

NW Natural 2022 Integrated Resource Plan

Washington Utilities and Transportation Commission
February 27, 2023





Today's Agenda

- Key Changes in 2022 IRP
- The Planning Environment
- Defining Resource Needs
- Resource Options
- Results
- Action Plan



Key Process Changes for 2022 IRP

- Development of Community and Equity Advisory Group (CEAG)
- Recording of Technical Working Group (TWG) Stakeholder Workshops and posting on NW Natural website
- Posting TWG presentations on NW Natural website
- Established online workpaper depository for stakeholder review and held workpaper tour workshop
- Post-filing office hours to field stakeholder questions



Key Analytical Changes in 2022 IRP

- Switching to the PLEXOS software for system planning optimization
- State specific emissions compliance planning
- Utilization of stochastic risk analysis as the primary tool for developing the Action Plan
- More detailed assumptions about low-GHG emitting resources
- Change in how load forecasting models are deployed
- Including transportation schedule loads in our optimization modeling
- Inclusion of implementation workbook for low carbon gas evaluation methodology
- Inclusion of customer bill impacts in addition to system costs
- Results presented in comparison to a “reference case”

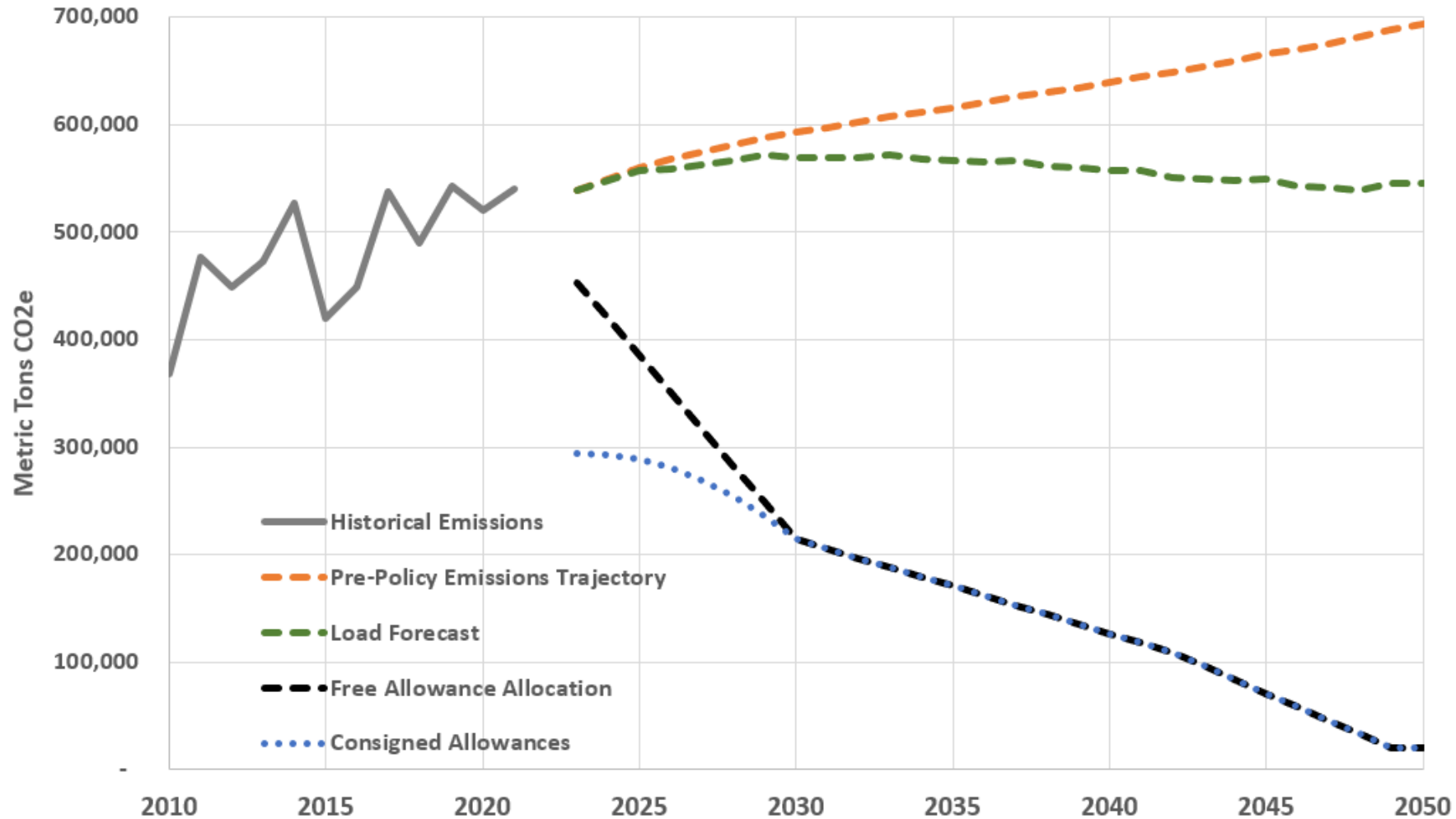


IRP Analysis Process

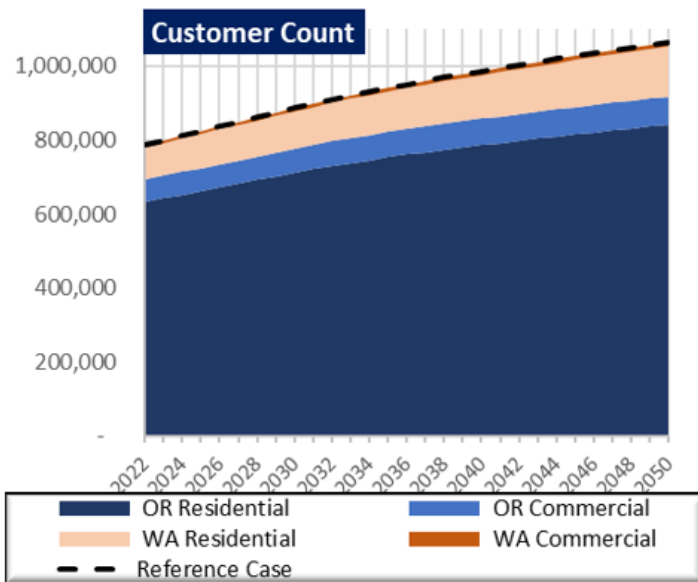




Climate Commitment Act (CCA) Compliance Position

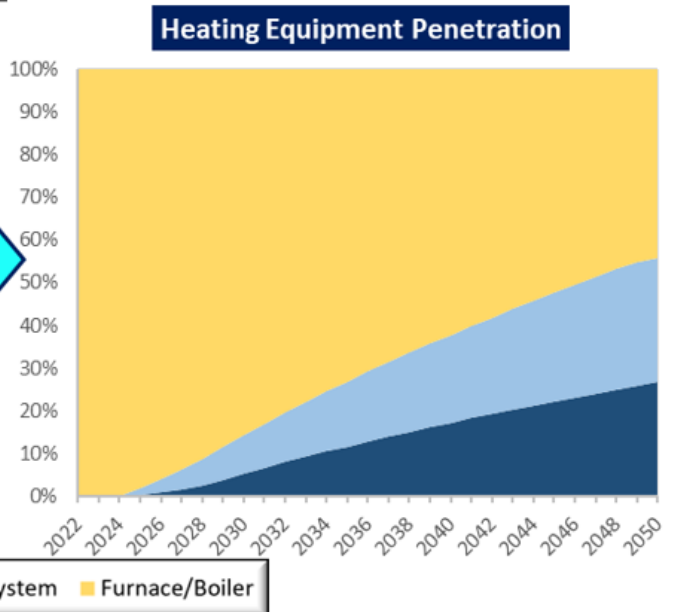
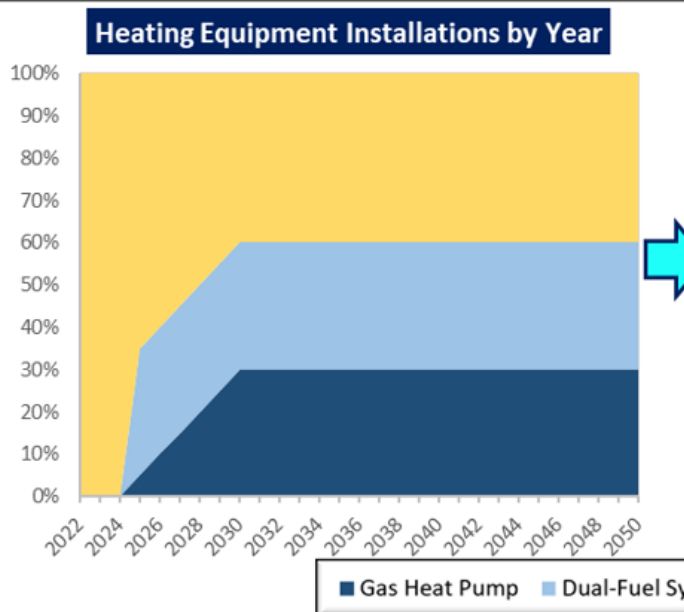


Analysis Example- Scenario 1



Demand-Side Assumptions

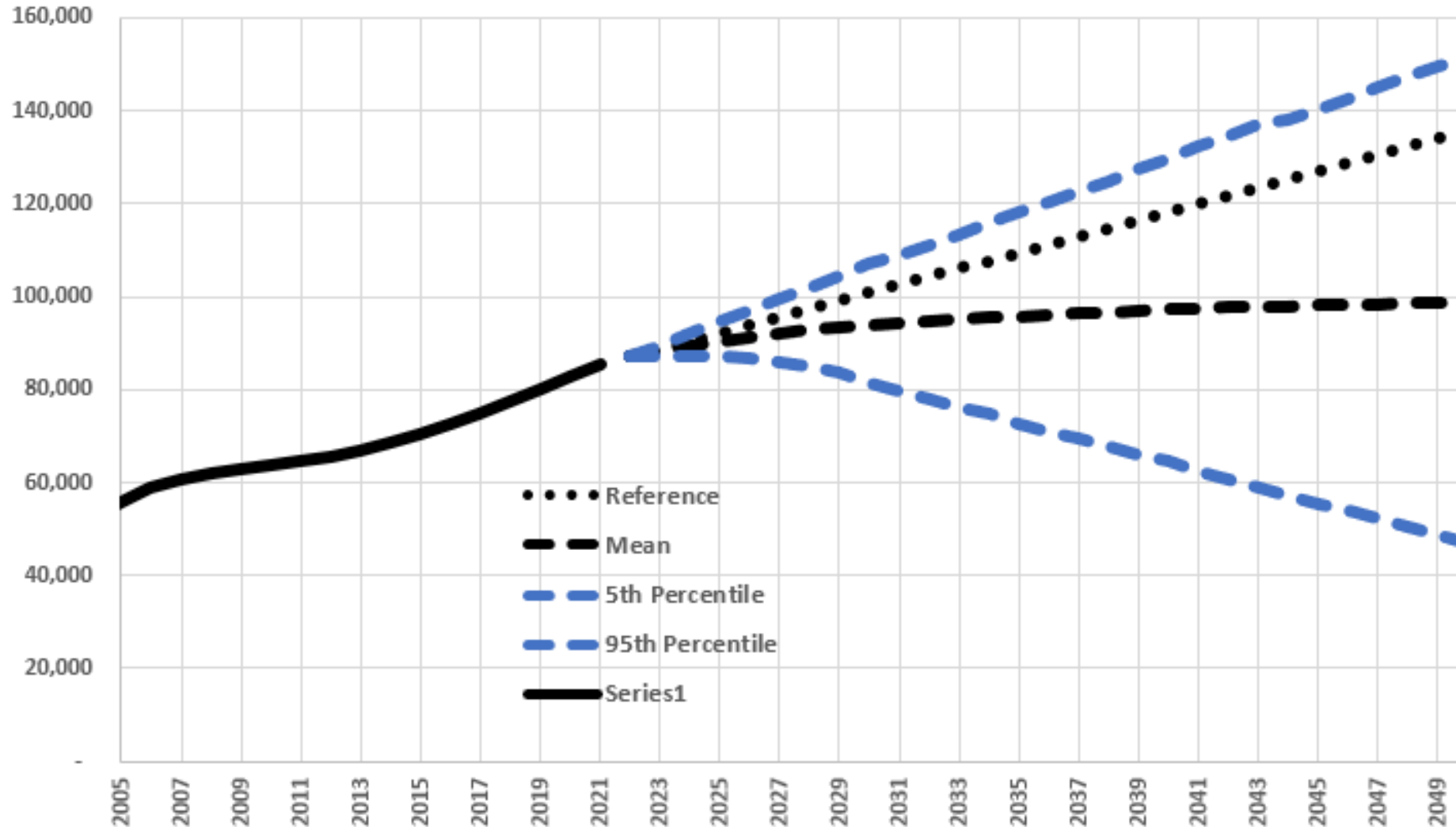
Sales Customer Energy Efficiency	Energy Trust of Oregon projection of savings, at \$5.06/therm of first year savings
Transport Customer Energy Efficiency	Applied Energy Group projection of savings at \$1.79/therm of first year savings
Gas Heat Pump Cost	\$4,000 total cost to utility for a residential heating system, \$13,000 for a Commercial heating System; \$1600 for residential water heater
Dual-Fuel System Costs	Net cost of \$400 to utility



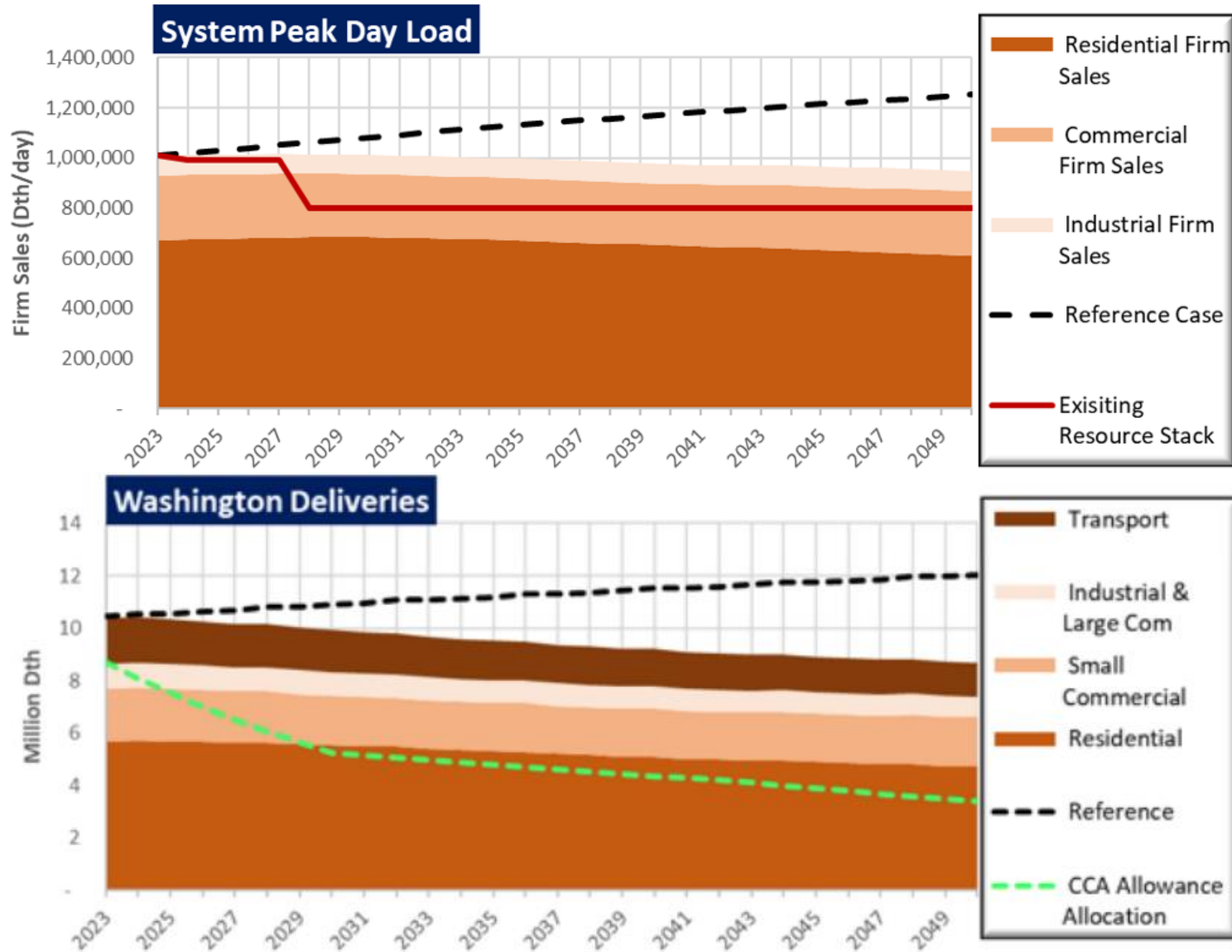
Risk Analysis- Residential Customer Count Example



Washington Residential Customer Count



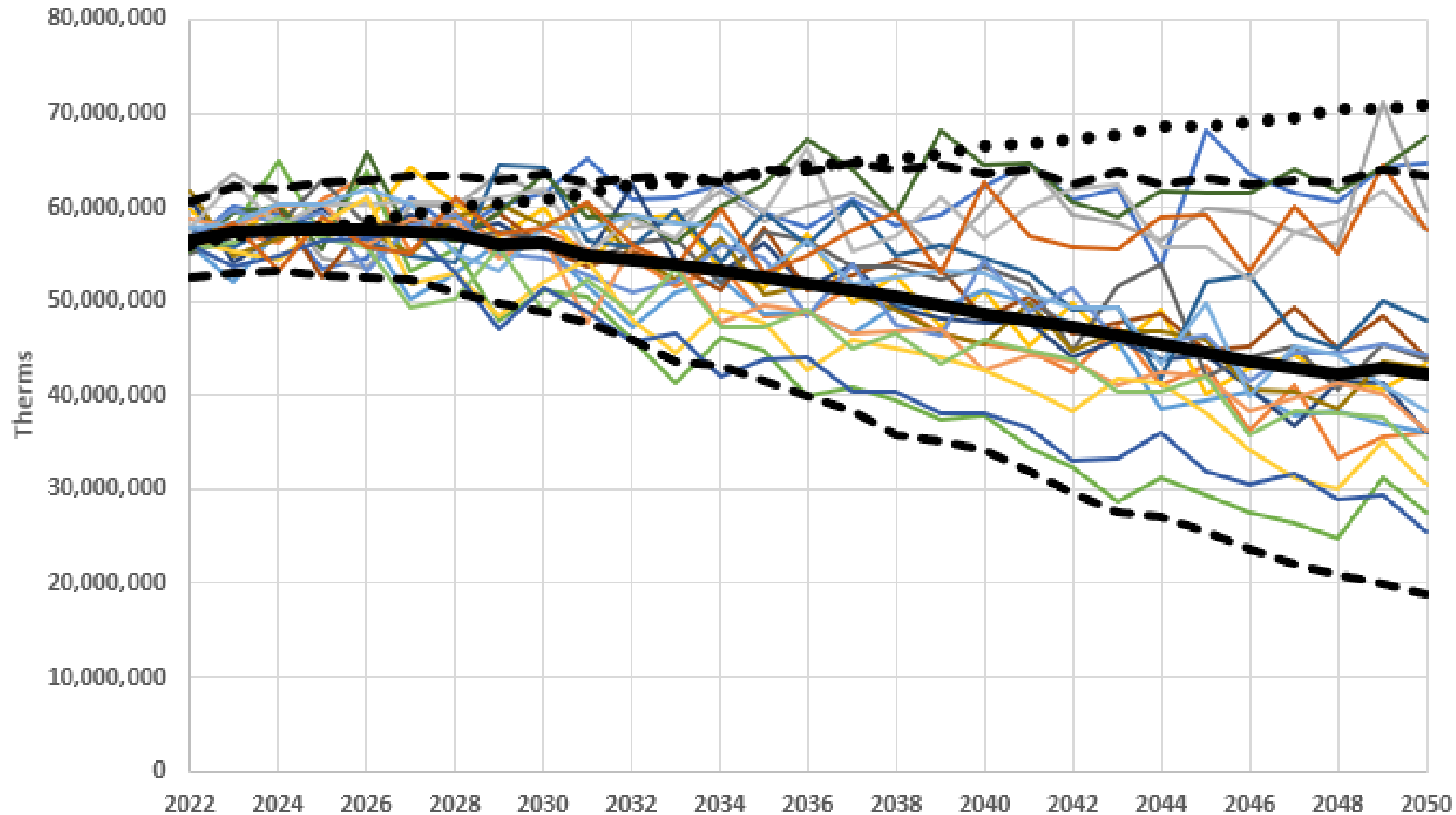
Analysis Example- Scenario 1



Risk Analysis- Residential Load Example



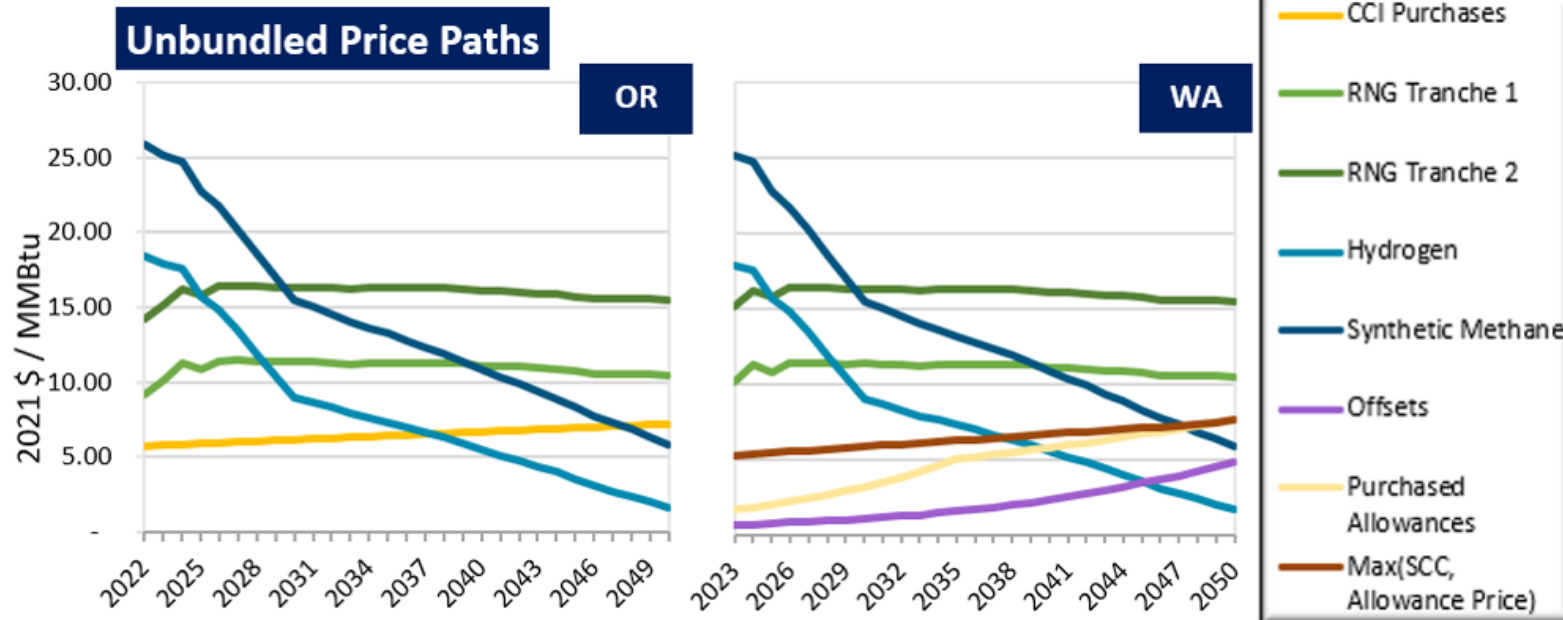
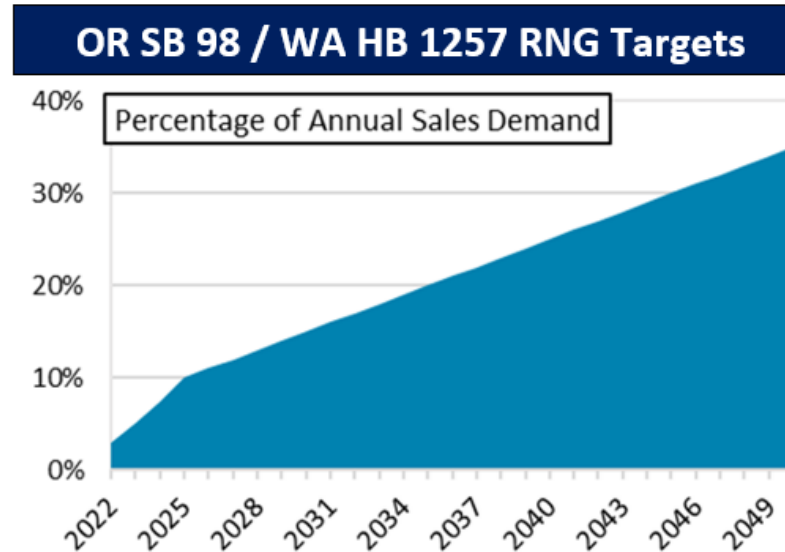
Washington Residential Deliveries



Analysis Example - Scenario 1

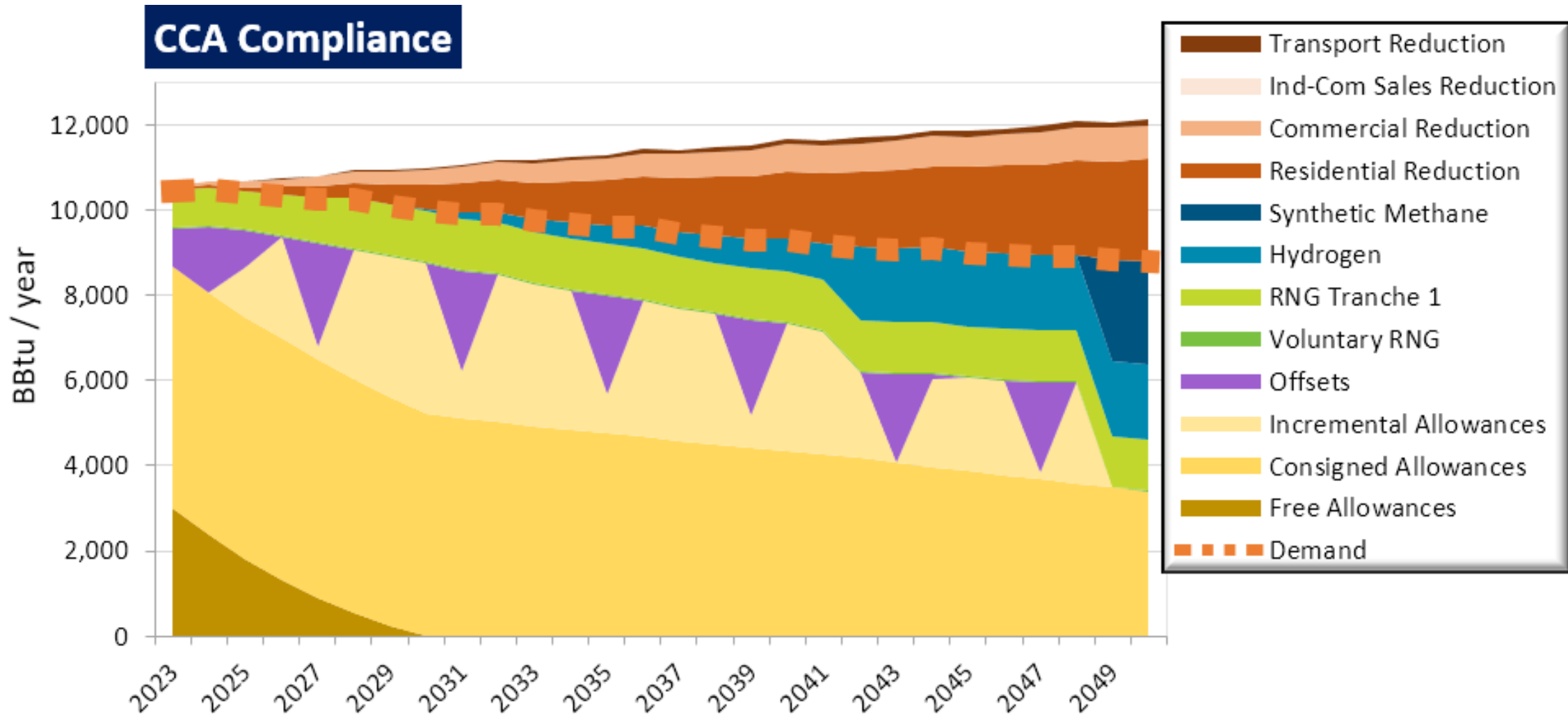


Quantity Available	
Option	Limit
RNG Tranche 1	13,000,000 Dth / year
RNG Tranche 2	27,000,000 Dth / year
Hydrogen	20% of Deliveries by Energy
Synthetic Methane	Unbounded
CCIs	OR Compliance Period 1: 10% OR Compliance Period 2: 15% OR Compliance Period >=3: 20%
Allowances	Unbounded
Offsets	WA Compliance Period 1: 6% WA Compliance Period >=2: 8%

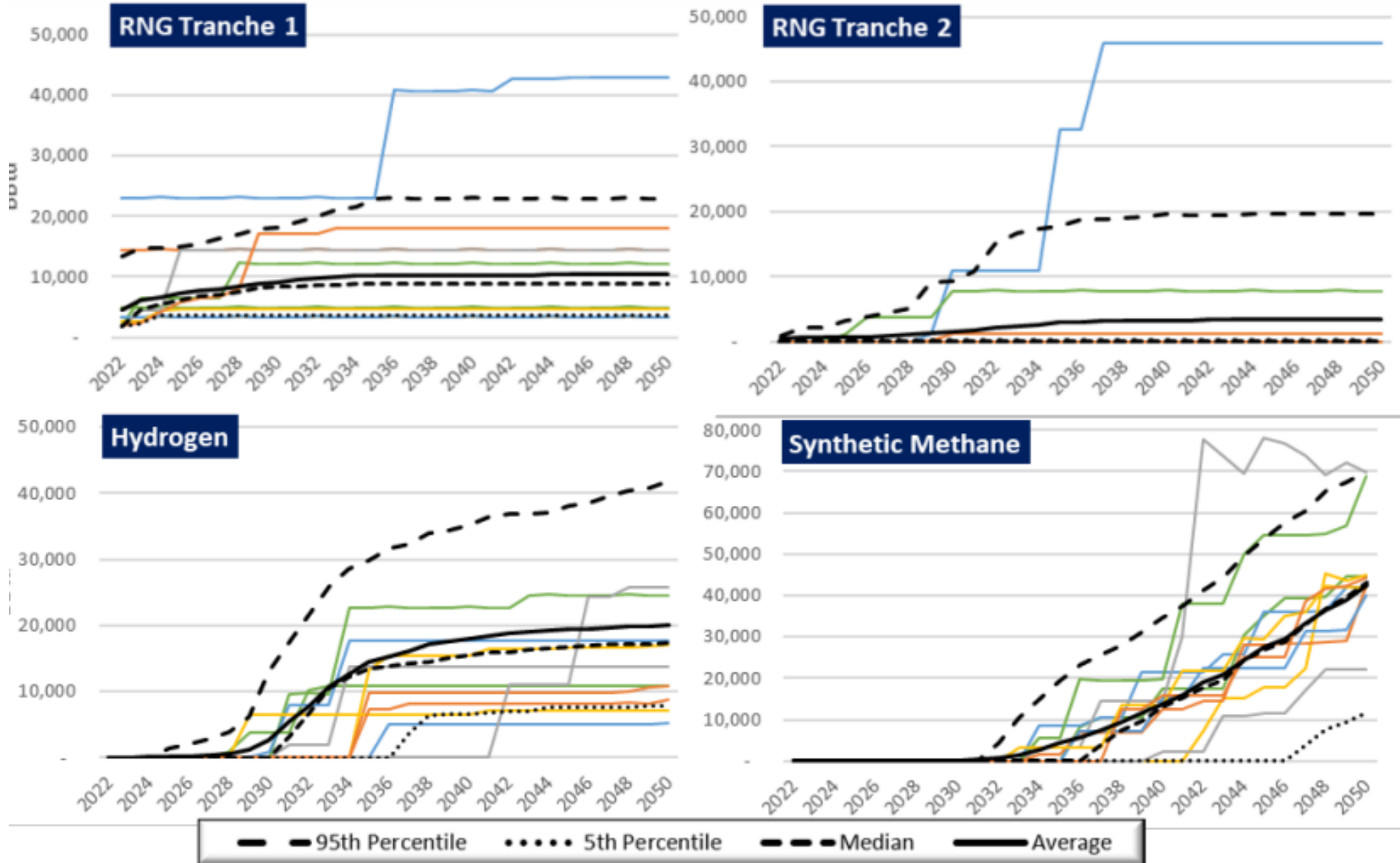




Compliance Example-Scenario 1



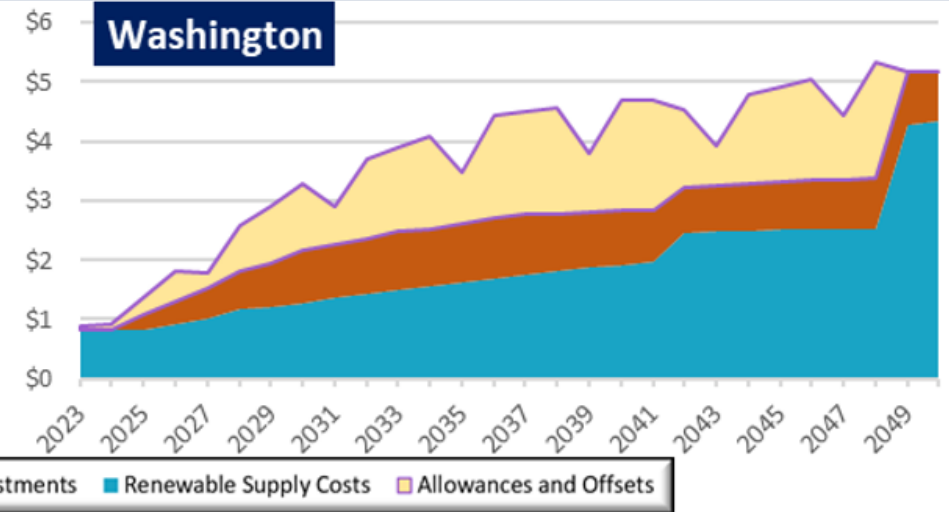
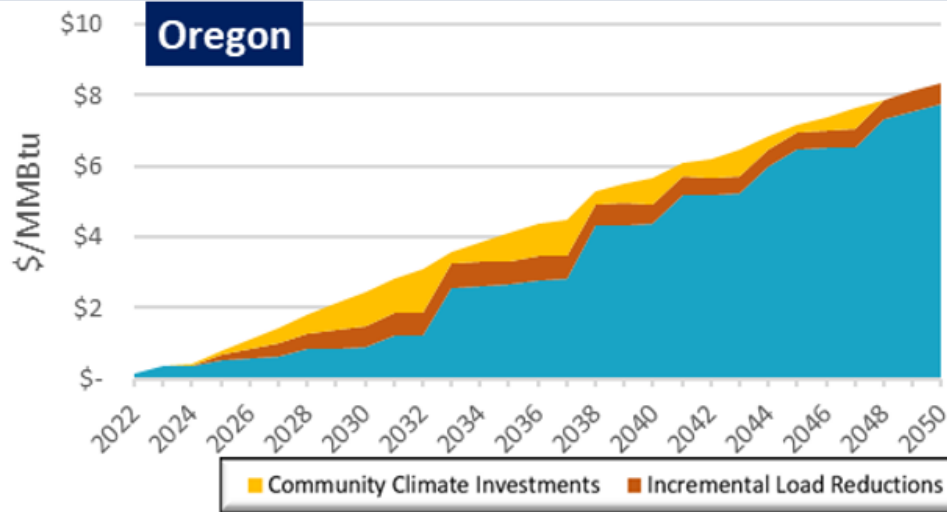
Risk Analysis Low Emissions Gas Results





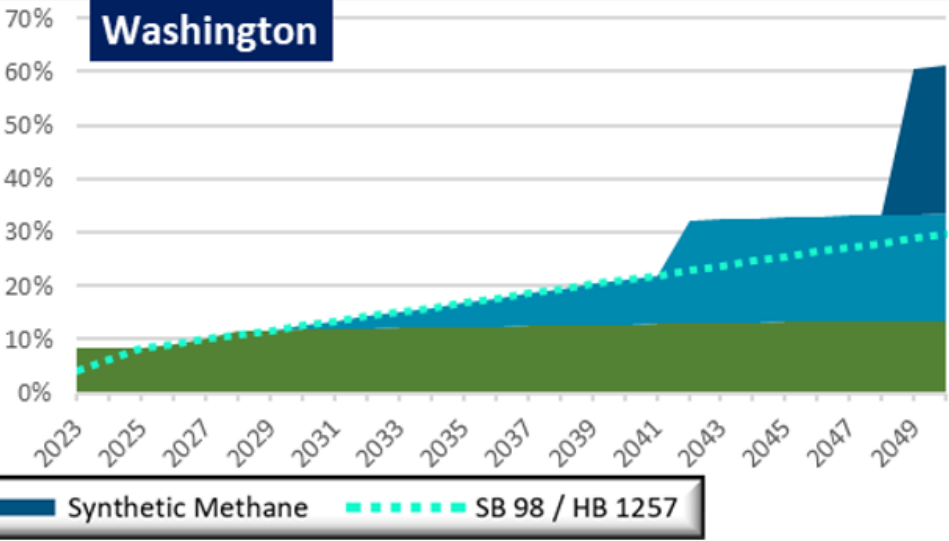
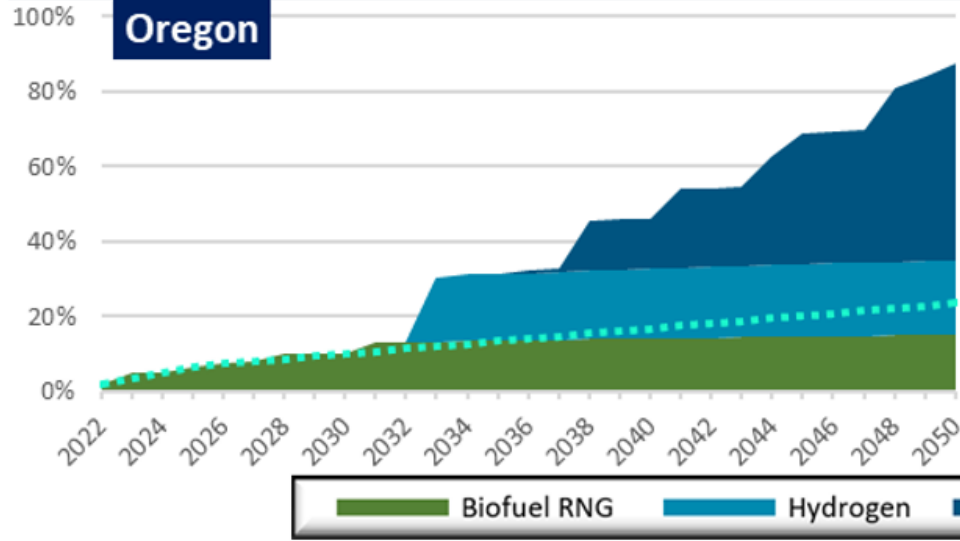
Analysis Example- Scenario 1

Average Cost of Decarbonization



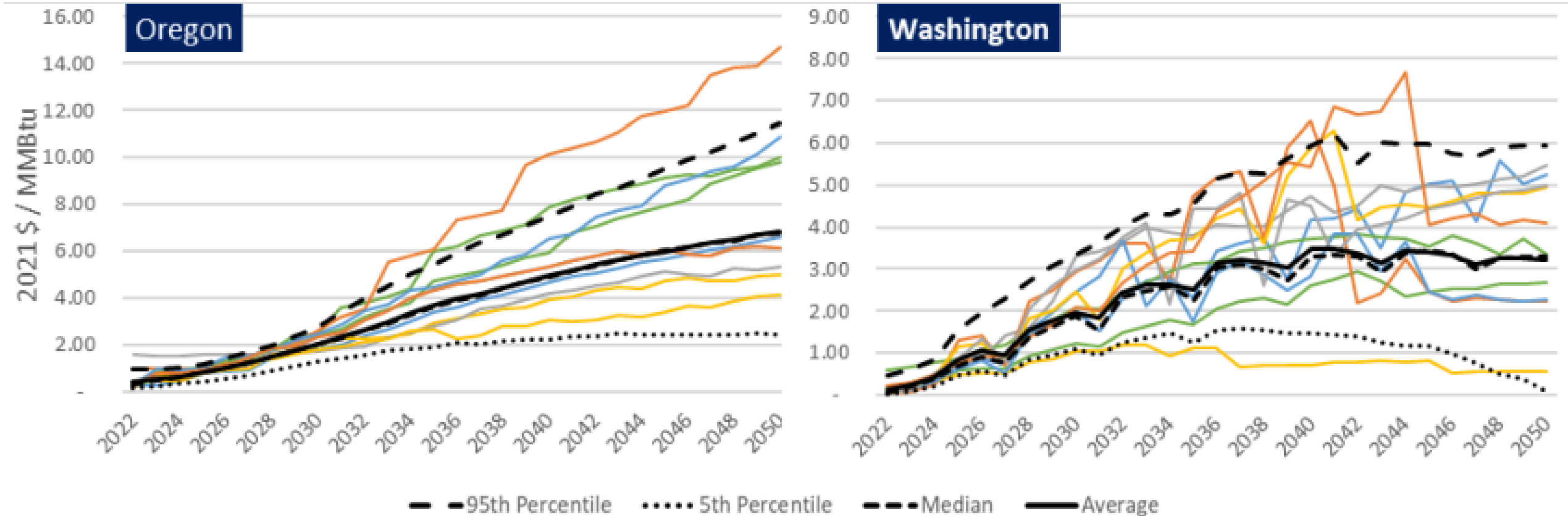
Community Climate Investments Incremental Load Reductions Investments Renewable Supply Costs Allowances and Offsets

Percentage of Deliveries in the Year



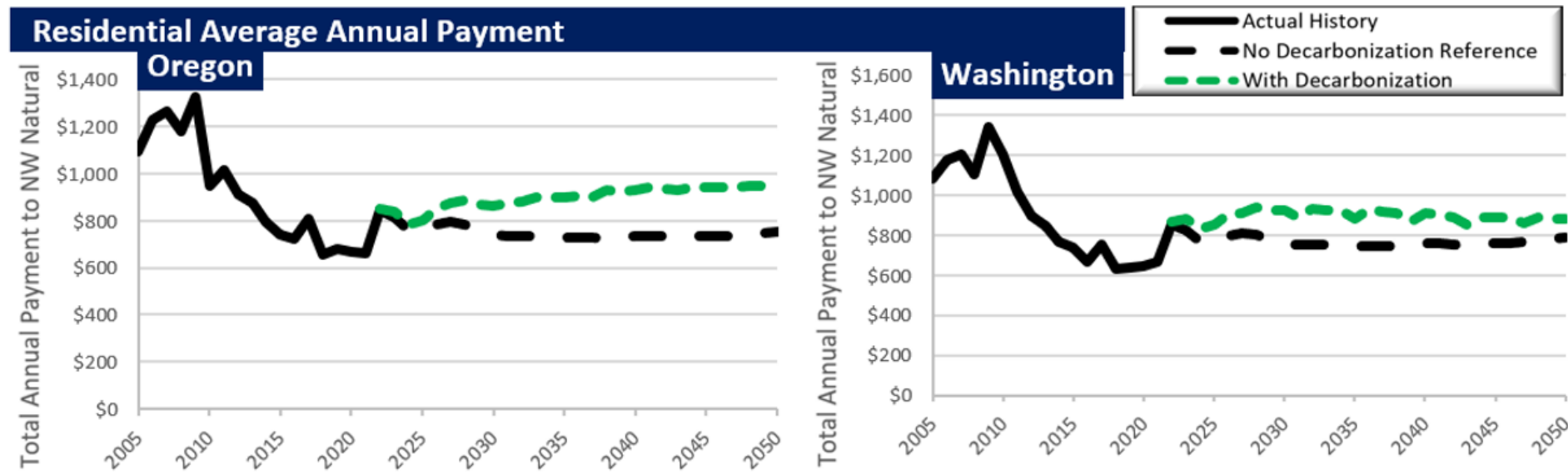
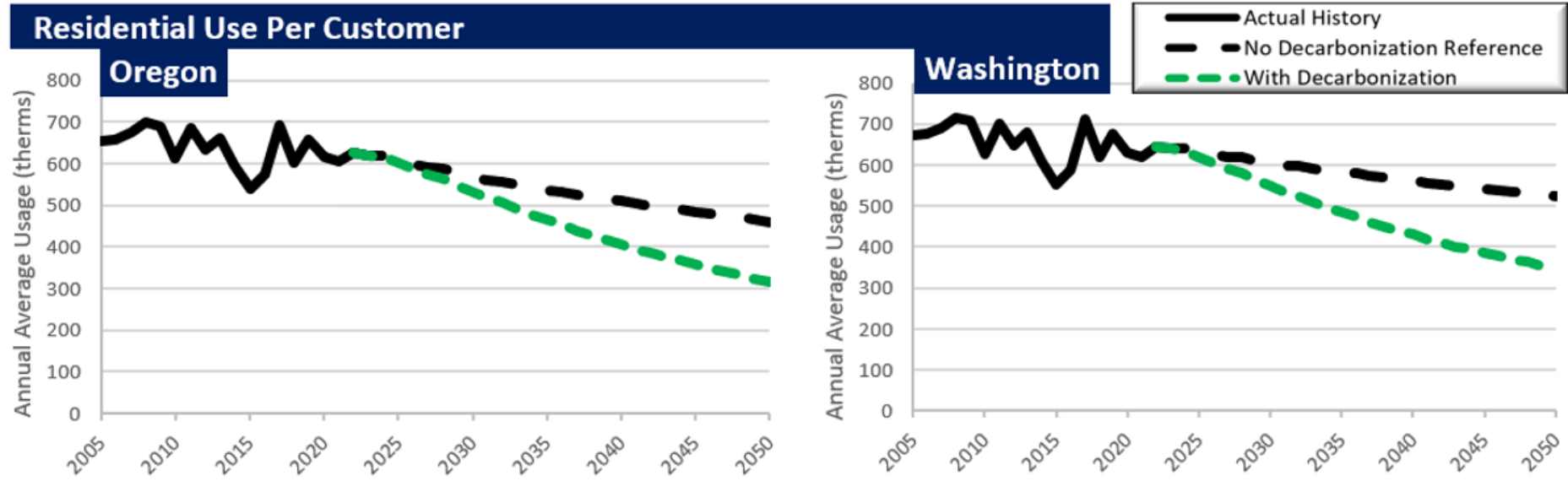
Biofuel RNG Hydrogen Synthetic Methane SB 98 / HB 1257

Cost of Environmental Compliance



Washington results shown do not include options where consigned allowance revenue sales are not deployed in least cost method from total utility cost perspective.

Analysis Example – Scenario 1



Action Plan



The Action Plan turns the results of the IRP analysis into discrete near-term activities that represent the best combination of least cost and least risk over the IRP planning horizon. The action items in this Action Plan are robust to a wide range of potential future outcomes and therefore all represent low regret ways to move forward in the current environment.

The focus of the Action Plan in Washington are actions to comply with the Climate Commitment Act's Cap-and-Invest program.

Action Plan



Washington Emissions Compliance Action Items:

9. Acquire carbon offsets compliant with the Climate Commitment Act's Cap-and Invest program for 5% of expected weather emissions in year 2023 and 2024. Seek to acquire additional offsets representing 3% of expected weather emissions allowed for CCA compliance on tribal lands, and if they can be acquired for a lower price than the program allowance price floor for years 2023 and 2024, acquire these offsets.
10. Seek to acquire 600,000 Dths of renewable natural gas (RNG) in 2024 and 800,000 Dths of RNG in 2025, representing 6% and 8% of normal weather compliance gas in 2024 and 2025.
11. Purchase emissions allowances equal to emissions at an estimate of the 95th percentile of need for annual compliance net of voluntary RNG, carbon offsets, and freely allocated but not consigned allowances.
12. Working through Energy Trust of Oregon, acquire 275,000-370,000 therms of first year savings in 2023 and 276,000-310,000 therms of first year savings in 2024, or the amount approved through WUTC Biennial Energy Efficiency Plan.
13. Work with Energy Trust of Oregon, the Alliance of Western Energy Consumers and other stakeholders to develop energy efficiency programs for transportation and industrial sales schedule customers by 2024.

Action Plan



Capacity Resource Action Items:

1. Acquire 20,000 Dth/day of deliverability from either recalling Mist, a city gate deal, or a combination of both for the 2023-24 gas year. Based upon updated load forecast in upcoming IRP updates recall Mist capacity as required for the 2024-25 and 2025-26 gas years.
2. Replace the Cold Box at the Portland liquified natural gas (LNG) facility for a targeted in-service date of 2026 at an estimated cost of \$7.5 to \$15 million.
3. Scope a residential and small commercial demand response program to supplement our large commercial and industrial programs and file by 2024.