

NW Natural 2025 IRP Technical Working Group: *Planning Environment*

TWG #1 Part 1
October 22, 2024



Forward Looking Statement



This and other presentations made by NW Natural from time to time, may contain forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements can be identified by words such as “anticipates,” “intends,” “plans,” “seeks,” “believes,” “estimates,” “expects” and similar references to future periods. Examples of forward-looking statements include, but are not limited to, statements regarding the following: including regional third-party projects, storage, pipeline and other infrastructure investments, commodity costs, competitive advantage, customer service, customer and business growth, conversion potential, multifamily development, business risk, efficiency of business operations, regulatory recovery, business development and new business initiatives, environmental remediation recoveries, gas storage markets and business opportunities, gas storage development, costs, timing or returns related thereto, financial positions and performance, economic and housing market trends and performance shareholder return and value, capital expenditures, liquidity, strategic goals, greenhouse gas emissions, carbon savings, renewable natural gas, hydrogen, gas reserves and investments and regulatory recoveries related thereto, hedge efficacy, cash flows and adequacy thereof, return on equity, capital structure, return on invested capital, revenues and earnings and timing thereof, margins, operations and maintenance expense, dividends, credit ratings and profile, the regulatory environment, effects of regulatory disallowance, timing or effects of future regulatory proceedings or future regulatory approvals, regulatory prudence reviews, effects of regulatory mechanisms, including, but not limited to, SRRM and the Company’s infrastructure investments, effects of legislation, including but not limited to bonus depreciation and PHMSA regulations, and other statements that are other than statements of historical facts.

Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. Our actual results may differ materially from those contemplated by the forward-looking statements, so we caution you against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements are discussed by reference to the factors described in Part I, Item 1A “Risk Factors,” and Part II, Item 7 and Item 7A “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and “Quantitative and Qualitative Disclosure about Market Risk” in the Company’s most recent Annual Report on Form 10-K, and in Part I, Items 2 and 3 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Quantitative and Qualitative Disclosures About Market Risk”, and Part II, Item 1A, “Risk Factors”, in the Company’s quarterly reports filed thereafter.

All forward-looking statements made in this presentation and all subsequent forward-looking statements, whether written or oral and whether made by or on behalf of the Company, are expressly qualified by these cautionary statements. Any forward-looking statement speaks only as of the date on which such statement is made, and we undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

Today's Agenda

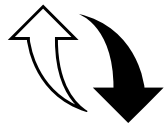


1. Meeting Logistics
2. NW Natural, IRPs, and the Planning Environment
3. Environmental Policies/Building Codes
4. Equity Considerations
5. Gas Supplies/Alternative Fuels

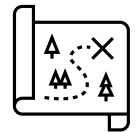
Facilitator Requests



Engage constructively and courteously towards all participants



Take space and make space



Respect the role of the facilitator to guide the group process



Avoid use of acronyms and help each other understand



Aim to focus on the meeting topic

Commitments



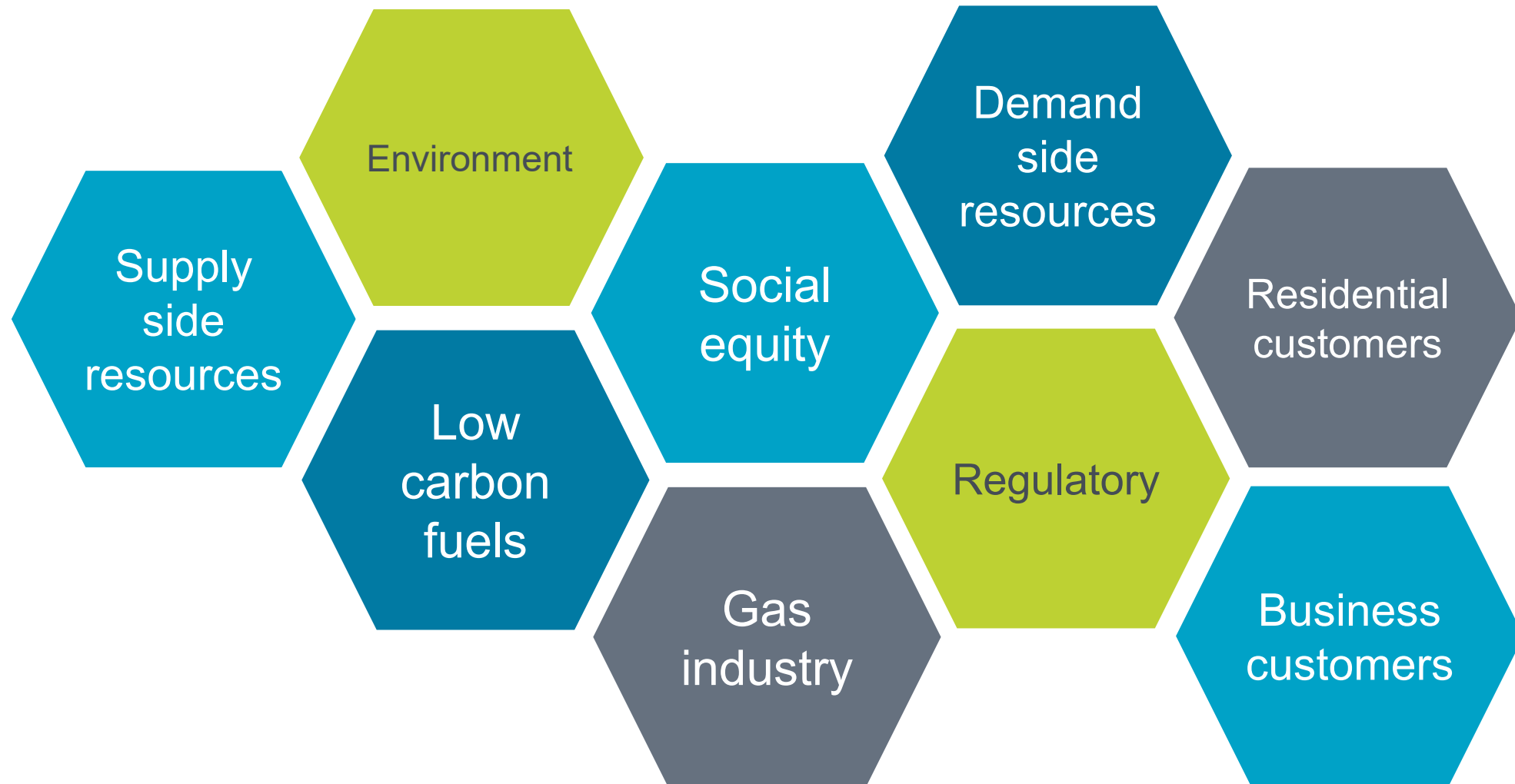
NW Natural commits to:

- Make best effort to provide agendas and meeting materials ahead of meetings
- Make meeting recordings available
- Consider participant feedback and recommendations

Participants commit to:

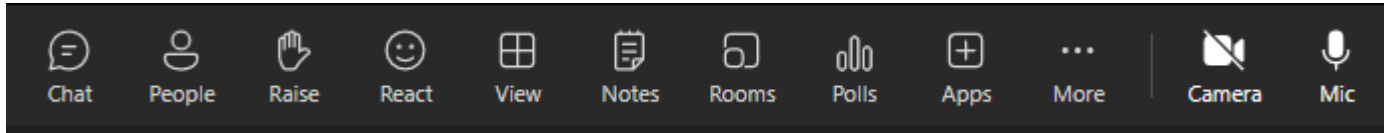
- Share perspectives as they relate to meeting topics
- Hold space for multiple opinions
- Submit written comments within a timely manner

Seeking to examine IRP development through multiple perspectives

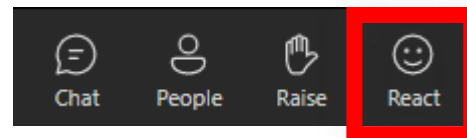
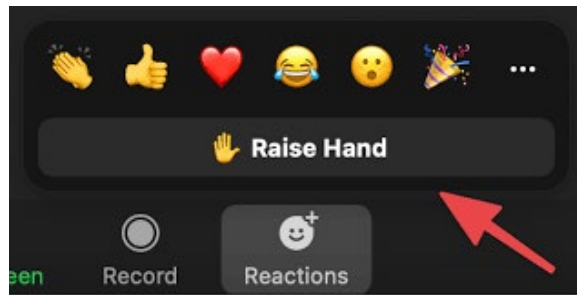


How to Interact in a Teams Meeting

- Participant Controls are at the top or bottom of your screen

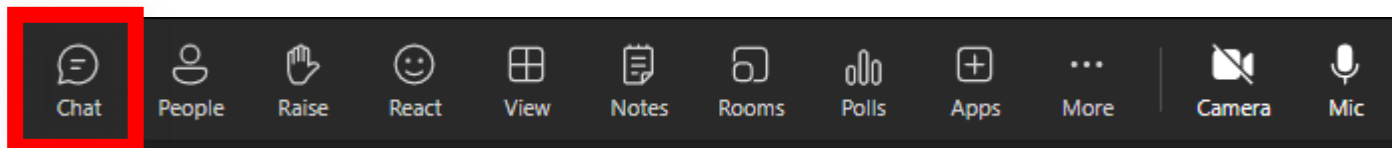


- Ask a question or comment at any time using the “raised hand”



A member of the IRP team will monitor the chat, and participant list for raised hands during the meeting.

- You may also use the chat box



Meeting Best Practices – virtual spaces



To maintain an engaged and productive space, please:



Mute your mic unless asking a question and/or providing comment



Turn your camera on (if your bandwidth allows and you are comfortable with camera on)



Limit side conversations in the chat

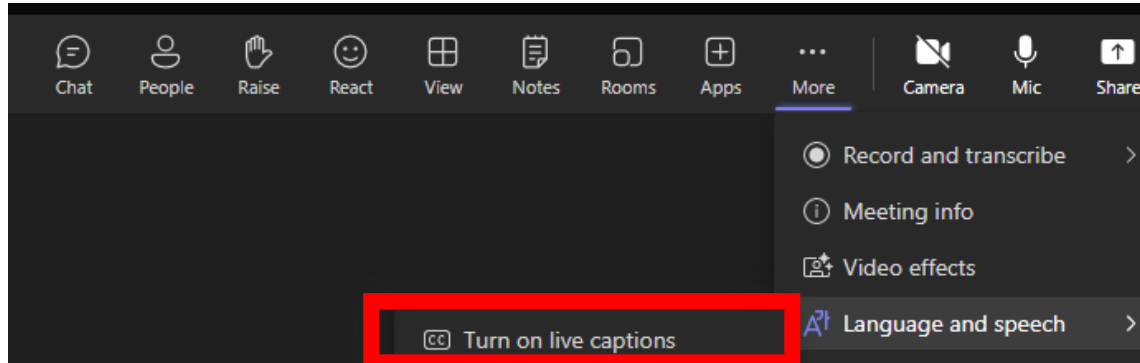


Make efforts to adhere to the meeting schedule

Teams Meeting – Accessibility Functions



- [Live Captions](#) : real-time auto-generated text of what is said in a meeting. They appear a few lines at a time for a user who has turned them on, and aren't saved



- Reducing Distractions and Customizing Views:
 - Microsoft Teams has a variety of features to support different learning styles, please find reference material for:
 - [Turn on live captions during meetings](#)
 - [Customize your meeting view](#)
 - [Change background effects in Teams meetings](#)
 - [Reduce background noise in Teams meetings](#)
 - [5 tips for using Teams when you're deaf or hard of hearing](#)
- Meeting Recordings:
 - NW Natural will record IRP virtual meetings and will post them to the NW Natural website on the [resource planning webpage](#)

Take 2 Minutes for Safety:

Prevent Slips, Trips, and Falls in the Office

More than 6.9 million people were treated in emergency rooms for fall-related injuries in 2021.

A fall can end in an injury in a split second, but with a few simple precautions, you'll be sure stay safe at home and at work.

- Keep floors and surfaces clear of clutter
- Keep file cabinets and desk drawers closed
- Keep electrical and phone cords out of traffic areas
- Use handrails on stairways
- Wear sensible footwear
- Never stand on chairs, tables or any surface with wheels
- Properly arrange furniture to create open pathways
- Maintain good lighting indoors and out



NW Natural and IRPs

Who is NW Natural?



- 165-year-old Oregon company
- Over 800,000 customers
 - 88% Oregon
 - 12% Washington
- Operates in 2 states, 18 counties, 140 different communities
- More than 1,200 employees

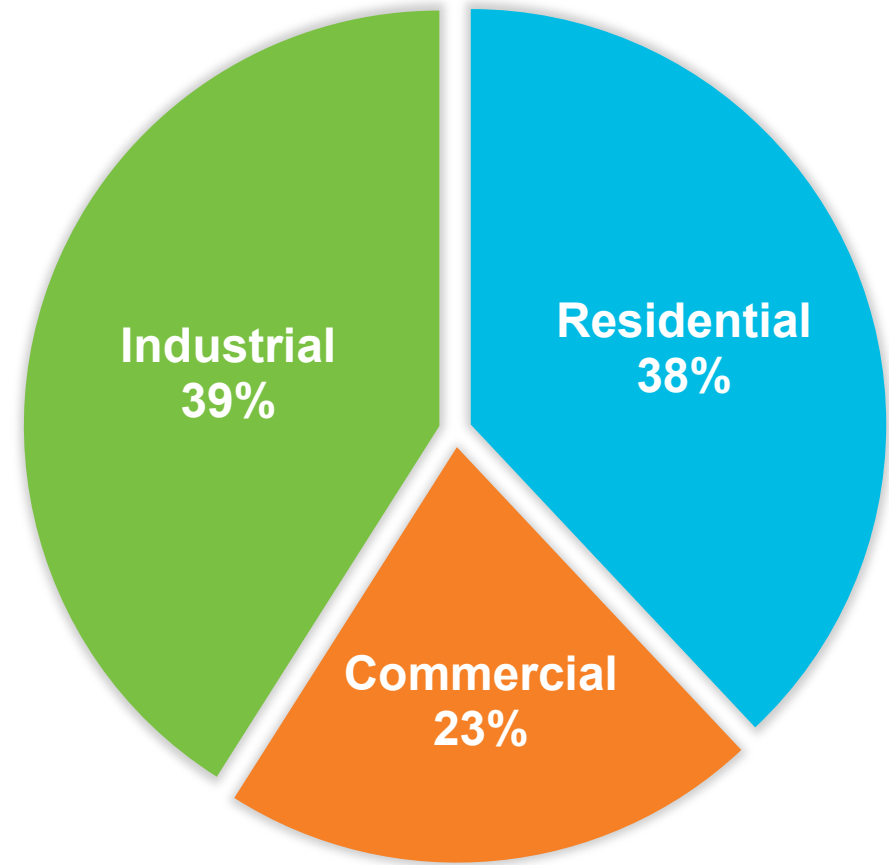
Types of Customers

Approx. Customer Counts

Residential	731,497	91%
Commercial	69,390	9%
Industrial	1,056	<1%

Source: NW Natural June 2024 10Q

% OF VOLUMES



Source: NW Natural 2023 10-K

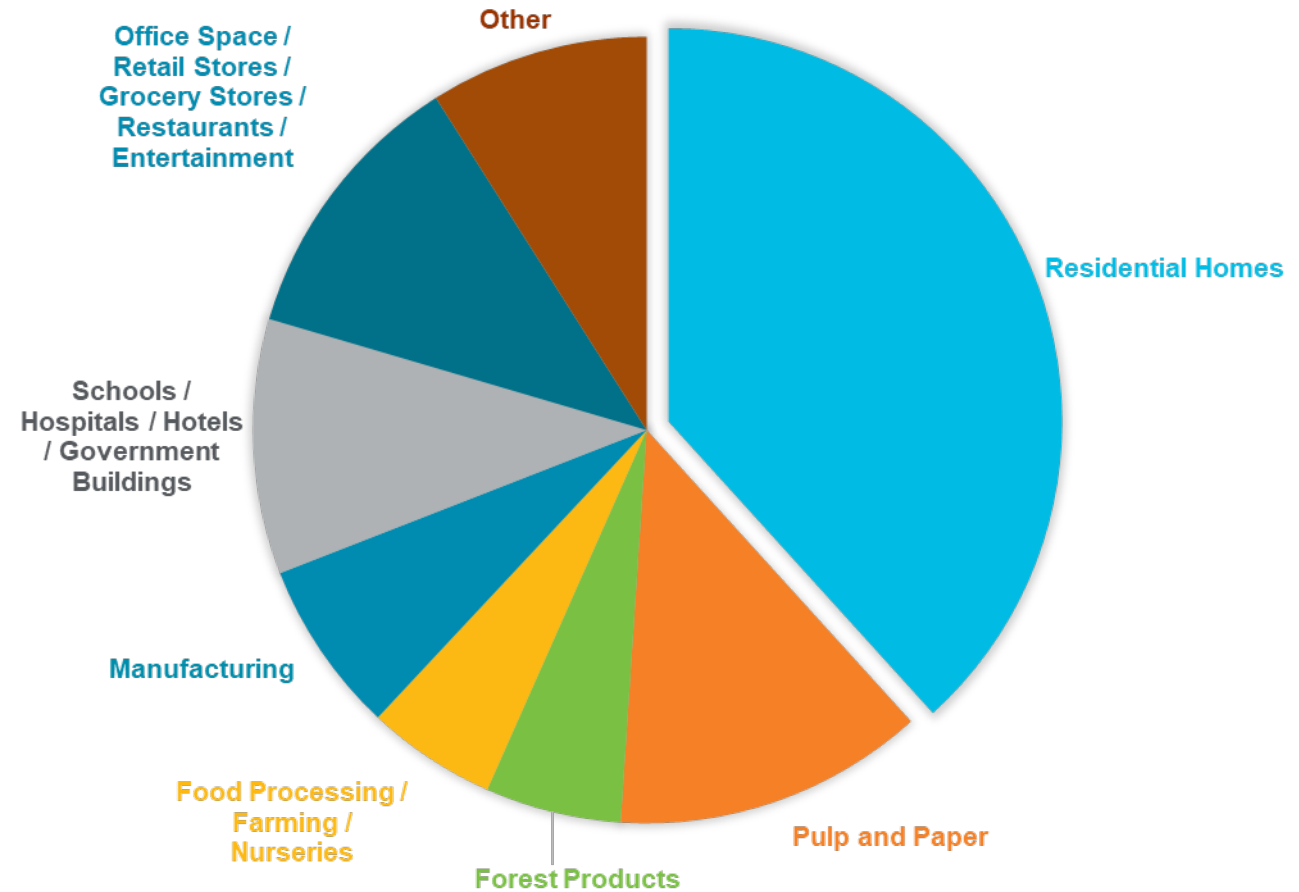
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Source: NW Natural June 2024 10Q

LOAD BY MARKET SEGMENT



System Planning in NW Natural's IRP

Supply Options

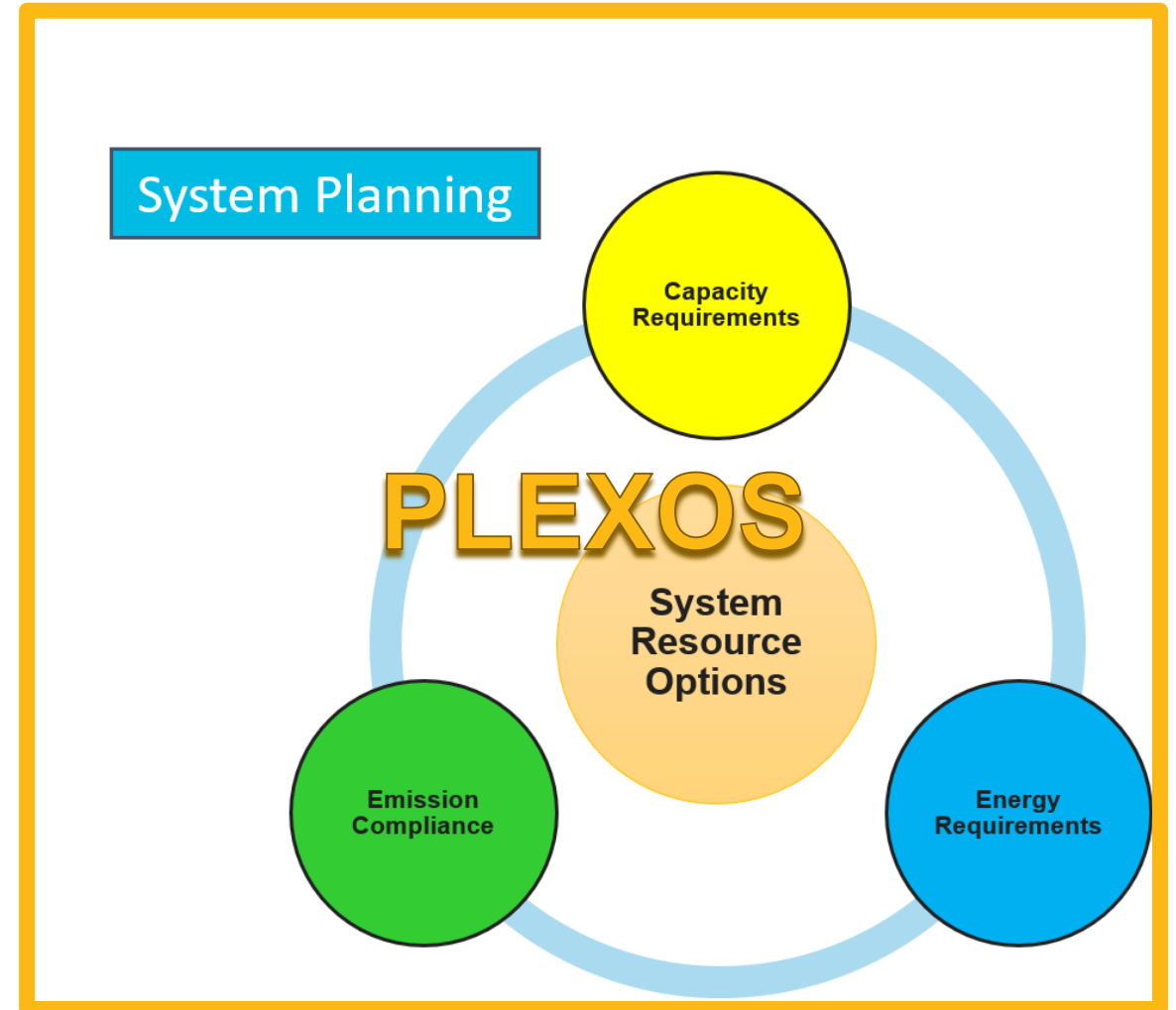
Basin Gas Purchases
On-System RNG/Hydrogen
Underground Storage
LNG Storage
Pipeline Capacity

Demand Options

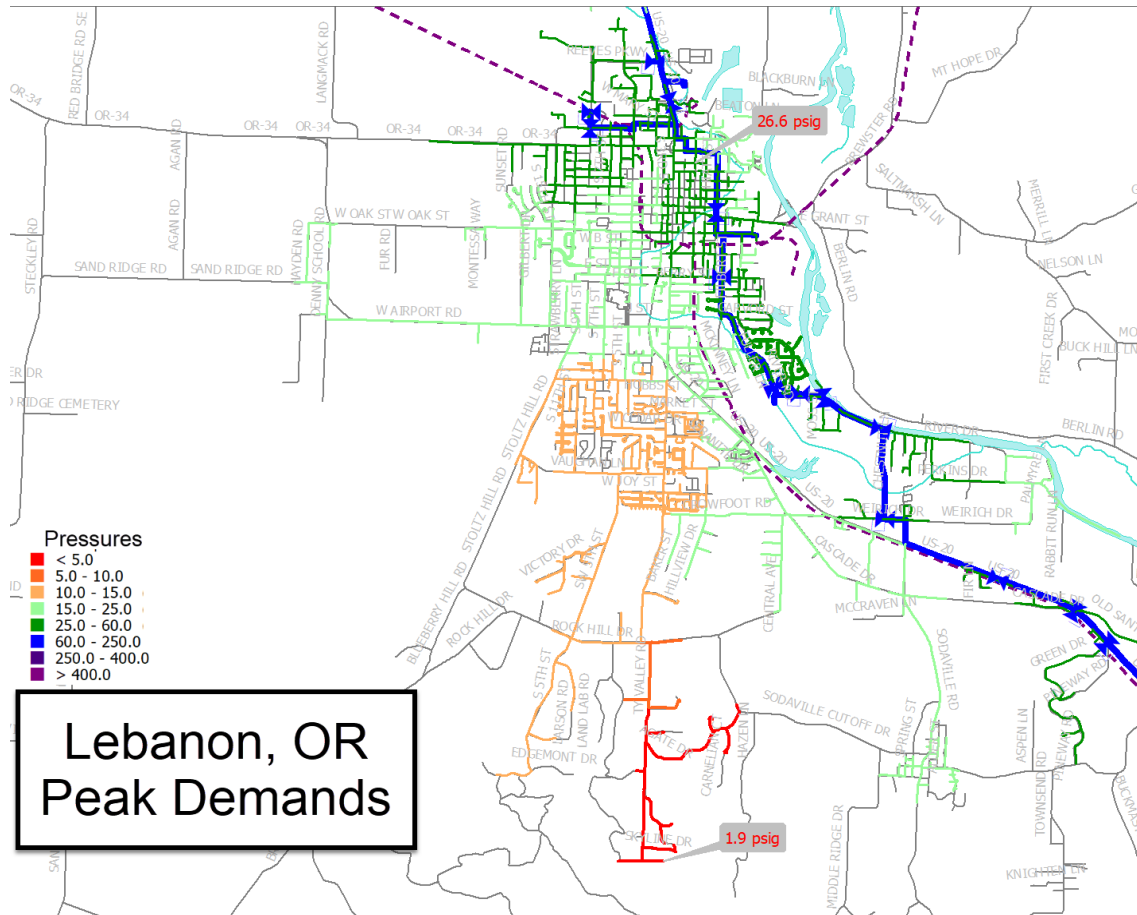
Energy Efficiency Programs
Demand Response Programs
Hybrid Gas and Electric Heating Solutions
New Technologies

Carbon Compliance Options

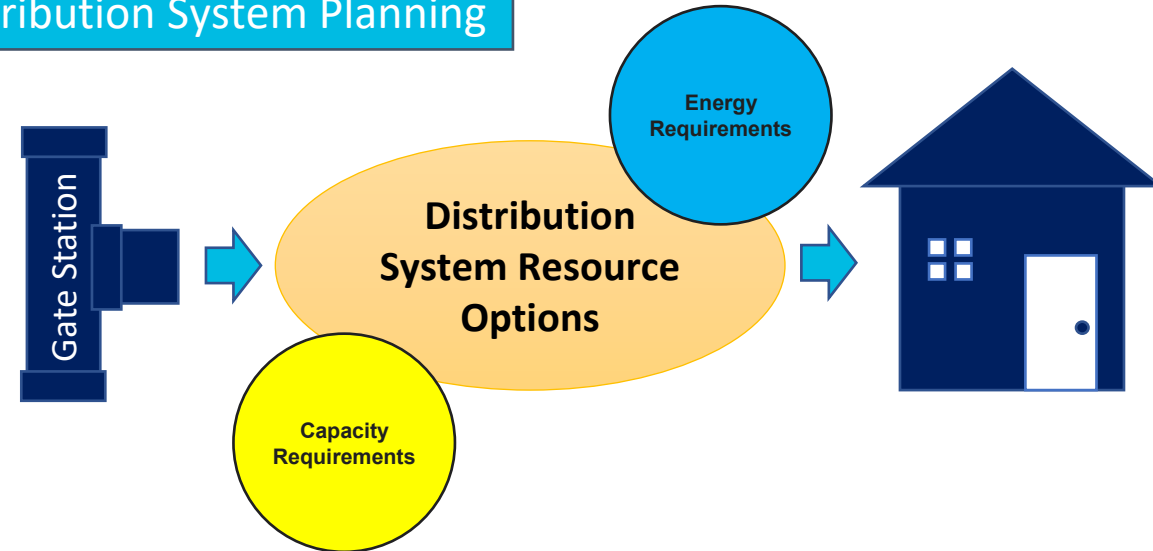
Off-system RNG/Hydrogen Development
Renewable Thermal Credit (RTC) Purchases
Carbon Offsets
Community Climate Investments



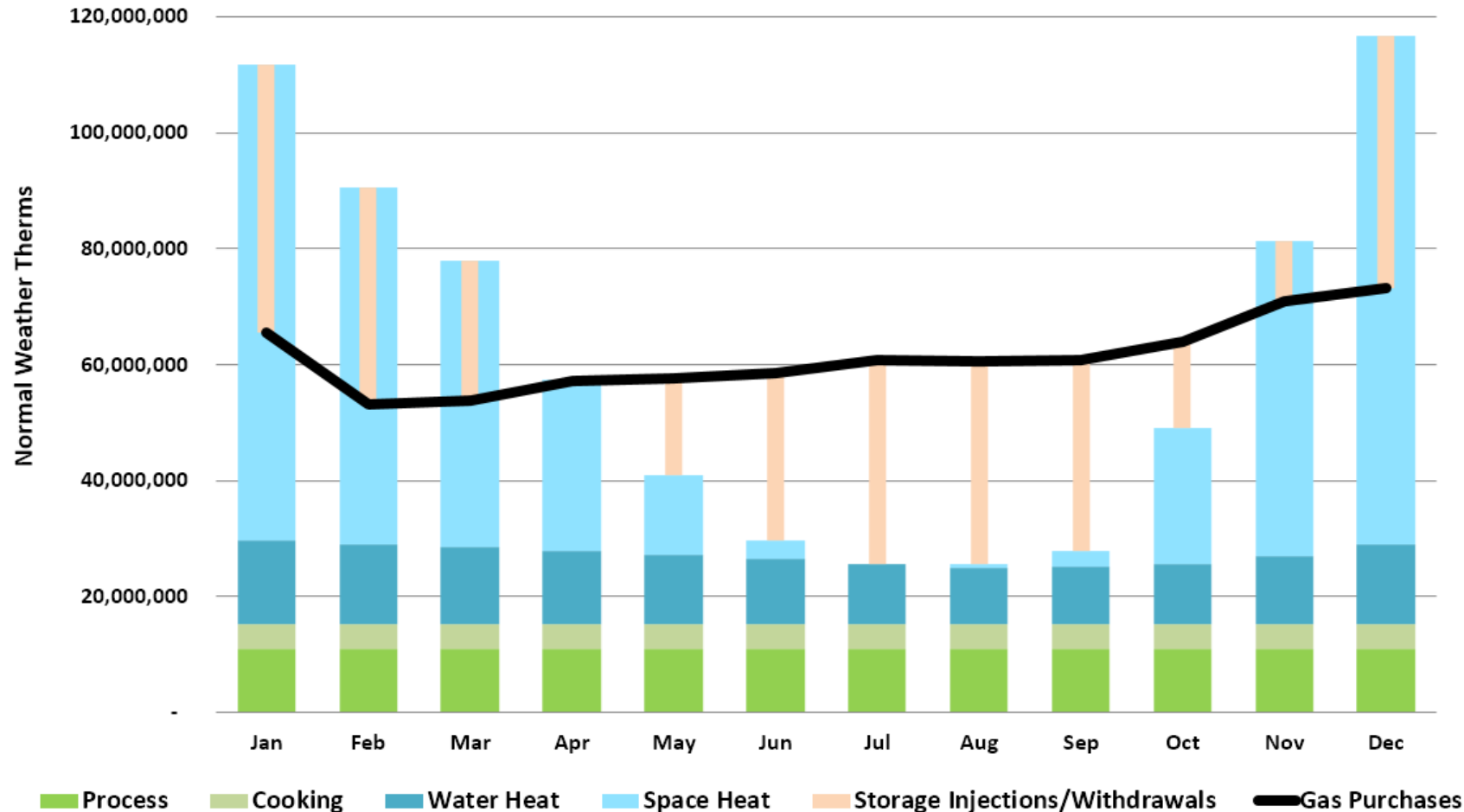
Distribution Planning



Distribution System Planning



Energy storage is critical to meeting seasonal demand

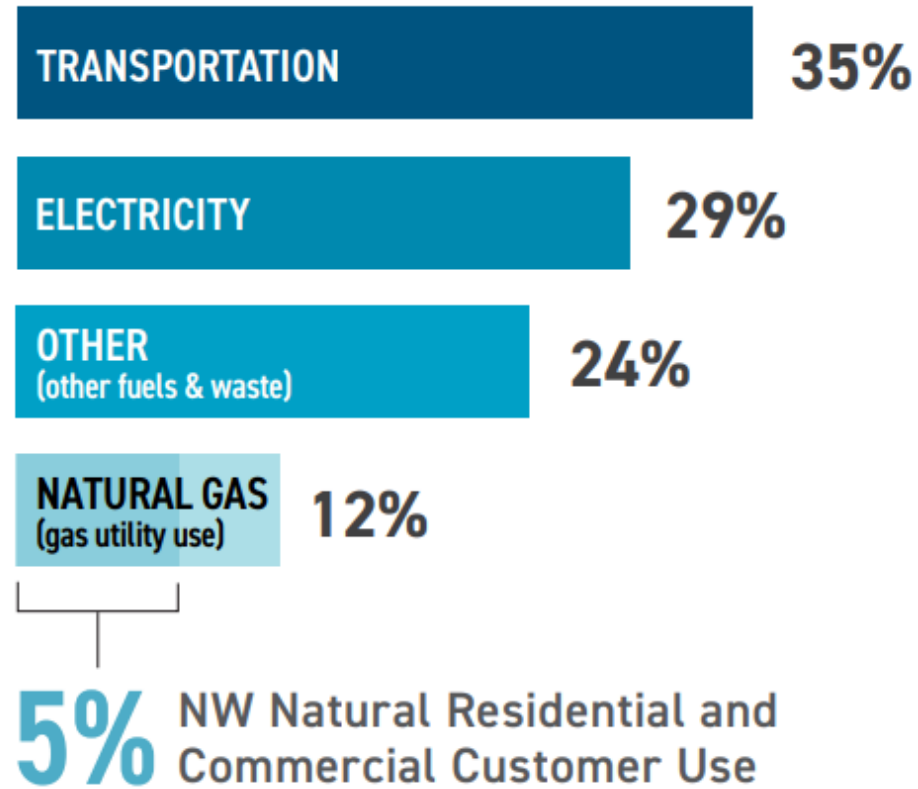


Source: NW Natural 2018 IRP, Figure 1.8: NW Natural Monthly Sales Load by End Use. Includes both firm and interruptible customers

State Emissions

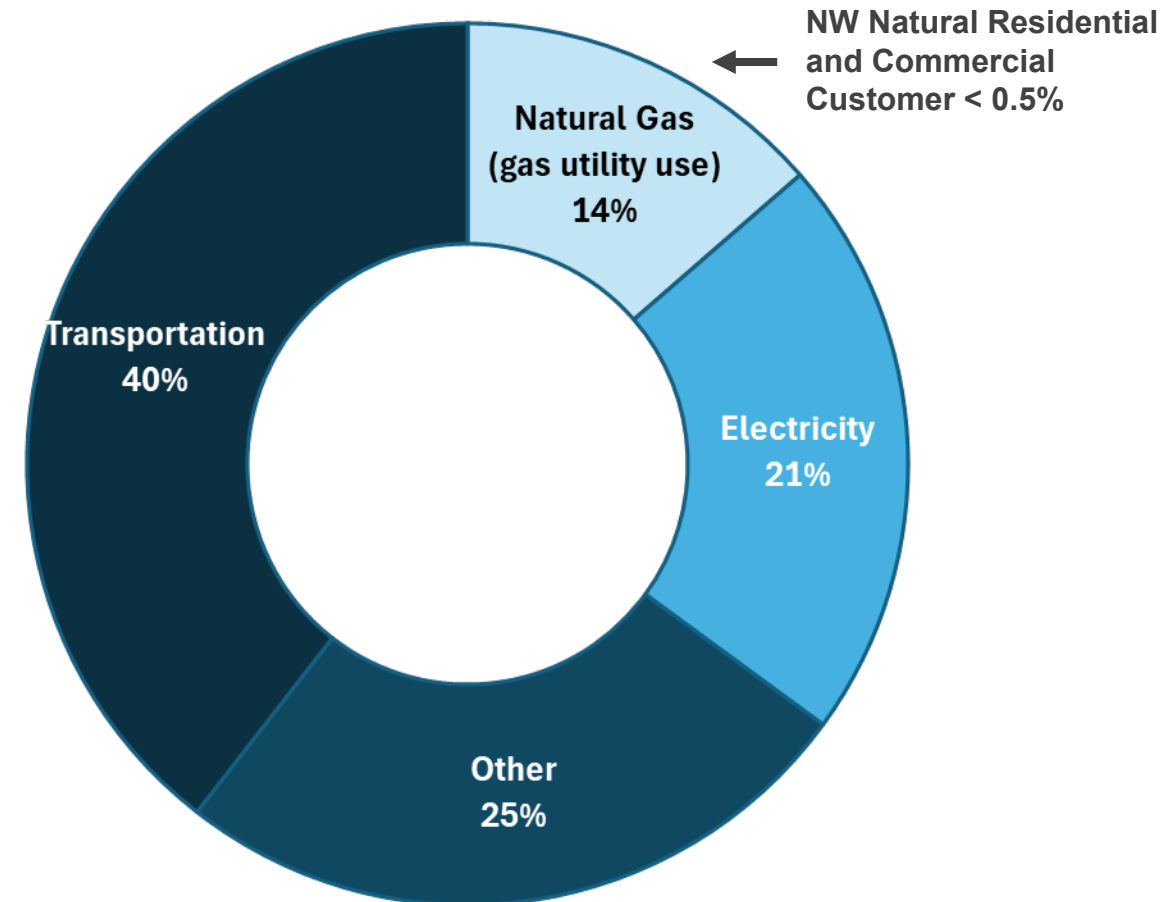


Oregon Greenhouse Gas Emissions by Sector



Source: Oregon DEQ In-Boundary GHG Inventory 2021 data.

Washington Greenhouse Gas Emissions by Sector

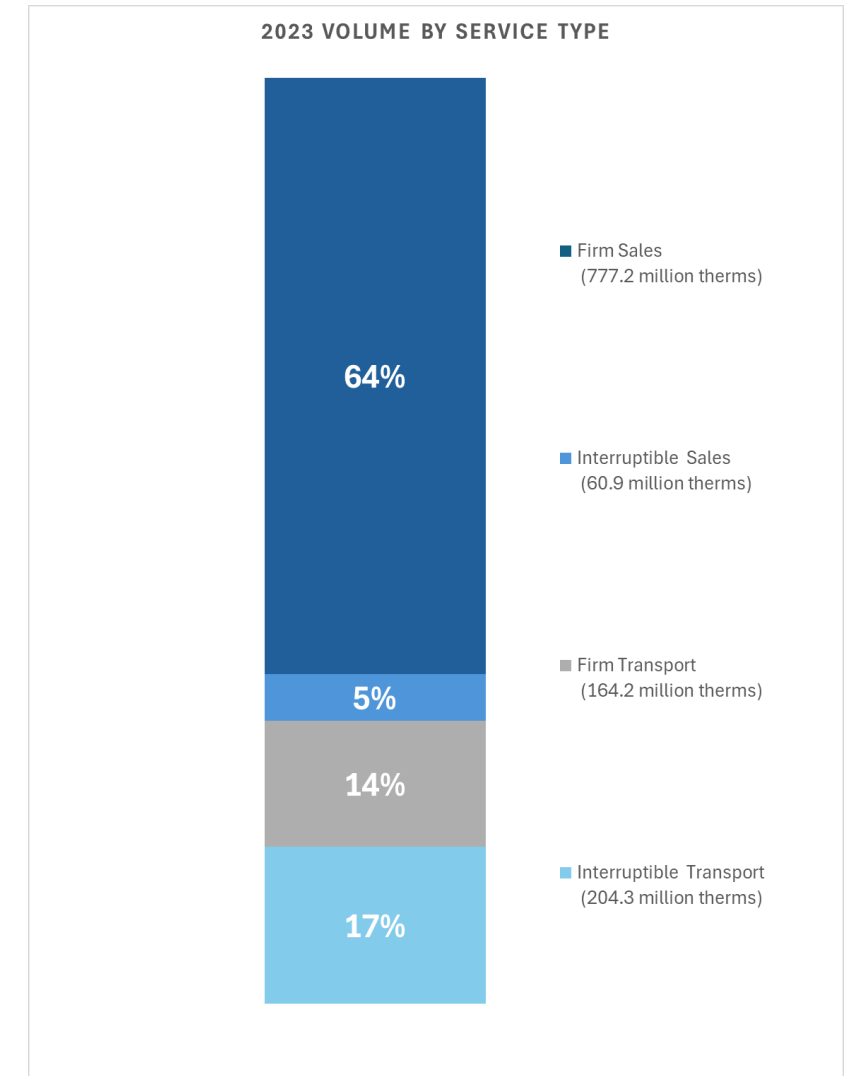
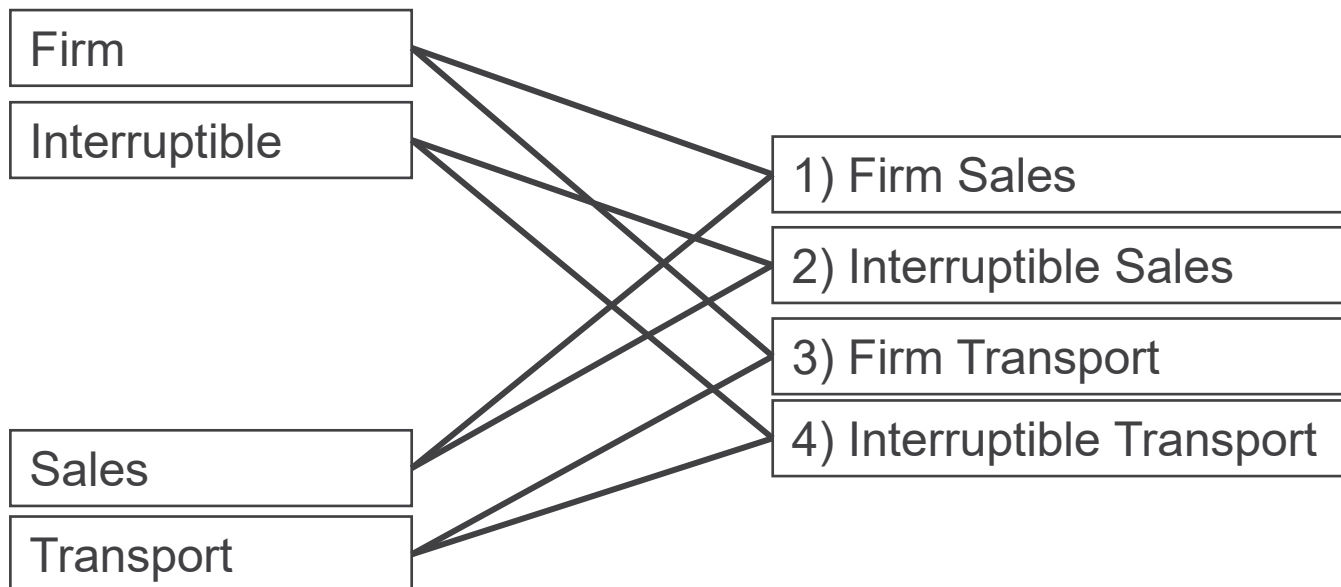


Source: Washington State Greenhouse Gas Emissions Inventory 2019 data

Types of Services NW Natural Offers



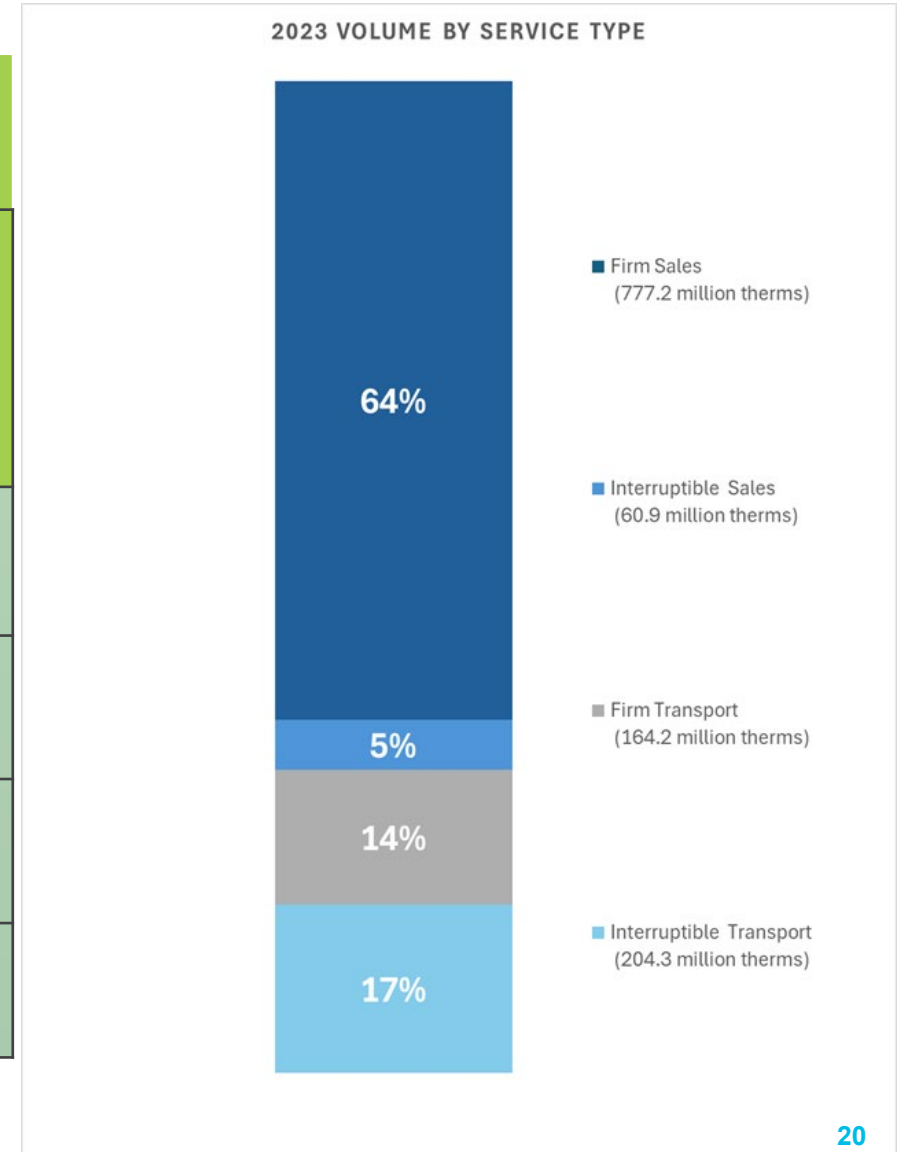
There are 4 Main Types of Service



Customer Types and Resource Planning



Customer Category	System Capacity Resource Planning			Distribution System Planning
	Design Winter Weather Energy Requirements	Peak Day Capacity Requirements	Emission Compliance	Peak Hour Capacity Requirements
Firm Sales	✓	✓	✓	✓
Interruptible Sales	✓		✓	
Firm Transport			✓	✓
Interruptible Transport			✓	



What is Integrated Resource Planning?



- The Integrated Resource Plan (IRP) starts with the current customer base (**where we know we are today**) and evaluates the near and long-term decisions required to reliably serve customers energy needs into the future (**what energy services will our customers need in the future**)
- The IRP assesses a suite of resource options to inform actions that represent the **best combination of cost and risk** to the utility and its ratepayers
- Required compliance document with state commissions



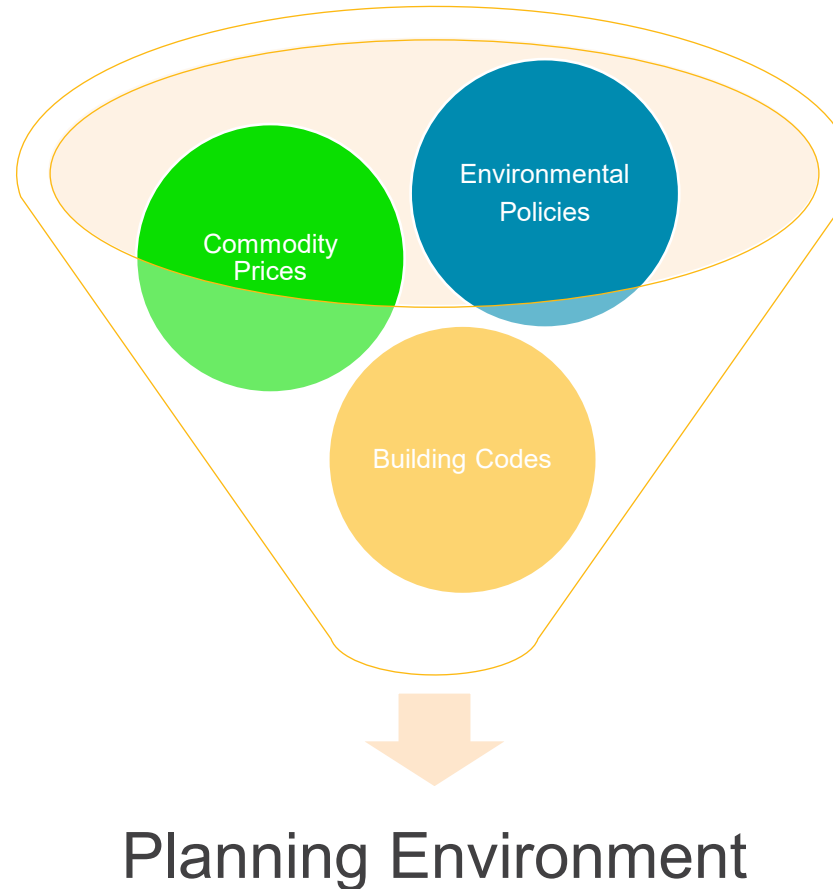
Planning Environment

Role of the Planning Environment in an IRP



What is considered?

- This is an example of some of the factors that are considered in the planning environment:
- Environmental Policies
- Building Codes and Standards
- Commodity Prices
 - Such as Natural Gas or RNG
- Macroeconomic factors
 - Such as business climate



Environmental Policies

State Carbon Compliance Programs



- Washington Climate Commitment Act (CCA)
- Oregon Climate Protection Program (CPP)



WA Climate Commitment Act (CCA)



- Signed into law 2021, 1 year rulemaking
- Washington's GHG Cap and Invest Program
- 45% reduction by 2030 and 95% reduction by 2050 all from average of 2015-2019 emissions
- Economy wide coverage and point of regulation
 - Transportation fuel suppliers
 - Natural gas suppliers (customers under 25,000 mt CO₂e)
 - Facilities (>25,000 mt CO₂e)
 - Electricity generators and importers
 - Landfills
- Four-year compliance periods (1st is 2023-2026)

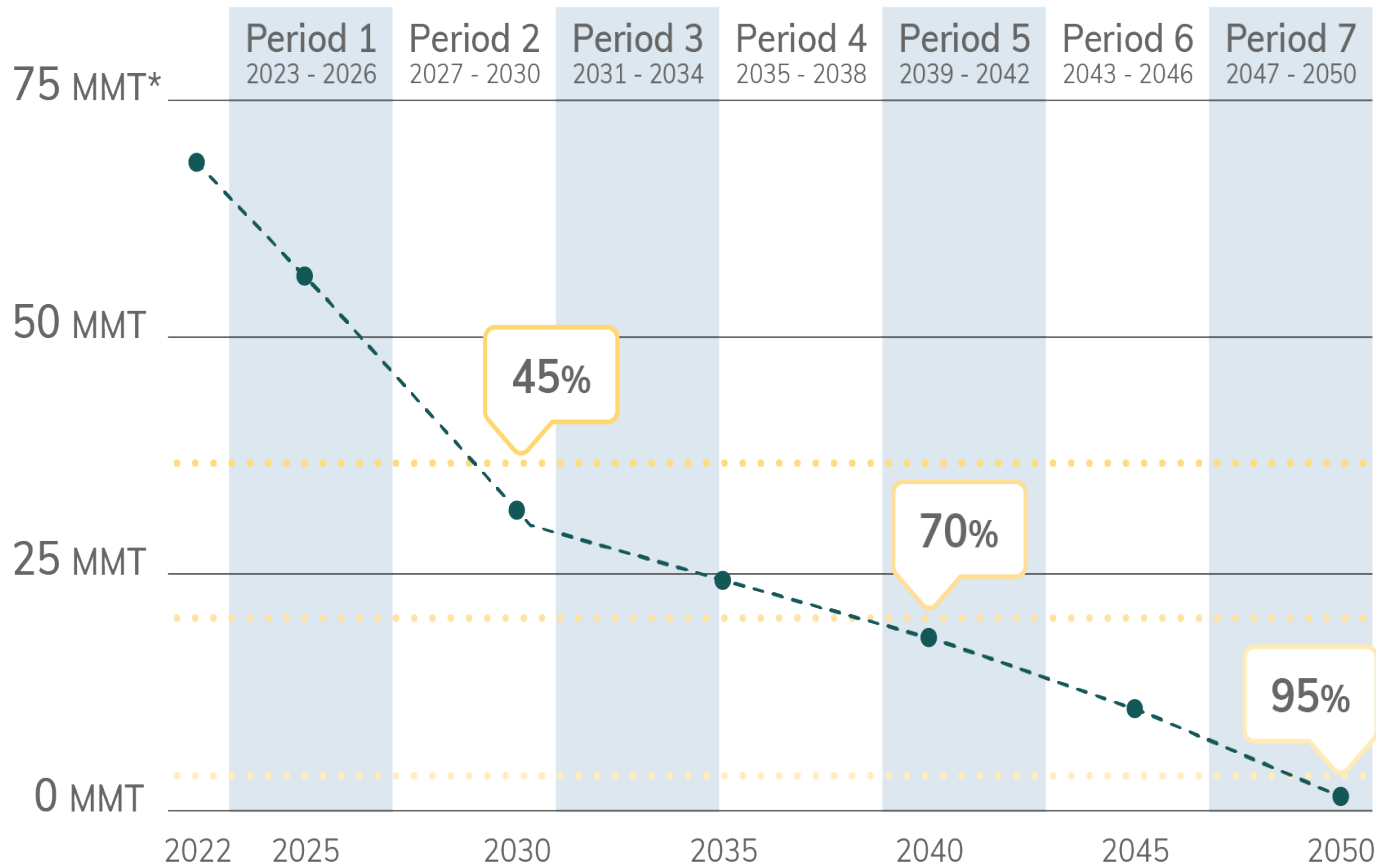


CCA Cap Trajectory



Projected Emissions Cap Over Time

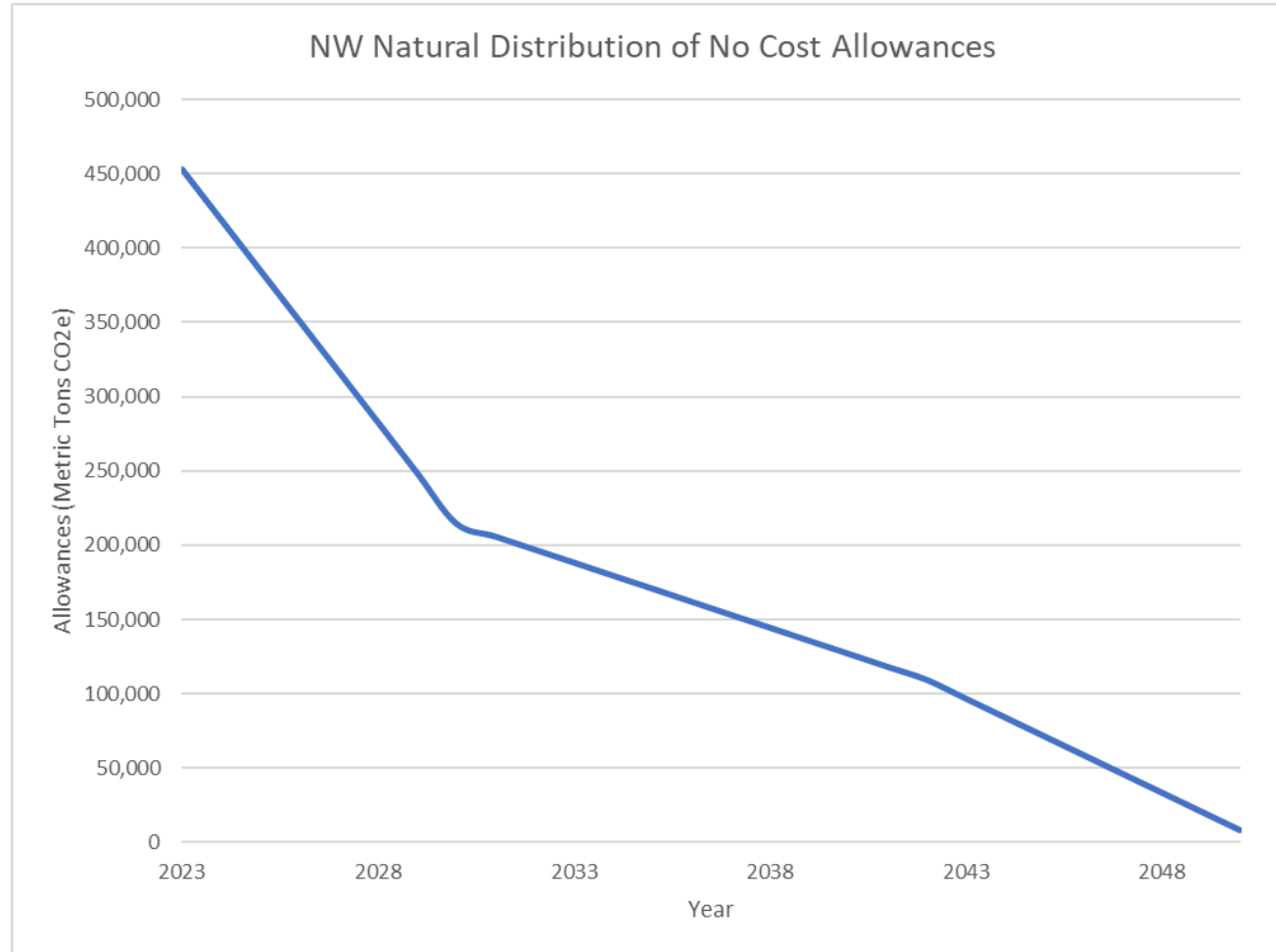
* million metric tons of CO₂ equivalent



Source: [Cap-and-invest - Washington State Department of Ecology](#)

- 2023-2030: 7% of baseline per year reductions
- 2031-2042: 1.8% of baseline per year reductions
- 2043-2049: 2.6% of baseline per year reductions

CCA NW Natural No Cost Allowance Distribution



CCA Compliance Instruments & Pathways



- Carbon Allowances
 - Western Climate Initiative Compliance Instrument Tracking System auction platform used to implement quarterly auctions and allowance price containment reserve auctions, when triggered
 - Limited market / aggressive trajectory cause high costs
- Eligible Carbon Offsets
 - Currently limited to projects benefitting WA - likely to change with linkage
 - Capped at 5% in 1st compliance period, unless inclusive of tribal offset projects, then up to 8% of obligation
- Customer Conservation & Low to No Carbon Gases
 - Energy Efficiency
 - Renewable Natural Gas and Hydrogen

CCA Auctions



- Quarterly Auctions:
 - Annual floor and ceiling price set
 - Allowances sold by state and consigned by natural gas LDCs or electric utilities
- Allowance Price Containment Reserve (APCR) Auctions:
 - Only held if the previous quarterly auction settled above the APCR Trigger Price
 - Up to four APCR Auctions per year
- Generated \$1.8 billion dollars for the state of Washington in 2023
 - Funds are appropriated by the state legislature

CCA Natural Gas LDC Specific Conditions



- Point of regulation for all customer emissions except for large sources (>25,000 mt CO₂e) or EITE
- Receive some no cost allowances, but required to consign percentage of allowances to auction:
 - Starting at 65% in 2023 and increasing 5% up to 100% in 2030
- ***“Revenues from allowances sold at auction must be returned by providing nonvolumetric credits on ratepayer utility bills, prioritizing low-income customers, or used to minimize cost impacts on low-income, residential, and small business customers through actions that include, but are not limited to, weatherization, decarbonization, conservation and efficiency services, and bill assistance” (CCA Bill Language, RCW 70A.65.130(2)(b))***

WA Ballot Initiative 2117

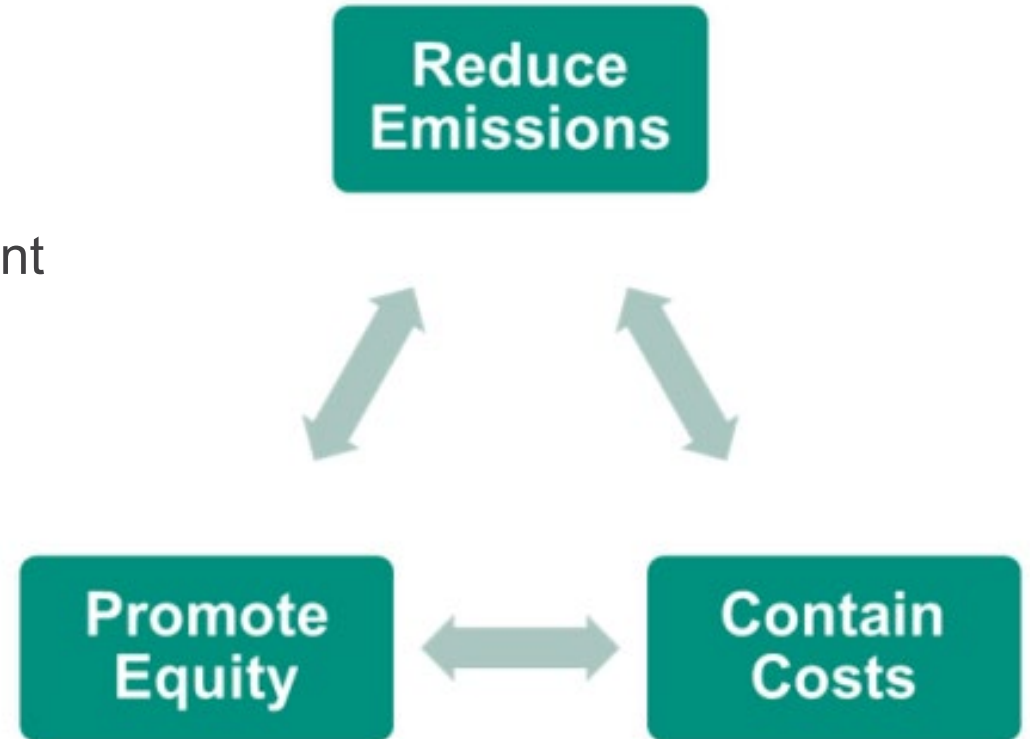


- "Prohibit Carbon Tax Credit Trading and Repeal Carbon Cap-and-Invest Program Measure"
- Will be on the November 2024 Ballot for public vote
- If passed, will have implication for WA planning

Original Climate Protection Program (CPP)



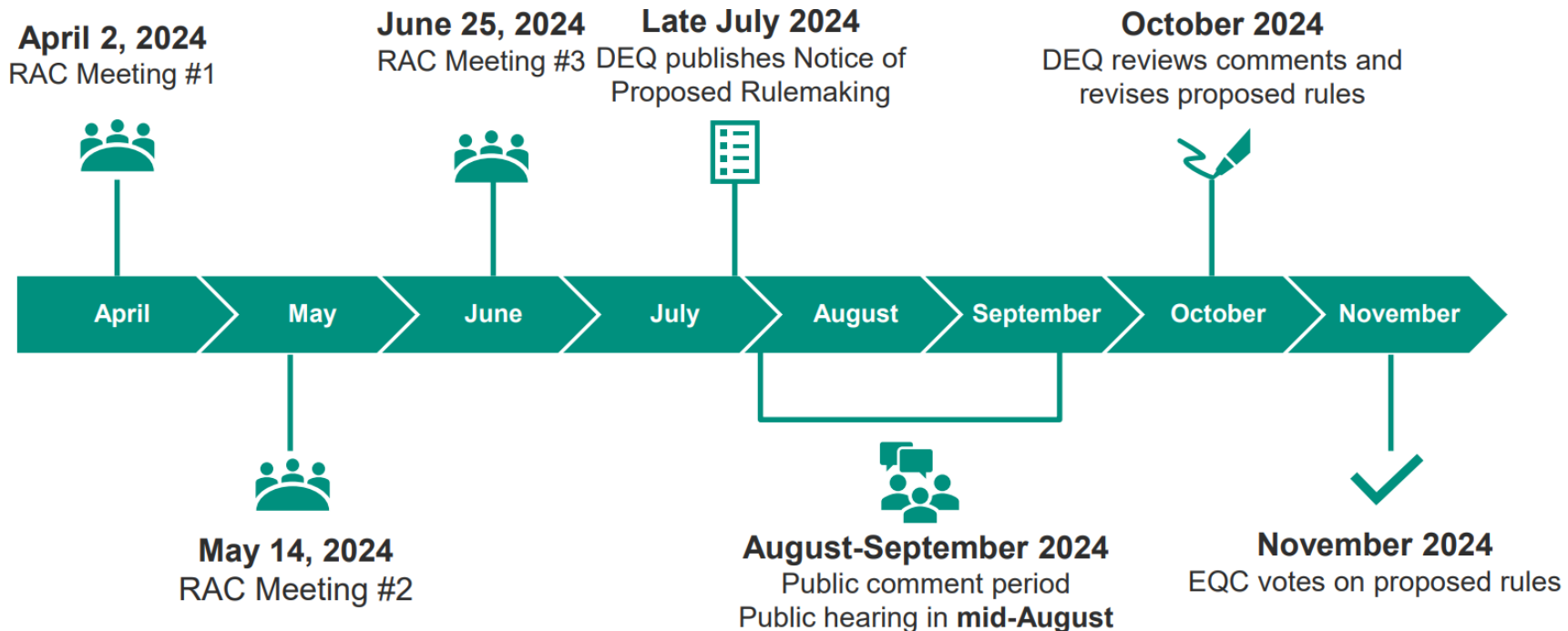
- Oregon's Greenhouse Gas Cap and Reduce Program
- Oregon Administrative Rule that was created in response to Governor Brown's EO 20-04
- Developed and Administered by Oregon Department of Environmental Quality (DEQ)
- Effective January 1, 2022
- **Ruled invalid in December 2023 by the Oregon Court of Appeals**



2024 CPP Rulemaking

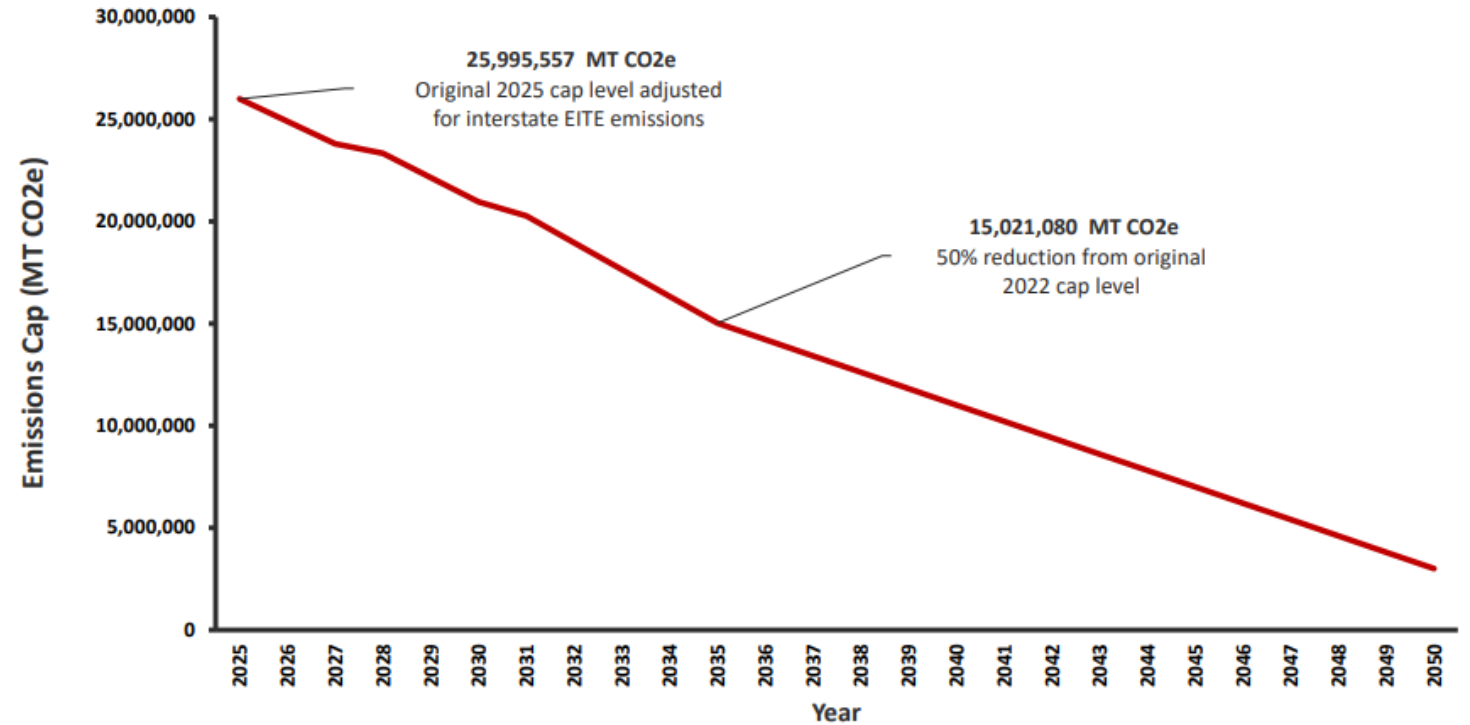


- Oregon DEQ did not appeal Court of Appeals Decision and instead initiated a new rulemaking process to reestablish the program.
- New program is pending EQC approval but is intended to begin January 1, 2025.



Draft 2024 CPP Emissions Targets/Cap Trajectory

- 50% reduction from average of 2017-2019 by 2035
- 90% reduction from average of 2017-2019 by 2050



Source: <https://ormswd2.synergydcs.com/HPRMWebDrawer/Record/6768300/File/document>

Draft 2024 CPP Covered Emissions and Point of Regulation



Under Emissions Cap

- Fuel Suppliers
 - Gasoline, diesel, propane
- Local Distribution Companies (LDCs)
 - Natural gas usage for all customers except EITEs, sales and transport, regardless of size
- Emissions Intensive Trade Exposed (EITE) facilities

Best Available Emission Reduction Program

- Very Large Stationary Sources (facilities)
 - Process emissions only

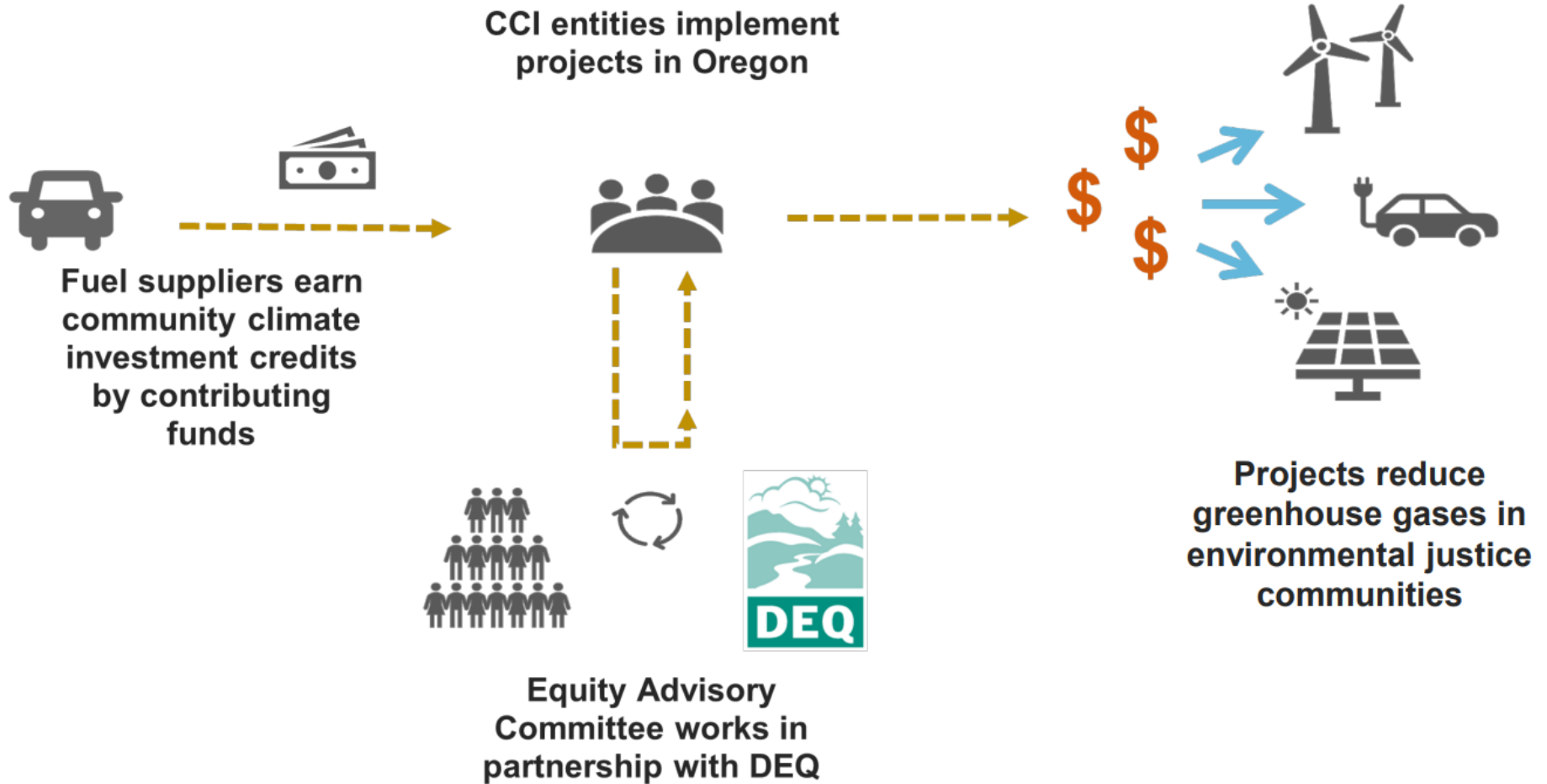
Note: electricity providers, landfills, and smaller process emissions are not covered

Draft 2024 CPP Compliance Tools



- Compliance Instruments
 - Distributed by the state (outlined in rule for LDCs)
 - Traded with covered entities
- Community Climate Investments (CCI)
- Energy Efficiency
- Renewable fuels
 - Biomethane (RNG)
 - Hydrogen

CPP Community Climate Investments (CCI) NW Natural®



Source: [Department of Environmental Quality : Climate Protection Program 2024 : Rulemaking at DEQ : State of Oregon](#)

CPP Community Climate Investments (CCI) cont.



- Covered entities limited to 15% of compliance obligation in 1st compliance period, and 20% of compliance obligation in 2nd compliance period and beyond
- Unclear when CCI's will be available for purchase

Building Codes



New Construction - Oregon Residential/ Commercial Energy Codes



Residential Codes	Commercial Code
<p><u>RESIDENTIAL: Effective 10/1/2023</u></p> <ul style="list-style-type: none">• “Additional Energy Credits” Table: above-code efficiency options to comply (per EPCA)• 94% AFUE furnaces vs. 92% AFUE in previous code <p><u>RESIDENTIAL Reach Code: Effective 7/1/2024</u></p> <ul style="list-style-type: none">• Based on national standards: EnergyStar, Zero Energy Ready Home (ZERH), and Passive House (PHIUS)• Aligns with incentive programs• Optional/aspirational	<p><u>COMMERCIAL: Effective Q1/2025 (date TBD)</u></p> <ul style="list-style-type: none">• Adoption of ASHRAE Standard 90.1-2022 with minor modifications for Oregon• Pending upstream development



Washington Residential Energy Code Effective March 15th, 2024



2021 Summary - Previous Code	2024 Changes - Current
<ul style="list-style-type: none">• New “Energy Credits” Table: above-code efficiency options to comply (per EPCA)• Space & Water Heating Appliances: compared to electric Heat Pumps via “Fuel Normalization” and Source Energy Factors (SEF)• Gas Space & Water Appliances: require more credits vs. heat pumps than prior code	<ul style="list-style-type: none">• Energy Credits Table: now based on Site Energy Consumption - Greater credits disparity between fuels.• Gas heating appliances: more challenging to comply than previous code• Dual-Fuel & Gas Heat Pumps eligible for more credits• Like-for-like replacement of appliances allowed• Gas Fireplaces, Cooking and Clothes Dryers: exempt



Washington Commercial Energy Code Effective March 15th, 2024



2021 Summary - Previous Code	2024 Changes - Current
<ul style="list-style-type: none">• “Energy Credits” Table: requires above-code credit packages. Credits are mostly fuel neutral.	<ul style="list-style-type: none">• Energy Credits: now based on Site Energy Consumption. Greater credits disparity between fuels.• Dual-Fuel Heating allowed for water heat without credit penalty but not space heat (Petition Pending)• Like-for-like replacement of appliances allowed• Very challenging for gas appliances: Significant onsite renewables required to achieve credits• “Electric-readiness” required for all gas appliances• Gas Fireplaces, Cooking and Clothes Dryers: exempt



Washington Ballot – November 2024



Initiative 2066

- Changes development & implementation of energy codes – current and future
- “shall not in any way prohibit, penalize, or discourage the use of gas”



National Code Changes



DOE Changes

DOE Furnace Rule: In force 12/18/2028

- USA manufacturers and imports must provide Gas furnaces with $\geq 95\%$ AFUE

DOE Cooking Efficiency: In force 1/31/2028

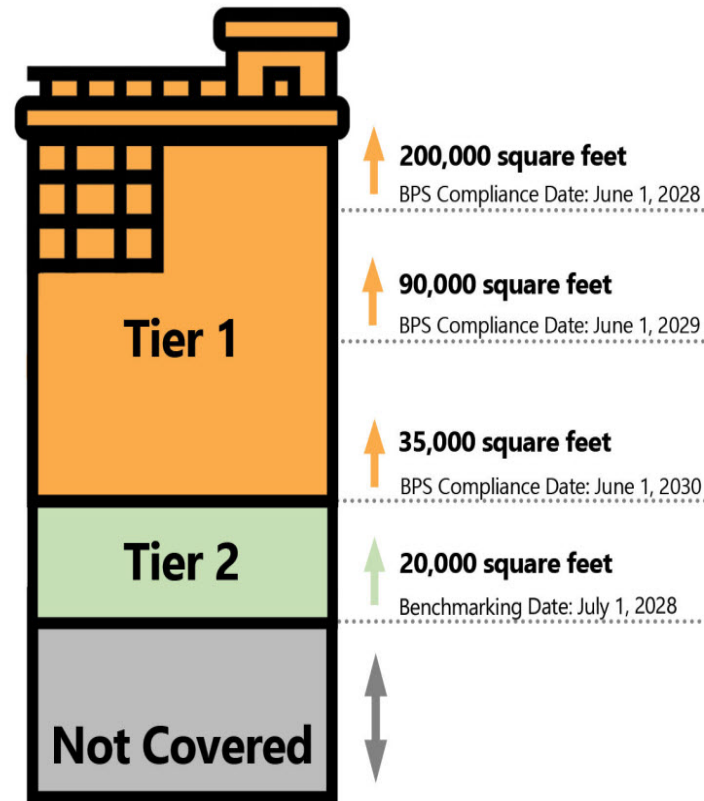
- Annual consumption limit for gas stoves
- ~97% of current market complies

OR Building Performance Standard 'BPS'

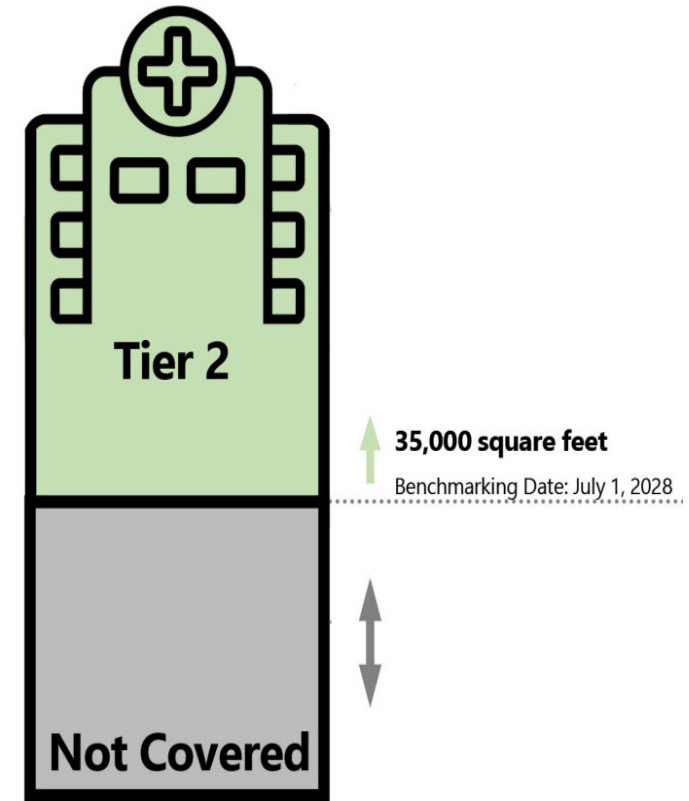


- **HB-3409** requires ODOE to adopt a BPS for Oregon's largest Commercial buildings
- **Tier 1 buildings** not meeting EUI targets must upgrade to reduce energy use
 - *Cost-effective* measures packages required
 - EUI targets = state averages
- **Tier 2 buildings** must report energy use annually
- **Rulemaking** due end of 2024
- **Effective** starting 2028

NON-RESIDENTIAL, HOTELS, AND MOTELS



MULTIFAMILY RESIDENTIAL, HOSPITALS, SCHOOLS, DORMITORIES, AND UNIVERSITIES BUILDINGS



Equity Considerations

Equity Considerations in the IRP



- ✓ Regulatory Landscape
- ✓ Equity Considerations in IRPs | Past & future
- ✓ New tools, resources & events
- ✓ Winter Preparedness Fair (IRP Fair) | Background, purpose & stakeholder engagement
- ✓ Equity Considerations Beyond the IRP

Procedural Equity, Justice & the IRP

- Equity → Process vs Justice → Destination
- Primary tenet of Energy Justice
- Demonstrated by fair and meaningful participation in the decision-making process
- Asks: Who is at the table and what voice and power do they have in influencing planning, decision making, and implementation?
- Examples: broad stakeholder engagement, accessible & transparent communication, diverse representation, consistent accountability and feedback practices
- Goal: **We are here today to present an overview of NW Natural's efforts to procedural justice and public engagement in our IRP process**



What do we mean by equity considerations in the IRP?



While specific guidelines regarding the integration of equity considerations in natural gas IRPs are still evolving, the Company recognizes that equity in the utility sector should ensure that all stakeholders—whether they are customers, shareholders, or communities—have equitable access to the advantages provided by natural gas infrastructure.

Our IRP must focus on what we can directly impact. We aspire to equitable resource allocation, energy affordability, and community engagement.

These questions inform our process:

- Are benefits equitably enjoyed?
- Are liabilities equitably shared?
- Are rates affordable?

Equity in Utility Regulation (OR)



Oregon Public Utility Commission (OPUC)

- **Inclusive Decision-Making:** Focus on underserved communities (e.g., communities of color, rural areas, tribal nations, low-income customers)
- **HB 2475:** Resuming in 2024 to approve low-income bill discounts and address energy burdens on environmental justice communities; UM2211 is implementation
- **Cost Recovery Shift:** Utilities now recover low-income discount costs from commercial and industrial customers

***** NW Natural was first utility in Oregon to prepare Equity Testimony in its most recent rate case UG490 in December 2023.**

Equity in Utility Regulation (WA)



Washington Utilities & Transportation Commission (WUTC)

- **Equity in Ratemaking:** Rates must be fair, just, reasonable, equitable, and sufficient
- **CETA:** Clean Energy Transformation Act mandates 100% clean energy by 2045
- **Equity Lens:** Required in all utility work “*WUTC is seeking to incorporate an equity lens in all of its work and is requiring utilities to do the same.*”
- **Equity Docket:** Addressing equity four tenets of energy equity (A-230217)
- **IRP Equity Integration:** Clear definitions and demonstrations from utilities
- **Carbon Reg. Frameworks:** CCA includes carve out of low-income customers
 - Allowance consignment revenues are first applied to low-income customers to zero out cost of carbon compliance on bills.
 - Tribal communities, a defined front-line community in WA policy, have opportunity to benefit from in-state offset development and sale.

Equity in the 2025 IRP | Early Steps



- IRPs historically open to the public; opportunity to build on this and bring in more voices and diverse perspectives to energy planning
- Specific guidelines on equity considerations in natural gas IRPs are still evolving
- Certain aspects of the IRP are inherently technical and will remain so; our goal is to advance equity in the IRP by broadening and easing access to the planning process (procedural equity)
- Updates to IRP heavily informed by Community Equity Advisory Group (CEAG)
 - CEAG seeks out and elevates historically underrepresented voices, perspectives, and lived experiences to advance inclusive practices and institutional actions and bring a racial equity and environmental justice lens to NW Natural's energy and operational planning.

Enhanced Public Participation in the IRP



Engagement

- IRP fair events with community partners
- Open-house events to meet the IRP team
- Community webinars alongside technical workshops

Accessibility

- Translation and interpretation services upon request
- Plain language reviews
- Accessible virtual platforms and meeting spaces
- Collaboration with accessibility experts and third-party consultants

Outreach

- Regular progress updates
- Meeting summaries
- Sharing stakeholder feedback integration
- Informational content for new participants

2025 IRP Development | New Tools



- New and updated content on **NW Natural web pages** dedicated to the IRP informed by feedback from our CEAG [in progress]
- 2024 **Energy Burden Analysis** findings and recommendations
- Winter Preparedness Fair [November 16, 2024]
- An **IRP toolkit** designed to improve awareness and engagement among non-technical audiences [planned]

Winter Preparedness Fair - Background



- February 2024 CEAG meeting focus: **to discuss and receive feedback on improving procedural justice in NW Natural’s IRP process and public engagement**
- What we learned from the CEAG:
 - Strong preference for weekend, daytime event
 - Co-locate & partnership-based
 - Community-center space
 - Close to public transportation
- Designed “IRP” Fair based on feedback – since renamed to Winter Preparedness Fair

Fair - Goals

- Prepare residents for winter
- Create awareness of utility energy resource planning processes and plans
- Provide information on how to get involved in utility resource planning processes
- Provide easy access to utility resources that lower bills, improve household energy efficiency
- Facilitate sign-ups for bill assistance programs and other utility programs for eligible participants

Winter Preparedness Fair

Join us for a winter resource fair to learn how to keep yourself, your family, and your home safe and warm this winter season!



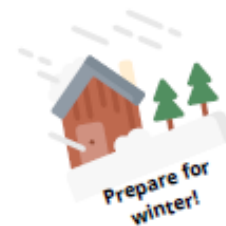
NOV 16 2024

PARKROSE HIGH SCHOOL
12003 NE SHAVER ST,
PORTLAND, OR 97220

11AM - 2PM



- ❄️ **NONPROFIT RESOURCES**
- ❄️ **HEALTHCARE SIGNUP**
- ❄️ **FAMILY ACTIVITIES**
- ❄️ **FREE LUNCH**
- ❄️ **WINTER COATS**
(INFANT - SIZE 12 YOUTH - LIMIT 2 PER FAMILY)
- ❄️ **FOOD BOXES**
- ❄️ **HOME WEATHERIZATION KITS**
- ❄️ **ENERGY EDUCATION**
- ❄️ **BILL DISCOUNT OPPORTUNITIES**
- ❄️ **VACCINATIONS**



In Partnership With:

NW Natural
We grew up here.

Sponsored by:

THE DPI GROUP
BEYOND RESULTS WITH SOCIAL IMPACT

CareOregon COMCAST



Equity Considerations in IRP | Recap



Updates to 2025 IRP center on strengthening inclusive and meaningful public engagement—core elements of procedural justice and equity. Specific enhancements include: new processes, materials, events, partners

Important to remember the iterative, ongoing nature of this work. Equity is not linear; continuous commitment. Company strives to continually incorporate new learnings into its offerings.

Equity Considerations in the IRP play an important role in the Company's larger efforts to further energy equity

Energy Equity at NW Natural



Current Program/ Activity

**income-qualified program*

Energy equity intervention

Conservation Programs*	Improve energy efficiency / reduce energy bills
Energy Education	Improve engagement, and understanding of role of utilities and programs, customer bills and charges, and safety
Weatherization Kits	Improve energy efficiency / reduce energy bills
Oregon Gas Low-Income Assistance * [OLGA]	Improve energy affordability through bill assistance
Gas Assistance Program [GAP]	Improve energy affordability through bill assistance
Oregon Bill Discount Program*	Reduce energy burden; improve energy affordability through discounted rates
Washington Bill Discount Program*	Reduce energy burden; improve energy affordability through discounted rates
2024 Washington Arrearage Management Program*	Reduce energy burden; improve energy affordability through arrearage forgiveness
Washington Community Action Plan* (CAP)	Temporary emergency arrearage assistance during COVID
Oregon Arrearage Program (AMP)	Temporary emergency arrearage assistance during COVID
Community Equity Advisory Group (CEAG)	Strengthen Procedural Equity practices; Broaden engagement and participation in energy planning
Community Partnerships and Outreach	This includes community event support and programmatic outreach
Community Grants and Funds	Support over 250 nonprofit organizations through NW Natural territory

Gas Supplies

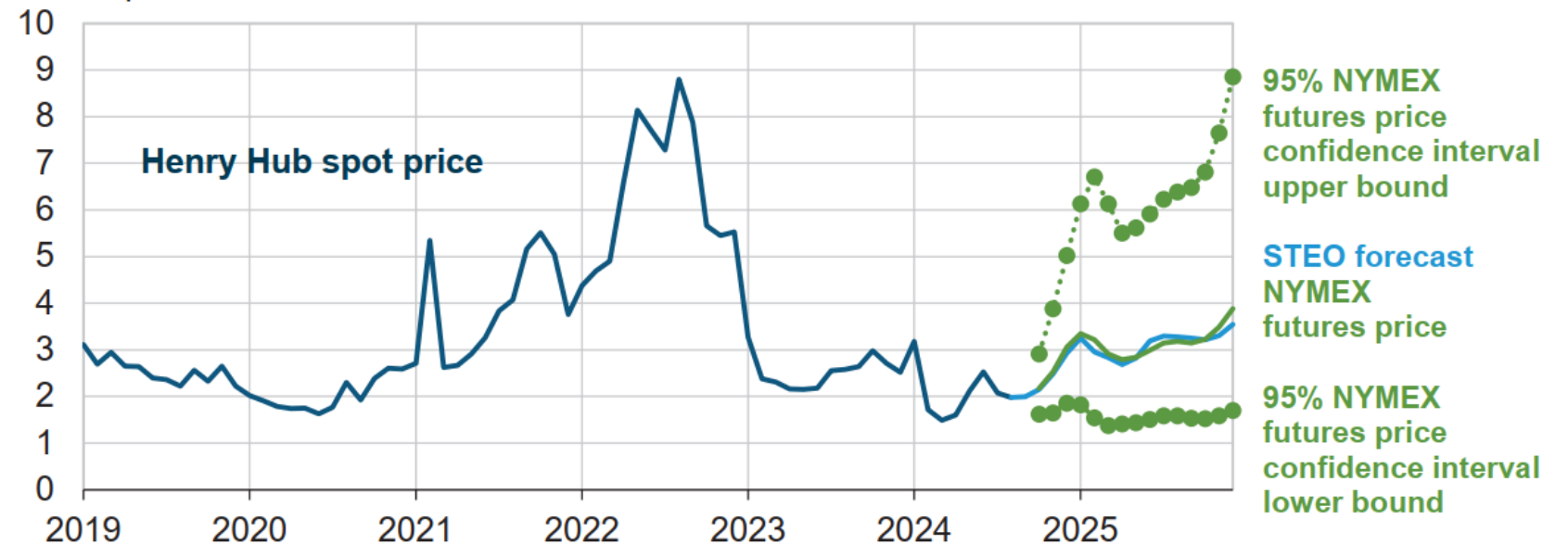
National prices are low in the near term but rising, with risk skewed asymmetrically higher



National fundamentals:

- Storage is in a surplus position, but surplus has been declining (bearish to mixed)
- Production fell through the spring and early summer but has rebounded recently (mixed)
- Gas demand for electricity generation has been high (bullish)
- LNG exports have returned to their maximum levels with more coming online (bullish)

Henry Hub natural gas price and NYMEX confidence intervals
dollars per million British thermal units



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024, CME Group, and Refinitiv an LSEG Business

Note: Confidence interval derived from options market information for the five trading days ending September 5, 2024. Intervals not calculated for months with sparse trading in near-the-money options contracts.

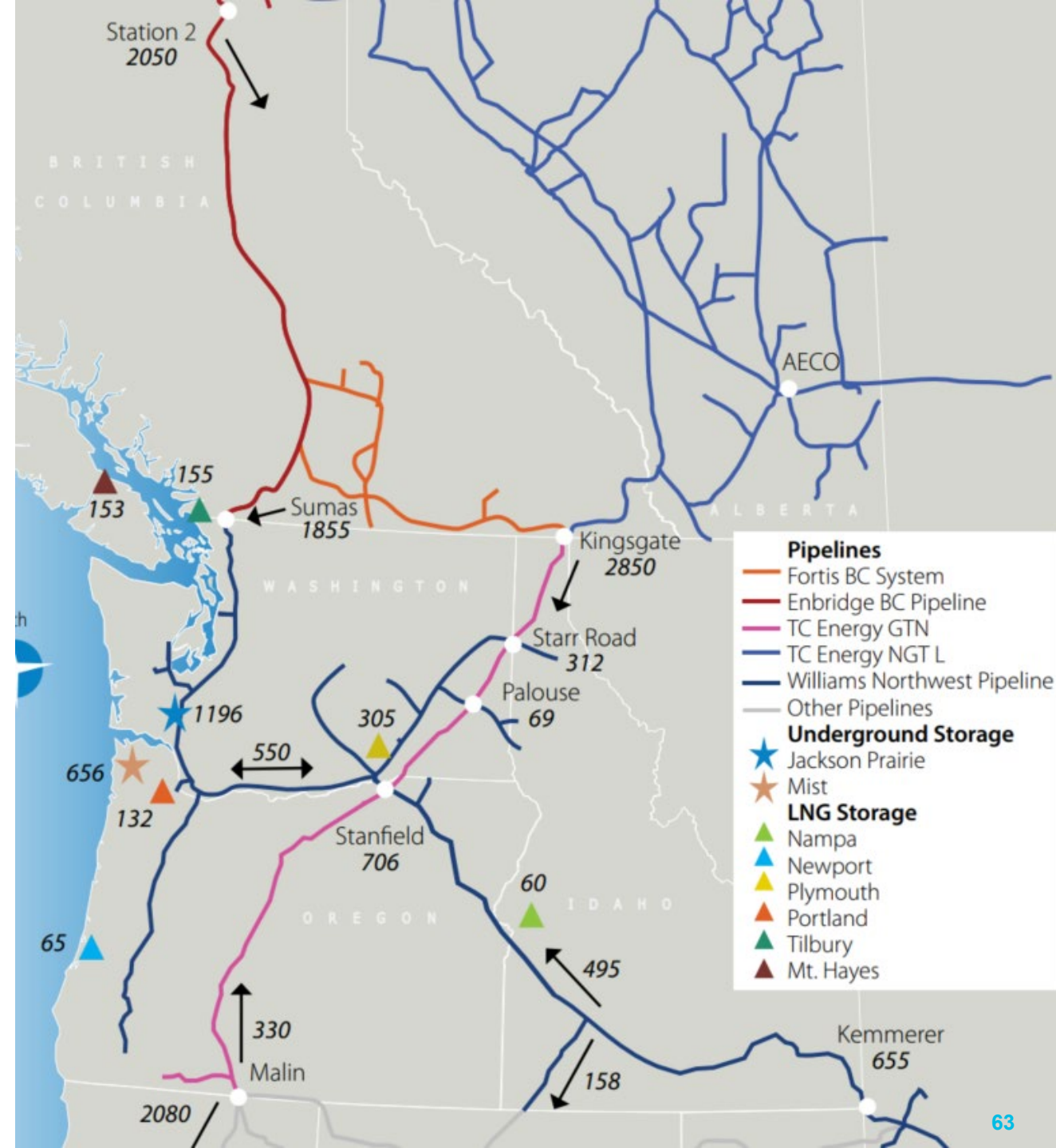


Upstream Pipelines

We contract with various upstream pipelines to bring gas we purchase to our service territory

- This allows us to purchase gas from a variety of locations
- All purchased gas supplies are eventually delivered to us on Northwest Pipeline

We own and operate three storage facilities (Mist, Newport LNG, Portland LNG) and have contractual capacity at Jackson Prairie



Pacific Northwest gas system is very tight with more demand being added

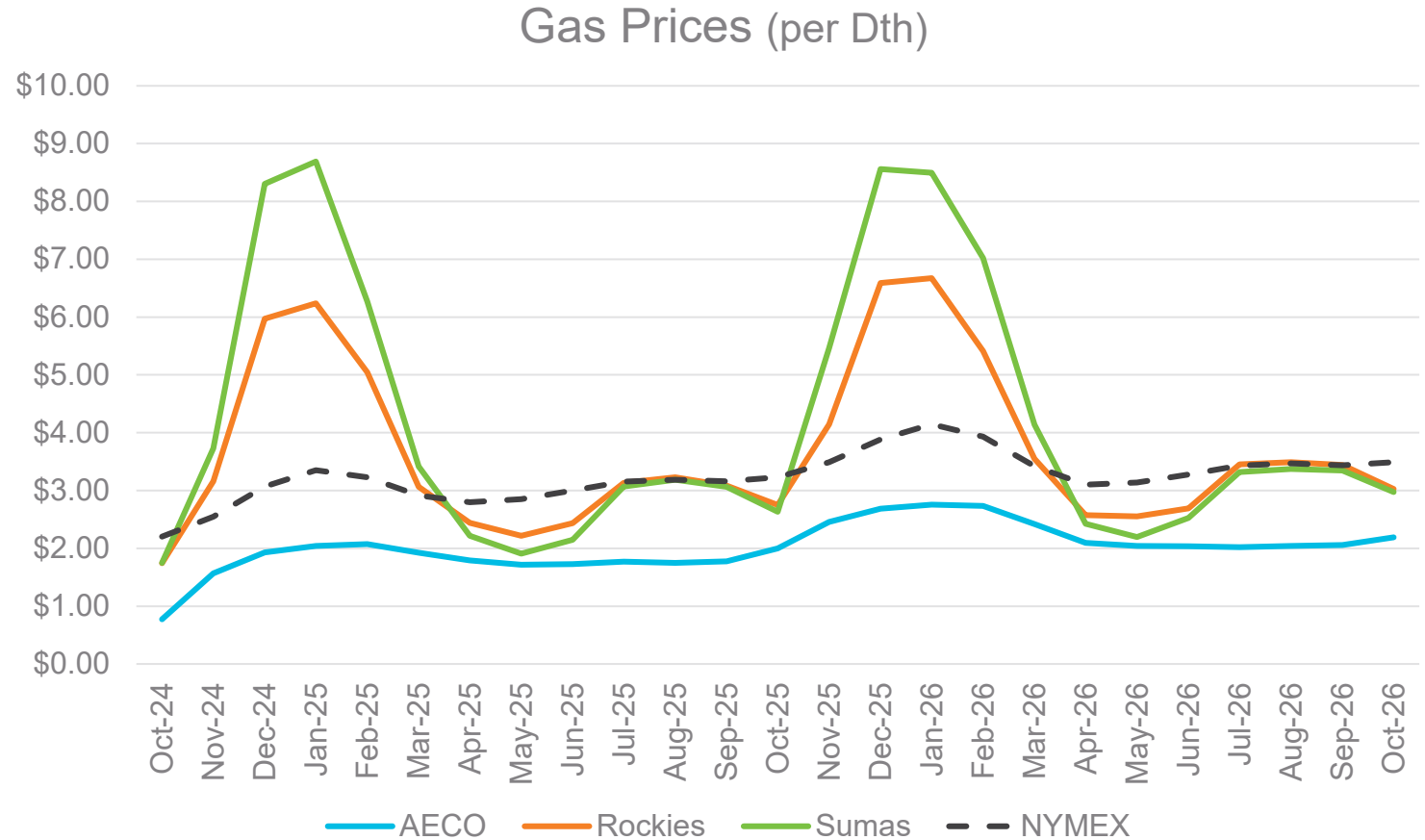


- NW Pipeline system is designed as a 3.9 Bcf/day system
 - Flowed 4.5 Bcf on peak day in January 2024
- Utilization of NW Pipeline system exceeds 90% in winter months
- Natural gas used in power generation has increased over the last several years in the region
- Woodfibre LNG will have the impact of removing ~15% of the supply at the Vancouver, BC to Washington border beginning in 2027
 - Woodfibre has firm pipeline contracts in place and will take priority over other less firm shippers

Our portfolio focuses on reducing customer bill impacts from volatile markets



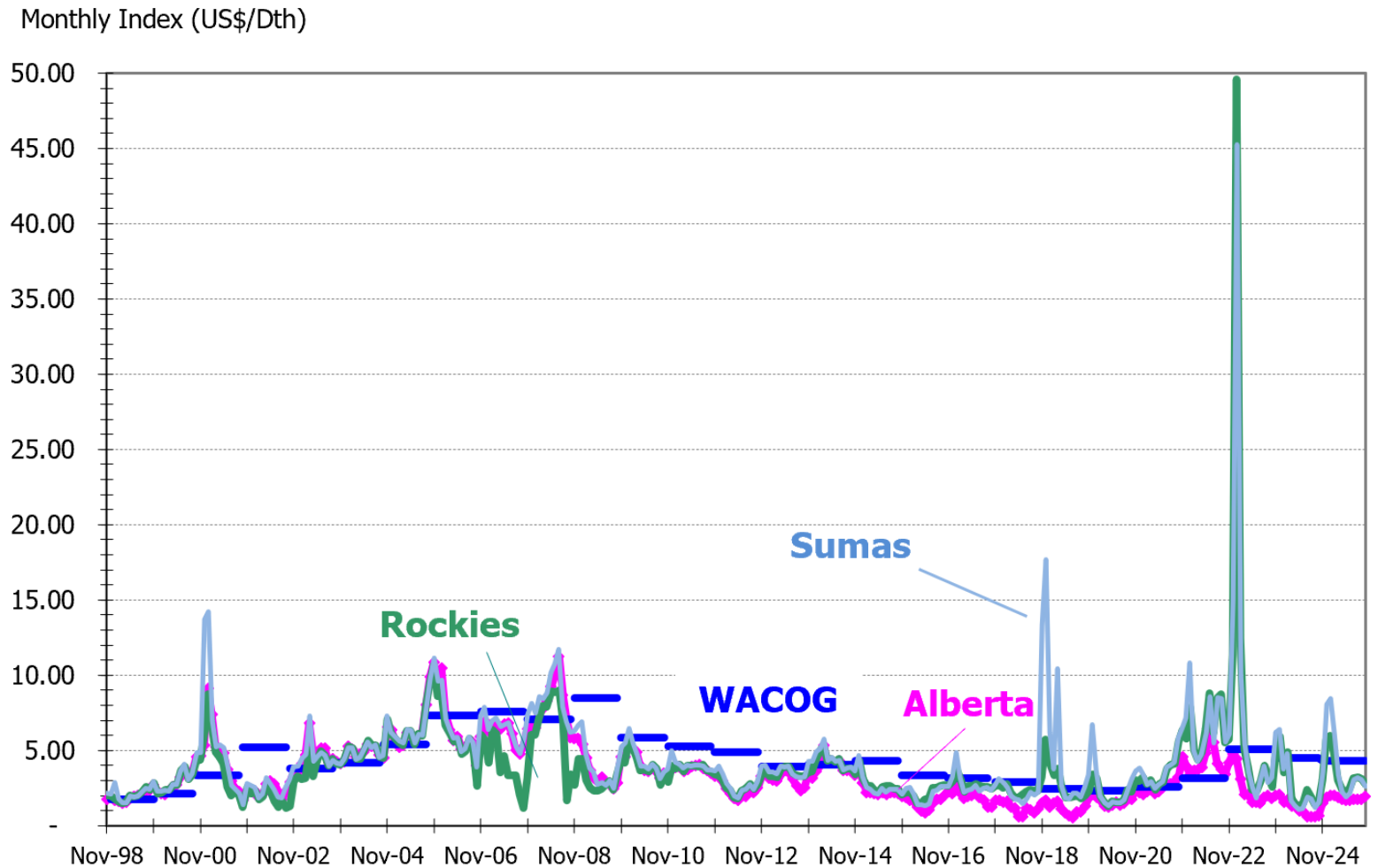
- Local markets continue to price in a winter risk premium due to constrained infrastructure, while Canadian prices are low year-round
- NW Natural continues to target 85% hedging in Oregon
- Washington follows a risk based hedging program



Commodity rates (WACOG bar) experienced by customers remain stable amidst market volatility



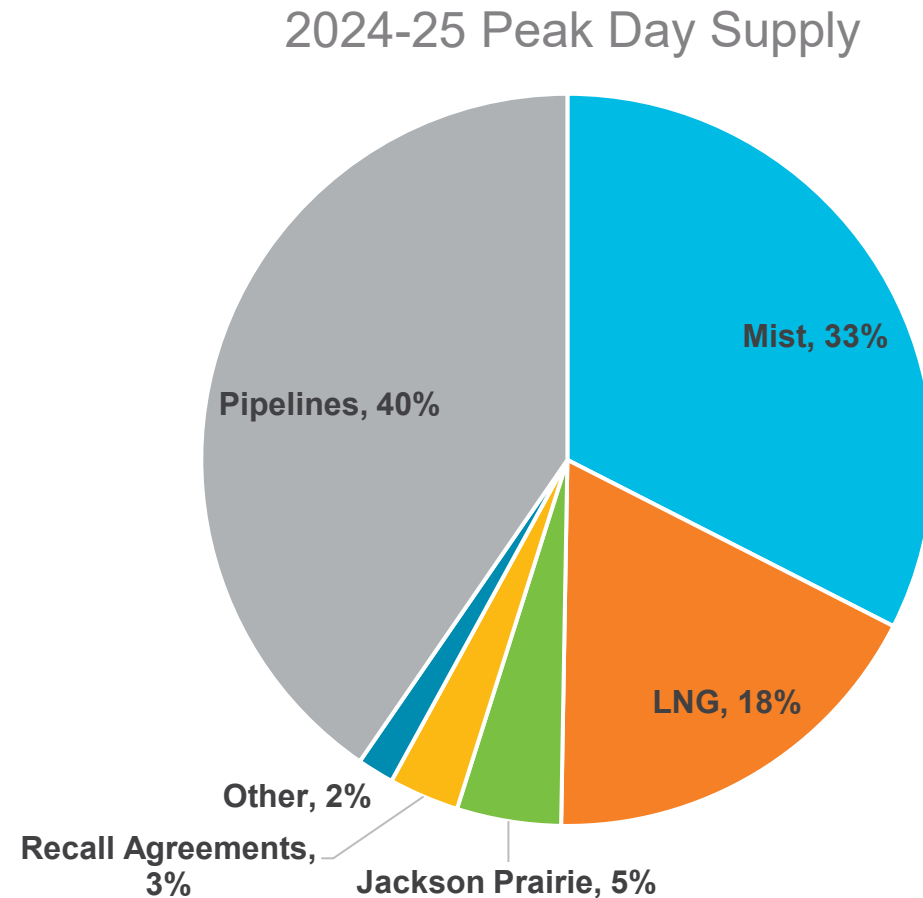
- This chart shows first-of-month prices, daily pricing is more volatile
- Weighted average cost of gas (WACOG) is Oregon specific
- Our hedging program protects customers from market spikes



Gas Supplies are in place to serve peak demand of one million Dth this winter



- Over half of our peak day supplies come from on-system storage, providing excellent resilience
- Our planning assumes all resources are available at their maximum output, so they need to be reliable
- We had our first Mist recall since 2015 this year which increased the Mist allocation to customers



Alternative Fuels

Policy Environment for Decarbonization



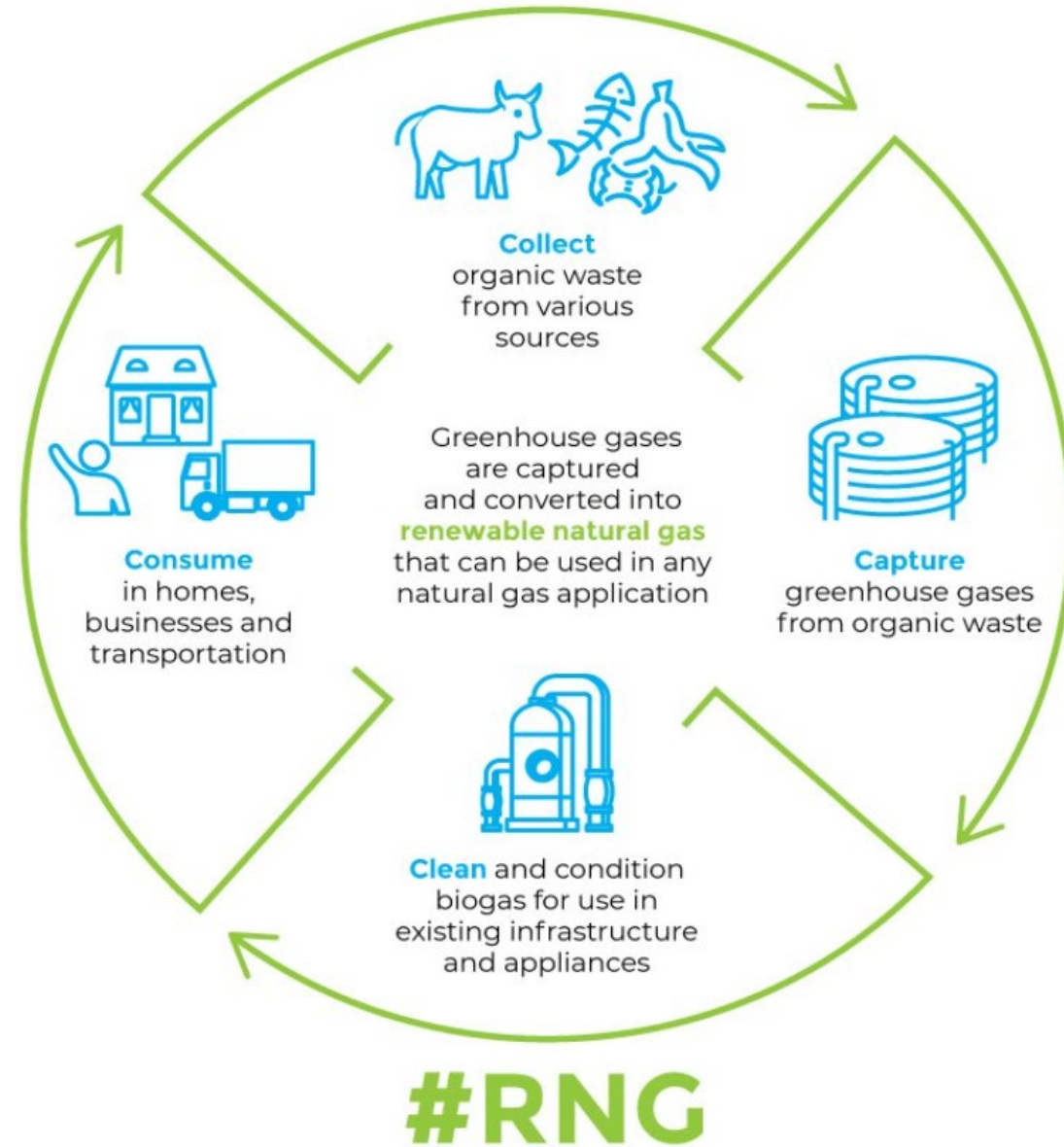
- Oregon Senate Bill 98 (Enables purchase of biomethane for customers)
- Oregon Climate Protection Program (CPP)
 - Compliance can include Compliance Instruments & CCIs
 - Compliance will include energy efficiency, biomethane, hydrogen, and synthetic methane when cost-effective to procure
 - 50% carbon reduction by 2035, 90% carbon reduction by 2050



- Washington House Bill 1257 (voluntary biomethane)
- Washington Climate Commitment Act (Emissions cap, similar to Oregon CPP, includes allowances and trade)
 - Reduce emissions below 1990 levels
 - 2030: 45% below
 - 2040: 70% below
 - 2050: 95% below

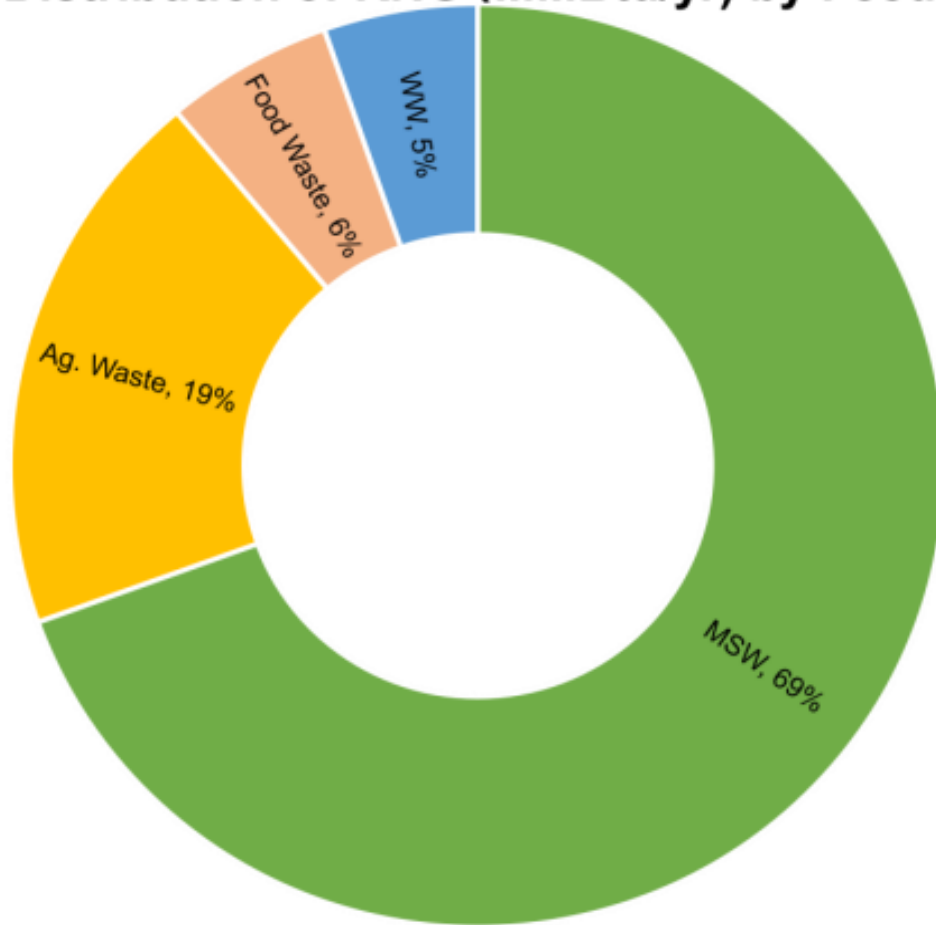
What is RNG?

**Collect. Capture.
Clean. Consume.**



RNG: Sources

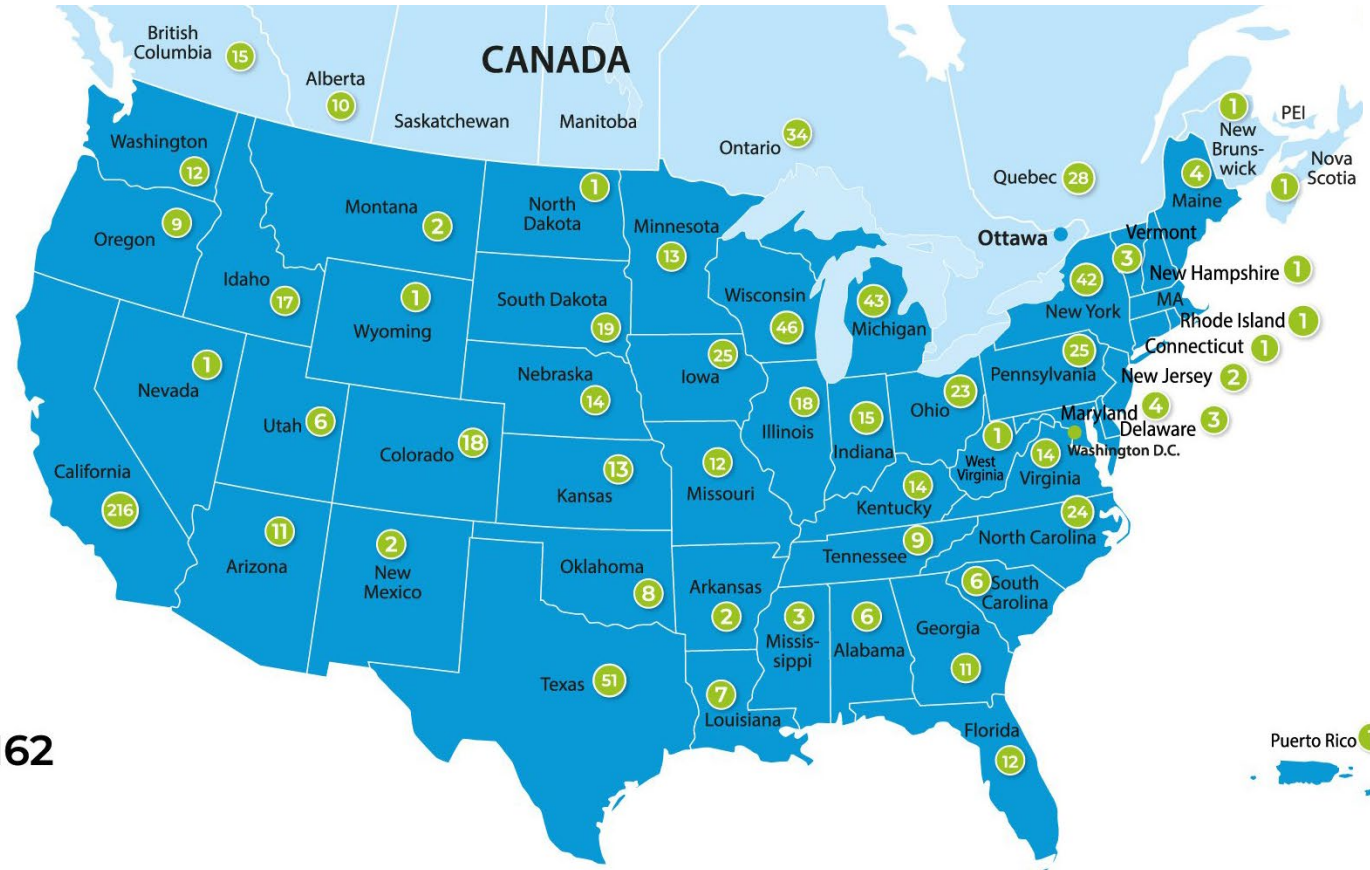
2022 Distribution of RNG (MMBtu/yr) by Feedstock



- 19% Agricultural Waste
- 6% Food Waste
- 5% Wastewater
- 69% Municipal Solid Waste

Source: Guidehouse

RNG: Operating Facilities



RNG Facilities

Operational: 433

Under Construction: 162

Planned: 290

Total: 885

“This (...) represents a significant leap from just a year ago, when the North American RNG industry celebrated the establishment of 300 facilities, marking a remarkable 44% growth within just one year.”

RNG: Emerging Demand



Buyer	Estimated Demand (million MMBtu/yr)	Comments
FortisBC	32	By 2030, 15% of FortisBC's gas must be RNG
Xcel Energy	50	Colorado targeting 15% of natural gas supply to be from RNG by 2030
Southern California Gas	170	Targeting 20% of gas to come from RNG by 2030
Vermont Utilities	10	25% RNG by 2025 / 75% RNG by 2035
Nevada Utilities	9	3% RNG by 2035
Washington Gas (DC)	235	13% of throughput by 2032 and 58% by 2050

Source: ICF

What is Clean Hydrogen?



- Clean hydrogen refers to hydrogen produced through electrolysis—separating liquid water into hydrogen—using renewable or low-carbon emissions energy sources, such as wind, solar or nuclear.
- Clean hydrogen can also refer to hydrogen produced using thermal conversion processes with carbon capture and permanent storage (CCS) technologies that reduce greenhouse gas emissions.

Clean Hydrogen: Hydrogen Rainbow

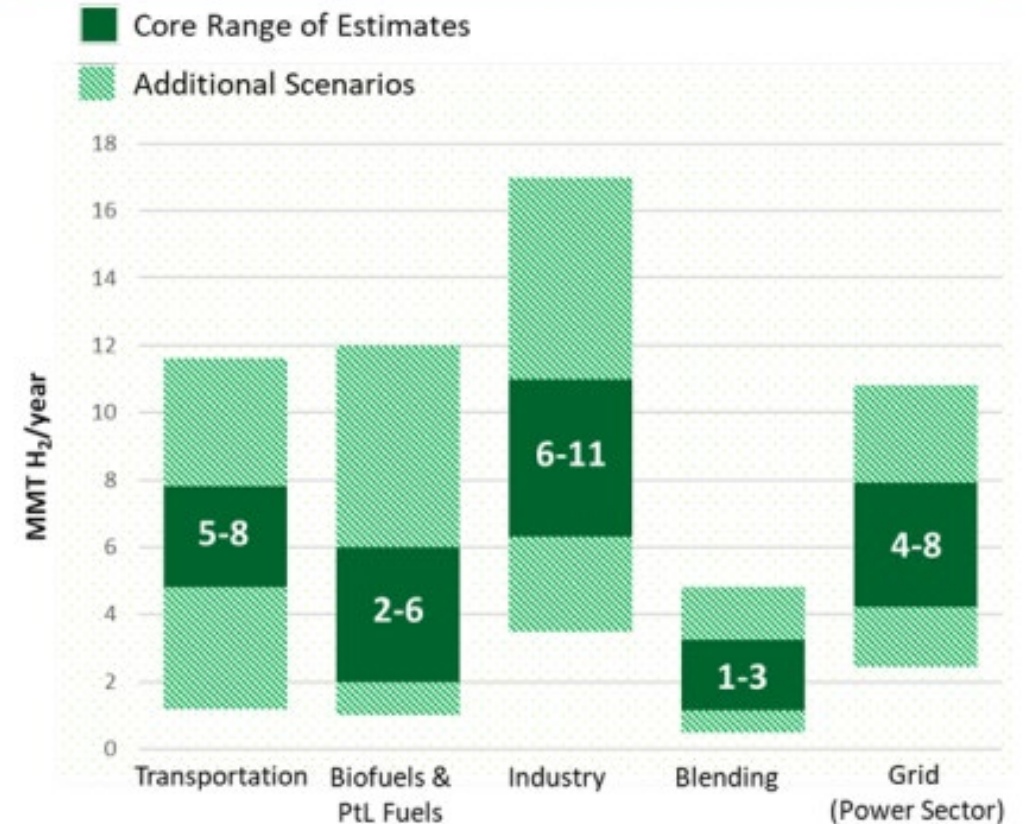


	Gray Hydrogen	Blue Hydrogen	Turquoise Hydrogen	Green Hydrogen	Pink Hydrogen
Process	Steam methane reforming	Steam methane reforming with carbon capture sequestration	Reforming methane into hydrogen gas and elemental (solid) carbon	Electrolysis, electricity is used to split the molecule into hydrogen and oxygen	Electrolysis, electricity is used to split the molecule into hydrogen and oxygen
Source	Methane	Methane	Methane	Renewably-generated electricity	Nuclear electricity generation

Clean Hydrogen: Demand

- Transportation can include trucks, buses, trains, and ships
- PtL Fuels = “Power to Liquids” (mostly aviation)
- Industrial uses include steel manufacturing, fertilizer and ammonia production
- Blending hydrogen into natural gas pipelines

Range of Potential Demand for Clean Hydrogen by 2050



• **Core range:** ~ 18–36 MMT H₂

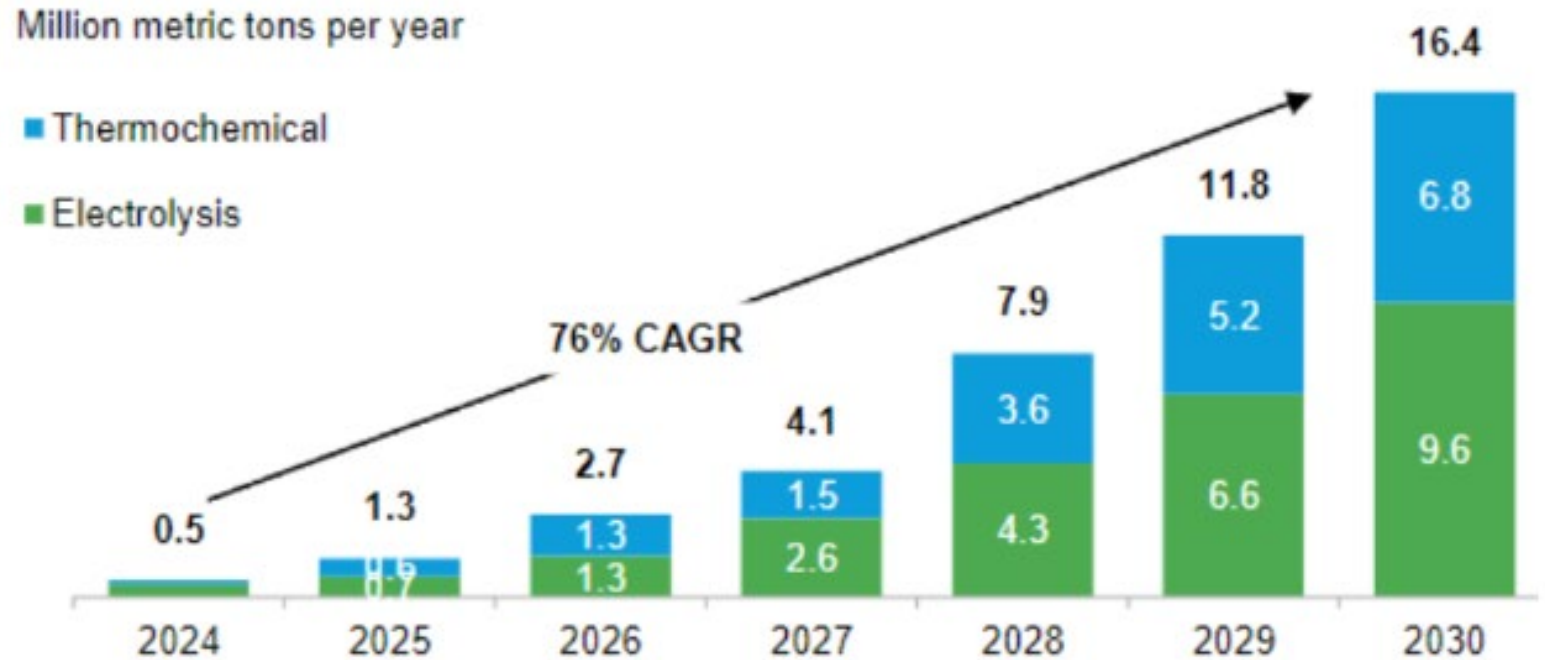
• **Higher range:** ~ 36–56 MMT H₂

Source: hydrogen.energy.gov

Clean Hydrogen: Supply

From 0.5 million metric tons (Mt) of capacity online today, annual low-carbon hydrogen supply could grow 30x by 2030

Figure 1: Forecast annual low-carbon H₂ supply by production method and commissioning year



Source: BloombergNEF. Note: 'Thermochemical' includes all low-carbon pathways using fossil fuels as feedstock. 'CAGR' stands for compound annual growth rate.

Source: bnef.com

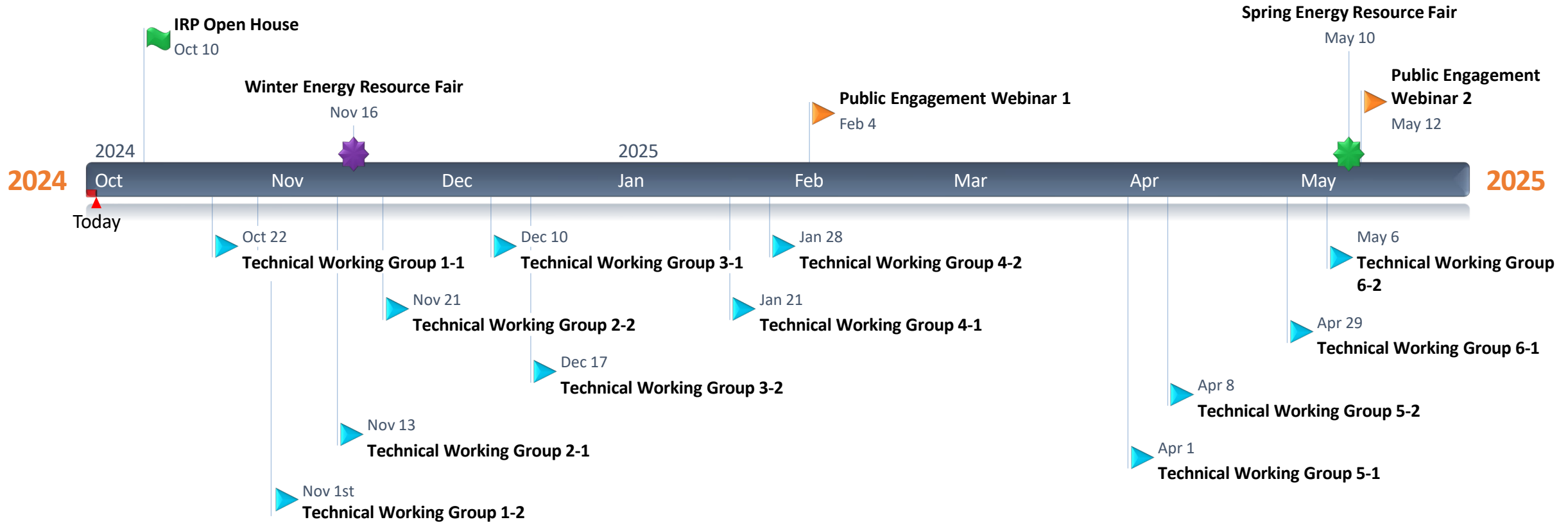
Renewables: Incentives



- Federal
 - Bipartisan Infrastructure Law and Inflation Reduction Act (IRA)
 - Investment tax credit
 - Clean fuel production credit
 - Rural Energy for America Program Renewable Energy Systems & Energy Efficiency Improvement Guaranteed Loans & Grants
 - Regional clean hydrogen hubs (H2Hubs)
- State
 - Oregon Rural and Agricultural Energy Assistance Program
 - Community Renewable Energy Grant Program
- City
 - Portland Clean Energy Community Benefits Fund

Next Steps

NW Natural IRP Stakeholder Engagement Dates



Current Technical Working Group Schedule



TWG No.	Date	Type & Purpose of Engagement
TWG#1: Part 1	Oct 22, 2024	Planning Environment
TWG#1: Part 2	Nov 1, 2024	Scenarios
TWG#2: Part 1	Nov 13, 2024	Load Forecast
TWG#2: Part 2	Nov 21, 2024	Load Forecast
TWG#3: Part 1	Dec 10, 2024	Avoided Costs & Demand- Side Resources
TWG#3: Part 2	Dec 17, 2024	Avoided Costs & Demand- Side Resource
TWG#4: Part 1	Jan 21, 2025	Supply-Side & Compliance Resources
TWG#4: Part 2	Jan 28, 2025	Supply-Side & Compliance Resources
TWG#5: Part 1	Apr 1, 2025	Distribution System Planning
TWG#5: Part 2	April 8, 2025	Distribution System Planning
TWG#6: Part 1	Apr 29, 2025	Resource Optimization Planning Model
TWG#6: Part 2	May 6, 2025	Portfolio Results and Action Plan
File Draft	Jun 13, 2025	Comments due by July 7 th
File 2025 IRP	Aug 2, 2025	Beginning of formal process

- All TWGs will be facilitated and virtual
- Part Two will provide an opportunity at the beginning to follow up questions from Part 1
- Feedback forms found on website:
[IRP Website](#)

Or email us at:

IRP@nwnatural.com

Other Public Engagement Opportunities



Public Engagement Opportunity & Topic	Date	Type & Purpose of Engagement
Energy Resource (IRP) Fair #1:	November 16, 2024	In-Person Only. Opportunity to learn and engage. on IRPs and Energy Services & Programs. Event to be held in collaboration with community partners. <i>Parkrose High School from 11:00am to 2:00pm</i>
Public Engagement Webinar #1:	February 4, 2025	Opportunity to learn and engage on an IRP and key topics previously presented and related to resource planning and utility energy services.
Energy Resource (IRP) Fair #2:	May 10, 2025	In-Person Only. Opportunity to learn about IRPs and Energy Services & Programs & Proposed Action Plan and engage. Event to be held in collaboration with community partners.
Public Engagement Webinar #2:	May 12, 2025	Opportunity to learn and engage on an IRP and key topics previously presented and related to resource planning and utility energy services.

- Please check our dedicated IRP website (Link below) for the most current information:

[IRP Website](#)



Thank you!
We value your feedback.

IRP@nwnatural.com
[IRP Website](#)