

**Cascade Natural Gas Integrated Resource Planning Feedback Report**

Item #	Date	TAG Meeting	Name/Company	Comment/Question	Cascade Response
1	4/4/2022	TAG 1	WUTC	Will Cascade consider more frequent breaks throughout the TAG meetings?	Cascade would be open to ideas on how often the Company should break during TAG meetings. Cascade suggests we shouldn't break more often than once per hour, with a 5-minute maximum for each break, unless we need a longer lunch break.
2	4/4/2022	TAG 1	WUTC	Will Cascade consider adding in at least 15-minutes of unscheduled time during meetings, perhaps at the end, for the sole purpose of encouraging questions?	Cascade intended for the penultimate TAG 1 slide to be that unscheduled time as you indicated. Key Cascade members will remain in the meeting as long as needed to respond to questions.
3	4/4/2022	TAG 1	WUTC	During the virtual presentation, is hand raising encouraged or unmuting? Any guidance in future meetings on how to participate would be beneficial for stakeholders. Perhaps laying this groundwork at the beginning of TAG meetings would be useful.	Cascade's meetings are very informal so either unmuting or raising your hand, or even typing questions into chat is fine with Cascade. Cascade will clarify this in future TAG meetings as well as include this information in the Stakeholder Engagement Design Document.
4	4/4/2022	TAG 1	WUTC	Does Cascade plan on sending out minutes/summaries of each meeting? Staff's hope is that such summaries would include any comments or questions from TAG members and Cascade's initial response to those items, in addition to including such as an appendix in the final IRP.	Yes, Cascade will provide minutes that include questions, stakeholder comments, and Cascade's responses.
5	4/4/2022	TAG 1	WUTC	On slide 17, Cascade staff noted natural gas volatility of 179.1%. Staff is not familiar with volatility as a metric. It would be helpful to have a bit more explanation of what it is, how it is measured, and what it signifies. Could this volatility result in supply risk/interruption, rather than simply pricing risks? What do volatility projections look like for the future? Does this spike in volatility have greater meaning to Cascade beyond hedging and prices?	<p>Volatility is a statistical measure of the magnitude of changes for a particular value, regardless of direction. Volatility is often measured with terms such as variance or standard deviation. A low variance/standard deviation would mean low volatility.</p> <p>The EIA defines their measure of volatility as the magnitude of daily changes in the closing price for natural gas in a 30-day window, based on rolling front-month contracts. For example, the EIA would measure what future contracts are for February 2022 each day in January 2022. A high volatility might show low February priced contracts earlier in January, but as time goes on, the market begins showing very high February contracts, resulting in a high volatility measure. This could be due to a number of market conditions, supply issues, production issues, unexpected weather; even related to pricing hubs in Europe and Asia where Henry Hub price volatility has historically corresponded.</p> <p>Volatility is key metric in Cascade's Value at Risk analysis. A high volatility environment presents high risk to the both the hedged and unhedged portion of the Company's portfolio. Short term, the Company is projecting that high volatility will continue into the upcoming heating season, as there is still great uncertainty surrounding the variables discussed above. Long-term, however, Cascade does expect the market to stabilize, leading to lower volatility in the outer years of Cascade's hedging horizon and beyond. Cascade does not see any significant relationship between volatility and supply/interruption risk.</p>

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6	4/4/2022	TAG 1	WUTC	Since the UTC has new staff assigned to this IRP, it would be helpful to staff to schedule a walkthrough of the load forecast, avoided cost methodology, upstream emissions methodology, stochastic analysis, and resource integration. Additionally, if Cascade does indeed intend to use Plexos rather than SENDOUT as its resource integration software for this IRP, it will be helpful to schedule a demonstration of the software and how Cascade uses it.	Cascade’s next four TAG meetings are intended to dig into these models and much of the TAG meetings will be a walkthrough of these models. Cascade’s recommendation would be that after each TAG meeting, if there is still a request for a walkthrough, Cascade would gladly set up a meeting to further dive into a model/methodology.
7	4/4/2022	TAG 1	WUTC	UTC staff commend Cascade for starting a conversation around stakeholder engagement and their demonstrated openness to amendments to the IRP stakeholder engagement document.	We appreciate this comment. Cascade is committed to implementing best practices for stakeholder engagement while recognizing stakeholders have a full workload.
8	4/4/2022	TAG 1	WUTC	During the meeting Cascade Staff noted previous engagement strategies (e.g. Facebook posts regarding the Bend TAG and consideration of a mailer), for the sake of clarity, would it be possible to have anticipated outreach strategies outlined in the IRP stakeholder engagement document during a future update? Clearly outlining Cascades outreach plans/efforts may make it easier to have future discussions about improving outreach strategies. For example, “Cascade staff plans to publish TAG meeting notices on their Twitter account 2 weeks prior to each meeting” – this example would clearly communicate one step Cascade plans to take.	Cascade appreciates this comment and perspective. The Company understands the importance of stakeholder engagement and wants to ensure customers and interested parties know how and when to participate in Cascade’s IRP efforts. Cascade will include on the TAG 2 meeting agenda a discussion of Cascade’s engagement strategies. The Company looks forward to this discussion.
9	4/6/2022	TAG 1	OPUC	OPUC checked in on the plan to not hold separate DSM-related workshops noted in Order 21-127 and in Slide 14 of Cascade’s TAG presentation and just addressing through the TAG meetings. OPUC is fine with that plan as long as the Company will be addressing all the issues that were raised in the Order on that topic.	Cascade agrees with this and is amenable to any follow up workshops if those topics are not discussed in detail to OPUCs satisfaction during Cascade’s TAG meetings.