

Appendix M
Comments Matrix
2018 WA IRP

PAGE	LOCATION	COMMENT	Cascade's Response
N/A		<p>Methodological changes: Staff is impressed with the additional analytical rigor the Cascade resource planning team has added to the 2018 IRP. It is clear that the team has spent significant time and resources to address issues that were included in the acknowledgement letter for the 2016 IRP. Quite a few changes have been made, and while those changes seem positive, it is difficult to keep track of them all in the current draft. Additionally, in some instances Cascade has not adequately addressed in the IRP the advantages and disadvantages to using these new methods, and how and why the new methods are better than the old methods. Staff would like further discussion of these issues in the final IRP. What Staff would like to see is some discussion of the pluses and minuses to the new methods, and, to the extent possible, verification that the new methods are better than the old methods. While not a requirement, Cascade could consider a new "methodological changes" chapter or appendix. Such an appendix would be a handy guide for the Commission in its review of the IRP, and could serve as an opportunity for Cascade to showcase its improvements. If Cascade chooses not to create a methodological changes chapter/appendix, it still needs to elaborate on these changes in the narrative. Additionally, Cascade made the following methodological changes in response to Staff comments during the 2016 IRP process. If Cascade creates a chapter/appendix on methodological changes, these items should be included, though would require less discussion/justification, since Staff's comments on them are already on the record in the 2016 IRP.</p>	<p>Cascade appreciates the positive feedback related to the changes. The Company has added narrative to the 2018 IRP when appropriate to highlight significant methodological changes from the 2016 IRP, and to discuss the pros and cons of these changes. The new narratives can be found in the redline version of the final IRP, and all of the methodological changes have been aggregated in a new appendix, Appendix L. This appendix also presents an analysis of the advantages and disadvantages of the new methodologies.</p>
N/A		<p>Section 7: This section seems quite wordy and hard to follow. For instance, pages 7-11 through 7-23 jump back and forth from methodology to results frequently. This makes it more difficult to follow the specific steps that were involved in developing the conservation projection. Additionally, outside of the "Key Points" box on page 7-2, the section doesn't actually state how much energy efficiency Cascade is projecting over the next 20 years; the charts on page 7-24 help, but the number itself does not appear elsewhere in the section. Staff suggests editing this section to make it more succinct, and reorganizing it so the process and results are very clear and easy to follow..</p>	<p>Cascade cut out text where available. The Company did not completely reorganize the chapter as it would require significant alterations, however we moved some elements to aid legibility and we added narrative about the actual energy efficiency expected for the next 20 years earlier in the chapter, and referenced where the information is located. Additionally Cascade is available to walk stakeholders through the model upon request.</p>
N/A		<p>Total Resource Cost (TRC) test: Staff's memo for the 2016 IRP requested that Cascade "focus on developing a fully-balanced total resource cost test" for energy efficiency programs. While Cascade has included TRC calculations in its CPA, it is clear that the utility cost test (UCT) remains the primary cost effectiveness test. In Section 7, please briefly discuss Cascade's progress towards implementing a fully-balanced TRC, and what barriers still stand in the way of that goal.</p>	<p>Cascade added additional narrative.</p>
N/A		<p>Distribution projects: Staff appreciates Cascade's verbal clarification that the choice to highlight the three distribution projects on pages 9-10 and 9-11 was not indicative of their importance relative to other projects. This clarification should be added to the final IRP. At a minimum, Staff suggests noting on page 9-10 that these three projects are just examples and highlighting them does not necessarily indicate that they have more importance than others. A better approach would be to use this discussion to bring the Commission's attention to any particularly important projects that are expected to be completed in the next five years. The Commission might be interested in hearing about any urgent and/or particularly costly projects that the company has planned.</p>	<p>Cascade added language to the Distribution System section discussing the highlighted three projects and their importance. Cascade will work with stakeholders in the future to determine which projects should be highlighted in the narrative.</p>

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N/A		Action plan: There are a few items that Staff suggests adding to the action plan. First, in its 2016 action plan, the company agreed to continue exploring biogas opportunities. There is no mention of biogas in the current action plan, but since Staff is aware that Cascade is monitoring biogas opportunities, Cascade should mention that explicitly in the action plan. Second, Staff suggests including a point on performing backcasting or similar verification of its new methodologies as needed, and continue to refine modeling techniques as needed.	Cascade has added additional language in the 2-year action plan about biogas as well as cross validating new methodologies.
N/A		Appendices: While Staff appreciates the information in the appendices, it can be difficult to digest hundreds of pages of spreadsheet printouts. Cascade should consider ways to make the data-intensive appendices more readable. One suggestion is to include introductory pages for the more data-intensive appendices to tell the reader what is in the appendix. Some appendices include introductory pages, but Appendices B, E, and G do not, and the lack of context makes these appendices harder to understand. Another suggestion is, where feasible and beneficial to the reader, to include 20-year line charts showing the shape of the data so it can be quickly reviewed by the reader. The zone and citygate charts in Appendix B are a good example of this.	Cascade has added introductions to the data-intensive appendices in order to improve readability. These introductions discuss the layout, order, and structure of the data that follows it. Cascade will continue to look for ways to improve readability.
Page 1-3	3rd paragraph	"an system weighted" should read "a system-weighted"	Thanks.
Page 1-8	1st paragraph	Please spell out abbreviations on first use; "WUTC" used in previous page	Thanks.
Page 3-2	Key Points 2nd bullet	The word "day" is missing in 2nd line	Thanks.
Page 3-6	2nd to last line	"to be" should read "to have"	Thanks.
Page 5-2	Key Points last bullet	This last bullet is cut off before the sentence is finished	Thanks.
Page 5-4	3rd paragraph, 6th line	There is a "the" before "Cascade's" that doesn't shouldn't be there	Thanks.
Page 5-6	1st paragraph	The reference to 2012 model year should actually be 2021	Thanks.
Page 5-7	3rd paragraph, end of 1st line	Add an "of" before "costs"	Thanks.
Page 5-9	Last paragraph	The sentence that starts "Many..." uses more than one verb tense ("involved", "applied", "combusts", "is"). The last part could be changed to "...combust fossil fuels and/or are suppliers of fossil fuels" to make more sense.	Thanks.
Page 5-16	3rd paragraph 1st line	"of which" should read "in which"	Thanks.
Page 5-18	4th paragraph, 2nd line	"Overtime" should read "over time"	Thanks.
Page 5-23	Table 5-1	It's not clear what units this table is in, or what "impact" means. Please clarify	Thanks.
Page 5-23	Last paragraph, 4th line	There should be an "of" after "representative"	Thanks.
Page 5-24	1st sentence	The sentence gets cut off before it actually ends	Thanks.
Page 6-2	Formula	There is an extra "+" in the formula	Thanks.
Page 7-11	Table 7-1	The last two columns of this table aren't labeled very clearly. Staff suggests clarifying that the difference and growth are from the previous biennium.	Thanks.
Page 7-11	Figure 7-1	Is this figure showing goals or actuals? If it is goals, the 2017-2018 bar looks like it's showing actuals. Please correct if needed.	Thanks.
Page 7-12	Table 7-2	There are footnote numbers in this table, but no footnotes below the table. Are there supposed to be footnotes here?	Thanks.
Page 7-15	Charts	Please clarify the chart titles.	Thanks.
Page 7-18	3rd paragraph	"LoadMAP generated" should be hyphenated	Thanks.
Page 7-18	Last paragraph, 1st line	"climate zone" is not capitalized, whereas above it is (inconsistent capitalization)	Thanks.
Page 7-24	Charts	In the charts, "Technical Potential" has a dashed line, but in the legend, it is solid. Please correct.	Thanks.
Page 7-24	2nd paragraph	There should be a "the" before "Residential", and "sector" should be pluralized	Thanks.
Page 7-25	Charts	Same comment as above with dashed "Technical Potential" line. Additionally, it is not clear which type of potential is portrayed in Figure 7-11 (technical, achievable, etc.).	Thanks.
Page 8-2	Key Points	The box cuts off the last point. Please fix.	Thanks.
Page 8-4	Step 6 & Step 8	The sentences starting "If the VaR" have "may be" and "became". This feels like a verb tense change. Perhaps change "became" to "would become"?	Thanks.

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Page 8-4	Step 7	"difference" should read "different"; "legislature" should read "legislation"	Thanks.
Page 8-15	3rd paragraph, 3rd line	"then resources" should be changed to read "the resources"	Thanks.
Page 8-17	Figure 8-5 legend	The three bottom lines on the legend all have the same description and should be differentiated	Thanks.
Page 8-20	3rd paragraph, 1st & 3rd lines	"serve" in the first line should read "served"; "Zone 30-5 in" in the 3rd line should read "Zone 30-S is"	Thanks.
Page 8-21	Last paragraph 1st line	"use" should read "uses"	Thanks.
Page 9-10	Last bullet, 2nd line	"capacity" is spelled wrong	Thanks.
Page 3-2		Staff suggests including the zone map that's on page 8-9 here, and/or define what a "loop" is	Cascade has added the definition of a citygate loop in Section 12 - Glossary and Maps.
Page 7-24		Here Cascade has a chart showing the DSM potential, as well as the table on page 7-27. However, other than the "Key Points" box on page 7-2, nowhere that Staff sees in the narrative does the company actually state how much DSM potential was uncovered by the CPA. Please state this clearly, and/or consider moving the table on page 7-27 to before the charts so these numbers are up front.	Company moved the potential prior to figure 7-8 and has included the full CPA in the Appendix for reference. Additional context is included in the 2019 Conservation Plan in further detail.
Page 8-3		Staff doesn't see any place that the company has elaborated on what each of these portfolios represent. For instance, what is "All-In" or "GTN Only"? Staff suggests very brief explanations under Step 2, i.e., "All-In: all available incremental resources considered", "GTN Only: only available incremental GTN resources modeled", etc. Cascade could also consider moving Table 8-5 to here as well.	Appendix E pages 263-268 include the 6 portfolios that the Company modeled and each resource the portfolios had available to select. Cascade has added a table in Appendix E that shows the Composition of each portfolio and what SENDOUT ultimately decided was the least-cost most reasonable mix of energy supply resources and conservation to meet system demand.
Page 10-3		To fully capture all outreach for the IRP, Cascade should add the June 18, 2018, catch-up workshop held at the UTC to the list of workshops.	The workshop has been added to section 10 - Stakeholder Engagement.
2-2		How is "community" defined?	Cascade defines communities as cities, towns, or census-designated place.
2-2		Which region(s) does this align with among the three listed below?	This aligns with the Central region.
3-16		I know the planning horizon is through 2038, but it seems odd to jump in 5-year intervals until the last one, which is 4. The period-over-period changes in load aren't comparable, as a result.	This is admittedly an odd table as there is no way to create equal intervals if Cascade wants to maintain the beginning and end of the planning horizon, 2019 and 2038. It should be noted that this table is not meant to compare intervals, but to show the general trend throughout the planning horizon.
4-14		The level of demand has changed? This sentence is not clear, so probably needs additional detail/context.	That is correct. The level of demand has changed. Cascade will edit the sentence to make it more clear.
5-2		A portion of the sentence is missing. (Key Points)	Cascade believes the Key Points had a visual error when converting from Word to PDF. These will be corrected in the final version of the IRP.
5-7		Would this factor in as a sensitivity or assumption in the model?	Social Cost of Carbon is the base carbon assumption used in Cascade's modeling. Table 8-2 outlines how SCC is substituted out in the Company's various carbon sensitivities.
5-21		Was this request from the Commissioners or Commission Staff?	Staff
5-22		Does "one main CO2 adder" mean this is an assumption, rather than one of four sensitivities?	That is correct. SCC is the base carbon assumption.
5-24		If the SCC is an assumption in the modeling, how are the other scenarios (b-d above), then how are the additional costs layered in? (if social cost is just one of several carbon sensitivities included in model runs, then disregard this question.)	Table 8-2 identifies how the other carbon sensitivities are treated. For each sensitivity, the costs associated with the SCC is removed from the model, and a new carbon forecast is inserted in its place. The model is then rerun, and the results of the sensitivity analysis are recorded.

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7-11		Savings/Conservation?	Cascade updated the table for clarity.
7-12		This seems like it should be discussed earlier in the section, or at least be given a different heading. It seems like an abrupt shift.	The Company added a header - potential estimates.
7-16		It may be worth describing additional strengths of the LoadMAP model and the reasoning behind the move to the new model.	This has now been addressed with pros and cons under the new Methodological Changes appendix.
7-23		Perhaps list some examples? Or are the measurable NEBs included later in the IRP/appendices?	Added narrative on NEIs under LoadMAP analysis section.
7-26		It may be beneficial to discuss the low-income weatherization issues presented in the GRC and how the Company intends to work toward the potential savings. It can dovetail with the action plan below as well.	Public Counsel confirmed the current content is sufficient and will reference Conservation Plan for additional detail.
7-27		this seems out of place/abrupt, given the previous low-income discussion	This has been moved.
8-2		This appears to cut off mid-sentence	Cascade believes the Key Points had a visual error when converting from Word to PDF. These will be corrected in the final version of the IRP.
8-8		This section seems to clear up whether or not the Social Cost of Carbon is an assumption or sensitivity in the model. Public Counsel recently formalized our position on this issue, as we are ramping up for the electric IRP process. Our position is that Social Cost of Carbon (as determined by the federal government) should be used only as a sensitivity in the model, along with other measures intended to measure the externalized costs of carbon. Until there is clearer direction from the legislature, it is our belief that it should not be included in every case. We also want to ensure that including the SCC as an assumption in the base case doesn't lead to double-counting with other costs of carbon.	For the 2018 WA IRP, Cascade has elected to use the SCC as its base case proxy for the externalized cost of carbon. This decision was made after consulting with Commission Staff and other Stakeholders throughout the technical advisory group process. The Company does agree that it is important to measure the impact of other potential carbon futures, which is why Cascade has included the results of three carbon sensitivities in the IRP. In each of these sensitivities Cascade avoided double-counting the impact of carbon by removing the costs associated with SCC and instead running the models with the designed carbon sensitivity (such as the ballot initiative or Inslee/Carlyle proposal.)