

Appendix K
Methodological Changes
2020 WA IRP

Introduction

The Methodological Changes Appendix outlines the key changes in methodologies that occurred in the 2020 WA IRP. Cascade will identify each change with a brief analysis of pros and cons of the new approach.

Chapter 3: Demand Forecast

Cascade has made a slight change to the forecast methodology this year by gathering its billing data from Cascade's ThoughtSpot platform whereas previously it was gathered from Cascade's Customer Care & Billing system. This allows billing data to be parsed by rate class and citygate rather than rate class and town. When the data is parsed by town, Cascade has to create allocations to assign towns to citygates to figure out what demand was behind each citygate. Now, that information is structured behind the citygate in the database. This removes any need to create allocations which increases forecast accuracy.

Pros:

- Increased historic data accuracy due to database showing citygate demand rather than needing to allocate from town to citygate.
- ThoughtSpot always contains the most up-to-date billing information.
- ThoughtSpot is easily accessible at any time.

Cons:

- Due to server constraints, ThoughtSpot only contains data as far back as 2015. Cascade's Resource Planning Team is working with the I.T. department to fix this.

Chapter 6: Environmental Policy

In this IRP, Cascade has used the Social Cost of Carbon (SCC) with a two and a half percent discount rate as the main CO₂ adder in modeling impacts of a potential price that could be placed on CO₂ emissions from customers' usage of natural gas sales. These values are adjusted from Real \$2007 to Real \$2020. Additionally, Cascade modeled one new carbon sensitivity for the 2020 IRP, House of Representatives bill H.R 3996 – Raise Wages, Cut Carbon Act of 2019

Pros:

- Modeling the SCC with a two and a half percent discount rate is compliant with regulatory requirements for quantifying carbon costs.
- By running a carbon sensitivity using data from 2019, Cascade is better able to model nationally focused carbon compliance costs.

Cons:
None

Chapter 7: Demand Side Management

The DSM tool and modeling methodology for this iteration of the IRP are the same as used in the last IRP but have been updated further. AEG's modeling framework tool, LoadMAP was developed as an end-use load forecasting model to allow estimation of conservation potential, built in Microsoft Excel and tailored to meet the needs of the client. Due to the scalable nature of the model, it allows utilities to analyze potential for a combination of market sectors, segments, climate zones, end uses, technologies and measures under the UCT, TRC and Resource Value Test (RVT) concurrently.

Pros:

- LoadMAP was built to reflect the latest NWPCC's methodology, calculating the Company's Achievable Technical Potential similarly to others within the region.
- Ramp Rate (Adoption Curves) best practices and guidance were provided as part of the Conservation Potential Assessment delivery, allowing for incorporation on the measure level in the model.
- Updates were made to the measure libraries per AEG's guidance through the CPA and LoadMAP model build, allowing for incorporation of current market assumptions, latest technologies and updated weather factors.
- This IRP provides Cascade's Washington service territory therm savings potential as calculated by AEG in Phase 1 of the 2020 CPA. AEG's updates for Phase I of Cascade's CPA included revised:
 - Sector and segment energy baseline totals using 2019 billing data from CNGC
 - Saturations (presence of equipment) based on updated billing data
 - Residential annual equipment consumption data based on most recent DOE data
 - Commercial end use intensities to align with Commercial Building Stock Assessment 2019
 - Measure achievability ramp rates to improve model alignment with achieved program results
 - Avoided costs to be consistent with Chapter Z and include the social cost of carbon adder
 - Model engine files to reflect the current AEG versions
 - Reviewed and updated incentives for measures currently active in CNGC programs

Cons:

- Administrative cost entry in LoadMAP requires a more intricate approach.

LoadMAP has administrative costs entered on a measure by measure basis as a percent of the incremental costs, which provides less flexibility on allocating the costs within the portfolio.

- The model requires data entry of the same input multiple times, which requires diligence to avoid entry errors. For example, when updating the base or starting year, every table on every tab of every spreadsheet needs to be diligently checked, and exceptions exist for certain tables whose years must not be updated.

Chapter 10: Resource Integration

- Removed Scenario/Sensitivities:
 - Price Volatility – High
 - Price Forecast – Low
 - Ballot Initiative
 - Inslee/Carlyle Carbon Tax

Added Scenario/Sensitivities:

- Raise Wages, Cut Carbon
- Cap and Trade Carbon Forecast
- Limit Mist
- No Mist