶ 173 & 178.

dump," where large size effectively prevents recipients from getting answers to their questions unless they have specific search criteria in mind.

For its **Final IRP, Staff makes the following data disclosure recommendations**. PacifiCorp must:

- Provide all data input files to the Commission in native format with appropriate context (e.g., assumptions made by the company) as appendices or attachments to the final filing or via accompanying data disk**(s).** Data made available in this accessible manner will facilitate understanding of why PacifiCorp took the actions it did and assist in the independent review of such actions.[97]
- Include complete data sets informing the company's preferred portfolio. Supporting data and workpapers should allow a 2019-to-2021 comparison of resource need.
- Ensure supporting data is easily accessible to interested parties by including contextual aids with the given information. At minimum, the company should organize its final IRP deliverable by including a master table of contents, readme files, and categorically grouping related data.

For **data disclosure during future planning cycles**, PacifiCorp:

- First and foremost, must adjust its internal timelines to meet Washington's new IRP schedule, including the draft IRP.[98]
- Should commit appropriate company resources to maintain timely response to stakeholder feedback and data requests *throughout* the IRP development process.[99]

Conclusion

Staff finds PacifiCorp's Draft IRP is limited and deficient to the point of not meeting the new rule requirements for a draft IRP.[100] However, Staff is sympathetic to the company's present position given the progressive nature of PacifiCorp's multi-state, system-wide IRP development process and that the company has been working to implement new PLEXOS modeling software, which has added workload to its 2021 IRP development process.[101] As is echoed throughout these comments, Staff expects PacifiCorp's Final IRP to include complete data sets informing the company's IRP. Further, the Final IRP should explain how the company's IRP will inform its CEIP, and meet the standards set forth in CETA and the new rules.[102] Supporting IRP narrative, data, and workpapers should allow Staff to provide a holistic review of PacifiCorp's Final IRP.

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[97] *Id*. at 60, ¶ 173.
[98] CETA Rulemaking Order at 58-59, ¶ 168.
[99] *Id*. at 61, ¶ 178.
[100] WAC 480-100-625(3).
[101] *PacifiCorp's Motion for Exemption from WAC 480-100-625(3)*, Docket UE-200420, ¶ 5 (Jan. 25, 2021).
[102] WAC 480-100-610(2) and (3).