**TAG #2 –WUTC TAG Meeting**

**Date & time:** 05/27/2020, 09:00 AM – 11:00 AM

**Location:** Microsoft Teams Meeting

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

**In attendance**: Mark Sellers-Vaughn, Brian Robertson, Devin McGreal, Ashton Davis, Bruce Folsom, Abbie Krebsbach, Renie Sorensen, Carolyn Stone, Eric Wood, Kary Burin, Chris Robbins, Linda Offerdahl, Monica Cowlishaw, Patrick Darras, Brian Cunnington, Mike Parvinen, Becky Hodges, Phillip Hensyel, Mike Paruszkiewicz – NWN, Mark Iverson – Ruby Pipeline, Corey Dahl – Public Counsel, Bradley Cebulko – WUTC, Andrew Rector – WUTC, Kyle Depew – WUTC, Marty Saldivar – NWP, Nicholas Columbo – OPUC,

**Minutes:** Carolyn Stone

Brian began the meeting with a “Safety Moment” reminding all of us to use safety precautions in mind of the COVID 19 pandemic. Mark stated he was looking forward to today’s discussion prior to filing the IRP. Brian then went through introductions and the agenda.

**Presentation #1 – DEMAND FORECAST** (Ashton Davis)

**QUESTION**: Andrew asked if this process has changed?

**ANSWER**: Ashton said this process is the same.

**QUESTION**: Andrew asked when the forecast was changed from using 65 to 60 HDD?

**ANSWER**: Brian said it was introduced in 2014 by consultants, 5 to 6 years ago. Mark added that it was used in the 2016 IRP.

**Presentation #2 – CUSTOMER FORECAST** (Ashton Davis)

**QUESTION**: Andrew asked what does it mean, that the model “ignores” those variables?

**ANSWER:** Ashton said “co-linearity”. The population increases at a certain rate.... employment information increases at the same rate. So, the model sees these are “parallel lines”. The model regression shows “funky” results if these are left in. Without the parallel line information, the model normalizes information. The model eliminates redundancies.

 Andrew further asked if the model sets these redundant variables to zero.

 Ashton says it doesn’t do the regression on those variables. Model doesn’t take those variables into account; it does not set them to zero.

**QUESTION**: Andrew asked what the “trend variable” was?

**ANSWER**: Over the entire historical timeline, it captures the trend. ARIMA with Fourier – term tell model to not differentiate data – takes predicted values & ARIMA value being forced not to trend.

**Presentation #3 – FORECAST RESULTS** (Ashton Davis)

**QUESTION**: Andrew asked if the “Y Axis” represent Therms?

**ANSWER**: Therms is on the Y Axis - use per day.

**QUESTION**: Bradley asked what the source of the data is?

**ANSWER**: Ashton said they use the internal forecast for customer by Citygate.

**QUESTION**: Andrew asked if Resource Planning has gone back to 2016 IRP to compare forecast to actual?

**ANSWER**: Ashton said they have not actually graphed it out as a comparison but have “checks and balances” with Gas Supply and multiple departments. If there was an issue, those departments would come back to us, if it didn’t add up.

Ashton said they will do a back cast. Brian Said that they check the variance between past forecasts and this forecast, there were some demand changes. These changes are related to Non-core switching to Core. In 2018, for example, large Non-core customers switched to Core, totaling 10m Therms jumping to the Core side. This is the reason the forecast moves around from past IRP’s. Ashton said this is a good point. Our forecast is for the Core.

**QUESTION**: Brad asked how Resource Planning includes economic downturns? Like now, for instance with the COVID 19 pandemic – do you adjust for today?

**ANSWER**: The long-term forecast – 20-year looks at typical day. There is no pandemic indicating variables at this moment. Devin added that their scenarios/sensitivity analysis are used in getting robust “what-if’s” in. We can’t predict the future. We run low growth scenario and then put it in the narrative in the IRP. There were no decisions made on the low growth scenario.

**FURTHER DISCUSSION:**

* Corey asked if 1 variable is useful in relation to the Pandemic...economic outlook...? He said, we have no crystal ball, but we can say the economic outlook has changed since Jan 2020. I would be interested in looking at the variable in demand = economic outlook.
* Mark said no one forecasted the pandemic. it would take 2 years to determine the impact now. What elements of economic forecast you would expect us to change?
* Corey asked how often are the sources updated? The economic outlook data – how fresh is it - how often refreshed?
* Ashton said every forecast is a “point in time”. Once we get more data and vet it, then we can use it. Preliminary data has conflicting information...if significant data we will rerun the forecast. The next IRP will show that. We must lock numbers for the current forecast.
* Mark said they can contact Wood & Poole for updates of economic data they provide to us and include that in our IRP narrative or adjust before the draft IRP comes out and identify differences.
* Andrew asked what does the underlying data say that economic data will look like in the next few years? When is your forecast “lock down”?
* Brian said lock down to happen very quickly after Tag #2. We must send off numbers to the Energy Efficiency team for Tag #4.

**QUESTION**: 5 electric generators, were these “peakers” or combination cycle?

**ANSWER**: Brian referred to Chris Robbins, who said it was a combination of both.

**QUESTION**: Nick asked about the OPUC, electric generation slide...is this OR or WA?

**ANSWER**: Brian said it is total Non-Core, Washington & Oregon transportation & electric generation.

**Presentation #4 – MARKET OUTLOOK & LONG-RANGE PRICE FORECAST** (Ashton Davis)

**QUESTION**: Andrew asked if the NWPCCs Forecast was part of the forecast in 2018?

**ANSWER**: Devin said “Yes”, the weight ascribed to it at the time was not outdated at that time.

**QUESTION**: Andrew asked about Slide #44. He asked if supply during COVID showing up in Nymex? Is the Nymex data updated consistently?

**ANSWER**: Devin said the NYMEX data is updated daily, in market forward strips. The market is making the decisions considering constraints, etc.

**Brian Robertson asked if there were any questions or comments about anything in the presentation:**

**QUESTION:** Corey said it would be helpful for next meeting, to make available the data on the delta between the forecast & actual.

**ANSWER:** Brian asked if the “back cast” they talked about earlier would work?

Corey said “Yes”.

 Brian asked if they wanted the price or demand forecast?

 Corey asked for the “demand forecast”.

Brian then reminded all attendees of IRP website, located at IRP@cngc.com and went over the schedule:

* TAG #3 is in one month – June 24 – will include distribution planning
* August 6, TAG #4 planned to be in Bellingham, but Resource Planning will let everyone know if that will be the location.
* TAG #5, Wednesday 9/23
* Nov 17, 2020 – Draft of IRP
* Jan 27, 2021 – TAG #6, if needed
* Feb 26, 2021 - IRP filing in Washington

Brian showed attendees all members of Resource Planning’s contact information.

Brian reminded the group that the demand forecast must be locked in soon!

Mark said that it was good discussion today and thanked everyone reminding them to keep safe and healthy!

Brian remarked that this meeting sets a record for attendees at TAG #2. He thanked everyone for their participation!

The meeting was adjourned