Appendix L

Comments Matrix

2020 WA IRP

Appendix L - Introduction

The purpose of this document is to provide the comments Cascade received on the Draft IRP and the responses to those comments. Several of the comments are responded directly in this appendix and other comments reference the IRP narrative.

Stakeholder	Chapter	Comment	Response
Staff	General	COVID-19 impacts : During and after the second technical advisory group (TAG) meeting, both Staff and Public Counsel expressed some concern over the emerging COVID-19 crisis and how it could impact certain inputs into the IRP, including employment, population, and gas prices. Staff understands that putting together an IRP model in a pandemic is difficult to say the least, and that model inputs eventually need to be locked down, but Staff also believes that this situation warrants some discussion in the IRP. Some questions to address include: How (if at all) has the pandemic increased uncertainty about the economic and demographic inputs into the model? Has Cascade noticed any significant changes in any of the inputs after they were locked down that could change the analysis and/or portfolio selection? The demand and gas price forecasts would be most important to address. Additionally, in the appropriate spots in the narrative, it would be helpful to note when (month/year) each of the inputs/forecasts was finalized.	Cascade leans on consultants for employment, population, and price forecasting. Cascade has added language regarding COVID-19 from the consultants to the narrative. Specifically, employment and population is addressed on page 3-7 and price forecasting is addressed on page 4-9.
Staff	General	Context and comparison to past IRPs: It occurs to Staff that Cascade could provide some useful context in the IRP by comparing the results from past IRPs to the current IRP. For example, in TAG #2, Cascade presented graphs that shows its projected annual demand as calculated in IRPs dating back to 2016. That type of context would be extremely useful in the IRP document. Please consider adding such context where it would be helpful; going back further than 2016 could also be informative. Staff suggests the chapters on demand, conservation, and resource integration are ripe for this context.	Cascade has added a graph that compares load growth from previous IRPs in figure 3-9 in Chapter 3. In Figure 7-3 on Page 7-12, Cascade shows how the first two years of the Company's DSM forecast compares to previous IRPs as well as to how they actually performed. Cascade has also included an avoided cost comparison in Figure 5-1 on Page 5-6. Cascade will work with stakeholders to determine what other comparison's could be useful in future IRP cycles.
Staff	General	Clarity of calculation descriptions and methodologies: In certain places in the document (chapters 3 and 4, for instance), Cascade provides text that describes its calculations and methodology. These were also described during the TAG meetings. In many instances, Staff finds the TAG explanations – and the graphics used to supplement them – to be easier to follow than the written explanations. Staff suggests using graphics in tandem with the narrative where it would be beneficial to clarify its methodology.	Cascade has added clarification to methodologies throughout the IRP. Cascade transformed the upstream emissions calculation to show the formula and a discussion on the formula. Footnotes have been added to several sections in an effort to clarify the source of the data.
Staff	General	Staff recommends that Cascade spend time editing the IRP prior to submitting the final version. IRPs are admittedly difficult documents to write, but Staff found numerous areas where the narrative lacked clarity or detail, or generally needed proofreading. This document and the attached Excel file include examples of several ways in which the narrative could be clarified or otherwise improved. Reviewing the IRP for these suggestions could improve its readability.	Cascade has multiple reviewers who review the IRP before it's filed. Some review for content and others review for grammar. Unfortunately, when working closely with the document on a day to day basis there is narrative that is understood by the writer/reviewer that may not be as easily understood from the reader. Cascade appreciates that Staff, who has an understanding of the information in the IRP and fresh eyes, is willing to point out area's that need clarity and detail. Cascade will make an attempt to better review documents prior to filing.
Staff	2	This chapter could be augmented with some additional helpful info. Please consider adding some graphics/narrative around end uses for Cascade's gas (i.e., how much of demand is for heating, etc.), percentage of residential vs. commercial vs. industrial customers, etc.	Currently, Cascade doesn't have end use data to build these charts easily. Cascade will work with the Information Technology group to gather this information. Once the information is gathered, allocations will need to be created to break out the usage information by end use. Cascade will incorporate this data in future IRP cycles.
Staff	3	The chapter does not discuss the expected impact of climate change on its load forecasts. Does the company expect that the HDDs will change? If so, what are its impacts on total energy usage and peak energy usage? A bullet point in Chapter 12 mentions that the Company will be reviewing its peak day in the next IRP because it will fall outside the 30-year window. When conducting that analysis the Company should be considering climate change impacts as well.	Cascade plans to evaluate a few different strategies regarding climate change. First, Cascade could develop different ranges of historic weather data in order to get a better picture of the effects of climate change on Cascade's service territory. These ranges could be 10 years of historic weather, 15 years, or even 20 years. Another strategy could be to look at climate change studies and develop values from that. As for peak day, Cascade will be investigating new methodologies to develop peak day values as the current peak is December 21st, 1990, which will fall off if Cascade continues to use its coldest rolling 30-year value. This could be derived from stochastic simulations and percentiles, or loss of load probabilities.
Staff	3	HDDs: If the change from a 65-degree reference temperature to a 60 degree one was made a couple of cycles ago, is this discussion still relevant? Or could it be condensed? At the least, please make clear that this is not a brand-new methodology change.	Cascade has shortened the paragraph down and added a footnote explaining that Cascade uses a 60 degree reference temperature as discussed in prior IRPs.
Staff	3	High-/low-growth scenarios: Please clarify how Cascade developed these scenarios. This is discussed briefly on page 3-10 and in a bit more detail on page 3-18, but neither passage is completely clear regarding how the scenarios are defined. Additionally, has the company considered, rather than simply basing scenarios on confidence intervals, varying the input assumptions going into the forecasts?	More narrative has been added on page 3-17 and 3-18 that explains the components of the high/low growth models.
Staff	3	Per the 2018 acknowledgement letter, at the fifth TAG meeting, Cascade provided some cross-validation analysis of its model. None of this shows up in the draft IRP. Staff believes that it should.	Cascade has added a cross-validation section that includes the cross-validation data that was presented at TAG 5.
Staff	4	Supply side options: Many of these resources appear to be things that would need to be constructed if the model were to select them. Is that accurate? If so, would Cascade construct them alone, or would it need cooperation from other utilities? Additionally, what is the status of the Bremerton-Shelton realignment today? Staff recalls this was selected as a resource option in the 2018 IRP, but the text here makes it seem like this is a new opportunity and one that has not been finalized/completed yet.	Cascade has added language to the Supply Side options. Most projects would require construction, with most having a lead time of 2 to 4 years. Each project would be on its own case by case basis but Cascade would preferably work with other utilities to lessen the impact of cost for each project. Cascade has added narrative that clarifies the Bremerton-Shelton acquisition and the status of the realignment.
Staff	4	As part of the Other Alternative Gas Supply Resources, has the utility investigated the cost and feasibility of a hydrogen project?	This has been added to the two-year action plan.
Staff	5	Staff appreciates Cascade using the social cost of carbon with a 2.5% discount rate as its base carbon forecast.	Thank you.
Staff	5	In the avoided cost formula, the Power Council's 10% conservation adder (called the "environmental adder" in the IRP) is applied only to the cost of the commodity. Is this fully consistent with the Council's methodology? Please verify and confirm. Staff has learned that in 2018, for instance, the Energy Trust of Oregon adjusted its avoided cost formula to apply the 10% adder to the transmission, distribution, and generation deferral values.	Cascade does believe its methodology is consistent with the intent of the Council Methodology, but recognizes there may be an opportunity to refine its application of the 10% environmental adder. The Company notes that each regional LDC takes its own approach with regards to how it should be applied, and will be further exploring these regional best practices to determine if any modifications should be made. Cascade will introduce any proposed changes during the 2022 TAG process.
Staff	5	Upstream emissions: Staff understands that the company did not include upstream emissions in the avoided costs that it calculated for the draft. Staff also understands that the company will incorporate these in the final IRP. Given this, Staff will expect to see some discussion of how these additional costs get incorporated into the overall avoided costs. There is only one sentence on this topic on page 5-4. Given that it is a significant new requirement from HB 1257, it seems like the topic deserves a bit more than one sentence.	Most of the upstream emissions discussion is in Chapter 6. Cascade has added language stating where the calculation is captured in the avoided cost with a reference to the Chapter 6 discussion.
Staff	5	Please provide a citation to the BEA document that Cascade used to convert the cost of carbon to real 2020 dollars. (Please also indicate what "BEA" stands for as it has not been used in the document yet.)	Cascade has provided a citation to the BEA document referenced in Chapter 5. Cascade defined BEA as the Bureau of Economic Analysis at the top of page 5-3 of the 2020 IRP Draft.
Staff	6	General comment: While it is perhaps helpful to have a rundown of what bills, rules, proceedings, etc., Cascade is following, this chapter doesn't often make clear if/how such proceedings are incorporated into the IRP. It leaves the reader feeling confused about what is important and what isn't. Please consider condensing some of the detailed descriptions, particularly of bills/laws that aren't factoring into the model. Additionally, provide some context for the reader on why they are reading about all of the various laws, etc.	Cascade has condensed some details and removed some areas where a bill/law was discussed later in the IRP. Cascade also noted if the bill/law was factored in this IRP or if it was just being monitored as it may impact a future IRP.

Stakeholder	Chapter	Comment	Response
Staff	6	As Staff has mentioned in the TAG and in emails, given the push for electrification and GHG emission reductions in Cascade's territory, it may be useful to consider sensitivities around municipal natural gas bans or other such deep decarbonization possibilities. While Staff does not expect to see these sensitivities for the final 2021 IRP, Staff does anticipate recommending them in its formal comments after the final IRP is submitted.	Cascade has added language to the action plan.
Staff	6	Pages 6-17 through 6-19: Staff has several comments. This seems like a helpful discussion, but please provide citations in the footnotes to any reports, documents, etc. (There are several.) The quoted text from the 7th Power Plan lacks context; please provide some. Staff is a bit confused about the 1% calculation for Rockies gas. Did the AGA actually perform that calculation, or was it the EPA that did it and the AGA just wrote the document Cascade sent to Staff regarding the calculation? As expressed via email on Oct. 21, Staff has reservations around the upstream methane release rates from both the Rockies and Canada, as they are well below many estimates in the literature, including the rates that the Power Council landed on. Staff suggests that Cascade consider a sensitivity that increases these rates, and/or revisit them for the next IRP. Staff anticipates writing formal comments about this issue for the final IRP. Also as expressed in the above-reference email, Staff has reservations with Cascade using the 2007 Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) methane global warming potential (GWP) number figure. The Fifth Assessment Report (AR5) came out in 2014 and contained an updated GWP figure for methane. Staff doesn't see why that number should not be used instead. Cascade does not specify which GWP it uses in the draft IRP, and Staff feels that it should. Staff also anticipates writing formal comments about this for the final IRP. Please provide examples of the values in literature noted in the first full paragraph on page 6-19.	Cascade has reorganized the Upstream Emissions section of Chapter 6. The Chapter now includes the upstream emissions formula that explains the calculation. Under the formula, each input is explained with footnotes to where the source can be found. Cascade appreciates the comment regarding sensitivities around upstream emissions. Since the upstream emissions calculation itself had a small impact to the avoided cost, the sensitivities would have an even smaller impact on the avoided cost. Cascade does agree that a sensitivity is needed and will add that to the Company's action plan.
Staff	6	Page 6-20: Two comments. It is good to have this discussion of the calculations here, but as mentioned in other portions of these comments, the calculations would be clearer with some visuals and/or examples of the steps being taken. In the Oct. 15 supplemental TAG meeting, Staff understood the 1/3 Rockies to 2/3 Canada gas figures to be placeholders. Did Cascade confirm these percentages as actuals ?	Cascade has added the formula to the Chapter along with explanations for each aspect of the upstream emissions formula. The percentages for the supply basins have been updated and are provided in the Avoided Cost appendix.
Staff	7	General note: This chapter is shorter and a bit more focused than in the 2018 IRP but could still use some improvement. It seems like some of what got sacrificed was a deeper discussion of the results of the DSM analysis. Staff would find this more useful than information that can be found in the company's conservation plan. Staff also suggests, given the large increase in conservation potential in this IRP, discussing that a bit and perhaps producing a graphic or two showing the increase. Additionally, the narrative shifts from results to process and back; Figures 7-8 and 7-9, for instance, seems like they should appear next to Figure 7-4 a few pages earlier.	This section was moved to "Energy Efficiency Programs Forecasted Savings" beginning on page 7-14.
Staff	7	Cascade did not submit the conservation potential assessment (CPA) that the IRP is based on. Staff understands that the "second phase" of the new IRP (set to be submitted for Commission approval in mid-2021) is not done yet, but Cascade should provide the "first phase" to the TAG (as well as the conservation advisory group) as soon as possible, and submit it along with the final IRP.	Cascade has provided the first phase in Appendix D in the final IRP filing.
Staff	7	Please provide a DSM avoided cost comparison showing the SCGHG in and out of the avoided cost. Staff thinks it would be helpful for understanding the magnitude of the impact in this first IRP post 1257. Please also provide a narrative description.	Additional language was added to page 7-20 that explains to impact to potential savings as well as new graphs on Page 7-20 and 7-21. Additional language was also added to the Avoided Cost chapter explaining the impact SCGHG has on the avoided cost itself.
Staff	7	Page 7-2: As far as Staff sees, the highlights box is the only place that the total 20-year conservation potential is specified in this chapter. That seems like an important figure to note and discuss in the main body of the narrative. (Staff recalls making this same comment about the 2018 IRP, as well.)	Cascade added the 20-year conservation potential to the narrative. New figures have been added to pages 7-16, 7-17, and 7-21.
Staff	7	Page 7-6: Why set the cost-effectiveness threshold at 0.9? Is there any argument for setting it lower? As Cascade notes, the UTC generally judges cost-effectiveness at the portfolio level, not the measure level, so is it possible there are certain measures that make sense to pursue but don't meet the 0.9 threshold?	Additional language was added to page 7-6.
Staff	8	Staff appreciates this new chapter. The look at how Cascade views RNG as a new resource is very helpful!	Cascade appreciates the feedback.
Staff	8	Cost-effectiveness methodology: Please expand upon this section to describe what it is, what it is being/will be used for, and why it is appropriate. Please also discuss whether the methodology is still under development/consideration (Staff's understanding is that it is). Finally, please be clear about whether Cascade expects any action from the Commission on this methodology. (This is important as NW Natural specifically requested approval of its RNG methodology. Staff understands the formula that Cascade presents to be for internal use and not for approval by the Commission, which is fine. However, given NW Natural's request and the fact that RNG and the cost-effectiveness methodology are new to the IRP, Cascade should make that clear.)	Cascade has added language that describes the cost effective methodology at a high level. Cascade is not asking for approval on its RNG methodology and is only looking for feedback on the cost effective methodology, at this time.
Staff	8	Appendix J notes that Cascade is looking for feedback on the analysis for the project. What feedback is the company looking for? Staff could provide this, but perhaps would be easier to talk through over the phone.	Cascade wants to clarify that the Company is looking for feedback on how the information is provided as well as the information included. Cascade is not looking for approval on the RNG project that is included in Appendix J. Cascade agrees that a phone call or a workshop would be beneficial to discuss the RNG methodologies included in the 2020 IRP.
Staff	9	Page 9-8: Is there any more information that the reader might want on targeted energy efficiency? If so, should it be included here or possibly in Chapter 7?	To date Cascade has not developed targeted DSM efforts or pilots, as the programs have stressed equity of incentive offerings to all customers within the qualifying rate schedules. However, with the need to increase savings efforts across the territory in response to GHG reduction goals the Company will explore opportunities to emphasis EE programs to select geographical areas with its CAG. Cascade's unique service territory as a mostly rural utility provider may provide some unique opportunities.
Staff	9	Staff appreciates the additional project-level details in Appendix I.	Cascade's engineering group has taken great strides to provide justification for each project. Cascade appreciates Staff's comment.
Staff	10	"As-Is" analysis: Has Cascade studied a longer peak event, such as a five-day event? Why is a three-day event appropriate?	Cascade appreciates this question and believes it deserves further discussion during the next IRP process. When it comes to peak day modeling, Cascade's days are independent of one another. This means if Cascade is able to serve customers on the extreme peak day event, then the duration, whether it's a five-day or three-day, doesn't have an impact. Ultimately, determining what impacts Cascade is trying to uncover with these longer peak events will help decide what type of peak events need to be modeled. Cascade has added this action item to the action plan and looks forward to further discussions in the next IRP.

Stakeholder	Chapter	Comment	Response
Staff	10	Page 10-7, "High Pricing Environment": Has Cascade considered varying pricing in a way other than just by +/- 5%? Similar to a comment in Chapter 3 above, are there other ways to vary the inputs that would be more illustrative? Figure 10-8 appears to show that there's very little difference between the high, low, and mid-price scenarios. So how useful is this analysis?	The high pricing scenario is run stochastically, which is a far greater stress test than simply a 5% increase. This was incorrectly labeled and has been updated in Figure 10-3. The NYMEX comparison in figure 10-8 is mostly to show the low expected volatility in the deterministic NYMEX forecast, while emphasizing the dramatic impact that carbon pricing has on the price forecast.
Staff	10	Page 10-21: What is the DSM factor noted here? Does this need to be discussed further?	Additional language has been added.
Staff	10	Page 10-22: Under "Results", does Cascade elsewhere describe what additional GTN capacity it required, and what the LFM is/does? If not, please do so.	Language has been moved from page 10-27 to clarify the incremental GTN Capacity. References to the LFM has been removed since the GTN Capacity was the primary driver behind the solved shortfalls.
Staff	10	"Alternative Resources Not Selected": Staff has several comments/questions here. Incremental GTN – What capacity acquired in Oregon is being referred to here? Is this from the OR IRP? If so, please discuss briefly. Bremerton-Shelton realignment – This was a selected resource in the 2018 IRP. It might be worth providing some context around what changed that resulted in it not being needed now. "NOVA" – Earlier in the IRP process, Staff suggested being consistent with the use of "NGTL" and "NOVA". Staff renews that suggestion here. If they're the same resource, please label them consistently. Wenatchee/Zone 20/Eastern OR – All three of these resources are being rejected because the Bremerton-Shelton realignment would be cheaper. Yet the B-S realignment was also not chosen. Does that mean anything? Does it mean that ultimately there is no need anywhere in any of these places? That is a bit confusing. Additionally, would it be possible for the B-S realignment to cover for all of these shortfalls by itself? Spire Storage: Does Cascade still have safety concerns with this facility? If so, is it still worth considering as a potential resource?	Cascade's response in order of the comments: This is now clarified in the "Results" section. The Bremerton-Shelton realignment has been updated in Chapter 4. This has been updated. This language has been simplified for clarity. This has been updated.
Staff	10	Figure 10-18: Two notes on this figure. Please explain/provide some context for the unusually large/small dollar figures in the "No BC", "No Canada", and "No Rockies" scenarios. This was explained in the TAG but is not in the document. Page 10-32 talks about unserved demand in the "No Storage" and "No Evergreen" scenarios. Should Figure 10-18 have an unserved demand column, then? It seems like it would be useful.	This has been added in the form of a footnote and additional clarifying language in the Extreme Scenario Discussion Subsection. This has been added to the figure.
Staff	10	Extreme scenarios: Cascade discusses its findings from the "No BC" scenario in the draft IRP. Did it come to similar conclusions for the other extreme scenarios mentioned?	Language has been added to the Extreme Scenario Discussion Subsection to discuss all four scenarios.
Staff	10	Stochastic analyses: These charts are a bit interesting, but the narrative around them is brief. Some more context could be provided. What do they tell the Cascade team that the reader should know about?	Language has been added to the Stochastic Analyses - Annual Load Requirement & Weather Uncertainty and Stochastic Analyses - Price Uncertainty subsections.
Staff	12	RNG: Should starting a voluntary program under RCW 80.28.390 be included as an action item?	This has been added as an action item.

Stakeholder	Chapter	Page	Location	Comment/question	Response
Staff	1	5	4th paragraph	Can you please clarify what these growth factors are? Are they supposed to be percentages or...? Additionally, per the footnote, these numbers come from the EIA's 2018 AEO. Have they not been updated in subsequent versions of the AEO?	Cascade has removed this language as it was an older version of how Cascade produced high and low price cases. Cascade now handles the high/low price scenarios with the stochastic price analysis. This can be found in the Resource Integration chapter.
Staff	1	11	Stakeholder Engagement	FYI, Oregon does not have a Dept. of Ecology	This has been corrected to say Washington Department of Ecology.
Staff	3	11	Final paragraph	There are several spots in the document where Cascade notes changes in methodology. There is also Appendix K, which notes methodological changes. It does not appear all changes in methodology are in Appendix K. Consider a couple of actions: a highlight box ("What's Changed?") at the beginning of the each chapter, or making sure all changes are noted in the appendix (smaller changes could just be noted with a short explanation).	Cascade has included all changes in methodology in Appendix K. Cascade has made an attempt to clarify the narrative as to not indicate a methodology is new, when in fact, it isn't new to this IRP.
Staff	3	14	Figure 3-8	A line showing overall growth rate would be useful here	Cascade found adding an overall growth rate to figure 3-8 made the graph difficult to read. Cascade does have overall core growth in several other graphs. Specifically, figures 3-9, 3-11, and 3-12.
Staff	4	6	1st paragraph	What extract are you referring to? Is it the link in the footnote? Please include the source and name of the document in all footnotes. Additionally, how much capacity of JP does Cascade own/have contracted for (this is noted for the other storage resources but not JP)?	The extract is referring to the following paragraph. Cascade has updated the language and put the following paragraph in quotes. The footnote has also been updated. Cascade has provided Storage Capacity and Withdrawal Rights values in Figure 4-2.
Staff	4	10	Figure 4-4	The two blue lines look very similar. Please consider a different color for one of them.	Figure 4-4 has been updated.
Staff	4	11	Basis differential	This discussion is not clear. What is the basis differential and how does it factor into the price forecast?	A basis differential is the difference between NYMEX Henry Hub and the Basin. For example, the AECO basis is equal to NYMEX minus the AECO basin price.
Staff	4	11	Pros/cons	What are the changes to the methodology noted in the first sentence? Staff does not see these changes noted in the text.	Apologies for the lack of clarity. These were changes made in the 2018 IRP that carried over to the 2020 IRP. Cascade believes those changes are very important to the price forecast so the changes were noted again in the 2020 IRP. Cascade has clarified this language in the narrative.
Staff	4	16	RNG paragraph, 5th line	"Gas. gives"? Should a new sentence/paragraph start here?	This has been corrected in the narrative.
Staff	4	17	Last paragraph	What proposals or types of proposals is Cascade talking about here?	Cascade has added language to clarify the proposals that are referred here.
Staff	4	18	Bullets	Are the percents here correct? 50% for both years 1 and 2? Should they be consistent with the percentages noted in either of pages 4-22 or 4-23?	Year 2 has been updated to correctly reflect the year two goal of 30%.
Staff	5	5	Application paragraph	What enhancements is Cascade referring to here?	Cascade is specifically referring to the quantification of upstream emissions, accuracy around carbon compliance costs, and enhancements to the distribution system cost calculation methodology.
Staff	5	6	Figure 5-1	The use of "zones" in this figure is not clear. Cascade has not yet defined where each zone is. Please consider using a different descriptor. Additionally, if these figures are in dollars, please consider putting them in dollar format and limiting the number of decimal places (3 perhaps).	Cascade has clarified the conservation zones in the Chapter. Figures 5-1 and 5-2 have been updated to state the units and put them in dollar format with 3 decimal places.
Staff	6	18	Last paragraph	Who is the One Future Coalition? This is the first time they are mentioned in the document. There are also acronyms like "NWGA" and "EDF" that have not been used in the document yet that need to be defined/spelled out once before the acronym is used.	The ONE Future Coalition is a group of 37 Natural Gas companies working together to voluntarily reduce methane emissions across the Natural Gas value chain to 1% (or less) by 2025. NWGA and EDF have been defined in the narrative.
Staff	6	25	Table 2	I'm not finding Table 1 in this chapter. Additionally, please add a source for this data.	Table 2 has been updated the accurately reflect that it is the first Figure in the Chapter. A source has been added.
Staff	7	3	"By incentivizing..."	This sentence isn't clear. How are incentivizing efficiency from customers and conservation two different things?	Additional language was added to page 7-3.
Staff	7	5	Definitions text	The forecasting terms definitions are very long blocks of quoted text. Please consider if they could just be summarized.	These definitions have been trimmed down.
Staff	7	14	Top paragraph	This paragraph could be elaborated upon and clarified. What alternative carbon scenarios are referenced (the three bills/laws addressed in chapter 6)? Did all three give the exact same result? Consider a graph if it would be useful.	Additional language was added to page 7-20.
Staff	7	21	Figure 7-10	The title of this figure does not seem to reflect the content of the table. Please also clarify what percent is being referenced in the header row.	Cascade has updated the title of the figure.
Staff	7	23	120%	Should this be 20%? 120% would mean double, plus another 20%.	This has been updated to reflect the current percentage of 20%.
Staff	8	3	Mention of biomass	Is this accurate? Biomass and biogas are two different things.	This is accurate. That is the correct estimate from E3 on the supply of biomass in Washington and Oregon.
Staff	10	6	Figure 10-3	This is a large, busy table. Please break it into two: one for scenarios and another for sensitivities.	Cascade has created two separate tables as suggested.
Staff	10	9	RNG	Chapter 8 doesn't really say anything specific about price, timing, or quantity. Appendix J has some of these details, but for one possible project and under confidential treatment.	The must take on-system RNG and must take off-system RNG scenarios in Chapter 10 are referring to the RNG Scenarios discussion in Chapter 8. Cascade provides two theoretical RNG modeling scenarios in an effort to get feedback on the analysis that could be done in SENDOUT. These projects would theoretically begin in 2021, with 300 dekatherms/day of must take supply at $13.50/dth before environment attributes.
Staff	10	14	Key Output Reports	What should the reader be taking away from this description of output reports, particularly given that the reader never sees them?	Cascade added language to the Resource Optimization Output and Analysis Reports to clarify what takeaways the reader should have regarding the output reports.

Stakeholder	Chapter	Comment	Response
Public Counsel	Chapter 8	Re: the RNG plan at page 8-9, Does the UTC's recent policy guidance on RNG change this at all? How does safety and quality measure into this?	The RNG project in the IRP is not a project that Cascade is seeking acknowledgement on. Cascade has continued to meet with UTC and other LDCs to help clarify the policies. A top priority for Cascade is the ensure all RNG projects meet safety and quality measures. The Company will continue to work with UTC, other LDCs, and other interested parties to move forward with getting RNG on Cascade's system.
Public Counsel	Chapter 10	Re: Portfolios evaluated at 10-22, The draft mentions that the Company will evaluate additional portfolios in future iterations of the IRP. Under what sort of guidelines or potential new considerations will new portfolios be chosen for evaluation?	There are no guidelines that require specific portfolios to be considered. Cascade has chosen the portfolios that are currently in the IRP. Additional portfolios are created when a change to the natural gas industry could have a large impact on the Company. More specifically, portfolios including Renewable Natural Gas or Hydrogen are portfolios that should be considered in the future. As always, the Company is also open to any ideas external stakeholders have for additional portfolios.