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## **TAG #2 – TAG Meeting**

**Date & time:** 05/11/2022, 9:00 AM to 12:40 PM

**Location:** Microsoft Teams Meeting

**Presenters:** Brian Robertson, Devin McGreal, & Ashton Davis

**In attendance:** Abe Abdallah, Andrew Rector, Becky Hodges, Brian Cunnington, Brian Hoyle, Bruce Folsom, Byron Harmon, Caleb Reimer, Carolyn Stone, Chris Robbins, Corey Dahl, Eric Wood, Haixiao Huang, Isaac Myhrum, Jocelyne Moore, Jon Storvick, Kary Burin, Kathleen Campbell, Kathy Moyd, Kim Herb, Mark Sellers-Vaughn, Marty Saldivar, Matt Steele, Michael Parvinen, Monica Cowlshaw, Pamela Archer, Patrick Darras, Sudeshna Pal, Taylor Mead, & Tom Pardee

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.

### **Presentation #1 – Safety Moment (Brian Robertson)**

- Brian Robertson gave a quick safety moment on outdoor safety.

### **Presentation #2 – Public Outreach Plan and Stakeholder Engagement (Brian Robertson)**

- Brian presented Cascade's plan to reach out to external stakeholders for future IRP meetings. Cascade has suggested several ideas such as media releases, social media, meetings throughout service territory, web page, Commission web page, and perhaps bill inserts.

### **Presentation #3 – Demand Forecast (Ashton Davis)**

- Throughout the presentation, Ashton presented the methodology and results behind the customers, annual demand, and peak day demand forecasts.
- Ashton began with details and key definitions for the models.
- R software was discussed in brief details along with sharing how Cascade's weather stations are broken out and how citygates are assigned to the weather stations.
- Ashton shared a breakdown of the Company's customers by rate class.
- Each input for these forecasts were discussed on slide 15, and then further discussed in detail throughout slides 16-26.

**Question:** Kathy Moyd asked about gas bans due to legislation and how that impacts the forecast?

**Answer:** Ashton mentioned the ban in Bellingham to new commercial buildings within city limits. Cascade's subject matter experts doesn't think there will be much of an impact because if a commercial Company wants to build in Bellingham, they'll do it outside of city limits. This ban, however, will give Cascade an opportunity to monitor any impacts future bans may have on a city.

- Ashton then covered methodology changes and non-weather dependent demand.

- Ashton then shared how the customer forecast and the use per customer (upc) forecast come together to create the final demand. Details of the final results for Washington, Oregon, and System was provided. The data provided included no climate change (CC), where climate change was described in presentation #4.

**Presentation #4 – Weather Normals and Climate Change Impacts (Brian Robertson)**

- Past weather normals and peak day was provided with a few other scenarios of grabbing weather data by different historical ranges.
- Brian went into detail about the different climate change data that was reviewed and ultimately chosen to include in Cascade’s modeling. Cascade included no CC, a full RCP 4.5 CC, a conservative CC, and a historical .054°F CC. Each of these models would decrement the normal HDDs Cascade uses to forecast annual demand.
- The results in usage that each of these climate change impacts had were provided on slide 38.
- Brian mentioned Cascade’s preference would be to use a more conservative approach than the full RCP 4.5. Brian asked external stakeholders for feedback. OPUC mentioned running the others as scenarios along with the more conservative approach. WUTC wanted to look into the analysis more before responding.

**Presentation #5 – Non-Core Outlook (Brian Robertson)**

- Brian provided an outlook on Cascade’s transportation and electric generation customers usage out to 2050.

**Presentation #6 – Market Outlook and Long-Range Price Forecast (Devin McGreal)**

- Devin provided a quick look into the future of Natural Gas markets and then touched on COVID impacts and the economy. Cascade noted that in the Company’s FERC form 2 and MDUR’s 2021 Annual Report, Cascade implies there was no material impact to operations or revenues from COVID-19.
- Devin then discussed Cascade’s price forecast calculation process and then went into detail on each topic;
  - Updated Source Data;
  - Calculated Source Weights;
  - Interpolated Source Weights;
  - Apply Age Dampening Mechanism (if applicable); and
  - Apply Weights to Sources to Calculate Forecast.

**Presentation #9 – 2023 IRP Schedule (Brian Robertson)**

- Brian went through the WA TAG schedule as well as the OR TAG schedule.
- Brian noted that the next TAG meeting will be Washington focused and take place on June 29<sup>th</sup>.

**Post Presentations** – Byron Harmon asked for a technical Q&A session. Cascade remained on the call to answer those questions. Below are a few of the Q&A’s that Cascade would like to highlight:

Q: Is the  $\alpha_0$  variable an intercept or a garbage term.

A: Intercept. Cascade looked into the and determined the  $\alpha_0$  variable is needed.

Q: What is the purpose of Population/Employment in the customer forecast?

A: Cascade utilizes Population/Employment as an explanatory variable to help explain what Cascade’s customers may do in the future.

Q: Can you discuss the approach to using several models for the customer forecast and were there any discussions or ramification around using different models?

A: Cascade has a very diverse service territory, which means there are different ways to forecast customers. In some areas, there may be a high correlation between customer counts and population, therefore a model using population as an explanatory variable is stronger than others. There are other areas where population may not be a significant explanatory variable, so using another model may be better.

Q: It appears Cascade's upc forecast is pretty flat. Can you expand on that?

A: There are a few that are declining, but this is likely due to the fact that DSM hasn't been applied yet. When DSM is applied, the upc for each location will show a decline.

Q: Is it possible the fourier terms are covering up a gap in the data that our models are missing? For example, are HDDs different in the Fall compared to Spring.

A: We have noticed a difference in UPC per HDD based on time of the year. Generally, the UPC per HDD is higher in the colder months and smaller in the warmer months.

### **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 TAG2 meeting:

1. Brian will look into any analytics regarding Cascade's IRP website and will meet with Byron Harmon on comments about the Stakeholder Engagement Document.
2. Cascade will look at other demographics such as income levels as well as end use forecasting to account for building code changes for future IRPs.
3. Cascade will include high/low bands in the forecast charts in Appendix B of the IRP.