**TAG #4 WA –TAG Meeting**

**Date & time:** 08/10/2022, 9:00 AM to 3:00 PM

**Location:** Microsoft Teams Meeting

**Presenters:** Abbie Krebsbach, Brian Robertson, Devin McGreal, Kent Crouse, Lori Blattner, Monica Cowlishaw, Caleb Reimer, & Kathleen Campbell

**In attendance**: Abbie Krebsbach, Abe Abdallah, Becky Hodges, Brian Cunnington, Brian Robertson, Bruce Folsom, Byron Harmon, Caleb Reimer, Carolyn Stone, Carra Sahler, Chanda Marek, Chris Robbins, Dan Kirschner, Devin McGreal, Eric Wood, Haixiao Huang, Heide Caswell, James Fraser, Jon Storvick, JP Batmale, Kathleen Campbell, Kent Crouse, Kevin Connell, Lori Blattner, Mark Sellers-Vaughn, Matt Steele, Michael Parvinen, Monica Cowlishaw, Pamela Archer, & Robert Slowinski

Brian Robertson, Supervisor of Resource Planning, opened the meeting by welcoming and thanking stakeholders for participating in Cascade’s IRP Process. Brian then proceeded with introductions, the agenda, a safety moment, and a reminder of the stakeholder engagement principles.

**Presentation #1 – IRP Carbon Update and Assumptions** (Abbie Krebsbach & Brian Robertson)

* Abbie began by discussing Cascade’s commitment to reduce emissions with a predominant amount of time spent on discussing the Climate Commitment Act (CCA).
* Abbie shared the Company’s baseline emissions and described the non-core regulated as covered entities separately under the CCA.
* Abbie also covered customer and operation emissions.
* As part of the CCA discussion, Abbie shared the options Cascade has to comply with the CCA rules and what our RNG/Hydrogen projections look like.

**Question**: Byron asked if there were any entities that fell through emission requirement cracks since Cascade is only responsible for certain transport customers.

**Answer**: Abbie responded that there are certain rules that may make entities exempt from emission reduction requirements, but Cascade didn’t have any specific customers or examples during the meeting.

**Question**: JP asked if the current pipe Cascade was putting into the ground was safe for Hydrogen.

**Answer**: Kathleen informed the group that the more modern pipe is safe when it comes to Hydrogen blending and the vintage pipe is where there could be concerns.

* Brian then discussed the local GHG reduction focus and how Cascade planned to model those.
* Abbie touched on the national GHG reduction focus and then described the differences between Washington and Oregon policies.
* Abbie then discussed the upstream emissions calculation and described in detail the changes from the previous IRP.

**Presentation #2 – Renewable Natural Gas** (Brian Robertson, Devin McGreal, Lori Blattner, & Kent Crouse)

* Brian gave a high-level overview of what Renewable Natural Gas (RNG) is, some examples of RNG, and the benefits of RNG. Brian also described the main issue with RNG is the high cost.

**Question**: Byron asked if his understanding that RNG is a constant supply that supplies the same amount of gas each day throughout the year was correct.

**Answer**: Kathleen explained that Byron’s understanding is correct and there are multiple reasons as to why an RNG project generally supplies the same amount of gas for each day of the year.

**Question**: Abe asked a clarifying question after Cascade mentioned the high price of RNG. Abe’s question was how RNG prices compare to other green gas production costs.

**Answer**: Devin explained that we utilize an AGF ICF study for long term RNG and Hydrogen pricing and in that study, it shows that RNG starts out cheaper and then prices increase, where Hydrogen is the exact opposite.

* Devin McGreal discussed how Cascade does RNG Cost-Effectiveness analysis. Devin also covered the differences between purchase vs build when it comes to RNG.
* Lori gave an update on Cascade’s voluntary RNG program and gave some information on Hydrogen.

**Question**: Byron asked if there would be a more concrete timeline for the voluntary RNG program in the IRP narrative.

**Answer**: Lori said that Cascade plans to have something in place by the end of the year, so including more narrative on the voluntary RNG program shouldn’t be an issue.

**Question**: Abe asked if Cascade has looked at existing H2 blending projects operation in Europe and Australia.

**Answer**: Lori mentioned that Cascade has been monitoring the GTI study that has discussed H2 blending projects from across the world in great detail. Brian also mentioned that a member of Cascade recently went to Denmark to tour RNG/Hydrogen facilities.

* Kent described in detail several projects that Cascade is working on to get on-system RNG onto Cascade’s system.

**Presentation #3 – Demand Side Management (DSM) Forecast** (Monica Cowlishaw & Caleb Reimer)

* Monica shared an overview of Cascade’s energy efficiency program performance and then passed it off to Caleb to discuss the LoadMAP modeling tool and analysis framework.
* Monica then described the different scenarios that were run and discussed that the 2023 IRP values are different than the original 2021 CPA. Cascade also modeled a higher avoided cost using RNG pricing as well as a combination of that and natural gas bans. Each scenario provided varying amounts of DSM.
* Caleb then discussed forecast summaries and the top measures for Commercial, Industrial, and Residential customers.
* Caleb then went through the top twenty overall measures, which results in the final portfolio. Monica then described the DSM action items and next steps.

**Presentation #4 – Preliminary Results** (Brian Robertson)

* Brian shared the preliminary results for Cascade’s upstream transportation and showed how future DSM could delay upstream transportation needs approximately 11-12 years.
* Brian also showed what Cascade’s base case modeling could look like for the final results. Cascade is still working through CCA modeling to ensure the accuracy of all inputs.

**Presentation #5** – **Distribution System Planning** (Kathleen Campbell)

* Kathleen covered the overall distribution system modeling process and the data gathering process for Synergi.

**Question**: Heide asked about the time granularity of the billing data that goes into the CMM model.

**Answer**: Kathleen mentioned that the data comes from Cascade’s customer care and billing system which comes in at a monthly level.

* Kathleen shared how Cascade identifies system deficits/constraints and discussed options to address these system deficits/constraints.

**Question**: Heide asked if Cascade has ever done any transient modeling.

**Answer**: Kathleen mentioned that engineering is familiar with the transient modeling and mentioned that Cascade is developing those models for the Company’s distribution system.

* Kathleen went through the Company’s capacity enhancement review and selection process and how projects are placed in the capital budget.
* Kathleen then discussed the distribution system projects Cascade has planned for 2023-2027 in great detail. Then there was a brief discussion on the iterative process of an IRP where projects in the 3-5 year range will be included in future IRPs since those are completed every two years.

**Presentation #6** – **2023 IRP Schedule** (Brian Robertson)

* Brian went through the remaining TAG schedules for both WA and OR.
* Brian noted that the next TAG meeting will be Oregon focused and take place on September 20th while the next WA TAG meeting will take place on September 28th.

**The Meeting was Adjourned**

Per Cascade Commitment #8 (Stakeholder Engagement Design Document, 2/22/2022: “Provide TAG minutes that include the action items from bullet #7 as well as any upcoming deadlines for feedback on the IRP”), here are additional action items to track, coming out of the TAG 4 meeting:

1. Cascade will provide an update and details on the voluntary RNG program in the IRP narrative.