



In the Community to Serve®

Integrated Resource Plan Targeted Technical Advisory Group Meeting #5

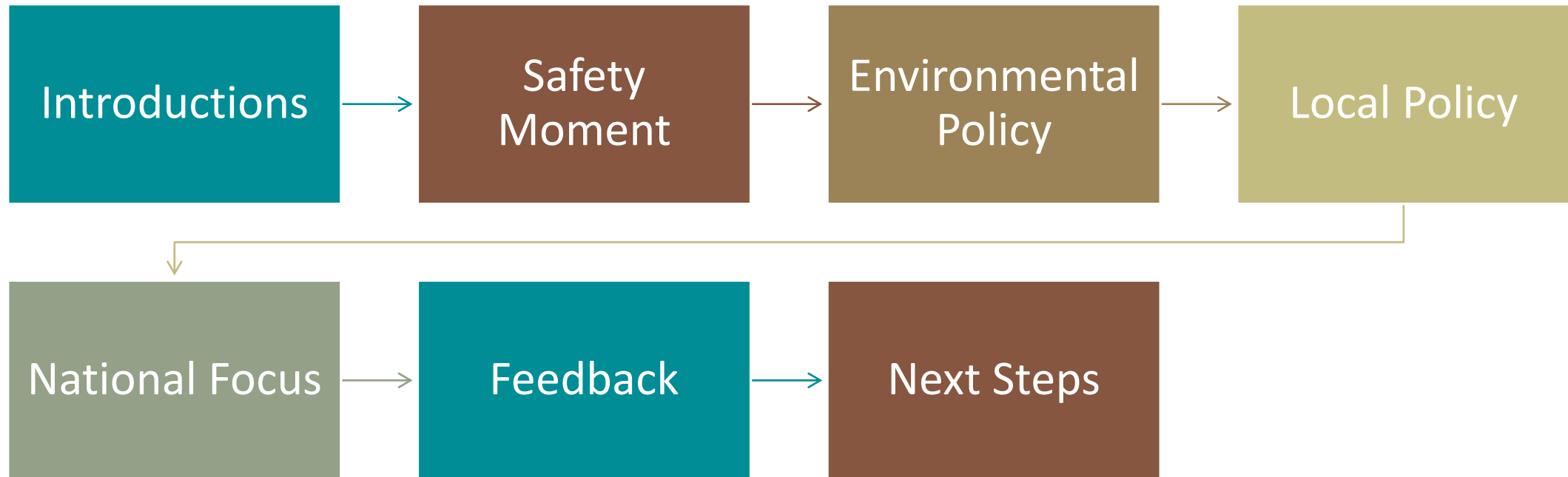
AUGUST 12, 2026

MICROSOFT TEAMS/TELECONFERENCE



In the Community to Serve®

Agenda



Safety Moment

Be cautious around power lines

- Keep workers and equipment at least 10 feet away from overhead power lines.
- Never touch anything in contact with a power line.
- Always assume downed lines are dangerous.
- Don't step in water near a downed line.



 **Safety+Health**
The Official Magazine of the NSC Congress & Expo

Managing Environmental Responsibilities

Cascade Natural Gas (Cascade) plays an important role in supporting a lower-carbon future across the Pacific Northwest by delivering safe, reliable, and affordable natural gas service while helping customers and communities reduce greenhouse gas (GHG) emissions.

Environmental Policy

Operate efficiently to meet the needs of the present without compromising the ability of future generations to meet their own needs. Our environmental goals are to:

- Minimize waste and maximize resources;
- Be a good steward of the environment while providing high quality and reasonably priced products and services; and
- Comply with or surpass all applicable environmental laws, regulations and permit requirements.

Customer Solutions

- Energy Efficiency & Demand-Side Management (DSM)
- Renewable Natural Gas (RNG)

Operational Excellence

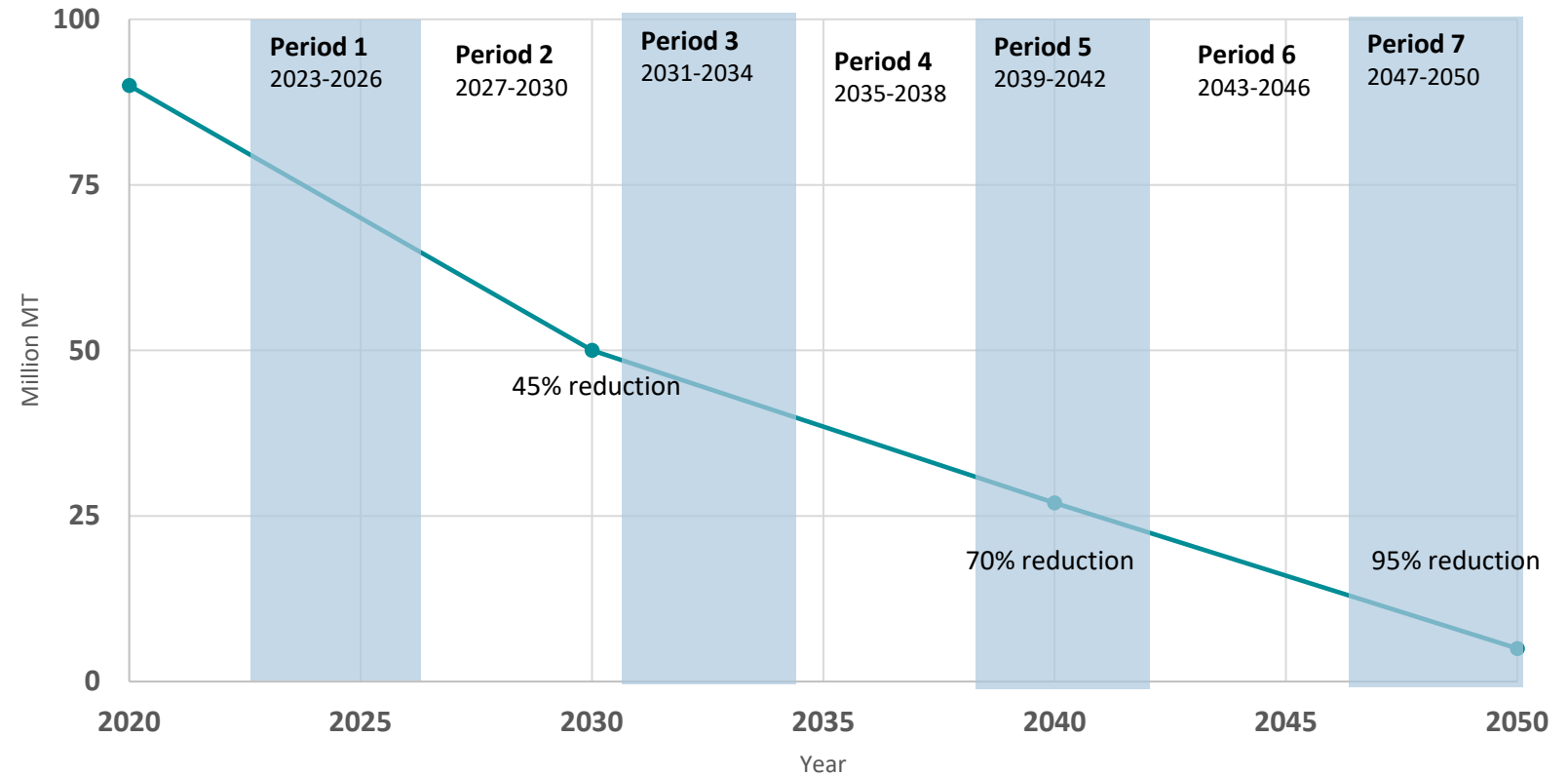
30% methane emissions reduction target by 2035 (2022 baseline)

- Pipeline modernization
- Advanced Mobile Leak Detection (Picarro AMLD)
- Accelerated leak detection and repair

Washington Climate Commitment Act (CCA)

Program establishing a declining cap on GHG emissions from covered entities consistent with the limits established in RCW 70A.45.020, and a program to track, verify, and enforce compliance with the cap through the use of compliance instruments.

Washington State's Projected Allowance Budget Over Time



Covered Entities

- Natural gas utilities
- Fuel suppliers
- Electric utilities
- EITE entities
- Waste-to-Energy facilities (starting in 2027)
- Railroads (starting in 2031)

Compliance Periods

4 Year Compliance Periods

- 2023-2026, 2027-2030, 2031-2034, ...

Compliance Deadlines:

- Compliance deadlines occur on **November 1** each year, as entities must submit compliance instruments equal to **30%** of their covered emissions from the prior year.
- The remaining **70%** are due at the end of the four-year compliance period.

Cascade's Covered Emissions Under the WA CCA

Customer Emissions

≈ 1.7-1.9 million MT CO₂e annually

Included:

- All (core) customers
- **Non-core customers below the CCA reporting threshold**
- **Customers that have not opted into the CCA individually**

Not Included:

- Large customers that are **covered entities** under the CCA (generally >25,000 MT CO₂e/year)
- **Customers approved as Emissions-Intensive, Trade-Exposed (EITE) facilities**
- NAICS national security facilities
- Customers that choose to comply directly under the CCA

Operational Emissions

≈ 25,000 MT CO₂e

Includes:

- Methane leaks
- Fuel combustion from compressor stations.

Washington CCA – Compliance Options



No-Cost Allowances – Allocated annually to eligible natural gas utilities based on a declining emissions baseline.



Auction Allowances – Purchased through Ecology auctions or the secondary market.



Offset Credits – Limited use for compliance (up to **8%** during the first compliance period: **5%** general offsets and **3%** Tribal offset projects).



Renewable Natural Gas - One for one replacement of geologic gas emissions through renewable thermal certificates



Energy Efficiency & Demand-Side Management – Utility measures actively implemented to help customers reduce natural gas use and support compliance.



Other: Hydrogen, Carbon Capture, Synthetic methane, etc.



Purpose

Expand Washington's carbon market by linking with **California and Québec**.
Create a larger, more liquid carbon market.



Expected Benefits

More stable allowance prices.
Greater market liquidity.
Joint allowance auctions across jurisdictions.
Broader compliance opportunities while maintaining Washington's emissions cap.



Continued Priorities

Cascade must still report emissions annually.
Compliance obligations and the timing of compliance events remain the same.



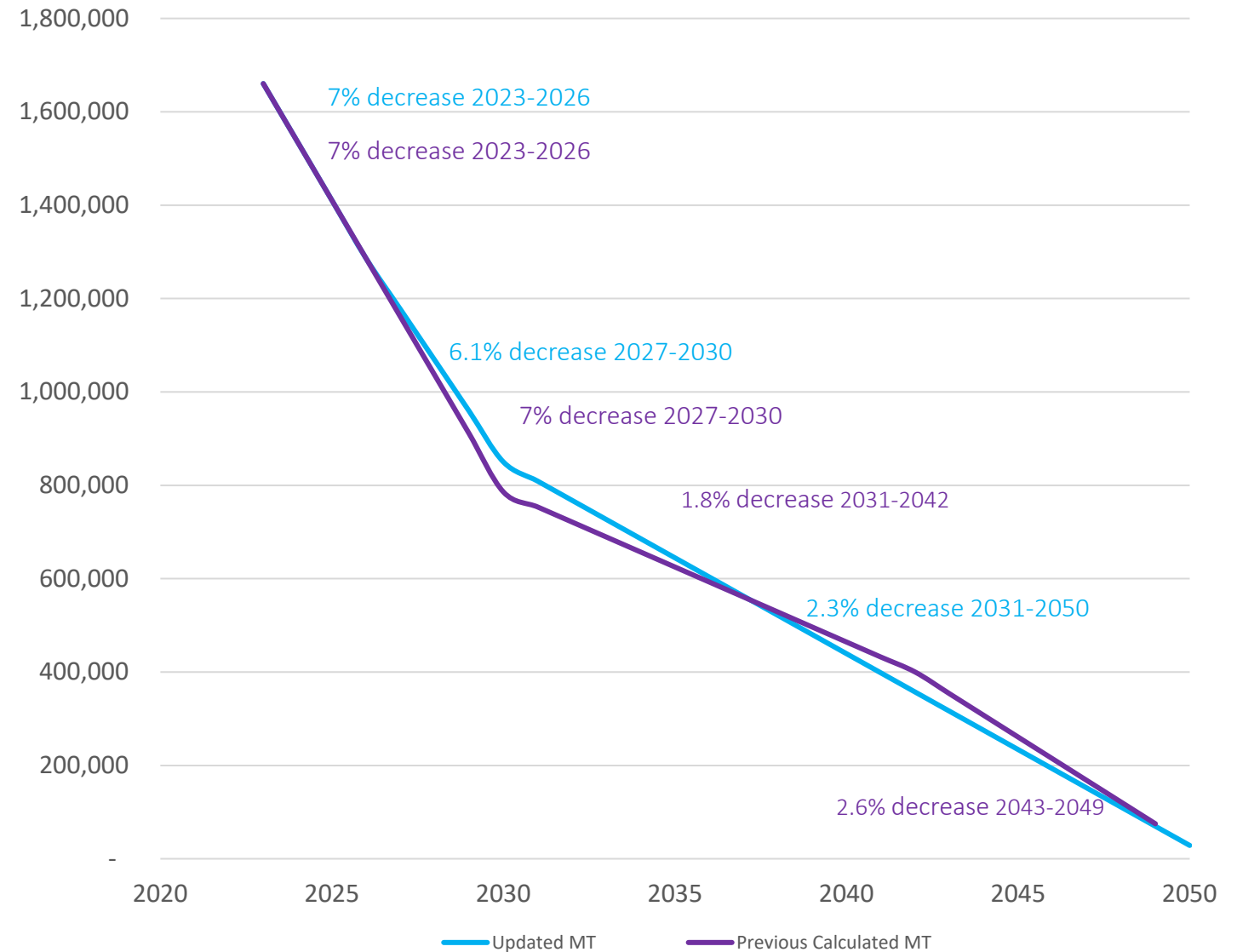
Expected Timeline

Linkage agreement signed in **June 2026**.
Ecology anticipates the market could begin operating in **2027**.

CA-WA-Quebec Linkage Status

WA CCA - No Cost Allowances (Proposed)

- Changes to allocations have been proposed in rulemaking
- Intended to protect customers from cost impacts
 - Low Income bill credit priority#1
- Can be used for compliance purposes, bill credits, or other decarbonization activities
 - WA Commission considering options



Oregon Climate Protection Program (CPP) — Program Scope

Targets

Reduce greenhouse gas emissions from regulated fuel suppliers **50% by 2035 and 90% by 2050** through a declining emissions cap.

Covered Entities

- Fuel suppliers (liquid fuels, propane, and non-natural gas fuel)
- Natural gas suppliers
- Large industrial facilities (non-natural gas fuel use and process emissions)
- EITE and Direct Natural Gas (DNG) sources. (Exempt from the first compliance period)

Oregon CPP Regulated Emissions

- **Cascade customer emissions** – about 500,000 – 700,000 MT CO₂e
 - All core customers
 - All non-core (transport) customers, excluding electric generation and EITE facilities

Sources excluded from the CPP

- Natural gas distribution system emissions
 - Cascade's system emissions are approximately 8,500 mT CO₂e per year as reported to ODEQ
- Emissions from biomass-derived fuels (e.g. RNG)
- Emissions from non-combustion use of natural gas, if approved by DEQ
- Emissions from electric generating plant units ≥ 25 MW

Oregon CPP – Compliance Options



No-Cost Compliance Instruments – Allocated annually and decline overtime. Unlimited banking and covered entities may trade compliance instruments to another covered entity.



Community Climate Investments (CCIs) – Limited use:
Compliance period 1 limits use to 15% of obligation
Compliance period 2 and each period thereafter: 20% of obligation



Renewable Natural Gas - One for one replacement of geologic gas emissions through renewable thermal certificates



Energy Efficiency & Demand-Side Management – Utility measures actively implemented to help customers reduce natural gas use and support compliance.



Other: Hydrogen, Carbon Capture, Synthetic methane, etc.

Climate Protection Program

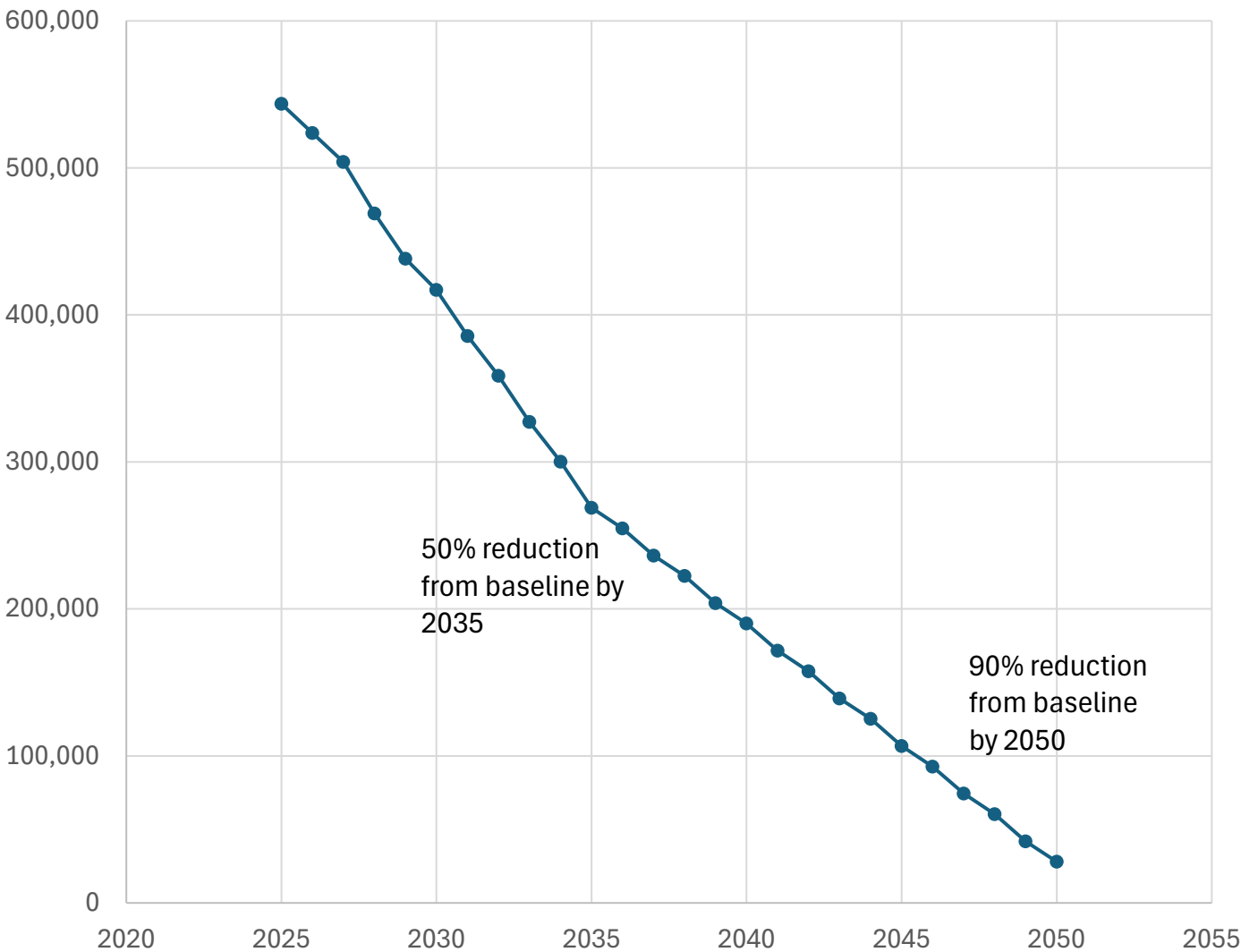
Baseline

2017-2019 average
2023 is equal to baseline of 2017-2019 average

No-Cost Compliance Instrument Allocations

DEQ distributes compliance instruments into covered entities' accounts each June

Cascade Projected Trajectory of Compliance Instruments in MT



OR CPP Compliance Periods and Compliance Demonstrations

Compliance Periods

- First compliance period is three consecutive calendar years: 2025–2027.
- Each subsequent compliance period is two consecutive calendar years: 2028–2029, 2030–2031, and so on.

Compliance Demonstrations

- Compliance demonstrations required by December 2028 for the 2025–2027 period.
- Subsequent demonstrations are due by December of the year following the end of each compliance period.

Reducing Operations Emissions

Developed a comprehensive GHG inventory to improve emissions tracking across operational activities.

Pipeline Integrity – Replace approximately 10 miles of main and 454 service lines in 2025 with modern protected steel or plastic pipe.

Proactive Leak Repair – All identified leaks, including non-hazardous leaks, are repaired within established timeframes.

Industry Collaboration – Work with ONE Future, AGA, and industry partners to improve methane measurement and reduction practices.

Damage Prevention – Public education and the Call Before You Dig (811) program help reduce excavation damage and prevent methane releases.

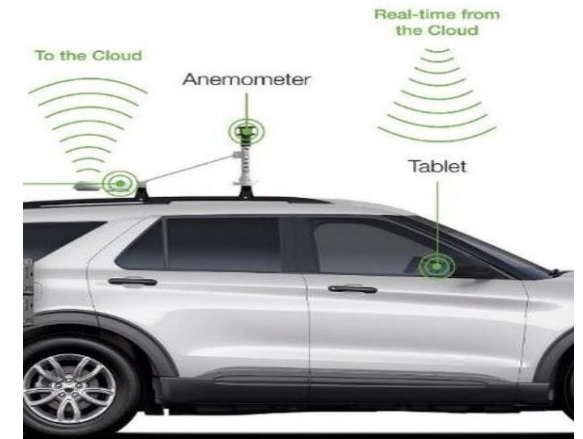
Reducing Operations Emissions (cont.)

Mitigation Strategies - We evaluated cross-compression opportunities throughout 2025 and continued to assess their application as a methane emissions reduction strategy for high-pressure pipeline operations, consistent with evolving industry practices.

Advanced Leak Detection – Picarro AMLD technology improves leak detection, and repair prioritization. Completed a first survey of WA's distribution system and have initiated a second survey. Expanded our fleet and have begun an emissions survey in Oregon.

Improved Emissions Reporting – Picarro AMLD and GTI Energy's Project Veritas support more accurate emissions measurement, tracking, and reporting.

Proprietary Hardware,



Operations Emissions using Picarro AMLD technology

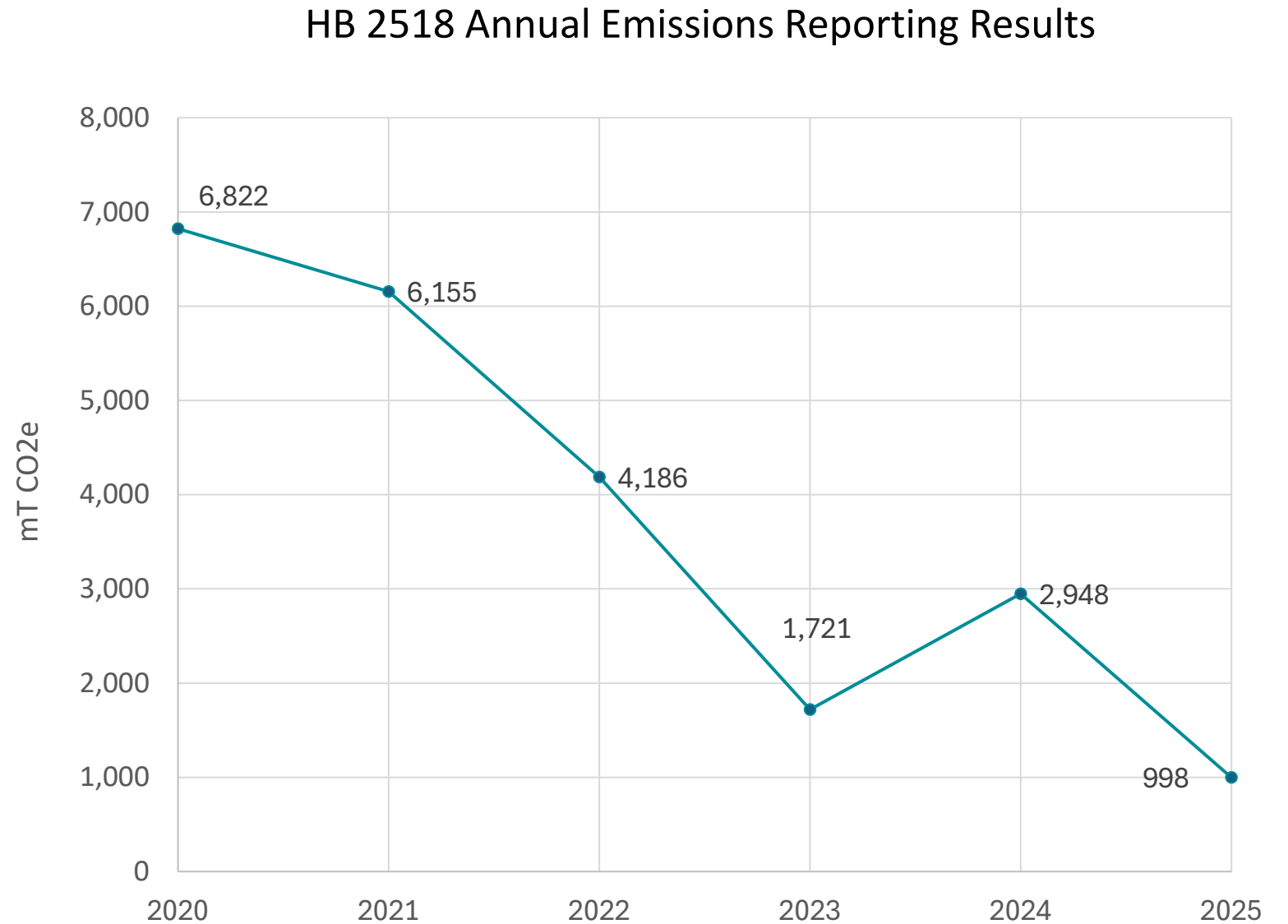
Sources	WA			OR		
	Established EF ¹	Company Specific EF ¹	% Difference	Established EF	Company Specific EF ¹	% Difference
Mains ²	391.7	173.7	56%	113.7	81.3	28%
Services ²	171.4	50.0	71%	49.0	23.4	52%
Meters ²	584.1	433.6	26%	217.5	217.52 ³	
Meter-Regulator Stations	3.1	3.1		0.5	0.5	
Transmission Line	1.3	1.3		0.2	0.2	
Blowdowns	0.7	0.7		0.2	0.2	
Damages	34.4	34.4		27.2	27.2	
Pressure Relief Valves	4.8	4.8		1.7	1.7	
Crankcase venting	0.6	0.6		-	-	
Compressor Station	0.01	0.01		-	-	
Pneumatic Devices	1.9	1.9		-	-	
Totals	1,193.9	704.0		410.1	134.6	

1 Emission Factors

2 Preliminary EF Developed

3 No EF Developed

WA Pipeline Leak Emissions Trend



Thermal Energy Networks (TENs)

- Two main laws pertaining to thermal energy networks have passed in Washington.
 - HB 2131, which took effect June 6, 2024
 - Identifies pathways for utilities to invest in networked thermal energy and associated pilot activities.
 - Funds are available from Commerce to invest in qualified pilot projects.
 - LDCs have 12 months to identify available projects in writing to Commission and 30 months to deploy with potential option for extension at discretion of UTC.
 - Law also allows LDC obligation to serve to be met through networked thermal energy at request of LDC and with approval of UTC.
 - HB 1514, which took effect July 27, 2025
 - Established that qualifying thermal energy companies would be regulated similarly to other investor-owned utilities under the WUTC framework

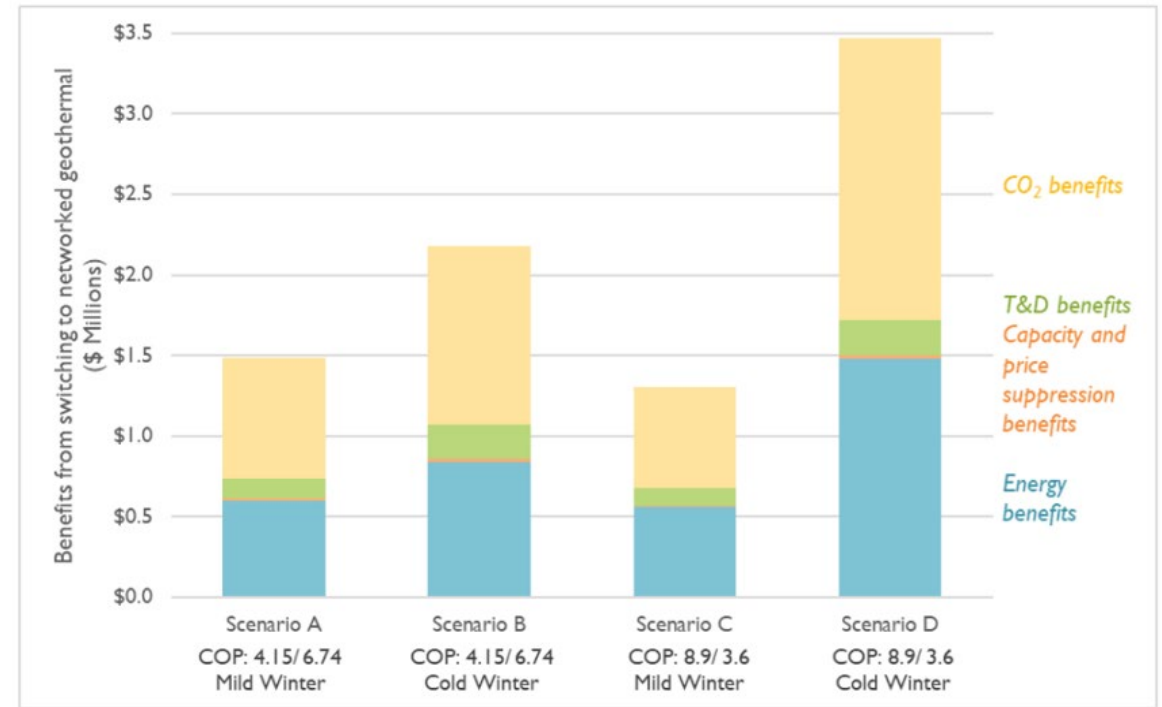
Thermal Energy Networks (TENs)

- Networked thermal energy can come from multiple sources including geothermal, ground source heat, waste heat, etc.
- Cascade will explore a range of opportunities for integration of this technology as part of our ongoing decarbonization compliance planning efforts.
- Cascade will continue to participate in the Utility Networked Geothermal Collaborative and monitor emerging best practices for this promising combustion fuel alternative .
- Targeted pilots will help Cascade determine the scalability of different TENs technologies and applications to support future modeling.

TEN Benefits

- Higher energy efficiency
- Decarbonization
- Synergies with Energy Codes and Performance Standards
- Reduces grid impacts from electrification
- Increased resiliency as compared to ASHP

Figure 1. Benefits from switching to thermal energy networks (2024 \$M) (1 network)

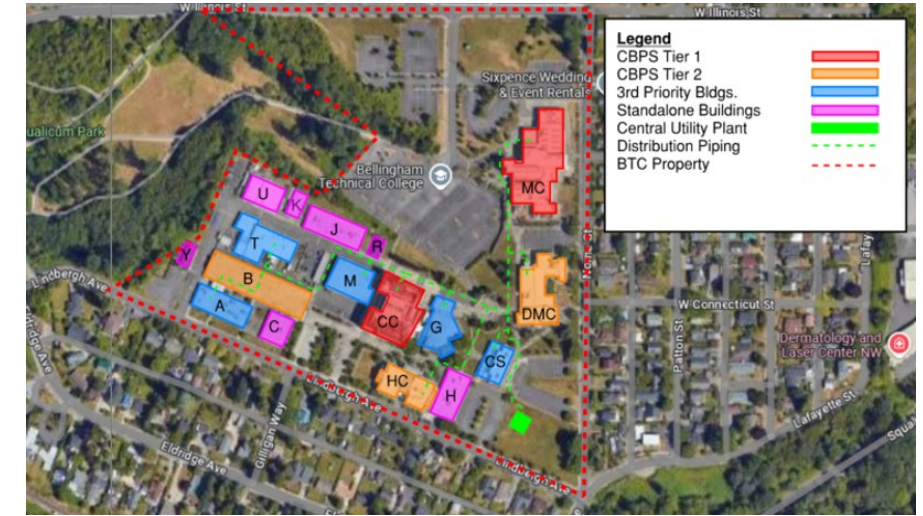


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Benefits of Thermal Energy Networks: A Comparison to Air-Source Heat Pumps, Synapse Energy Economics Inc.

Bellingham Technical College Pilot

- Pilot Target
 - Washington State
 - 2 buildings
 - Buildings with existing hot water heating infrastructure
 - CBPS Tier 1 buildings
- Potential for 'full' campus connection in future
 - Campus EUI reduction of 26+
 - Eliminate 600+ MTCO₂/year
- Potential for future neighborhood expansion
 - Largely single family residential



Category	Building Area	% of Total Campus
Subtotal - CBPS Tier 1	118,158	35%
Subtotal - CBPS Tier 2	83,433	25%
Subtotal - 3rd Priority Blds	76,120	23%
Potential TEN Service Area	277,711	83%
Total BTC Campus Area	334,509	100%

Other LDC TEN Pilots

- NWN Vancouver, WA Pilot
 - In their current general rate case
 - Received support from Staff, Intervenor, and Public Council
 - Ultimately denied to be included in rates by Commission
- PSE Seattle, WA Pilot
 - In their current general rate case
 - Has not received support from Staff
 - Has received support from Intervenor
 - Final determination TBD

City of Bellingham

Bellingham City Council passed an ordinance on Feb 7, 2022 and taking effect Aug 7, 2022, which requires electric space and water heating equipment for new commercial and large (4+ story multifamily buildings) buildings. It also requires incremental improvements in EE (building envelope, lighting, insulation) and solar installation or readiness in new buildings.

In March 2024, the city repealed the local commercial energy code and adopted the 2021 WSEC – C.

Whatcom County

On July 27th, 2021, Whatcom County voted to ban the construction of new refineries, coal-fired power plants and other fossil fuel-related infrastructure.

This does not constitute a gas ban but may have impacts on distribution system enhancement projects if needed in Whatcom County.

City of Bend

- Bend's climate goals focus on:
 - Reducing community fossil fuel use by 40% by 2030 and 70% by 2050
 - Achieving 100% renewable electricity
 - Improving energy efficiency in buildings
 - Supporting low carbon transportation
- Cascade has worked with the City ongoing to support Bend's goals via:
 - Development of a voluntary RNG program
 - Ongoing development of an RNG facility at the Knott Landfill
 - Pilot dual fuel heat pump program.

City of Bend

- On June 17, 2026, Bend City Council approved Bend Municipal Code Chapter 18.20, the Climate Pollution Fee
 - Scheduled to take effect April 1, 2027
 - Will be charged to developers for installing hookups for key gas appliances in new residential construction.
 - Based from 20% of the social cost of carbon
 - Subject to adjustment based on the incremental carbon difference between natural gas and electricity provided by Pacific Power and Central Electric Co-op.
- Cascade will continue to monitor and assess the impacts of this policy to natural gas usage in Bend.

Building Codes

The WA State Building Code Council (SBCC) is working towards the adoption of the **2024 Washington State Energy Code (WSEC)**.

- Public comment hearings for the WSEC will take place on August 5th and 7th, 2026. Anticipated adoption would be September 25, 2026, and effective date would be May 3, 2027.
- The proposed code still penalizes natural gas fueled buildings, as compared to electric heat pumps, for space and water heating. However, there have been some code proposals that could increase flexibility for designers and builders wanting to include natural gas in their buildings.
 - The credit table (Table R406.3(1)) in the residential code expands the building size categories from three size categories to nine which reduces the total credit requirements for houses under 2,499 sqft. but increases the requirements for homes over 3,000 sqft.
 - An Energy Rating Index (ERI) compliance pathway was added to the residential code allowing more compliance flexibility.
 - The fossil fuel compliance path has been removed from the commercial code and buildings using natural gas will refer to remodeled credit tables. Credit tables in the commercial code were to be recalculated by Pacific Northwest National Laboratories (PNNL). New credit values won't be known until a code change proposal is made public during the code hearings.

The **2026 Oregon Residential Specialty Code (ORSC)** is anticipated to be adopted Oct. 1, 2026. Public hearings for the adoption of this code will be held August 18, 2026.

- Proposed section **N1105.8** requires the installation of an electric heat pump for cooling that must also be capable of the first stage of heating. There are alternative compliance pathways that still allow natural gas choice, but the alternatives will require increased design complexity and additional costs. This code change positions electric heat pumps as the preferred default code compliance choice for space conditioning in residential buildings.

National Focus

- On July 7, 2026, DOE proposed revisions to its April 2024 Process Rule (89 Fed. Reg. 24,340) that could make it more difficult to adopt future appliance-efficiency standards. Existing standards would not be affected. Cascade will continue to monitor for impacts to our programs.
- DOE recently published a Federal Register notice of Direct Final Rule (DFR) pertaining to energy conservation standards for consumer clothes dryers along with its previously updated residential water heater efficiency standards which would apply to new water heater models starting in 2029. Cascade's energy efficiency team will continue to assess impacts to baseline equipment used to determine the Company's Energy Efficiency portfolio.
- EPA has proposed adjusting standards for ENERGY STAR natural gas furnaces to AFUE 97%+ and is considering ENERGY STAR qualification for hybrid HP technologies. Cascade's energy efficiency team will continue to monitor these developments and potential EE program impacts/opportunities.
- The EPA finalized updates to Subpart W in May 2025; however, implementation is currently on hold while the agency reconsiders the GHGRP. Additional information regarding the program's future is expected in August. To support reporting continuity should the GHGRP be discontinued, the University of Texas at Austin is developing a voluntary reporting platform for participating companies. In parallel, the Washington Department of Ecology is developing its own reporting platform, which is expected to be available next year.
- EPA is currently reconsidering the 2024 Carbon Pollution Standards for fossil fuel-fired power plants. In June 2025, EPA proposed repealing requirements for carbon capture controls. A final rule draft was submitted to OMB for review on May 14, 2026, and is pending final action.

Feedback for Cascade?

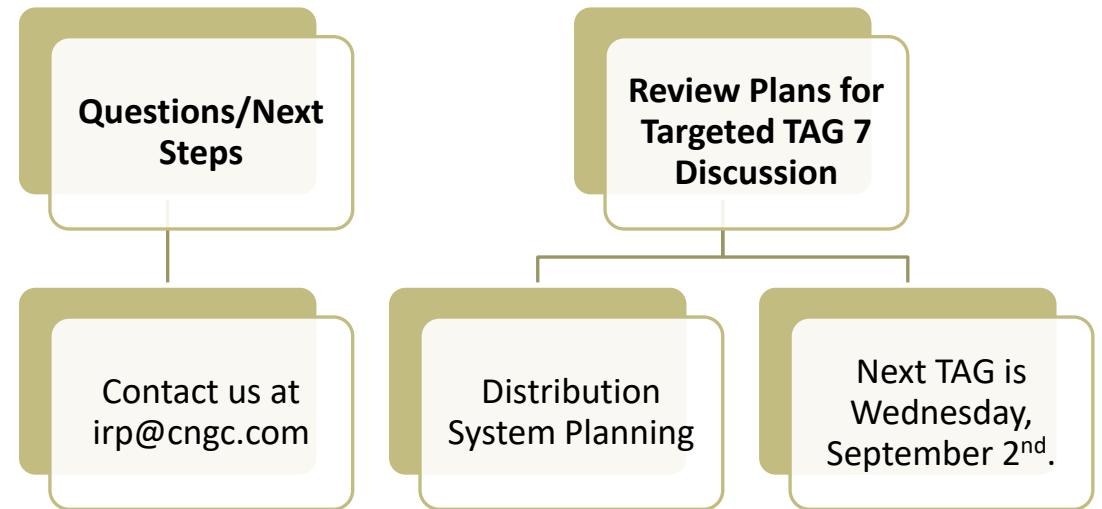
Do you have comments or ideas that Cascade should consider regarding Environmental Policy?

Process Item	Date	Process Element
Targeted-TAG	Wednesday, September 2, 2026	Distribution System Planning
Targeted-TAG	Wednesday, September 23, 2026	Resource Integration and Equity in the IRP
TAG 1	Wednesday, October 14, 2026	Process, Key Points, IRP Team, Timeline, Regional Market Outlook, Planned Scenarios and Sensitivities, Stakeholder Engagement, Demand and Customer Forecast and Non-Core Outlook, Drilling down into segments of demand forecast. Upstream Pipeline presentation.
TAG 2	Wednesday, November 18, 2026	Respond to TAG 1 Feedback, Distribution System Planning, Alternative Resources, Price Forecast, Avoided Costs, Current Supply Resources, Transport Issues, Carbon Impacts, Energy Efficiency, Bio-Natural Gas, Preliminary Resource Integration Results.
First Draft	Wednesday, December 16, 2026	
Comments Due	Wednesday, January 20, 2027	
TAG 3	Wednesday, February 10, 2027	Respond to TAG 2 feedback, Final Integration Results, finalization of plan components, Proposed new 2- to 4-year Action Plan
Final Draft	Friday, March 12, 2027	
Comments Due	Friday, April 9, 2027	
TAG 4 (if needed)	Wednesday, April 28, 2027	
Final Complete By	Wednesday, May 19, 2027	
File	Friday, May 21, 2027	

2027 IRP Schedule



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