



2025 Natural Gas Integrated Resource Plan
Technical Advisory Committee Meeting No. 5 Agenda
Wednesday, June 26, 2024
Virtual Meeting

Topic	Time (PTZ)	Staff
Feedback from prior TAC	10:30	All
Current Avista Resources	10:40	Justin Dorr
Greenhouse Gas Emissions & Pricing	11:15	Tom Pardee
TAC feedback	11:50	All

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Supply Side Resources

Justin Dorr

Manager of Natural Gas Resources

Interstate Pipeline Resources

- The Integrated Resource Plan (IRP) brings together the various components necessary to ensure proper resource planning for reliable service to utility customers.
- One of the key components for natural gas service is interstate pipeline transportation. Low prices, firm supply and storage resources are meaningless to a utility customer without the ability to transport the gas reliably during cold weather events.
- Acquiring firm interstate pipeline transportation provides the most reliable delivery of supply.

Pipeline Contracting

Simply stated: The right to move (transport) a specified amount of gas from Point A to Point B



Contract Types

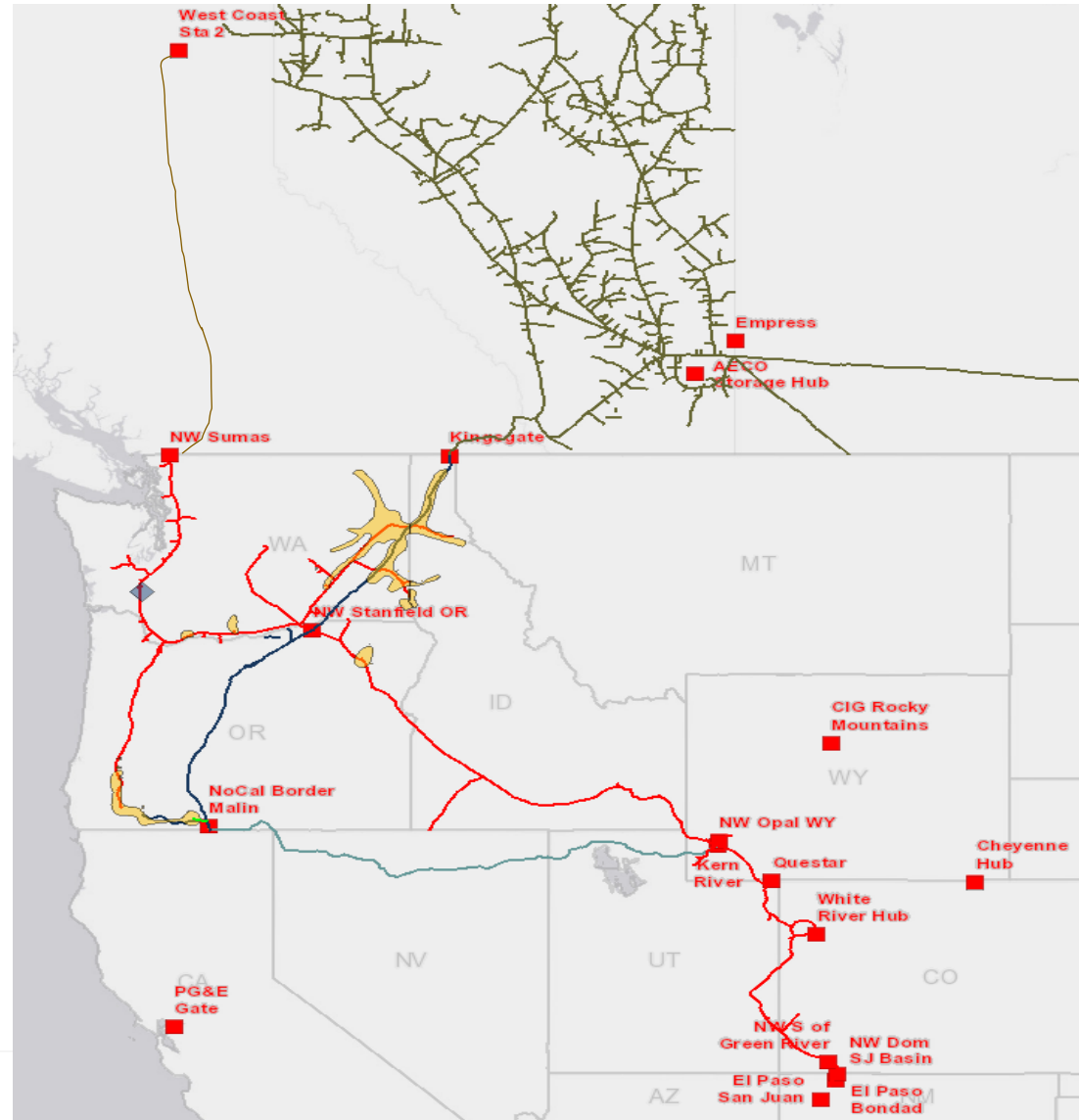
- Firm transport
 - Point A to Point B
 - Kingsgate to Malin
- Alternate firm
 - Point C to Point D
 - Kingsgate to Stanfield
- Seasonal firm
 - Point A to Point B but only in winter
- Interruptible
 - Maybe it flows, maybe it doesn't

Pipeline Rate Design

- Mileage Rate (GTN)
 - Distance between receipt and delivery determines price
 - Plus variable charges (variable, fuel, commodity)

- Postage Stamp (NWP)
 - 1 mile from receipt to deliver same price as 1000 miles
 - Plus variable charges (variable, fuel, commodity)

Pipeline Overview



Avista's Transportation Contract Portfolio

Avista holds firm transportation capacity on 6 interstate pipelines:

Pipeline	Expirations	Base Capacity Dth	Current Rate
Williams NWP	2025-2042	285,000	\$0.3725/MMBtu
Westcoast (Spectra)	2026	10,000	\$0.5770/ GJ
TC- NGTL	2025-2046	146,500	\$0.1994/ GJ
TC- Foothills	2025-2046	144,300	\$0.1448/GJ
TC- GTN	2025-2035	142,000-96,000	\$0.0004297/Mile
TC- Tuscarora	2026	200	\$0.23064/MMBtu

*1 MMBTU = 1.055056 GJ

- 1) Pipe reservations and modeling are only for LDC customers
- 2) Pipe reservations and model explicitly DO NOT CONSIDER electric side of business.

Northwest System – Strategically Located

> Low-cost, primary service provider in the Pacific Northwest

- 3,900-mile system with 3.8 Bcf/d peak design capacity
- ~120 Bcf of access to storage along pipeline, with high injection and deliverability capability in market area

> Bi-directional design

- Provides flexibility (Rockies to market and Sumas to market)
- Cheapest supply drives flow patterns
- Provides operational efficiencies through displacement

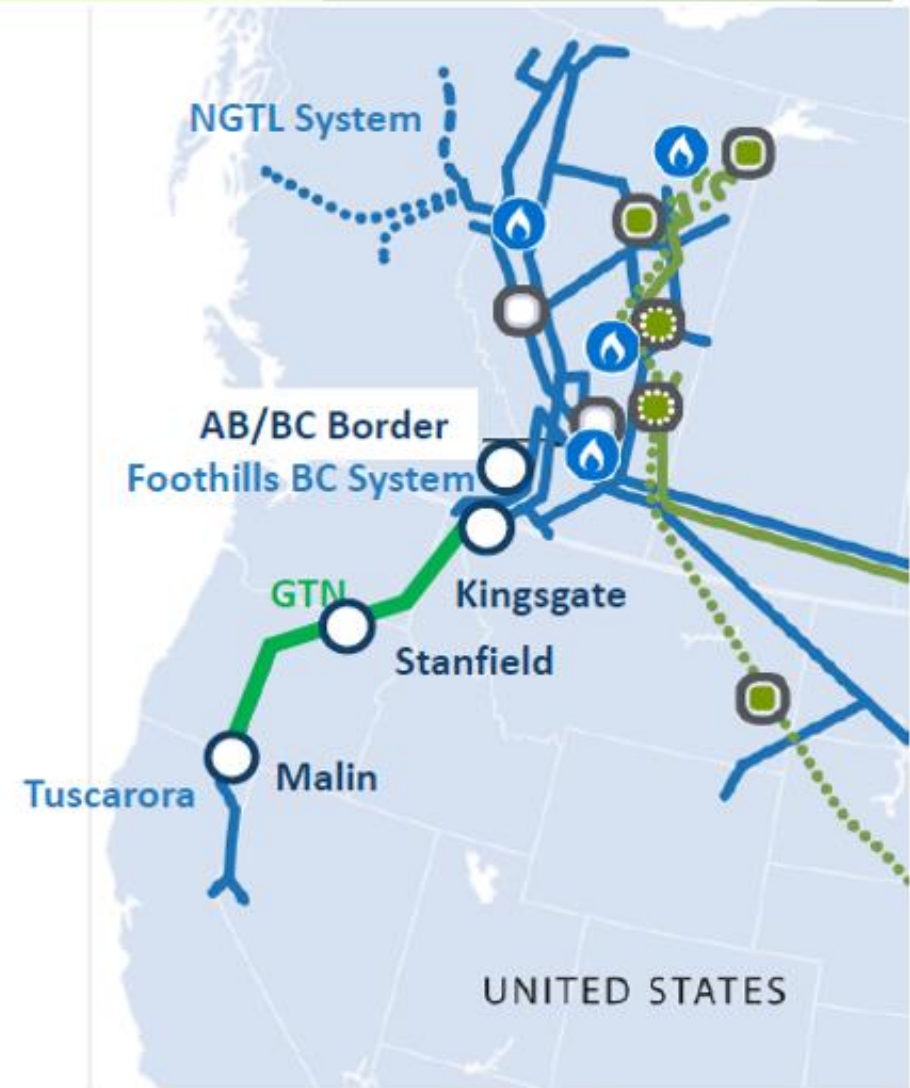
> Supply and market flexibility

- 65 receipt points totaling 11.6 Bcf/d of supply from Rockies, Sumas, WCSB, San Juan, emerging shales
- 366 delivery points totaling 9.7 Bcf/d of delivery capacity



GTN Overview

- Transports WCSB* and Rox natural gas to ID, WA, OR, and CA
- Approximately 1,377 miles of pipe
- Kingsgate best efforts receipt capability of approx. 2.87 Bcfd and throughput capacity of approx. 2 Bcfd through Station 14.



*WCSB – Western Canadian Sedimentary Basin

WCSB gas is competitive in key markets

WCSB (78% TC Energy)

18 Bcf/d supply
8 Bcf/d intra basin load
10 Bcf/d export
2 Bcf/d LNG projected by 2026
4 Bcf/d LNG projected post 2030

Pacific

9 Bcf/d market
2.5 Bcf/d via TC



U.S. Northeast

7 Bcf/d market
0.7 Bcf/d via TC

Eastern Canada

4.4 Bcf/d market
2.3 Bcf/d from WCSB via TC

Chicago (Mid-West)

13 Bcf/d end use market
1.5 Bcf/d from WCSB via TC

Storage – A Valuable Asset

- Peaking resource
- Improves reliability
- Enables capture of price spreads between time periods
- Enables efficient counter cyclical utilization of transportation (i.e., summer injections)
- May require transportation to service territory
- In-service territory storage offers most flexibility

Avista's Storage Resources

Washington and Idaho Owned Jackson Prairie

- 7.7 Million Dth of Capacity with approximately 346,000 Dth/d of deliverability

Oregon

Owned Jackson Prairie

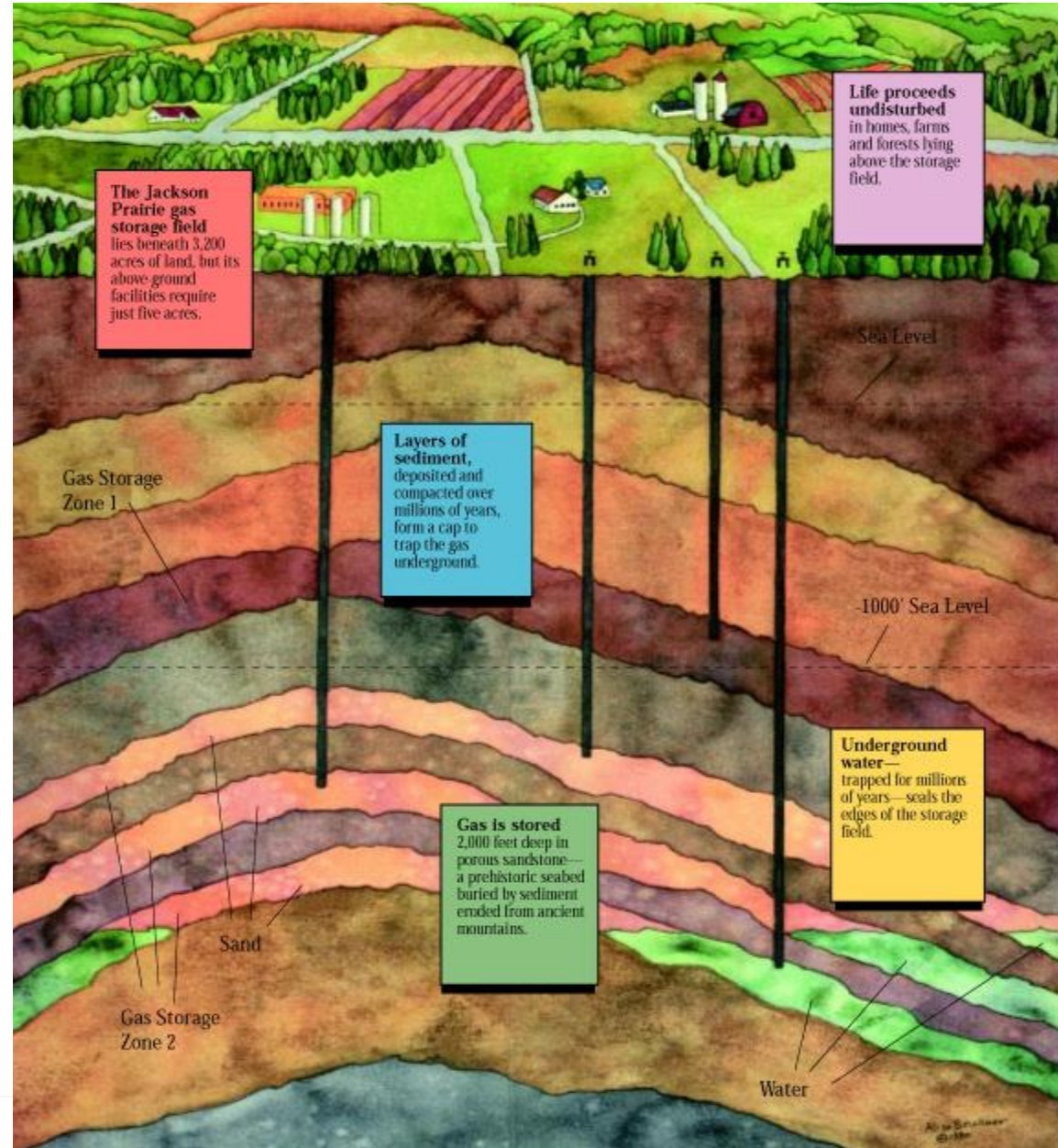
- 823,000 Dth of Capacity with approximately 52,000 Dth/d of deliverability

Leased Jackson Prairie

- 95,565 Dth of Capacity with approximately 2,654 Dth/d of deliverability

The Facility

- Jackson Prairie is a series of deep, underground reservoirs – basically thick, porous sandstone deposits.
- The sand layers lie approximately 1,000 to 3,000 feet below the ground surface.
- Large compressors and pipelines are employed to both inject and withdraw natural gas at 54 wells spread across the 3,200-acre facility.



Jackson Prairie Energy Comparisons

1.2 Bcf per day (energy equivalent)

- ◆ 10 coal trains with 100 - 50 ton cars each
- ◆ 29 - 500 MW gas-fired power plants
- ◆ 13 Hanford-sized nuclear power plants
- ◆ 2 Grand Coulee-sized hydro plants (biggest in US)

45 Bcf of stored gas

- ◆ 12" pipeline 11,000,000 miles long (226,000 miles to the moon)
- ◆ 1,400 Safeco Fields (Baseball Stadiums)
- ◆ Average flow of the Columbia River for 2 days
- ◆ Cube - 3,550 feet on a side



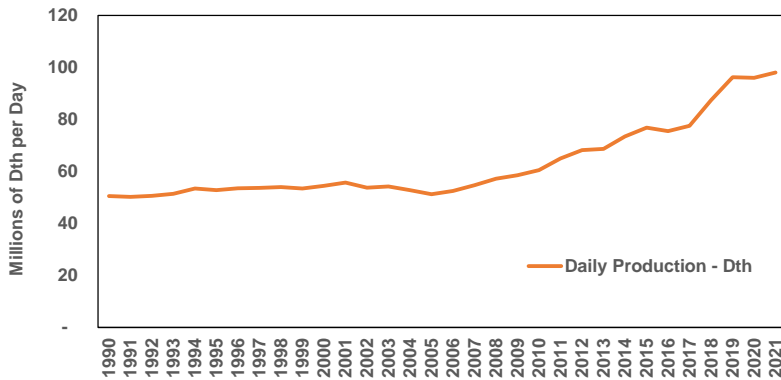
Green House Gas Assumptions and Climate Pricing

2025 Avista Gas IRP

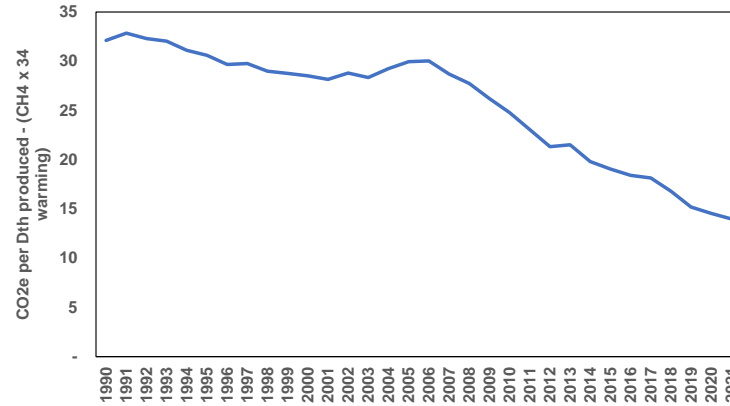
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Greenhouse Gas Assumptions

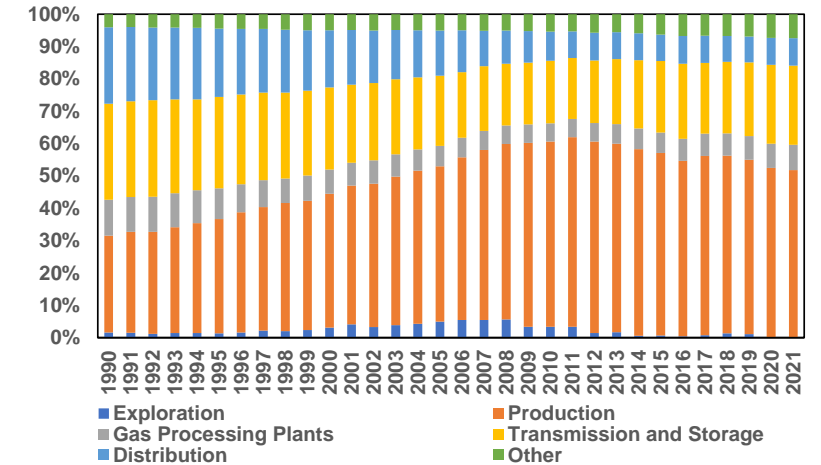
CH4 emissions (kt) for Natural Gas Systems (EIA)



Production



CO2e of CH4 per Dth



CH4 by Major Category

Source: 2023 ghgi annex tables – EIA - Table 3.6-1: CH4 Emissions (kt) for Natural Gas Systems, by Segment and Source, for All Years

Total Emissions for natural gas (combustion, upstream and LDC)

Fuel Emission Rates in lbs GHG per unit of natural gas combusted in lbs & CO ₂ e lbs - 100 year GWP		lb GHG/mmbtu	lb CO ₂ e/mmbtu
Combustion			
	CO ₂	116.88	116.88
	CH ₄	0.0022	0.0748
	N ₂ O	0.0022	0.6556
	Total Combustion		118
Upstream			
	CH ₄	0.422	14.35
	Total		132

*NWPPCC – 2021 Power Plan with updated average actual Avista basin purchases for prior 5 years

**Includes LDC L&U estimate of 0.8%

Use of Upstream Emissions in 2025 IRP

1

Evaluation of energy efficiency in OR and WA

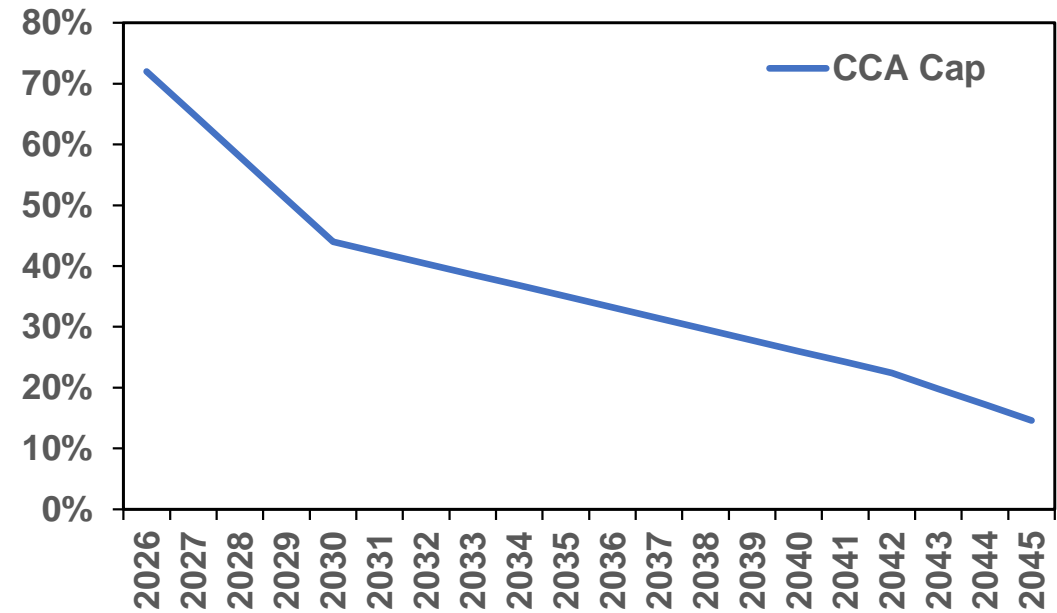
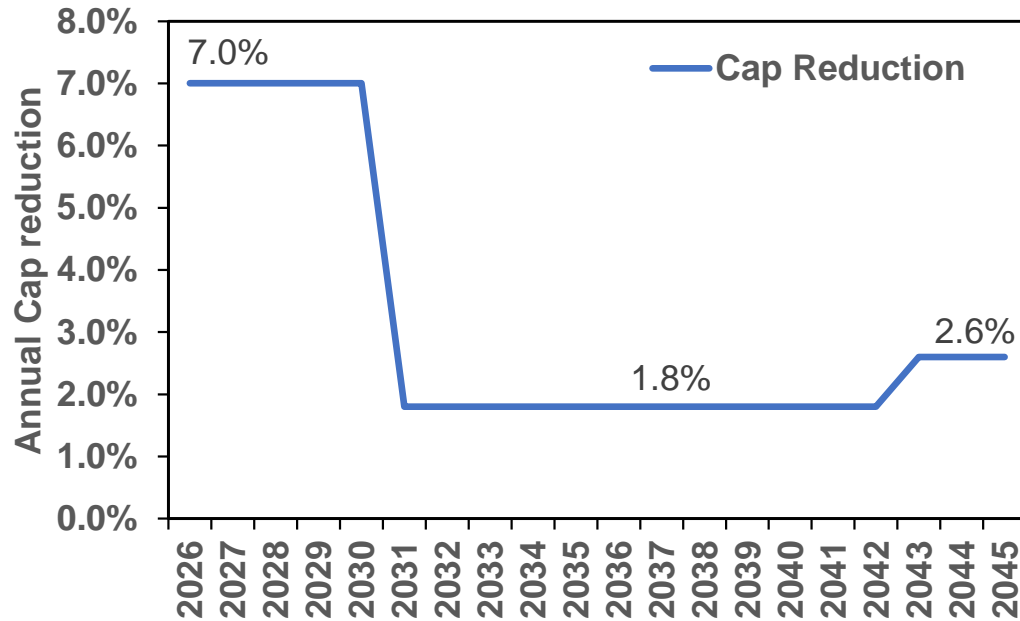
2

SCC scenario in all jurisdictions

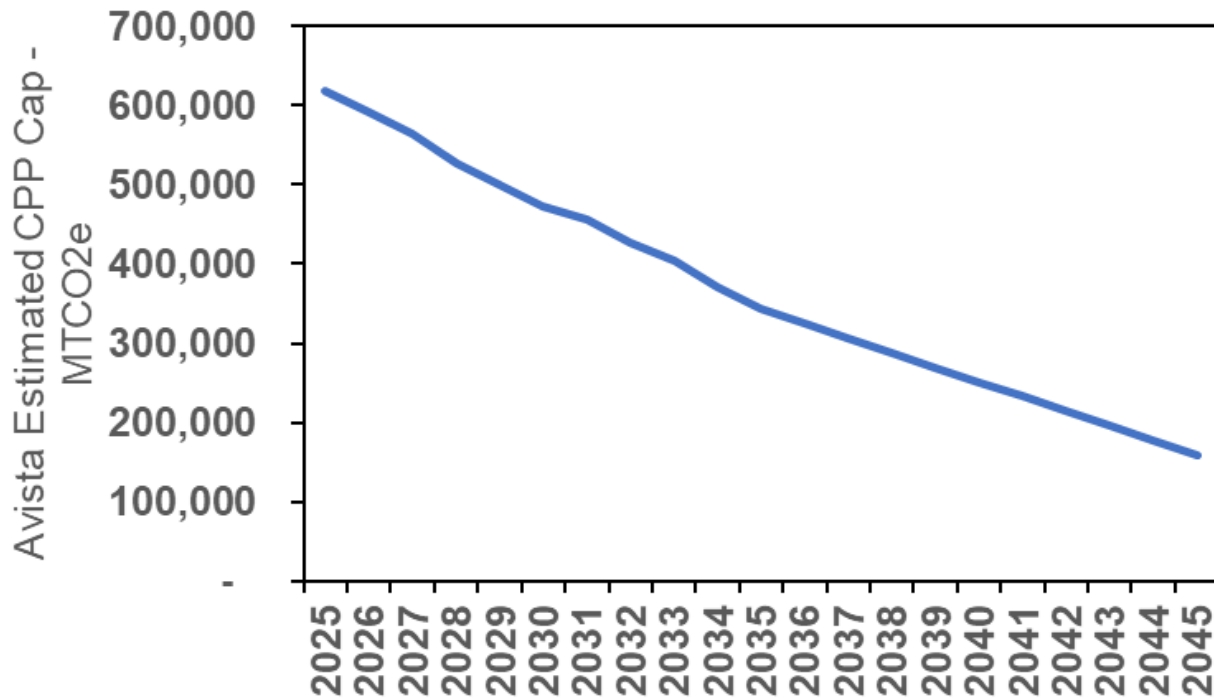
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CCA and CPP do not account for upstream emissions in program requirements

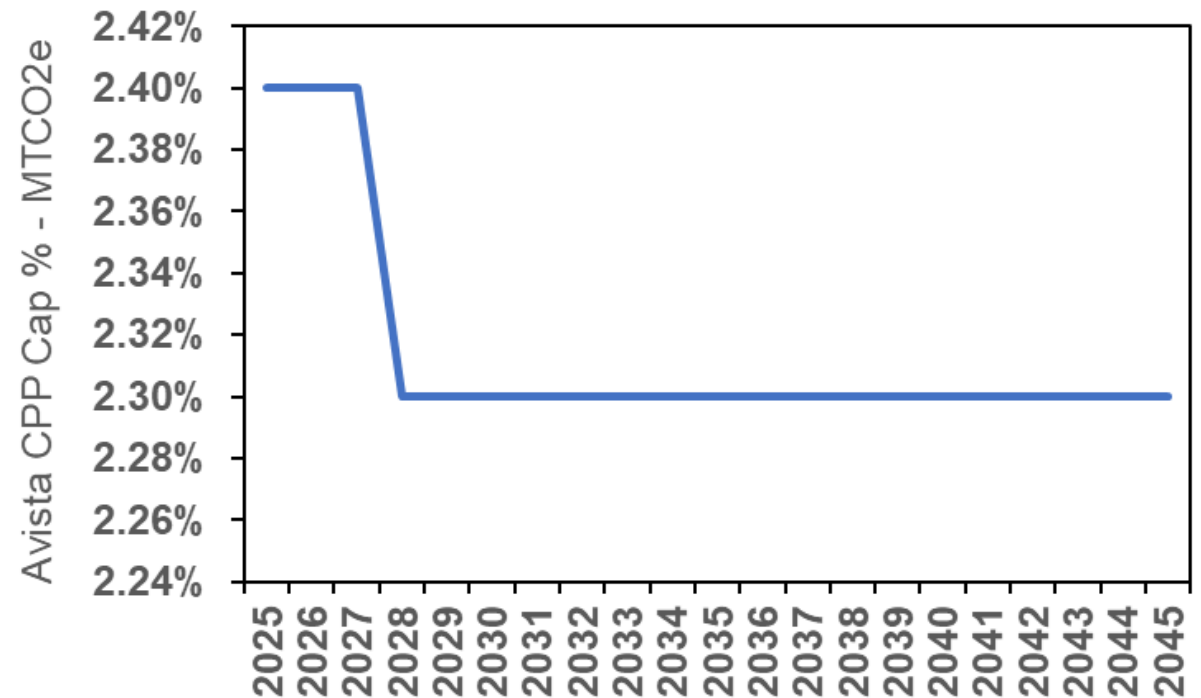
Climate Commitment Act (CCA) Cap



Climate Protection Plan (CPP) Cap



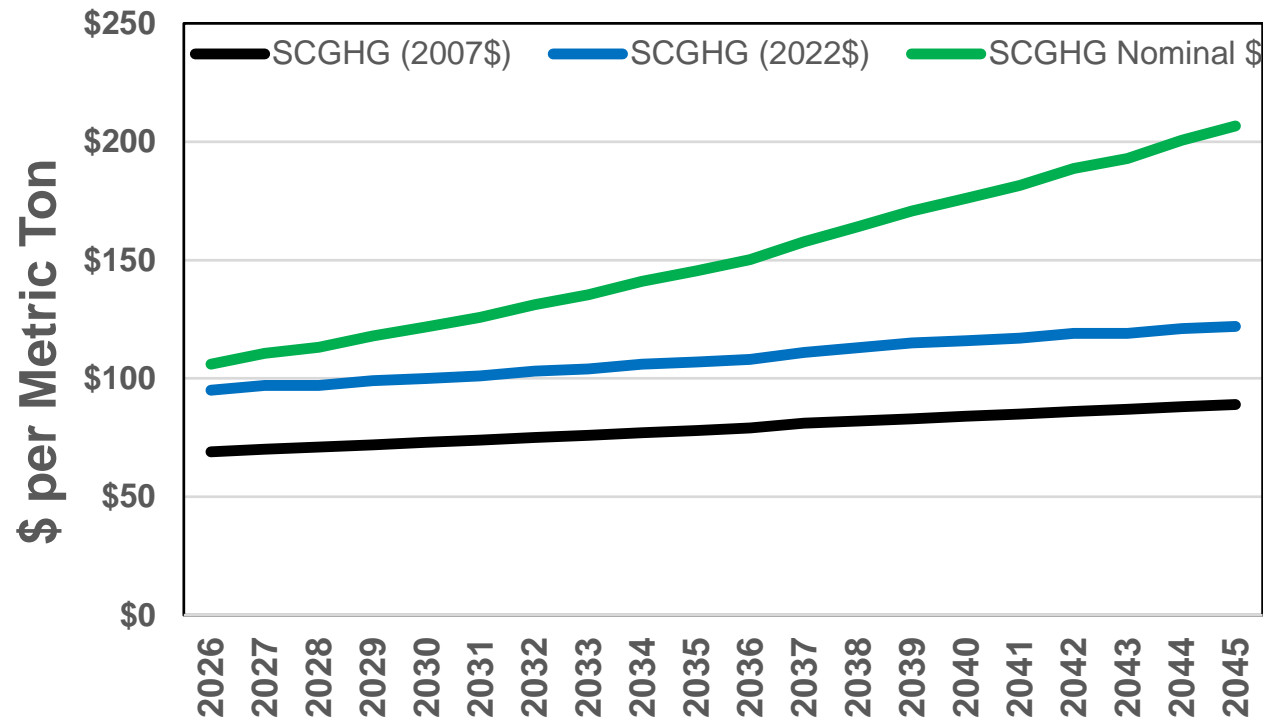
*RAC Draft Rules – June '24 – Tables 2 & 4



*RAC Draft Rules – June '24 – Table 4

Climate Pricing

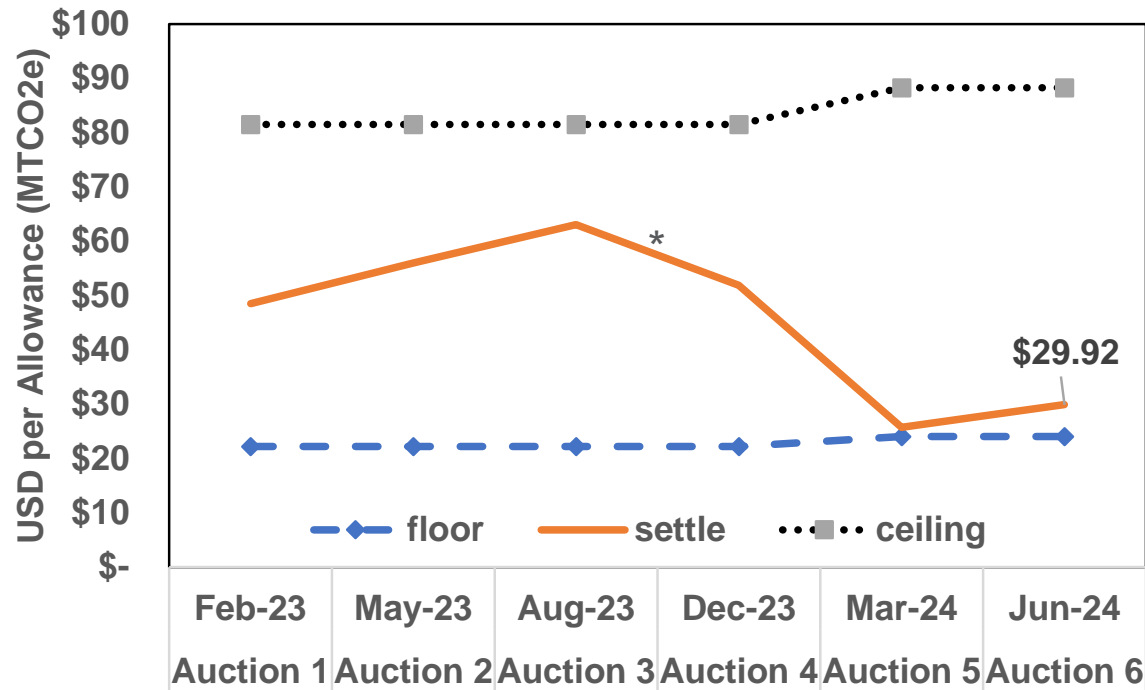
Social Cost of Carbon (SCC) at 2.5%



- SCC @ 2.5% will be used for Energy Efficiency CPA in OR and WA
- SCC scenario will utilize SCC @ 2.5% as a resource selection criteria and is added to the price of emissions to each Dth of natural gas for all jurisdictions

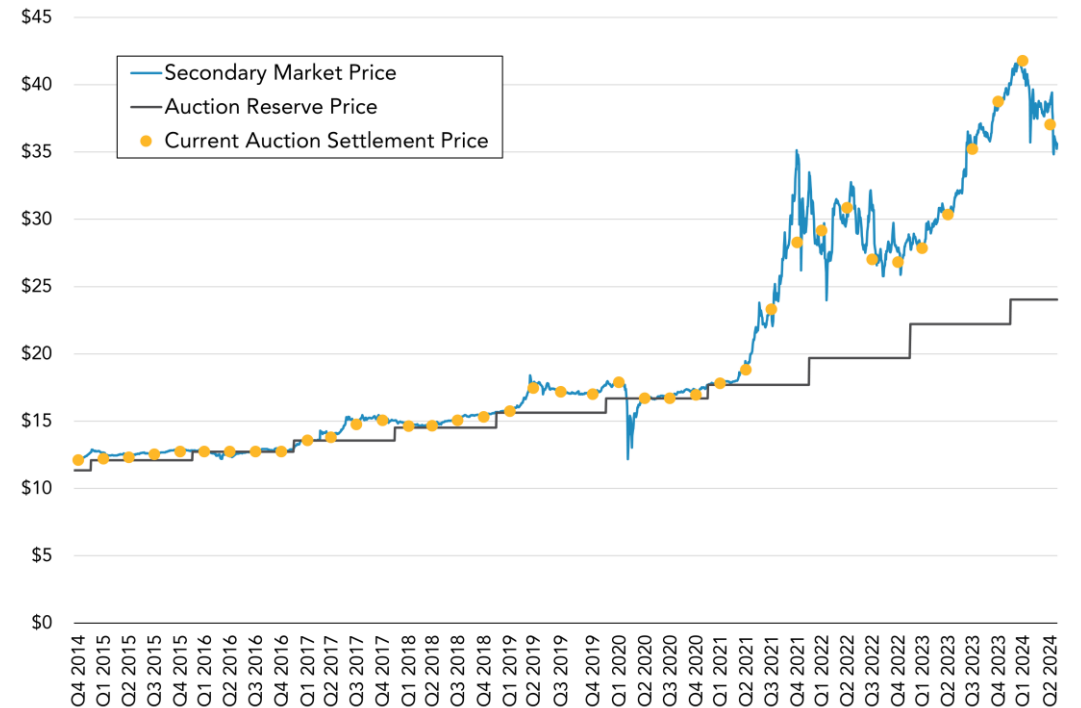
Allowance Prices

CCA



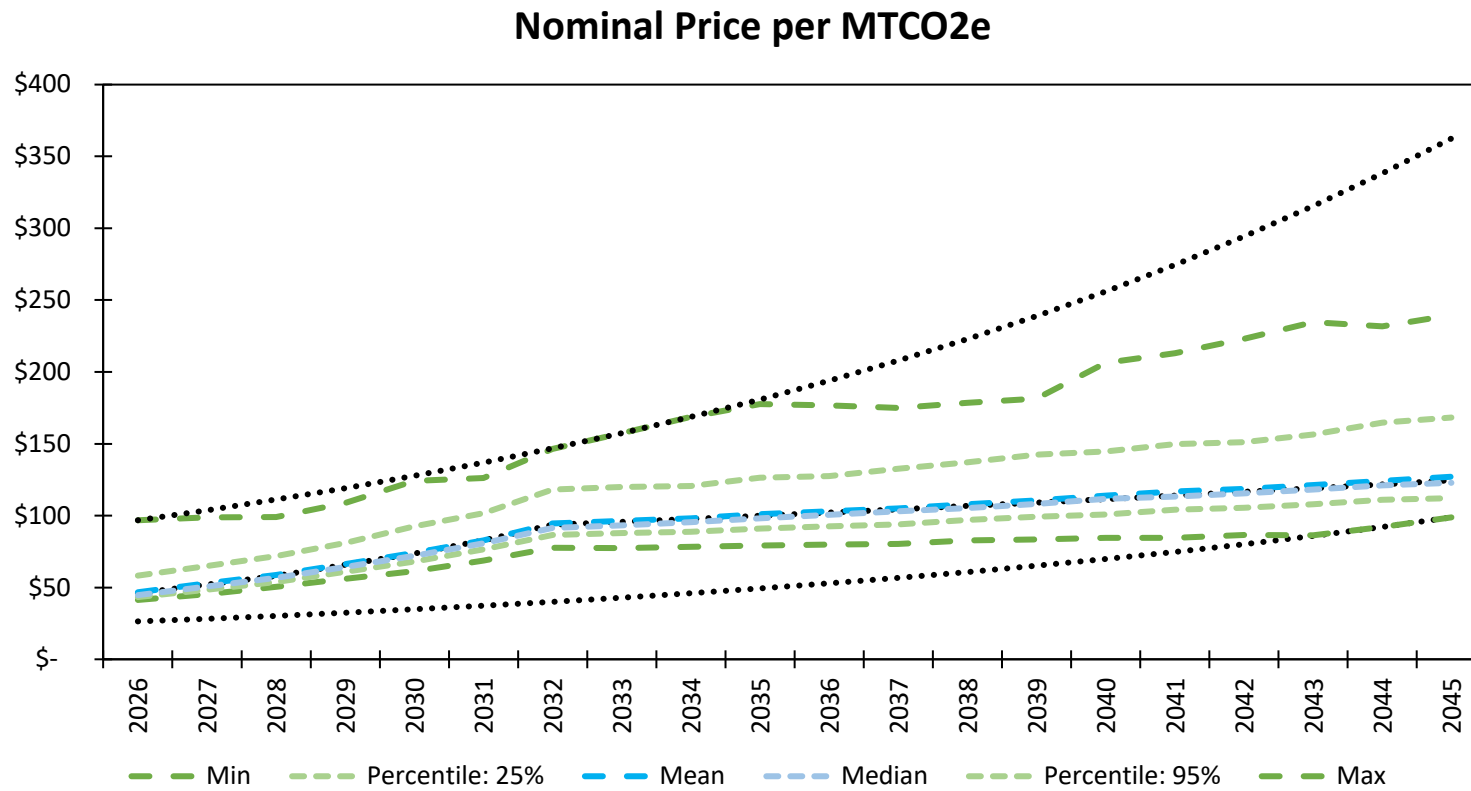
*Nov. 3rd Announcement to pursue linkage to CA Cap and Trade

California - Québec

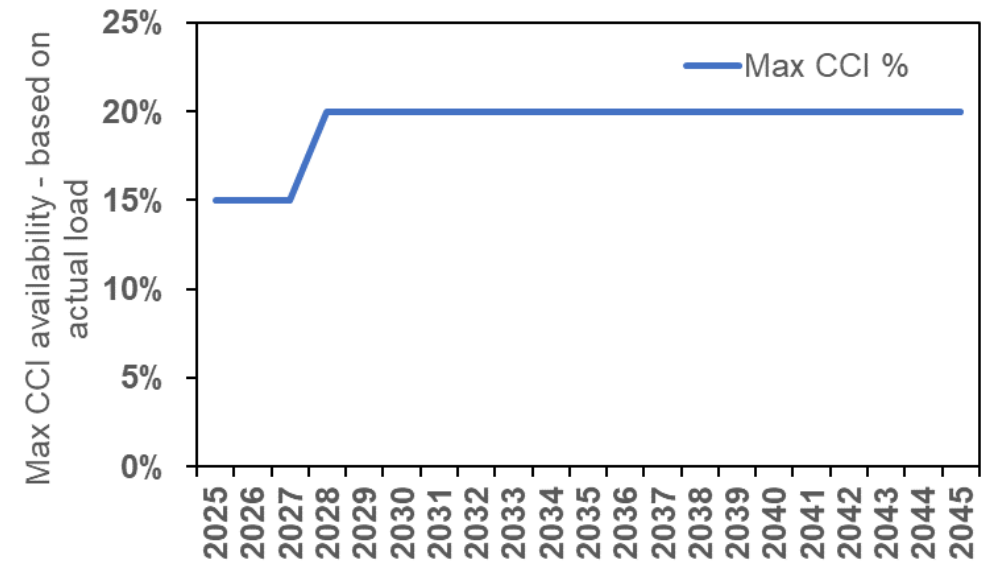
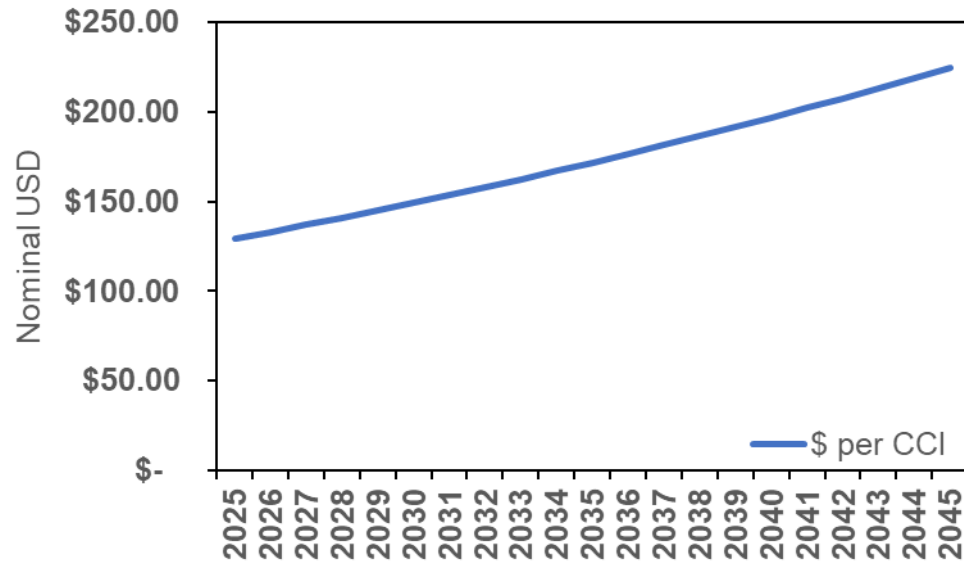


[Cap-and-Trade Program Data Dashboard](#) | [California Air Resources Board](#)

Allowance Price Estimate



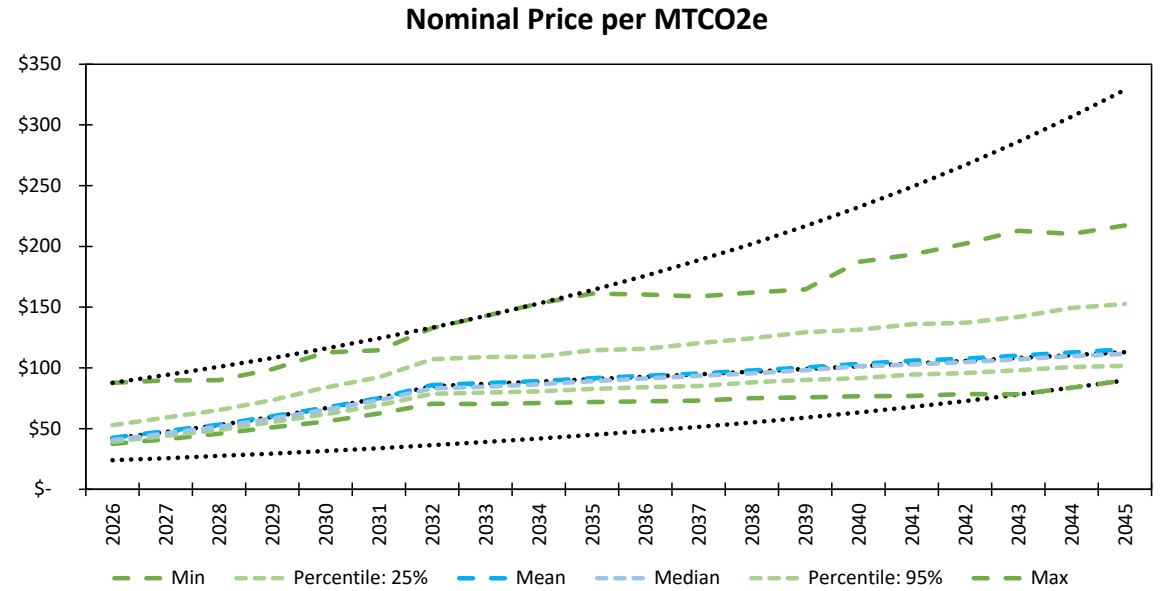
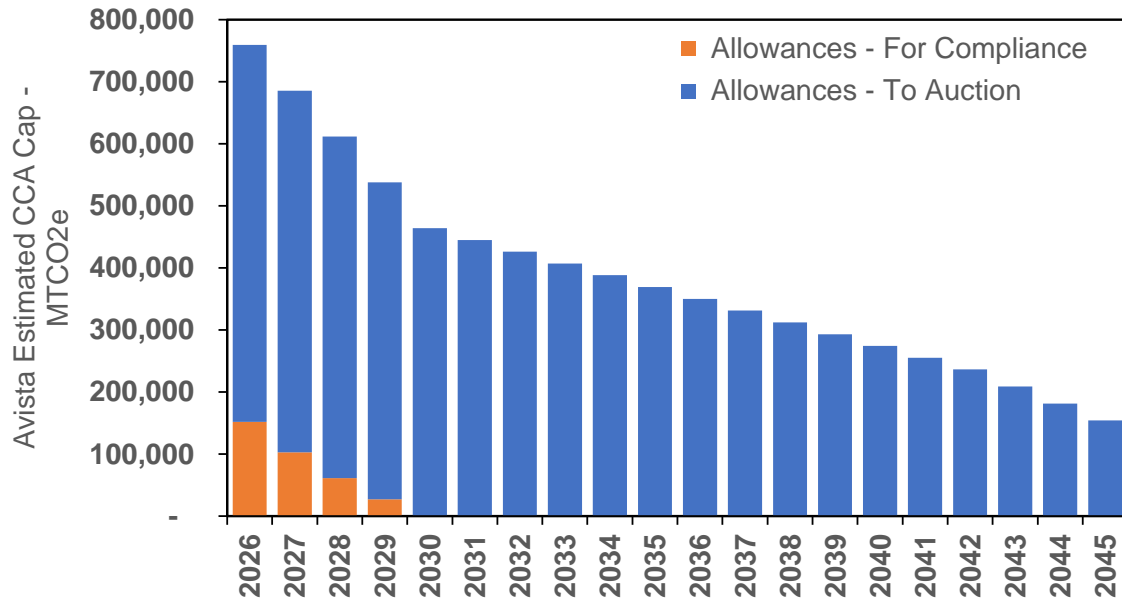
Community Climate Investments (CCI)



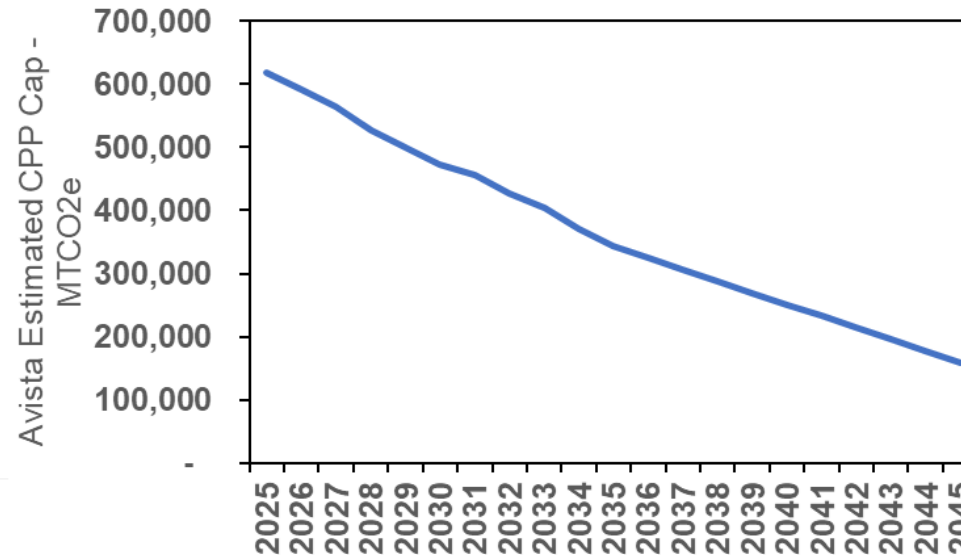
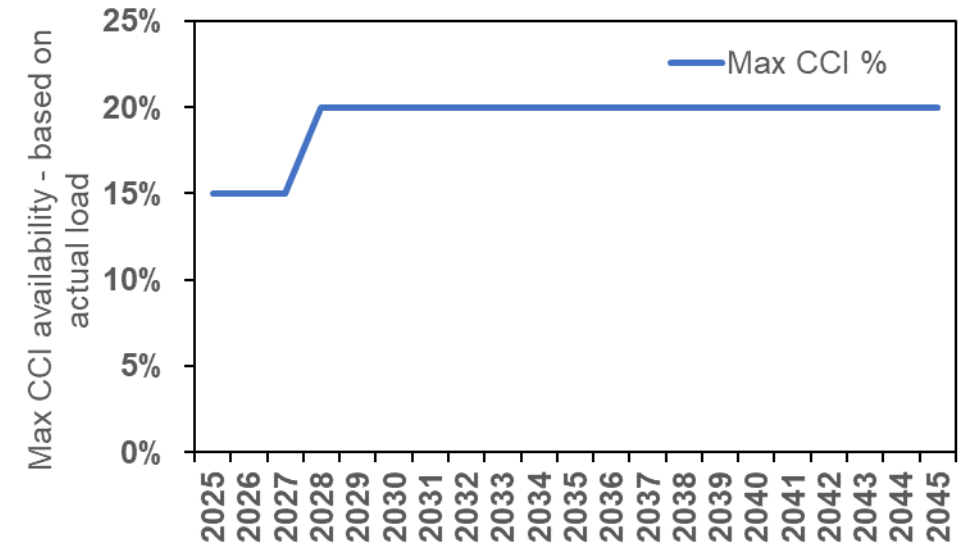
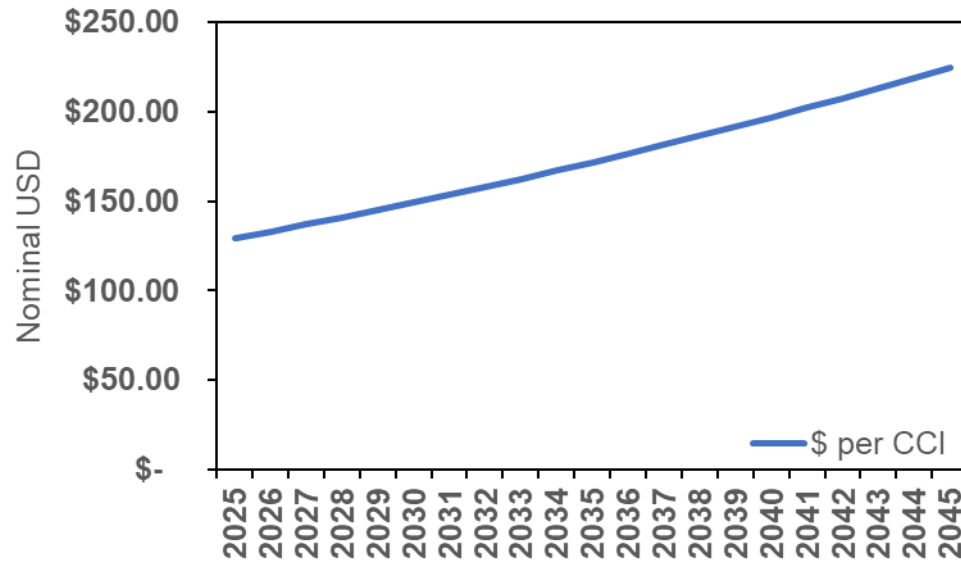
Use of Pricing in 2025 Gas IRP

- SCC @ 2.5% will be used for Energy Efficiency CPA in OR and WA
 - SCC scenario will utilize SCC @ 2.5% as a resource selection criteria and is added to the price of emissions to each Dth of natural gas
- CCA pricing for the allowance market will be used to evaluate program compliance in Washington
 - All cases except SCC scenario
- CPP pricing will be used to evaluate the use of CCIs for program compliance in Oregon (Most recent draft rules available at the time of modeling)
 - All cases except SCC scenario

CCA Summary



CPP Summary*



*2025 IRP values will be updated based on RAC process and changes