Appendix 1

Introduction

The passage of the Clean Energy Transformation Act (CETA, E2SSB 5116) in 2019 introduced many critical changes to the ways in which electric utilities conduct their integrated resource planning (IRP) processes. CETA also created a separate, new planning requirement called the clean energy implementation plan (CEIP). The new legislation directed the Commission to issue rules related to IRPs, which occurred midway through the previous IRP 2019 planning cycle. Faced with the likelihood the 2019 IRPs may not be fully CETA-compliant, Staff petitioned, and the Commission ordered, the 2019 IRPs be considered IRP progress reports.[1] The Utilities and Transportation Commission (Commission) initiated rulemakings[2] in January 2020 to develop rules that would implement the new law. The IRP and CEIP rules were finalized on December 28, 2020.[3]

The new rules require IRPs to be submitted on January 1, 2021, and on January 1 every four years thereafter.[4] However, given the changes to the IRP process required by CETA, the Commission ordered each electric utility (Puget Sound Energy [PSE], Avista Corporation [Avista], and PacifiCorp) to submit draft 2021 IRPs by January 4, 2021, with the final versions by April 1, 2021.[5]

All three utilities filed their draft IRPs on January 4, 2021. Both Avista and PSE filed joint electric and gas IRPs. On January 5, 2021, the Commission issued a notice of opportunity for comment from interested parties in the IRP dockets for these three companies by February 5, 2021.[6] The notices also announced recessed open meeting dates and times where the companies will present their draft plans and respond to questions from the Commission and interested stakeholders. The recessed open meeting dates are:

- PacifiCorp: Monday, February 22, 9:30 a.m.
- Avista: Tuesday, February 23, 9:30 a.m.
- PSE: Friday, February 26, 10:30 a.m.

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[1] PacifiCorp, Docket UE-180259, Order 03, ¶¶ 24-25; Puget Sound Energy, Dockets UE-180607 & UG-180608, Order 02, ¶ 15 (Puget Sound Energy); Avista, Docket UE-180738, Order 02, ¶ 15.
[2] Dockets UE-191023 & UE-190698 (*Consolidated*), implementing the Clean Energy Transformation Act codified as RCW 19.405 and changes to RCW 19.280 - Electric Utility Resource Plans.
[3] *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).
[4] WAC 480-100-625(1).
[5] *See supra* n.1.
[6] *Notice of Opportunity to File Written Comments*, Avista, Dockets UE-200301 and UG-190724, and UE-200420; Puget Sound Energy, UE-200304 and UG-200305; and PacifiCorp, Docket UE-200420 (Jan. 5, 2021).

This appendix is organized by subject area as they appear in the Commission's rules and describes the statute and rule requirements that govern the IRP process for both electric and natural gas IRPs. The main body of Staff's comments (to which the current document serves as an appendix) is also organized by subject area, and discusses three things:

- How each IRP meets (or does not meet) the requirements laid out in this appendix;
- Whether each utility's IRP modeling is consistent with its peers; and
- What changes Staff recommends to enable acknowledgment of the 2021 final IRP and Clean Energy Action Plan (CEAP), support the development of the Clean Energy Implementation Plan (CEIP), or in each company's next IRP.

Overview of Electric IRP Statute and Rule Requirements by Topic

Public Participation

The Commission's new rules facilitate more opportunities for deeper, cross-topical conversations between interested persons and utilities on a variety of IRP issues, such as equity, to implement CETA directives.[7] Staff highlights two of these public engagement components: participation and involvement of the IRP advisory group, and the two-step draft IRP and final IRP submittal, which will eventually help inform the shape and style of a CEIP. [8]

First, to develop an effective IRP, CEAP, two-year progress report, and CEIP, the utility must demonstrate and document how it considered input from its advisory group, including scenarios and sensitivities the utility used.[9] Throughout the IRP planning processes, it is incumbent upon each utility to provide staff, the advisory group, and the public meaningful opportunities to engage and discuss complex resource planning processes, data assumptions, and other topics such as upstream emissions and the SCGHG emissions used in IRP modeling analyses.

Second, utilities are now required to submit a draft IRP, which provides stakeholders, the media, and the public a meaningful *first glimpse* into the utility's thinking around energy and capacity resource planning in the post Clean Energy Transformation Act world, before the utility files its final IRP four months later.[10] Presenting a draft plan for complex energy and capacity planning is not new. In fact, requiring a mostly complete draft to be filed prior to the issuance of a final document is common practice. For example, the Northwest Power and Conservation Council's (NWPCC or Council) power plan development process includes a two-stage process of issuing a draft plan, taking public comment, conducting the appropriate analysis to respond to public comment, and issuing a final plan.[11]

Due to the ongoing COVID-19 public health crisis, the 2021 IRP public participation process

[7] WAC 480-100-620; -625; and -630.
[8] WAC 480-100-625; WAC 480-100-630; CETA Rulemaking Order at ¶ 137.
[9] WAC 480-100-625; -630; and -655.
[10] WAC 480-100-625(3).
[11] CETA Rulemaking Order at ¶ 166.

cycle looked very different as compared with previous IRP cycles. Staff is acutely aware the first post-CETA IRP cycle was decidedly more difficult for all involved, with most advisory group meetings held virtually via webinar. Plus, the utility faced unprecedented CETA modeling and timing challenges. Staff comments highlight specific areas of success in the public engagement arena and potential areas of improvement for future IRP cycles.

Data Disclosure

To comply with CETA, electric utilities should address three primary data disclosure themes during the 2021 IRP cycle. First, companies should provide the information that stakeholders request during the planning process in a timely manner or provide clear justification why the request cannot be met.[12] This circulation of information in the development and reporting of IRPs should primarily occur during the advisory group process.[13] Adherence to this principle is important as it will align utility planning with the overarching ethos of CETA – one of accessibility, transparency, responsiveness, and clarity.

Second, to maximize transparency, the electric utilities must file with the Commission all data input files in native format as appendices to the draft IRPs.[14] The Commission, Commission Staff, Public Counsel, and other parties with a substantial interest in a company's plan must be able to understand a utility's decisions. Companies disclosing such data in native format facilitates parties independently determining if those actions were in the public interest and represent the lowest reasonable cost option.[15]

Finally, the data a utility provides during the IRP planning process should be easily accessible.[16] Release of such information should be more than large data dumps, whose sheer size can overwhelm the recipients thus reducing the likelihood questions get answered. Instead, companies should tailor the data provided to the requestor's specific query.[17] While utilities can still designate relevant data confidential in keeping with the Commission's rules,[18] Staff's expectation that accessible information is readily shared amongst stakeholders fosters meaningful and inclusive public engagement throughout the IRP advisory group process.

Load Forecasting and Climate Change Impacts

One of the most critical steps in the IRP analyses involves the assessment of how much total energy the utility's customers are expected to consume over a 20-year period (load), including the maximum amount expected to be consumed instantaneously (peak demand). In the IRP, the utility must assess projected economic and population growth for the region. Further, recently updated IRP rules set forth additional requirements in the load forecasting step of the IRP

[12] *Id*., at ¶ 178.
[13] WAC 480-100-630(3).
[14] WAC 480-100-620(14) requires utilities undertake IRP data disclosure actions suggested in RCW 19.280.030(10)(a).
[15] CETA Rulemaking Order at ¶ 173.
[16] WAC 480-100-620(14).
[17] CETA Rulemaking Order at ¶ 178.
[18] WAC 480-07-160.

development process. These include requiring the utility to conduct a new assessment of Distributed Energy Resources or DERs, develop climate change scenarios, and other relevant load assessments.[19]

In addition to their existing requirement to pursue all cost-effective, reliable, and feasible energy efficiency, CETA now requires utilities to pursue all "cost-effective, reliable, and feasible" demand response (DR).[20] Thus, utilities must perform forecasts of cost-effective potential of both resources, where these forecasts must in turn inform the load forecast. Second, CETA requires utilities to conduct an overarching DER forecast, "and an assessment of their effect on the utility's load." The Commission's rules adopted to implement CETA require such forecasts to include energy efficiency, DR, and energy assistance, as well as other DERs like energy storage, electric vehicles (EVs), and solar photovoltaics (PV).[21]

Finally, risks are changing because of climate change. The recently revised IRP rules require utilities to include ***at least one*** future climate change scenario, incorporating "load changes resulting from climate change."[22] As compared to the expected 'base case' or 'do nothing' portfolio, the utility should also consider load impacts, higher risks of changing river flows, disaster frequency, and temperature effects over time on the utility's load-resource balance.

IRP Modeling

Modeling is central to a utility's resource planning because the IRP is essentially a numerical solution for how the company will keep the lights on in the short- and long-term, addressing resource need and balancing supply and demand, given a host of constraints.[23] In determining this IRP solution, the company and stakeholders must examine a range of forecasts and analyses when identifying options for how to meet customer demand, compare these options, and ultimately decide what resources to build or acquire.[24] The 2021 IRPs are the utilities' first roadmaps for realizing the transformative change required by CETA as these plans couple modeling with the supporting narrative required to explain companies' decisions to a wide stakeholder audience.

Utilities must develop and validate their planning models with additional rigor since electric IOUs' 2021 preferred portfolios will establish the baseline for achieving CETA's coal elimination, GHG neutral, and clean electricity targets over the next 25 years.[25] To comply with CETA directives and adaptively manage modeling methodologies, utilities must determine how best to incorporate the social cost of greenhouse gases (SCGHG) into their analytics, properly integrate distributed energy resource (DER) assessments into resource planning, and undertake more sophisticated scenario and sensitivity modeling as compared with previous IRP cycles. These three modeling topics constitute focal points of the 2021 draft IRP staff review.

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[19] WAC 480-100-620(3) and (10).
[20] RCW 19.405.040(6)(a); -.050(3).
[21] WAC 480-100-620(3).
[22] WAC 480-100-620(10)(b).
[23] RCW 19.280.030(1).
[24] WAC 480-100-620(11).
[25] RCW 19.405.030(1); -.040(1); -.050(1).

As required by statute and rule, utilities must incorporate SCGHG as a cost adder when evaluating and selecting conservation and resource options. Within their IRP narrative companies should evaluate the robustness of their analytical approaches and describe how the IRP solution incorporates the SCGHG cost adder throughout the modeling stages. Appropriately handling SCGHG within IRP analyses is likely the most important modeling consideration for utilities during the 2021 cycle as this adder applies across the range of resource strategies considered.[26] Modeling SCGHG also serves as an insightful linkage for comparing how Washington's three IOUs are pricing new CETA requirements into resource selection.

Reflective of CETA, both statute and accompanying rule continue to require the lowest reasonable cost (LRC) solution,[27] but are now more prescriptive when it comes to the types of resources, especially clean alternatives, and analyses that must be considered when planning for future targets. Utilities must now consider a wide range of DER options and undertake quantitative methods (e.g., forecasts of demand response and other demand side management) to determine the impact such efforts will have on utility planning.[28] Utilities should appropriately incorporate DER potential into portfolio development. Staff's goal is to ensure appropriate utility valuation of resources like demand response (DR) and energy efficiency (EE), which is crucial to meet CETA standards and implement specific targets identified in the CEIP.

Additionally, utilities' portfolio development must quantify the impact and risk associated with crosscutting concerns like ensuring resource adequacy and equitably distributing customer benefits and costs.[29] Companies need to develop a CETA "counter factual" scenario that identifies the alternative LRC portfolio the companies would have implemented if the CETA requirements around greenhouse gas neutrality by 2030 and clean electricity by 2045 were not in effect. Second, companies need to run a climate change scenario that incorporates the best science available to assess climate change impacts, including hydrological conditions, temperature, and load changes.

Finally, utilities are required to run a sensitivity that examines how their 2021 preferred portfolio performs when benefits for all customers are maximized, before balancing other objectives.[30] This analysis seeks to quantify how all customers, including vulnerable populations or highly impacted communities, are benefiting from the transition to clean energy.[31] The analysis should only adjust variables specific to an IOU's Washington service territory. The intent of this modeling exercise is to maximize the hypothetical benefit utilities' Washington customers could realize. There is no "right answer" for how to optimize this benefit so utilities should brainstorm what activities or actions are most efficacious. Once determined, companies could "hardcode" given levels of these benefits and subsequently co-optimize other modeling variables. Staff recognize competing constraints may prevent a company's 2021 IRP from ultimately reflecting these sensitivity attributes. For the 2021 IRP, the primary result of this sensitivity is additional

[26] RCW 19.280.030(3)(a); WAC 480-100-620(11)(j).
[27] RCW 19.280.030(1)(d); WAC 480-100-620(7) and (11)(a).
[28] RCW 19.280.030(1)(h) and (j); WAC 480-100-620(3) and (11)(c).
[29] RCW 19.280.030(1)(g), (i), and (k); WAC 480-100-620(8), (11)(f) and (g).
[30] WAC 480-100-620(10)(a) – (c).
[31] RCW 19.405.040(8).

data and analyses utilities can further refine for their 2022 CEIP and subsequent planning cycles.[32]

Nonenergy Impacts

The IRP statute changes in CETA require the IRP to address the clean energy transformation standards.[33] This results in the need for nonenergy impacts (NEIs) of the utility's energy system and programs to be included in the 2021 IRP more prominently as compared with previous IRP cycles. Historically, NEIs were nearly all associated with energy efficiency programs and measures. Under CETA, NEIs should be included with all resources when applicable.

Utilities are required to account for nonenergy costs and benefits not fully valued elsewhere in an IRP model within distributed energy resource assessments.[34] For example, a CPA should not include a separate value for the SCGHG if that value is appropriately accounted for elsewhere in the selection of energy efficiency. A nonenergy benefit that occurs exclusively or primarily on the demand-side should be included within the CPA (or other DER assessment). Some values of nonenergy impacts are well documented in the region, particularly those vetted by the Regional Technical Forum. However, there are many impacts for which data is currently unavailable, not monetized, attributable to a program instead of a measure, out-of-date, or not applicable to a particular utility service territory. In these instances, Staff finds it appropriate to use proxy data to identify nonenergy costs and benefits.

Finally, nonenergy costs and benefits are required by the new rules to be listed in the avoided costs section of the IRP and identify if they accrue to utility, customers, participants, vulnerable populations, highly impacted communities, or the public.[35]

New Customer Benefit Provisions of CETA

The clean energy transformation standards described in rule address the affirmative mandate to ensure all customers are benefiting from the transition to clean energy, identifying three *separate* components of the customer benefit requirement.[36] Each component should be addressed in the IRP in multiple ways.

Specifically, the rule requires each utility to include an assessment of economic, health, and environmental burdens and benefits in the IRPs.[37] While the cumulative impact analysis (CIA) conducted by the department of health that should inform the assessment was not available in

[32] Conservation Energy Planning and Energy Policy staff customer benefit discussion, January 20, 2021.
[33] RCW 19.280.030(1) requires an IRP to address the ". . . implementing [of] RCW 19.405.030 through 19.405.050, at the lowest reasonable cost and risk to the utility and its customers, . . ." including an assessment of "Energy and nonenergy benefits and reductions of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits, costs, and risks; and energy security and risk;"
[34] WAC 480-100-620(3).
[35] WAC 480-100-620(13).
[36] WAC 480-100-610(4)(c)(i)-(iii).
[37] WAC 480-100-620(9).

time for the 2021 IRP, the requirement that the assessment be informed by the CIA does not waive the requirement for an assessment if the CIA is unavailable.[38] Each utility IRP must include an assessment of energy and nonenergy benefits and reductions of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits, costs, and risks; and energy security and risk using other sources of information relevant to the assessment. One use of this assessment is to inform the current distribution of benefits and burdens within a utility's service territory.

While it is hard to overstate the impact of CETA's clean energy mandates, the statute's customer benefit provisions are perhaps even more of a divergence from the utilities' (and the Commission's) traditional approaches to system planning and operations. For decades, utilities have been tasked with building a plan that can meet anticipated system needs at lowest reasonable cost, considering risk. CETA has added another priority that the utilities must achieve: ensuring all customers are benefiting from the transition to clean energy.

In future IRPs, this customer benefit mandate will largely focus on customer benefit indicators (CBIs). However, the utilities' inaugural CEIPs will emphasize CBI determination and details.[39] Instead, the CETA statutory and rule applicable to the 2021 planning cycle covers three topical areas: current-state assessment of economic, health, and environmental burdens and benefits;[40] maximum customer benefit modeling sensitivity discussed above;[41] and each utility's formation of an equity advisory group.[42]

The new economic, health, and environmental burdens and benefits assessment includes developing a current-state "snapshot" of the energy impacts and NEIs vulnerable populations and highly impacted communities experience within the electric IOUs' Washington service territories. Similarly, the IRP also needs to consider risks associated with long-term and short-term public health and environmental impacts as well as energy security.[43] These current conditions are the basis for determining whether the allocation of benefits and burdens from the utility's transition to clean energy results in equitable distribution.[44] This current-state assessment is critical for establishing baseline geographic and demographic datapoints, including identifying the vulnerable populations and highly impacted communities a given utility serves.[45] While the original intent was for electric IOUs to consider the Washington Department of Health's cumulative impact analysis (CIA) in developing their assessments,[46] the CIA's delay past December 31, 2020, does not waive the assessment requirement. Utilities should consider

[38] CETA Rulemaking Order at ¶ 54.
[39] WAC 480-100-640(4).
[40] WAC 480-100-620(9).
[41] WAC 480-100-620(10)(c).
[42] WAC 480-100-625(2)(b), WAC 480-100-655(1)(b).
[43] WAC 480-100-620(9).
[44] CETA Rulemaking Order at ¶ 53.
[45] *See* WAC 480-100-605 for definitions of "highly impacted community" and "vulnerable populations."
[46] RCW 19.280.030(1)(k).

alternative references (e.g., U.S. Census data) relevant to the assessment.[47] Each electric utility must provide this assessment as part of its 2021 IRP to comply with CETA.[48]

Lastly, the equity advisory group required for utilities' forthcoming CEIPs should also inform IRP planning.[49] In this fashion, an IOU's comprehensive attention to vulnerable populations and highly impacted communities serve as a common thread linking successive CETA deliverables (i.e., IRPs, CEAPs, CEIPs).[50] Hence, each company should create an equity advisory group by May 1, 2021, to provide useful and timely input for the planning cycle. Further, 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 apply a systemwide advisory group to also serve as the company's equity advisory group to comply with CETA.

Conservation and CPA

The Energy Independence Act (EIA) (RCW 19.285) was not replaced or modified by the passage of CETA. When the activities undertaken to comply with the EIA meet the requirements of CETA, they qualify for compliance with both statutes. Staff expects that the customer benefit mandate, with its provisions to account for additional nonenergy impacts such as public health benefits, and requirement to reduce of burdens to vulnerable populations and highly impacted communities, will make additional energy efficiency a cost-effective resource choice.

The new IRP rule requires an energy efficiency and conservation potential assessment of current and potential policies and programs needed to obtain all cost-effective conservation, efficiency, and load management improvements; including the ten-year conservation potential used in calculating a biennial conservation target under WAC 480-109.[51] This requirement should not change utility standard practice to any real degree. Staff expects that incremental improvements to the potential assessment are ongoing.

Each IRP should, at minimum, provide sufficient data points to calculate the ten-year, four-year, and two-year cost-effective conservation potential under both CETA and the EIA.

Demand Response

The IRP must contain a demand response potential assessment of current and potential policies and programs needed to obtain all cost-effective demand response.[52] The statutory definition of demand response is broad and includes pricing structures (such as time of use or critical peak pricing), measure-based programs controlled by the utility, and behavioral programs that include

[47] CETA Rulemaking Order at ¶ 54.
[48] Conservation Energy Planning and Energy Policy staff customer benefit discussion, January 20, 2021.
[49] WAC 480-100-625(2)(b), WAC 480-100-655(1)(b).
[50] CETA Rulemaking Order at ¶ 162.
[51] WAC 480-100-620(3)(b)(i).
[52] WAC 480-100-620(3)(b)(ii).

an incentive payment.[53] In order to determine all cost-effective demand response as required by CETA, a potential assessment must include a broad range of options that include each of these types of demand response.[54]

Energy Storage

Energy storage is identified in CETA and in the recently adopted WAC rules implementing CETA as a key component of the transition to clean energy.[55] Energy storage can address many types of system needs: energy, capacity, ancillary services, integration of renewable resources, balancing, spinning and non-spinning reserves, and emergency power. Energy storage can also play a role in deferring or preventing some transmission and distribution projects. The newly adopted WAC includes the following requirements related to energy storage:

- WAC 480-100-605 – energy storage included in definition of a DER.
- WAC 480-100-620(3)(a) – DER assessments in a utility's IRP "must incorporate nonenergy costs and benefits not fully valued elsewhere within any integrated resource plan model."
- WAC 480-100-620(3)(b)(iv) – storage identified as a DER "that may be installed by the utility or the utility's customers," and which the "IRP must assess[.]"
- WAC 480-100-620(5) – battery and pump storage identified as potential way to integrate renewable resources and address overgeneration events.
- WAC 480-100-620(11)(e) – acquisitions made after CETA's passage must "rely on renewable resources and energy storage, insofar as doing so is at the lowest reasonable cost."

While CETA has changed the regulatory landscape in Washington, energy storage is not new to the Commission.[56] Accurate modeling and optimal use of energy storage within a utility's system planning tools was identified as the main limitation to full consideration of energy storage as a resource in the Commission's policy statement. The value of energy storage is more apparent when a system planning model uses a granular timescale – the more granular the modeling timescale, such as an hourly or sub-hourly dispatch simulation, the more value of energy storage can be identified. Many IRP modeling tools' optimizations are not typically performed on an hourly or sub-hourly basis.

In the policy statement, the Commission also discussed policy principles related to energy

[53] "Demand response" means changes in electric usage by demand-side resources from their normal consumption patterns in response to changes in the price of electricity, or to incentive payments designed to induce lower electricity use, at times of high wholesale market prices or when system reliability is jeopardized. "Demand response" may include measures to increase or decrease electricity production on the customer's side of the meter in response to incentive payments.
[54] WAC 480-100-610(4)(a).
[55] RCW 19.405.040(6)(a)(iii); RCW 19.405.050(3)(c); WAC 480-100-620(11)(e).
[56] *Report and Policy Statement on Treatment of Energy Storage Technologies in Integrated Resource Planning and Resource Acquisition*, Dockets UE-151069 and U-161024, ¶ 15 (Oct. 11, 2017) (Policy statement identified "barriers that prevent energy storage from being fairly considered in resource planning and develop[ed] policies to overcome them").

storage, many of which are also reflected in the newly adopted Part VIII of Chapter 480-100 WAC. We briefly summarize some components of the policy statement that continue to be relevant in the context of CETA and the revised WAC:

- Utilities should move toward a "new planning framework that more cohesively considers the relationship between generation, transmission, and distribution, allowing for a fair evaluation of hybrid resources such as energy storage."[57]
- Utilities should adopt modeling platforms capable of sub-hourly modeling, and in the interim should use an external model capable of modeling the sub-hourly benefits of storage over the resource's useful life, including transmission and distribution benefits, then calculate the net present value of those benefits and deduct that value from the resource's modeled capital cost in the IRP."[58]
- Utilities should consider at least "a reasonable, representative range of storage technologies and chemistries," working with their advisory groups to identify these resources, [59]
- Utilities should vet storage cost assumptions by reviewing third-party data and applying "a reasonable learning curve to storage costs to account for forecasted declines."[60]
- Finally, utilities should ensure that storage is considered in evaluating distribution system projects, including all locational benefits.[61]

As utilities use resource modeling software that is more sophisticated as compared with previous IRP cycles, and as CETA's equity components are better understood, Staff expects that the importance of energy storage as a resource that can address multiple system needs and inequities will only grow, as will Staff's focus on its accurate modeling and full consideration in each utility's IRP.

Qualifying Facilities – Avoided Cost Methodology

The Public Utilities Regulatory Policies Act, or PURPA, requires utilities to purchase energy and capacity made available to them by qualified facilities (QFs) at a price based on the utility's avoided costs.[62] The IRP estimates what the utility's system needs, and at what cost. The goals of making avoided costs understandable for all stakeholders and of strengthening the connection between the IRP analysis and PURPA rates were both key factors driving the adoption of the new WAC 480-100-620(13) and (15).

[57] *Id.* at ¶ 36.
[58] *Id.* at ¶ 43.
[59] *Id.* at ¶ 46.
[60] *Id.* at ¶ 47
[61] *Id.* at ¶ 48.
[62] The Commission revised its implementation of PURPA recently through a rulemaking that culminated in Chapter 480-106 WAC, which prescribes a methodology for setting PURPA rates for QFs with a nameplate capacity of 5 MW or less, and which requires that utilities file for the Commission's consideration and approval a methodology to calculate avoided cost rates QFs larger than 5 MW. These methodologies were submitted by all three utilities and approved by the Commission in the following dockets: UE-191062 for PSE, UE-200455 for Avista, and UE-200573 for PacifiCorp.

- WAC 480-100-620(13): "Avoided cost and nonenergy impacts. The IRP must include an analysis and summary of the avoided cost estimate for energy, capacity, transmission, distribution, and greenhouse gas emissions costs. The utility must list nonenergy costs and benefits addressed in the IRP and should specify if they accrue to the utility, customers, participants, vulnerable populations, highly impacted communities, or the general public. The utility may provide this content as an appendix."

- WAC 480-100-620(15): "Information relating to purchases of electricity from qualifying facilities. Each utility must provide information and analysis that it will use to inform its annual filings required under chapter 480-106 WAC. The detailed analysis must include, but is not limited to, the following components:

> (a) A description of the methodology used to calculate estimates of the avoided cost of energy, capacity, transmission, distribution and emissions averaged across the utility; and
> (b) Resource assumptions and market forecasts used in the utility's schedule of estimated avoided cost required in WAC 480-106-040 including, but not limited to, cost assumptions, production estimates, peak capacity contribution estimates and annual capacity factor estimates."

Resource Adequacy and Uncertainty Analysis

Resource adequacy (RA) studies in the IRP, including RA metrics and methodologies, are extremely important to ensure the lights stay on. Specifically, CETA requires an electric utility's IRP to determine "resource adequacy metrics for the resource plan" and to identify "an appropriate resource adequacy requirement and measurement metric consistent with prudent utility practice."[63] Staff's review of resource adequacy in the IRP is broad in scope and involves all aspects of load service and modeling, including: energy, capacity, flexibility, availability, and performance characteristics of specific resources, such as demand-side, storage, wind resources, and batteries.[64] The analysis of the contribution to RA by storage and variable energy resources is of particular interest to Staff in the first post-CETA IRP review. Staff comments also address the incorporation of uncertainty into the RA assessment, often in the form of sensitivity analysis.

Distribution Planning Process

The IRP rules require that the utility must include assessments of a variety of distributed energy resources and the effect of distributed energy resources on the utility's load and operations.[65] Further, the commission strongly encourages utilities to engage in a distributed energy resource planning process as described in RCW 19.280.100. If the utility elects to use a distributed energy resource planning process, the IRP should include a summary of these results.

[63] *See* RCW 19.280.030(1)(g) and (i).
[64] WAC 480-100-620(8).
[65] WAC 480-100-620(3).

Overview of Clean Energy Action Plan (CEAP) Requirements

To comply with statute and rules, each utility must develop a ten-year clean energy action plan that works toward implementing the IRP's lowest reasonable cost solution, including incorporation of the social cost of greenhouse gas emissions as a cost adder in its analysis.[66] As the intermediary plan between the IRP and the CEIP, the CEAP should identify the utility's ten-year resource "ramp" needed to meet energy, capacity, and associated flexibility in order to maintain and protect safe, reliable operation and balancing of the electric system, while achieving other clean energy transformation objectives.[67] Specifically, each CEAP should:

- meet clean energy transformation standards, including customer benefit provisions[68];
- be informed by the utility's ten-year cost-effective conservation potential assessment;
- identify the potential cost-effective demand response and load management programs that may be acquired;
- establish a resource adequacy requirement and demonstrate how each resource, including renewable, nonemitting, and DERs, may reasonably be expected to contribute to meeting the utility's resource adequacy requirement;
- identify any need to develop new, or to expand or upgrade existing, bulk transmission and distribution facilities; and
- identify the nature and extent to which the utility intends to rely on an alternative compliance option identified under RCW 19.405.040(1)(b), if appropriate.

Overview of Natural Gas IRP Statute and Rule Requirements by Topic

Design Day (Planning Standard), particularly in the context of climate change data or future studies

"Design day" refers to the peak temperature assumption that natural gas local distribution companies (LDCs) use to develop the plan for their natural gas supply and distribution pipeline systems. Neither statute nor rule impose any specific requirements for design day in the natural gas IRPs. Each LDC has the flexibility to identify its design day as appropriate. The utility must include the design day in its natural gas IRP, and provide a discussion justifying its selection, particularly addressing climate change risk of gradually increasing temperatures over time.

Upstream Emissions & SCGHG

For the first time, statute requires LDCs to model a price on greenhouse gas emissions in the IRP. The statute specifies the price assigned to these emissions, but only for the purposes of

[66] WAC 480-100-620(12).
[67] WAC 480-100-610(4)(b).
[68] WAC 480-100-610.

setting conservation targets.[69] That price is set at the social cost of greenhouse gases (SCGHG), using a 2.5 percent discount rate, where the utility must also model and account for upstream emissions or "emissions occurring in the gathering, transmission, and distribution of natural gas to the end user."

CPA and Conservation Targets

RCW 80.28.380 requires gas companies to identify and acquire all conservation measures that are available and cost-effective, with an acquisition target approved by the commission every two years beginning in 2022. The target will be reviewed with the next conservation plan, but the IRP will be a main source of the data. A determination of cost-effective conservation in the IRP will be the start of the target calculation and must be clearly included in the IRP.

The cost-effectiveness analysis required by this section must include the costs of greenhouse gas emissions established in RCW 80.28.395. This could be included in the CPA or in a different IRP model. The IRP must include a clear description of how and where the SCGHG is included.

The targets must be based on a conservation potential assessment (CPA) prepared by an independent third party and approved by the commission. In order for Staff to recommend the commission approve a CPA there must be:

1. Transparent review of model.
2. Vetting through advisory groups.
3. Consistency with the Council's method.
4. Internal consistency with load forecast.

While it has been the practice of the utilities to exclude gas transportation customers from participating in their conservation programs, Staff struggles to find an exclusion for gas transportation customers in the statutory language of RCW 80.28.380. Thus, in order to identify all cost-effective conservation, it will be necessary for the utility to separately consider and evaluate the energy efficiency potential of any customers too large to include in the CPA.[70] All available and cost-effective conservation potential must be included. The method chosen should be discussed with the advisory groups. Staff expects that if this conservation from large industrial customers is included in the IRP analysis, it is likely to reduce the utility's need for distribution system improvements.

Renewable Natural Gas (RNG)

Natural gas LDCs "must" offer their customers a voluntary RNG service by tariff.[71] Such service

[69] RCW 80.28.395. The conservation targets for LDCs are also a new requirement: HB 1257 for the first time requires LDCs to identify and acquire all cost-effective conservation and requires them to set two-year acquisition targets that will accomplish this goal. RCW 80.28.380.
[70] Potential assessments assume average market penetration and savings over sizeable populations. Conservation potential from large industrial customers, including transportation customers, are more appropriately treated individually than on an average basis.
[71] RCW 80.28.390.

would "replace any portion of the natural gas that would otherwise be provided by the gas company." Second, LDCs "may" propose an RNG program that "would supply renewable natural gas for a portion of the natural gas sold or delivered to its retail customers."[72] These two provisions contain an important distinction: The first *requires* LDCs to offer RNG to those customers that want it, while the second *allows* them to offer an RNG program that would serve all customers. The latter is subject to cost and environmental limitations. Analysis in the IRP will support the utility's proposals in this area. Further, the utility's IRP must discuss its plans concerning RNG.

Storage

WAC 480-90-238(3) requires LDCs to "assess" opportunities to use company-owned or contracted storage in their IRPs, and also includes storage options as one of many resource options to be evaluated using a "consistent method to calculate cost-effectiveness."

Distribution Planning

Each LDC must provide a short-term plan outlining the specific actions to be taken to implement the long-range integrated resource plan during the two years following submission.[73] Each LDC also typically outlines a multi-year budget for engineering projects through a distribution scenario decision-making process. LDCs identify areas with growth forecasted to create capacity issues, focusing on areas for future improved distribution capacity needs, and highlight these projects in the IRP.

[72] RCW 80.28.385.
[73] WAC 480-90-238(3)(h).