

Appendix C  
Regulatory Compliance Matrix  
2020 OR IRP

## **Appendix C - Introduction**

In Order No. 89-507, the Commission adopted “least-cost planning” as the preferred approach to utility resource planning. As part of the IRP, Cascade followed the adopted rules and guidelines. In this Appendix, Cascade outlines the rules and guidelines as well as how the Company complied with each.

<b>Order No. 07-047</b>		
Guideline (1)(a)	All resources must be evaluated on a consistent and comparable basis	Completed throughout the IRP, Chapter 9 provides an in-depth analysis of the resources considered in the derivation of Cascade's preferred portfolio.
	All known resources for meeting the utility's load should be considered, including supply-side options which focus on the generation, purchase and transmission of power – or gas purchases, transportation, and storage – and demand side options which focus on conservation and demand response.	Completed throughout the IRP, Chapter 9 provides an in-depth analysis of the resources considered in the derivation of Cascade's preferred portfolio. Demand side options are discussed in Chapter 6.
	Consistent assumptions and methods should be used for evaluation of all resources.	Cascade uses consistent assumptions and methods while evaluating all resources throughout the IRP.
	The after-tax marginal weighted-average cost of capital (WACC) should be used to discount all future resource costs.	Cascade uses the after-tax marginal weighted-average cost of capital in all calculations involving discounted future resource costs. This is discussed in Chapter 5.
Guideline (1)(b)	Risk and uncertainty must be considered.	Cascade uses Value-at-risk (VAR) analysis to capture the intrinsic and extrinsic value of all resources. This is discussed in Chapter 9.
	At a minimum, utilities should address the following: sources of risk and uncertainty: Natural gas utilities: demand (peak, swing and baseload), commodity supply and price, transportation availability and price, and costs to comply with any regulation of greenhouse gas emissions.	Cascade performs Monte Carlo Simulations to stochastically evaluate scenarios and sensitivities related to demand (peak, swing and baseload), commodity supply and price, transportation availability and price, and costs to comply with any regulation of greenhouse gas emissions. This is discussed in Chapter 9.

	<p>Utilities should identify in their plans any additional sources of risk and uncertainty.</p>	<p>All sources of risk and uncertainty are discussed in Chapter 9.</p>
<p>Guideline (1)(c)</p>	<p>The primary goal must be the selection of a portfolio of resources with the best combination of expected costs and associated risks and uncertainties for the utility and its customers.</p> <p>The planning horizon for analyzing resource choices should be at least 20 years and account for end effects.</p> <p>Utilities should consider all costs with a reasonable likelihood of being included in rates over the long term, which extends beyond the planning horizon and the life of the resource.</p>	<p>Cascade uses VaR analysis to capture the intrinsic and extrinsic value of all resources, and select the portfolio with the best combination of expected costs and associated risks and uncertainties for the utility and its customers. This is discussed in Chapter 9.</p> <p>Cascade performs its analysis over a 20-year or longer time horizon throughout the IRP. All cost analysis includes any projected costs that may extend beyond the 20-year horizon.</p>
	<p>Utilities should use present value of revenue requirement (PVRR) as the key cost metric. The plan should include analysis of current and estimated future costs for all long-lived resources such as power plants, gas storage facilities, and pipelines, as well as all short-lived resources such as gas supply and short-term power purchases.</p>	<p>Cascade uses PVRR as the key metric to rank its candidate portfolios. This cost figure includes all current and estimated future costs for the resources within each portfolio. This analysis is in Chapter 9.</p>
	<p>To address risk, the plan should include, at a minimum:</p>	

	<p>1. Two measures of PVRR risk: one that measures the variability of costs and one that measures the severity of bad outcomes.</p> <p>2. Discussion of the proposed use and impact on costs and risks of physical and financial hedging.</p>	<p>Cascade uses Monte Carlo analysis to measure the variability of costs, and VaR analysis to measure the impact of severe outcomes. Cascade views any portfolio containing unserved demand as unacceptable.</p> <p>Chapter 4 discusses the Company's approach to financial derivatives.</p>
	<p>The utility should explain in its plan how its resource choices appropriately balance cost and risk.</p>	<p>Cascade uses VaR analysis to appropriately balance intrinsic and extrinsic costs. This is mainly discussed in Chapter 9.</p>
Guideline 1(d)	<p>The plan must be consistent with the long-run public interest as expressed in Oregon and federal energy policies.</p>	<p>This IRP is consistent with the long-run public interest. Discussion of Oregon and national energy policies can be found in Chapter 6.</p>
Guideline 2(a)	<p>The public, which includes other utilities, should be allowed significant involvement in the preparation of the IRP. Involvement includes opportunities to contribute information and ideas, as well as to receive information. Parties must have an opportunity to make relevant inquiries of the utility formulating the plan. Disputes about whether information requests are relevant or unreasonably burdensome, or whether a utility is being properly responsive, may be submitted to the Commission for resolution.</p>	<p>Cascade ensures that stakeholders have access to materials and can make comments. The company is always willing to meet with stakeholders to further explain any topics of interest. Further information about public participation can be found in Chapter 10 as well as in Appendix A.</p>
Guideline 2(b)	<p>While confidential information must be protected, the utility should make</p>	<p>Cascade ensures that stakeholders have access to materials and can make comments. The company is always willing to meet with stakeholders to</p>

	<p>public, in its plan, any non-confidential information that is relevant to its resource evaluation and action plan. Confidential information may be protected through use of a protective order, through aggregation or shielding of data, or through any other mechanism approved by the Commission.</p>	<p>further explain any topics of interest. Further information about public participation can be found in Appendix A.</p>
<p>Guideline 2(c)</p>	<p>The utility must provide a draft IRP for public review and comment prior to filing a final plan with the Commission.</p>	<p>The 2020 Oregon Draft IRP has been filed on 5/12/2020. It will be posted on the CNGC website and distributed to all stakeholders involved in Cascade's IRP Process. There were no hard copies produced for the Draft.</p>
<p>Guideline 3(a)</p>	<p>A utility must file an IRP within two years of its previous IRP acknowledgment order. If the utility does not intend to take any significant resource action for at least two years after its next IRP is due, the utility may request an extension of its filing date from the Commission.</p>	<p>This IRP is filed within Oregon Commission deadlines.</p>
<p>Guideline 3(b)</p>	<p>The utility must present the results of its filed plan to the Commission at a public meeting prior to the deadline for written public comment.</p>	<p>This will be completed when the meeting is scheduled.</p>
<p>Guideline 3(c)</p>	<p>Commission staff and parties should complete their comments and recommendations within six months of IRP filing.</p>	<p>To be completed by Staff.</p>
<p>Guideline 3(d)</p>	<p>The Commission will consider comments and recommendations on a utility's plan</p>	<p>To be completed by Staff.</p>

	<p>at a public meeting before issuing an order on acknowledgment. The Commission may provide the utility an opportunity to revise the plan before issuing an acknowledgment order.</p>	
<p>Guideline 3(e)</p>	<p>The Commission may provide direction to a utility regarding any additional analyses or actions that the utility should undertake in its next IRP.</p>	<p>To be completed by Staff.</p>
<p>Guideline 3(f)</p>	<p>Each utility must submit an annual update on its most recently acknowledged plan. The update is due on or before the acknowledgment order anniversary date. Once a utility anticipates a significant deviation from its acknowledged IRP, it must file an update with the Commission, unless the utility is within six months of filing its next IRP. The utility must summarize the update at a Commission public meeting. The utility may request acknowledgment of changes in proposed actions identified in an update.</p>	<p>Cascade filed its most recent update on 07/31/2019. Cascade plans to continue to comply with this guideline.</p>
<p>Guideline 3(g)</p>	<p>Unless the utility requests acknowledgement of changes in proposed actions, the annual update is an informational filing that:</p>	
	<p>Describes what actions the utility has taken to implement the plan;</p>	<p>Cascade filed its most recent update on 07/31/2019. Cascade plans to continue to comply with this guideline.</p>

	Provides an assessment of what has changed since the acknowledgment order that affects the action plan, including changes in such factors as load, expiration of resource contracts, supply-side and demand-side resource acquisitions, resource costs, and transmission availability; and	Cascade filed its most recent update on 07/31/2019. Cascade plans to continue to comply with this guideline.
	Justifies any deviations from the acknowledged action plan.	Cascade filed its most recent update on 07/31/2019. Cascade plans to continue to comply with this guideline.
Guideline 4	At a minimum, the plan must include the following elements:	
Guideline 4(a)	An explanation of how the utility met each of the substantive and procedural requirements;	Cascade has filled out a compliance matrix to meet this requirement. Information regarding the compliance matrix can be found in Appendix C.
Guideline 4(b)	Analysis of high and low load growth scenarios in addition to stochastic load risk analysis with an explanation of major assumptions;	Cascade uses VaR analysis to stochastically test its preferred portfolio in a variety of scenarios, including high and low load growth, limited availability of supplies, and limited availability of storage. This analysis along with an explanation of the major assumptions is discussed in Chapter 9.
Guideline 4(c)	For electric utilities, . . .	Not applicable
Guideline 4(d)	For natural gas utilities, a determination of the peaking, swing and base-load gas supply and associated transportation and storage expected for each year of the plan, given existing resources; and identification of gas supplies (peak, swing and base-load), transportation and storage needed to bridge the gap between expected loads and resources;	Chapter 4 of the IRP discusses the various supply, storage, and transportation resources available for each year of the plan. Additionally, Chapter 9 of the IRP graphically identifies the mix of existing and incremental resources used to meet expected loads on a peak day and annual basis.



Guideline 4(d)	Identification and estimated costs of all supply-side and demand-side resource options, taking into account anticipated advances in technology;	Appendix E outlines the estimated costs of supply side resource options and Appendix D outlines the estimated costs of all demand-side resource options.
Guideline 4(d)	Analysis of measures the utility intends to take to provide reliable service, including cost-risk tradeoffs;	Cascade discusses the measures that will be taken to provide reliable service in Chapter 9. This plan includes the cost-risk tradeoffs evaluated in the VaR analysis which can be found in Chapter 9.
Guideline 4(e)	Identification of key assumptions about the future (e.g., fuel prices and environmental compliance costs) and alternative scenarios considered;	Cascade uses VaR analysis to stochastically test its preferred portfolio in a variety of scenarios and sensitivities, including high and low load growth, limited availability of storage, and various environmental compliance cost scenarios. This analysis along with an explanation of the major assumptions is discussed in Chapter 9.
Guideline 4(f)	Analysis of measures the utility intends to take to provide reliable service, including cost-risk tradeoffs;	Cascade discusses the measures that will be taken to provide reliable service in Chapter 9. This plan includes the cost-risk tradeoffs evaluated in the VaR analysis which can be found in Chapter 9.
Guideline 4(g)	Identification of key assumptions about the future (e.g., fuel prices and environmental compliance costs) and alternative scenarios considered;	Cascade uses VaR analysis to stochastically test its preferred portfolio in a variety of scenarios and sensitivities, including high and low load growth, limited availability of storage, and various environmental compliance cost scenarios. This analysis along with an explanation of the major assumptions is discussed in Chapter 9.
Guideline 4(h)	Construction of a representative set of resource portfolios to test various operating characteristics, resource types, fuels and sources, technologies, lead times, in-service dates, durations and general locations – system-wide or delivered to a specific portion of the system;	Discussion of the representative set of portfolios can be found in Chapter 9.

Guideline 4(i)	Evaluation of the performance of the candidate portfolios over the range of identified risks and uncertainties;	Discussion of the performance of the candidate portfolio over a range of scenarios and sensitivities can be found in Chapter 9.
Guideline 4(j)	Results of testing and rank ordering of the portfolios by cost and risk metric, and interpretation of those results;	Results of the testing and rank order of the portfolios by cost and risk metric, along with an interpretation of those results, can be found in Chapter 9.
Guideline 4(k)	Analysis of the uncertainties associated with each portfolio evaluated;	Cascade analyzes the uncertainties associated with each portfolio in its VaR analysis which can be found in Chapter 9.
Guideline 4(l)	Selection of a portfolio that represents the best combination of cost and risk for the utility and its customers;	Cascade has selected a portfolio that is the best combination of risk for the utility and its customers. Discussion of this portfolio can be found in Chapter 9.
Guideline 4(m)	Identification and explanation of any inconsistencies of the selected portfolio with any state and federal energy policies that may affect a utility's plan and any barriers to implementation; and	Cascade has not identified any inconsistencies with its preferred portfolio and state/federal energy policies. Discussion of Oregon and federal energy policies can be found in Chapter 6.
Guideline 4(n)	An action plan with resource activities the utility intends to undertake over the next two to four years to acquire the identified resources, regardless of whether the activity was acknowledged in a previous IRP, with the key attributes of each resource specified as in portfolio testing.	Cascade's four-year action plan can be found in Chapter 11.
Guideline 5	Electric Transmission	Not applicable.
Guideline 6(a)	Each utility should ensure that a conservation potential study is conducted periodically for its entire service territory.	Cascade partners with the Energy Trust of Oregon (ETO) for its energy efficiency efforts in Oregon. Energy efficiency efforts are discussed in Chapter 6.

<p>Guideline 6(b)</p>	<p>To the extent that a utility controls the level of funding for conservation programs in its service territory, the utility should include in its action plan all best cost/risk portfolio conservation resources for meeting projected resource needs, specifying annual savings targets.</p>	<p>Cascade partners with the Energy Trust of Oregon (ETO) for its energy efficiency efforts in Oregon. Energy efficiency efforts are discussed in Chapter 6. The impact of conservation on resource needs are integrated in Chapter 9.</p>
<p>Guideline 6(c)</p>	<p>To the extent that an outside party administers conservation programs in a utility's service territory at a level of funding that is beyond the utility's control, the utility should:</p> <ul style="list-style-type: none"> <li>• Determine the amount of conservation resources in the best cost/risk portfolio without regard to any limits on funding of conservation programs; and</li> <li>• Identify the preferred portfolio and action plan consistent with the outside party's projection of conservation acquisition.</li> </ul>	<p>Cascade partners with the Energy Trust of Oregon (ETO) for its energy efficiency efforts in Oregon. Energy efficiency efforts are discussed in Chapter 6. The impact of conservation on resource needs are integrated in Chapter 9.</p>
<p>Guideline 7</p>	<p>Plans should evaluate demand response resources, including voluntary rate programs, on par with other options for meeting energy, capacity, and transmission needs (for electric utilities) or gas supply and transportation needs (for natural gas utilities).</p>	<p>In Chapter 6, the Company explains that it offers interruptible service as a voluntary option to customers in both Oregon and Washington, and that this offering is a load management program. Chapter 4, Supply Side Resources discusses interruptible service as a needle-peaking supply-side resource.</p>

<p>Guideline 8 (revised – new guideline is from Order No. 08-339)</p>	<p>a. <b>BASE CASE AND OTHER COMPLIANCE SCENARIOS:</b> The utility should construct a base-case scenario to reflect what it considers to be the most likely regulatory compliance future for carbon dioxide (CO<sub>2</sub>), etc. The utility also should develop several compliance scenarios ranging from the present CO<sub>2</sub> regulatory level to the upper reaches of credible proposals by governing entities. Each compliance scenario should include a time profile of CO<sub>2</sub> compliance requirements. The utility should identify whether the basis of those requirements, or “costs” would be CO<sub>2</sub> taxes, a ban on certain type of resources, or CO<sub>2</sub> caps (with or without flexibility mechanism such as allowance or credit trading or a safety valve). The analysis should recognize significant and important upstream emissions that would likely have a significant impact on its resource decisions.</p>	<p>Cascade’s base case scenario contains what the Company expects the cost for regulatory compliance to be. In its stochastic analysis, Cascade performs a sensitivity analysis of the VaR that results from a range of CO<sub>2</sub> related regulatory costs. The results of this can be found in Chapter 9. Additional discussion of Carbon compliance can be found in Chapter 6.</p>
	<p>b. <b>TESTING ALTERNATIVE PORTFOLIOS AGAINST THE COMPLIANCE SCENARIOS:</b> The utility should estimate, under each of the</p>	<p>Cascade uses PVRR as the key metric to rank its candidate portfolios. This cost figure includes all current and estimated future costs for the resources within each portfolio. This analysis is in Chapter 9.</p>

	<p>compliance scenarios, the present value of revenue requirement (PVR) costs and risk measures, over at least 20 years, for a set of reasonable alternative portfolios from which the preferred portfolio is selected. The utility should incorporate end-effect considerations in the analyses to allow for comparisons of portfolios containing resources with economic or physical lives that extend beyond the planning period. The utility should also modify projected lifetimes as necessary to be consistent with the compliance scenario under analysis. In addition, the utility should include, if material, sensitivity analyses on a range of reasonably possible regulatory scenario futures for nitrogen oxide, sulfur oxides, and mercury to further inform the preferred portfolio selection.</p>	<p>Cascade analyzed a wide variety of extreme carbon scenarios. No carbon scenario created a substantial difference in the preferred portfolio.</p>
	<p>c. TRIGGER POINT ANALYSIS: The utility should identify at least one CO2 compliance “turning point” scenario which, if anticipated now, would lead to, or “trigger” the selection of a portfolio of resources that is</p>	

	<p>substantially different from the preferred portfolio. The utility should develop a substitute portfolio appropriate for this trigger-point scenario and compare the substitute portfolio’s expected cost and risk performance to that of the preferred portfolio – under the base case and each of the above CO2 compliance scenarios. The utility should provide its assessment of whether a CO2 regulatory future that is equally or more stringent than the identified trigger point will be mandated.</p>	
	<p>d. OREGON COMPLIANCE PORTFOLIO: If none of the above portfolios is consistent with Oregon energy policies (including state goals for reducing GHGs) as those policies are applied to the utility, the utility should construct the best cost/risk portfolio that achieves that consistency, present its cost and risk parameters, and compare it to those of the preferred and alternative portfolios.</p>	<p>All of Cascade’s candidate portfolios are consistent with Oregon energy policies.</p>
<p>Guideline 9</p>	<p>An electric utility’s . . .</p>	<p>Not applicable</p>
<p>Guideline 10</p>	<p>Natural gas utilities should analyze, on an integrated basis, gas supply,</p>	<p>Chapter 4 of the IRP discusses the various supply, storage, and transportation resources available for each year of the plan. Additionally,</p>

	<p>transportation, and storage, along with demand side resources, to reliably meet peak, swing, and base-load system requirements. Electric and natural gas utility plans should demonstrate that the utility's chosen portfolio achieves its stated reliability, cost and risk objectives.</p>	<p>Chapter 9 of the IRP graphically identifies the mix of existing and incremental resources used to meet expected loads on peak day and annually.</p>
<p>Guideline 12</p>	<p>Electric utilities should . . .</p>	<p>Not applicable</p>
<p>Guideline 13(a)</p>	<p>Electric utilities should . . .</p>	<p>Not applicable</p>
<p>Guideline 13(b)</p>	<p>Natural gas utilities should either describe in the IRP their bidding practices for gas supply and transportation, or provide a description of those practices following IRP acknowledgment.</p>	<p>Cascade's bidding practices for gas supply and transportation can be found in Chapter 4.</p>

<b>Order No. 11-196, UM 1286, PGA Guidelines</b>		
Appendix, Page 2 of 16, No. 1	For natural gas utilities, each IRP preparation process and final published IRP will address both planning to meet normal annual expected demand (as defined by the LOC - both base-load and swing) by day and planning to meet annual peak demand by day. The planning will include gas supply and associated transportation along with expected use of storage.	Chapter 4 of the IRP discusses the various supply, storage, and transportation resources available for each year of the plan. Additionally, Chapter 9 of the IRP graphically identifies the mix of existing and incremental resources used to meet expected loads on peak day and annually.
Appendix, Page 3 & 4 of 16, No. 6	<p>As part of the PGA filing, final IRP submission, and general rate case filing each LDC will include an attestation that it has verified, to the best of its knowledge, the historical values for (but not limited to) customer number, sales volumes, etc. are consistent if not totally equivalent among the following:</p> <ul style="list-style-type: none"> <li>a) All filings with FEREC and the Securities and Exchange Commission (SEC);</li> <li>b) Results of operations reports submitted to the OPUC;</li> <li>c) Most current IRP or IRP update;</li> <li>d) Most recent PGA filing (final); and</li> <li>e) Most recent general rate review filing.</li> </ul> <p>If the LDC cannot make such an attestation it should explain the</p>	Cascade has included this attestation in its 2020 IRP.



	variations and why these variations should be allowed.	
Appendix, Page 4 of 16, No. 7	All forecasts of demand, weather, etc. upon which the gas supply portfolio for the current PGA filing is based should be based on a methodology and data sources that are consistent with the most recently acknowledged IRP or IRP update and most recently concluded general rate review for the utility. If the methodology and/or data sources are not consistent each difference should be identified, explained, and documented as part of the PGA as well as the IRP and general rate review filing work papers.	All of Cascade’s forecasts used in the PGA filing are based on a methodology and data sources that are consistent with the 2019 Oregon IRP update.
<b>Order No. 16-054, Appendix A</b>		
Page 5, No. 1	Clearly show the plan to acquire all cost-effective energy efficiency.	Chapter 6 discusses Cascade’s plan to acquire all cost-effective energy efficiency.
Page 5, No. 2	Provide complete conservation resource potential results and inputs specific to Cascade only, not including results of other Energy Trust territories or for measures that do not apply to Cascade territory.	Conservation resource potential results and inputs can be found in Chapter 6.
Page 5, No. 3	Provide updated data and explanations for the policies and methodologies used to inform the DSM analysis.	Policies and methodologies used to inform the DSM analysis is discussed in Chapter 6.
Page 5, No. 4	Incorporate commercial market transformation savings similar to	Commercial market transformation savings are discussed in Chapter 6.

	residential methods and include an explanation for how those assumptions are derived and applied within the IRP.	
Page 5, No. 5	Clearly document assumptions behind capacity contribution of energy efficiency and how the capacity value is incorporated into resource planning.	Assumptions behind capacity contribution of energy efficiency are documented in Chapter 6.
Page 5, No. 6	Provide an explanation regarding how annual energy savings are translated into peak day demand and capacity resources.	The methodology behind the transformation of energy savings to peak day demand and capacity resources is discussed in Chapter 9.
Page 8, 1&2, Nos. 1 & 2	Future Cascade IRPs include portfolio analyses and present the analysis results clearly delineating the three analysis steps, and how those steps progressively lead to identification of the preferred portfolio of resources.	Portfolio analysis and identification of the preferred portfolio can be found in Chapter 9.
Page 8, No. 3	Future Cascade IRPs perform and clearly present this trade-off analysis.	This is discussed in Chapter 9.
Page 8, No. 5	Future Cascade IRPs provide a clear, complete, and concise presentation of the portfolio analysis results in a single Chapter of the IRP.	This is discussed in Chapter 9.
Page 9	Staff recommends that Cascade work with Staff and other interested parties to develop a comprehensive database comprising of both economic and weather variables such as price, income, employment, different Heating Degree	Cascade has improved its forecast modeling for the 2020 IRP. Information about new modeling techniques can be found in Chapter 3.

	<p>Days (HDD) cutoffs, seasonality, etc., and formulate alternative regression models to identify the drivers of the forecasted values and plausibility of the parameter estimates relative to the economic theory on demand for natural gas.</p>	
<p>Page 10</p>	<p>Staff recommends that future Cascade IRPs include detailed descriptions of, and basis for, the gas purchasing plan and hedging strategy, as well as the gas purchasing risk management plan/policy/strategy.</p>	<p>Cascade includes a detailed description of its gas purchasing plan and hedging strategy in Chapter 4.</p>
<p>Page 10</p>	<p>Staff also recommends that in the next IRP, Cascade comprehensively describe the rationale by which it chooses the hedging percentage levels, including upper limits of hedged gas based on the market environments (e.g., price levels, volatility, etc.), Cascade's risk tolerance (e.g., tolerance bands of potential losses), etc. In the meantime, Staff recommends that Cascade continue to apprise Staff and other parties during the recurring quarterly meetings of changes in the hedged gas percentage levels.</p>	<p>Cascade discusses its hedging practices in Chapter 4.</p>
<p>Page 11</p>	<p>Staff recommends that future Cascade IRPs present separate listings of</p>	<p>A discussion of all distribution system projects can be found in Chapter 8.</p>

	enhancement projects from the other projects.	
Page 12	Staff recommends for future IRPs that Cascade inform the Commission in its IRP of the price of renewable natural gas as compared to traditional source of natural gas, and report to the Commission how much renewable natural gas it purchased between the IRP filing years.	Cascade discusses the price of RNG in Chapter 7 as well as in Appendix I. Cascade has not purchased any renewable natural gas.
Page 12	Staff also recommends that Cascade report its EPA's Greenhouse Inventory Report information to the Commission in each of its future IRPs for each year preceding each IRP.	Subpart NN emissions for Oregon in 2018 was 562,197.4 Metric Tons of CO <sub>2e</sub> and 597,463.7 Metric Tons of CO <sub>2e</sub> in 2019.
Page 12	Staff recommends that Cascade evaluate its staffing approach and make changes where needed, to ensure that its required regulatory IRP activities are performed on schedule and in compliance with Commission requirements.	Cascade made enhancements to its staffing prior to the 2018 IRP, adding two new analysts and retaining the services of a consultant. Cascade has kept the same team through the 2020 IRP.
Page 13	Staff recommends that future IRPs use the Executive Summary to summarize the contents of the IRP, rather than to present additional information.	Cascade's executive summary now summarizes the contents of the IRP, this can be found in Chapter 1.