

## Overview

A key component of the Natural Gas Fact Finding (NGFF) – UM 2178 – is the development of Compliance Models to establish a range of potential costs associated with achieving the goals of the Climate Protection Program (CPP). This data will serve as the foundation for identifying and assessing the regulatory tools that may be needed in the future by the utilities and the Oregon Public Utility Commission to support the CPP. Within the framework of developing a Compliance Model is the ability to explore multiple possible futures by defining parameters on select sensitivities to create scenarios. These scenarios are designed to characterize possible futures, remote or not, and explore potential impacts, suggesting different policy and planning approaches.

## Alternative Scenarios

Scenarios must rely on existing data and sensitivities to the extent possible. The only changes made in each alternative scenario should be to the sensitivities listed in that exact scenario.

### 1. Accelerated Innovation / Electrification / High Social Cost of Greenhouse Gas Approach:

- **Accelerated Innovation:** Assume a 30 percent six-year production tax credit for the production of green hydrogen and syngas for which construction begins before 2026.<sup>1</sup> It is anticipated that projects may be outside the ordinary course of business and would result in near-term and aggressive emission reductions.
- **Higher Cost of GHG:** Assume updates to the social cost of carbon. Beginning in 2026, adjust the CCI price to align with the Social Cost of Carbon's 95<sup>th</sup> percentile with a three percent discount.<sup>2</sup> For example, starting in 2026 use the starting value of \$173.
- **Electrification:**
  - Fraction of new buildings (residential and commercial) using gas goes from its present share to zero in 2030 and stays zero thereafter
  - Existing buildings converting to electricity goes from its present share to 90 percent in 2050
  - Light industry converts to 90 percent electricity by 2050

### 2. Delayed Innovation / Accelerated Electrification Approach:

---

<sup>1</sup> See page 49 of the Department of the Treasury, General Explanations of the Administration's Fiscal Year 2022 Revenue Proposals <https://home.treasury.gov/system/files/131/General-Explanations-FY2022.pdf>

<sup>2</sup> See Social Cost of Carbon table A-1 in Appendix – Annual SC-CO<sub>2</sub>, SC-CH<sub>4</sub>, and SC-N<sub>2</sub>O Values, in 2020-2050 Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990 Interagency Working Group on Social Cost of Greenhouse Gases, United States Government [https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf)

- **Delayed Innovation:** Use a slower energy efficiency technology adoption curve. Gas heat pump water heaters come to market, but there are no gas heat pumps until after 2030 and they assume a traditional s-curve adoption pattern.<sup>3</sup>
- **Supply Competition:** RNG availability is limited to the percentage of the national RNG resource equal to the company's throughput share of total gas use in the U.S., including power sector use. National RNG resource is ICF's Low Resource Potential for RNG in 2040, namely 1,660 trillion Btu (tBtu) of RNG produced annually for pipeline injection by 2040.<sup>4</sup>
- **Very Rapid Electrification:**
  - The fraction of new buildings (residential and commercial) using gas goes from its present share to zero in 2025 and stays zero thereafter.
  - Fraction of existing buildings converting to electricity goes from its present share to 90 percent by 2040.

## Modeling Parameters and Results for Alternative Scenarios

Companies should use existing models and data to create the above referenced alternative scenarios. Staff expects the deliverables to include:

- Updated graphics and tables comparable in format to those submitted for the base case and associated sensitivities.
- To the extent possible and applicable, Staff asks that Avista and Cascade replicate the Scenario Comparison table created and shared by NW Natural, and that all companies use this format to include the alternative scenarios described above.
- **Data for Electrification:**
  - Where a load currently served by gas is not eliminated, but rather served by another resource, total annual MMTBU transferred to the alternative source must be identified for each year.
  - Staff will calculate estimated costs of the transferred load and associated emissions, taking into consideration the electrification cost elements proposed by stakeholders in comments.
- **Low and Moderate Income Customers:** Indicate the assumed or known percentage of low and moderate income residential customers.
- **Bill Impacts:** Report estimated bill impacts in terms of \$/therm

---

<sup>3</sup> See Oregon Citizens' Utility Board of Oregon 9/24/2021 comments  
<https://edocs.puc.state.or.us/efdocs/HAH/um2178hah163235.pdf>

<sup>4</sup> See <https://gasfoundation.org/wp-content/uploads/2019/12/AGF-2019-RNG-Study-Full-Report-FINAL-12-18-19.pdf>