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

TWG #1 Part 1
October 22, 2024

NW Natural®

# 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.

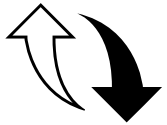
All forward-looking statements made in this presentation and all subsequent forward-looking statements, whether written or oral and whether made by or on behalf of the Company, are expressly qualified by these cautionary statements. Any forward-looking statement speaks only as of the date on which such 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

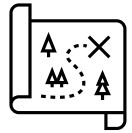
1. Meeting Logistics
2. NW Natural, IRPs, and the Planning Environment
3. Environmental Policies/Building Codes
4. Equity Considerations
5. Gas Supplies/Alternative Fuels

# 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

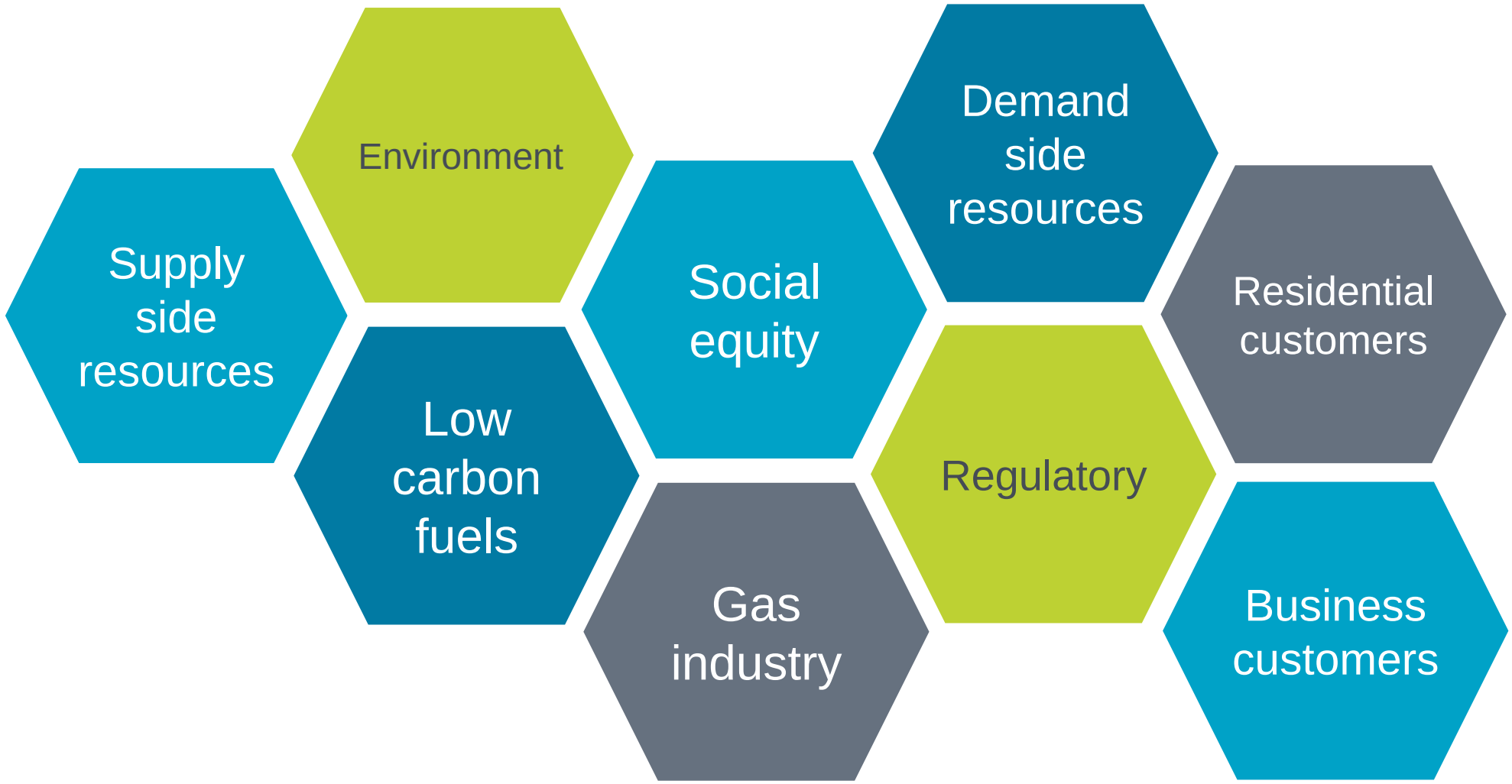
**NW Natural commits to:**

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

**Participants commit to:**

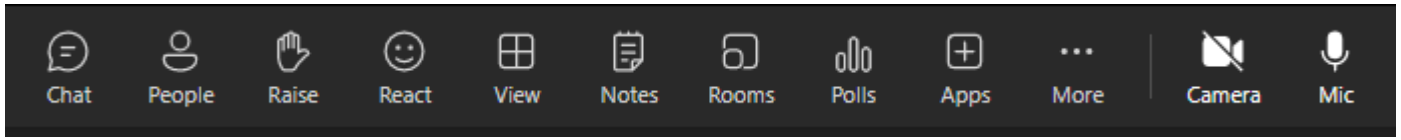
- Share perspectives as they relate to meeting topics
- Hold space for multiple opinions
- Submit written comments within a timely manner

# Seeking to examine IRP development through multiple perspectives

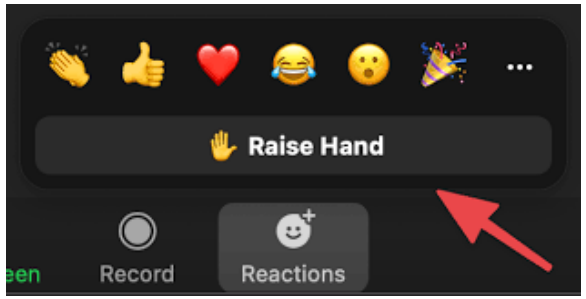


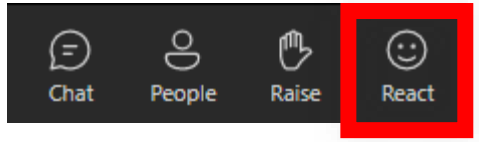
# How to Interact in a Teams Meeting

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

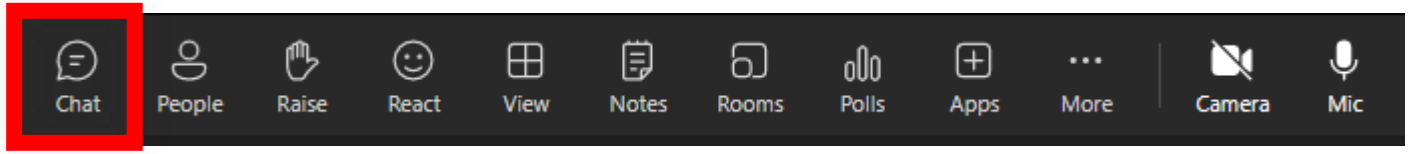



- Ask a question or comment at any time using the “raised hand”




- You may also use the chat box




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

# Meeting Best Practices – virtual spaces

**To maintain an engaged and productive space, please:**

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

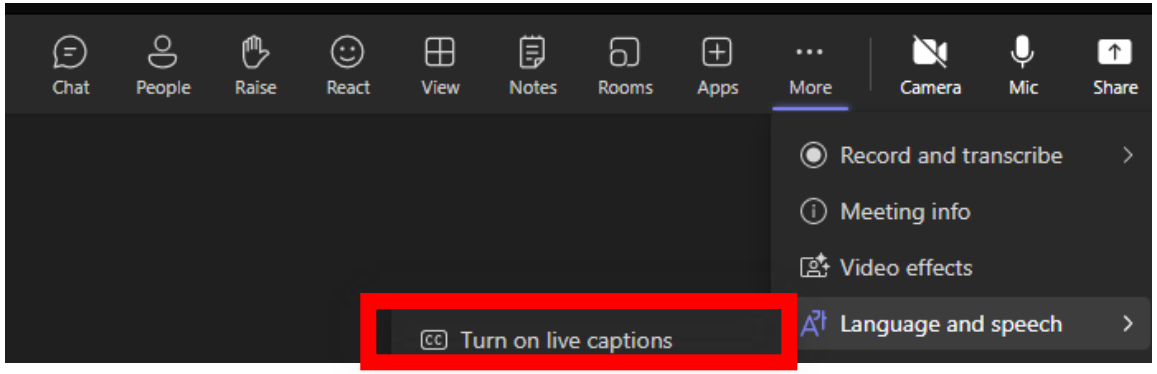
Turn your camera on (if your bandwidth allows and you are comfortable with camera on)

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?

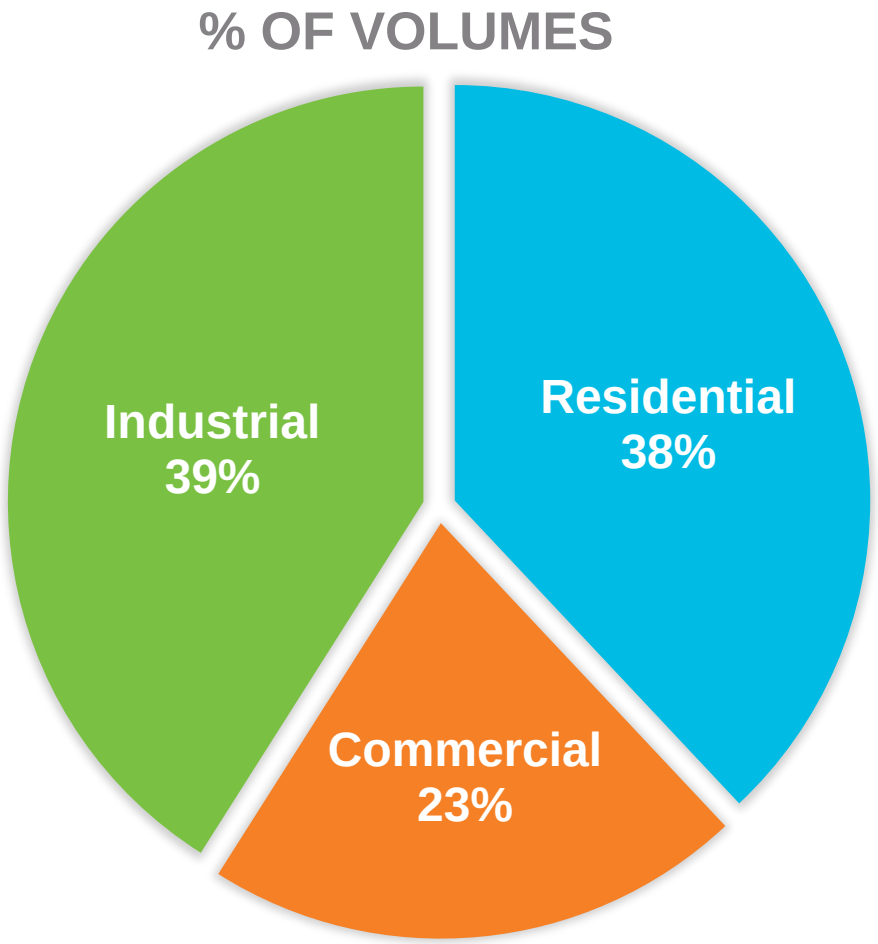

- 165-year-old Oregon company
- Over 800,000 customers
  - 88% Oregon
  - 12% Washington
- Operates in 2 states, 18 counties, 140 different communities
- More than 1,200 employees

# Types of Customers

## Approx. Customer Counts

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

Source: NW Natural June 2024 10Q




Source: NW Natural 2023 10-K

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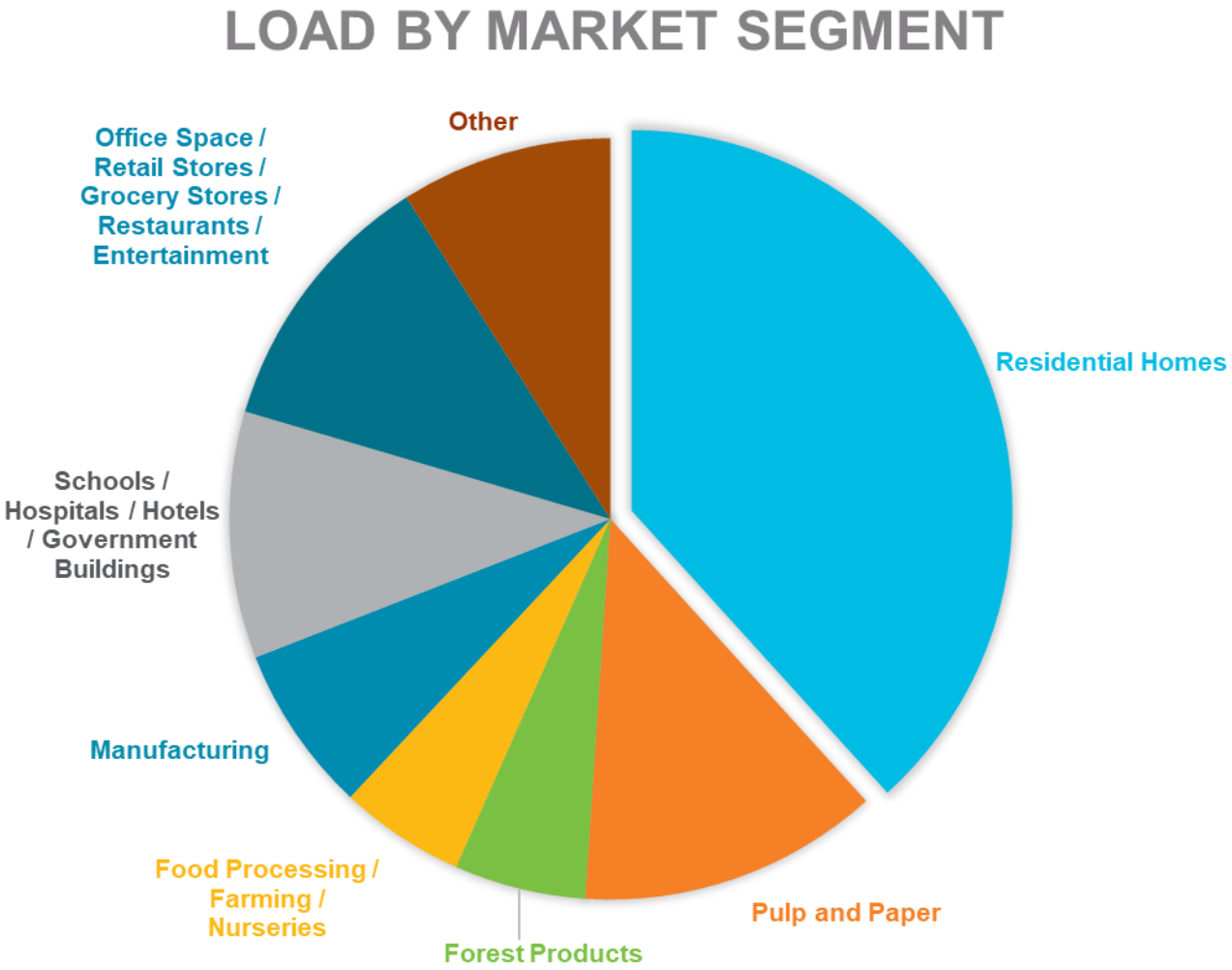

# System Planning in NW Natural's IRP

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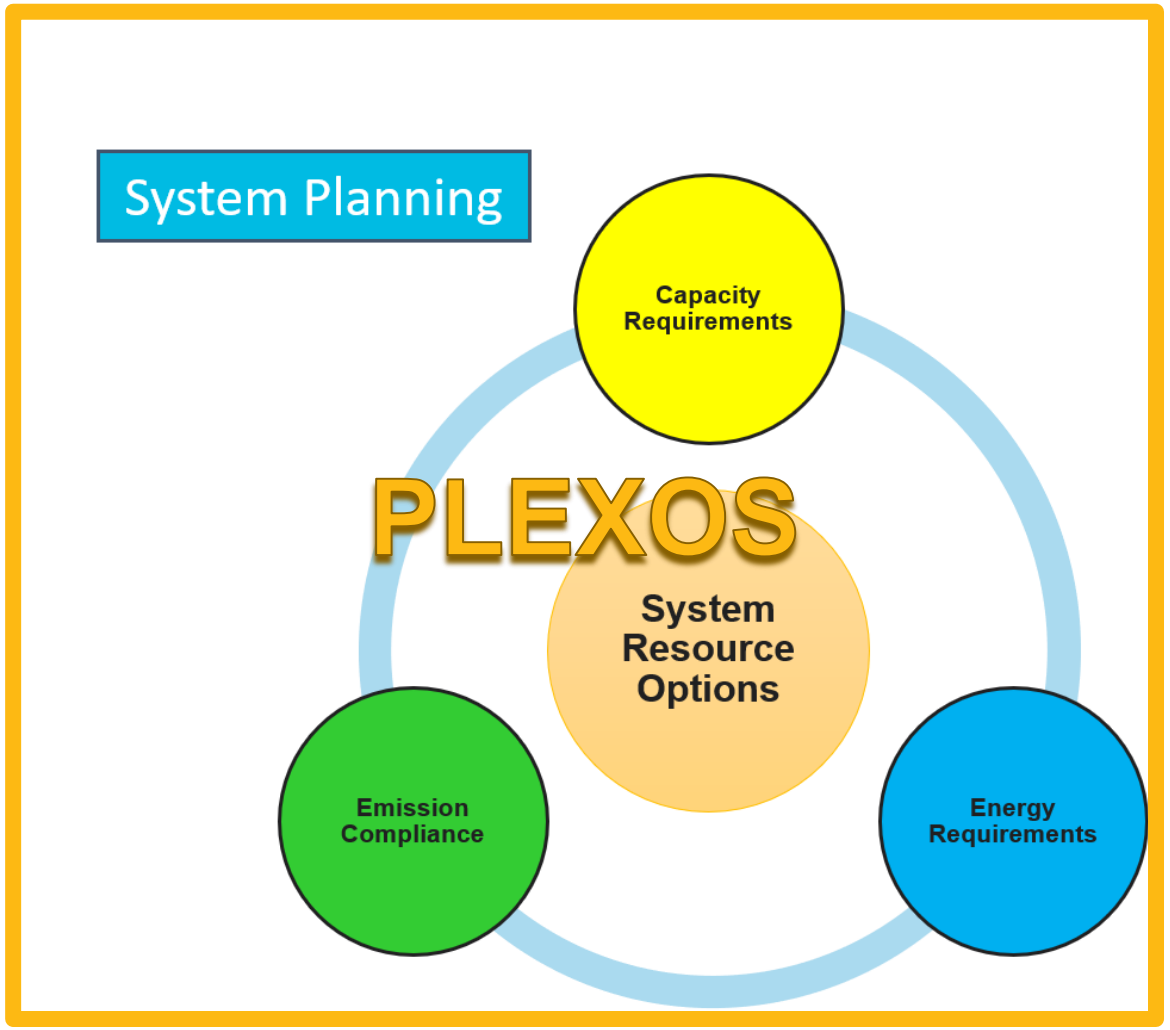
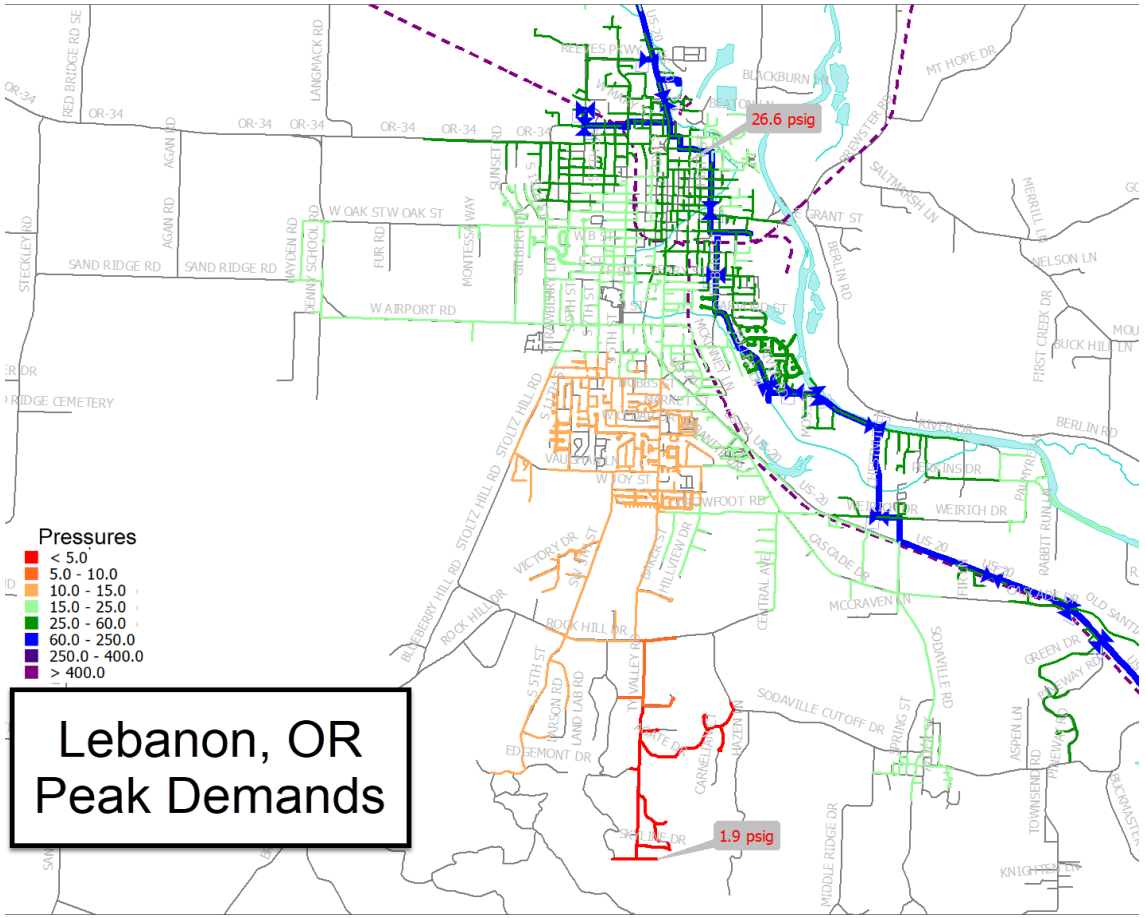
<u>Supply Options</u>
Basin Gas Purchases
On-System RNG/Hydrogen
Underground Storage
LNG Storage
Pipeline Capacity

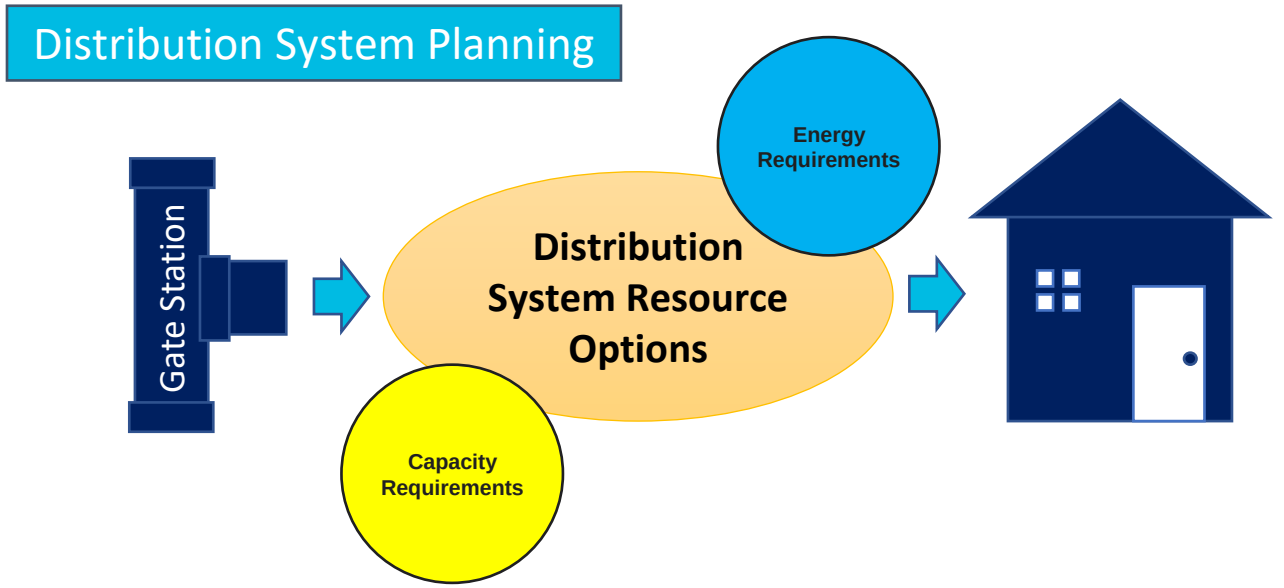
<u>Demand Options</u>
Energy Efficiency Programs
Demand Response Programs
Hybrid Gas and Electric Heating Solutions
New Technologies

<u>Carbon Compliance Options</u>
Off-system RNG/Hydrogen Development
Renewable Thermal Credit (RTC) Purchases
Carbon Offsets
Community Climate Investments

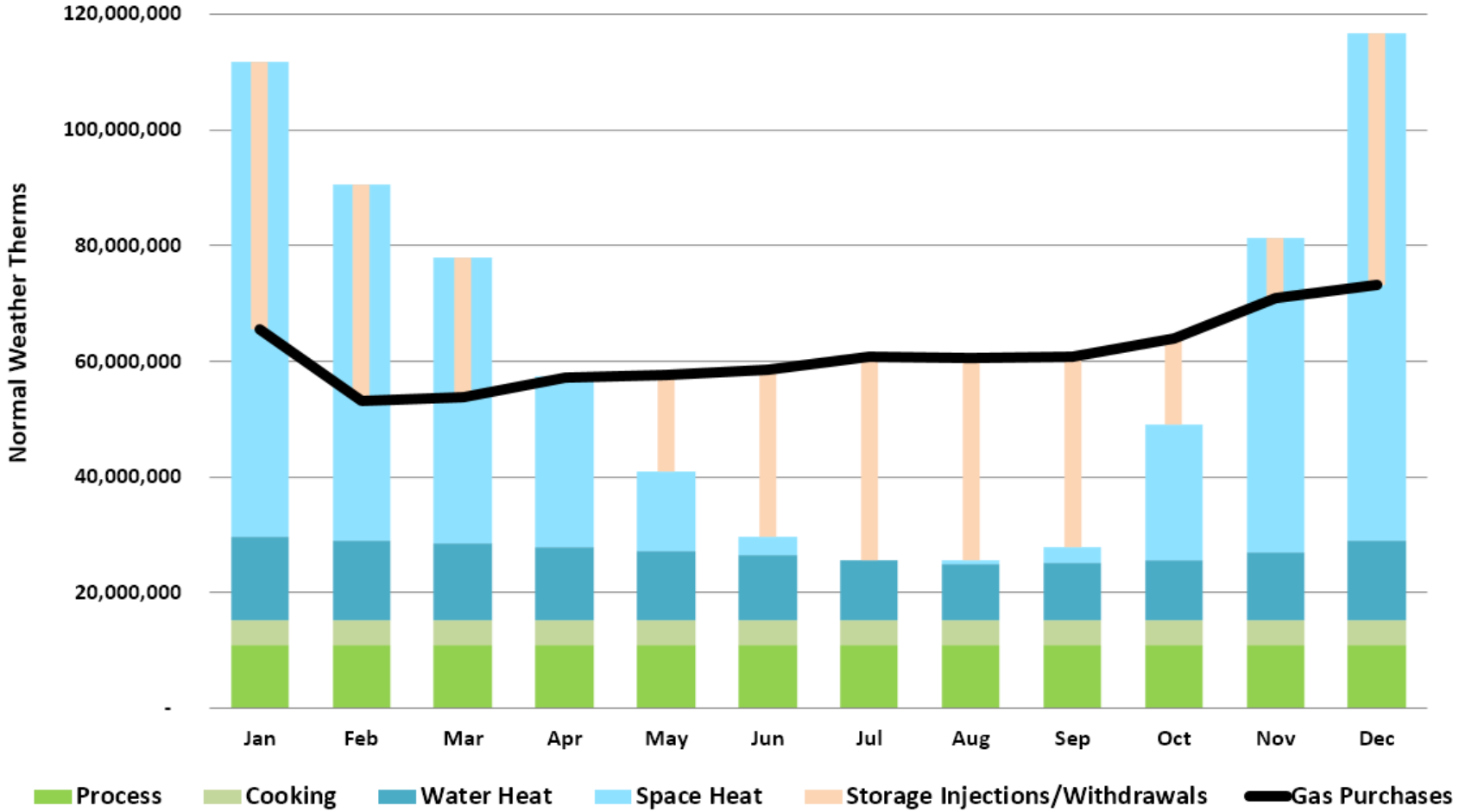


# Distribution Planning



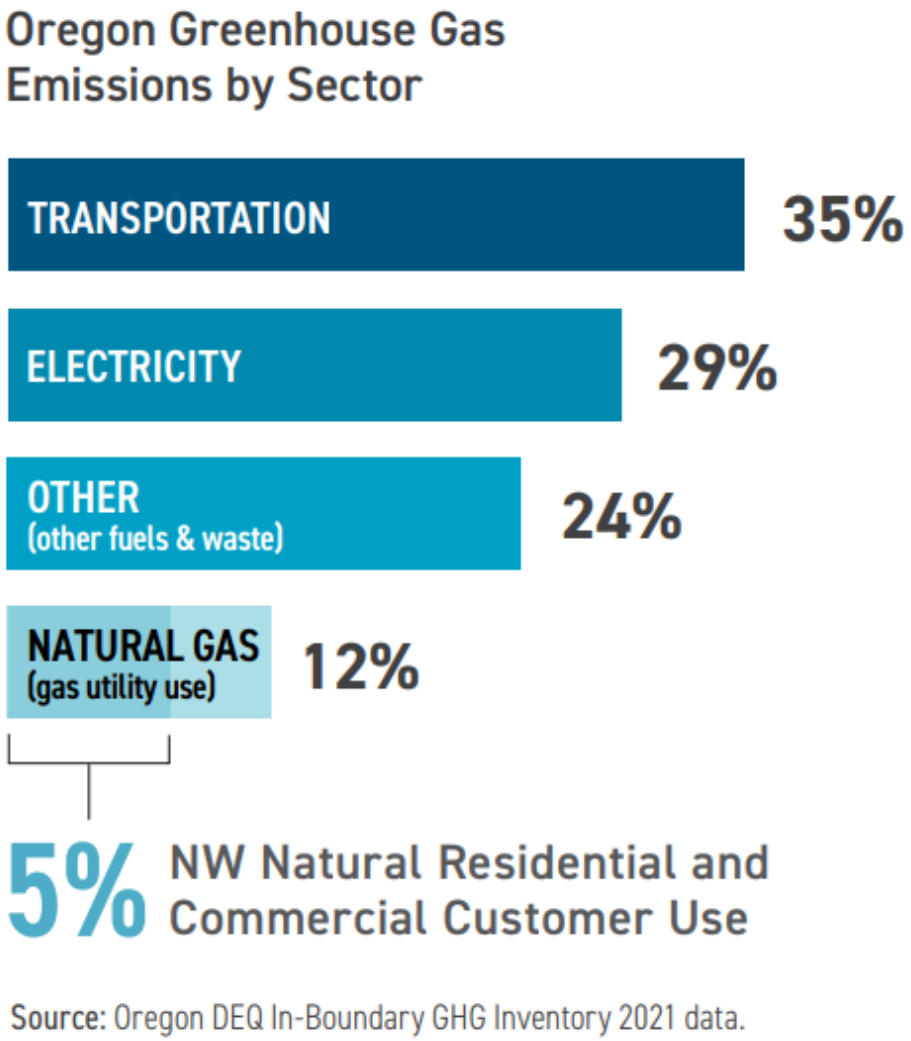



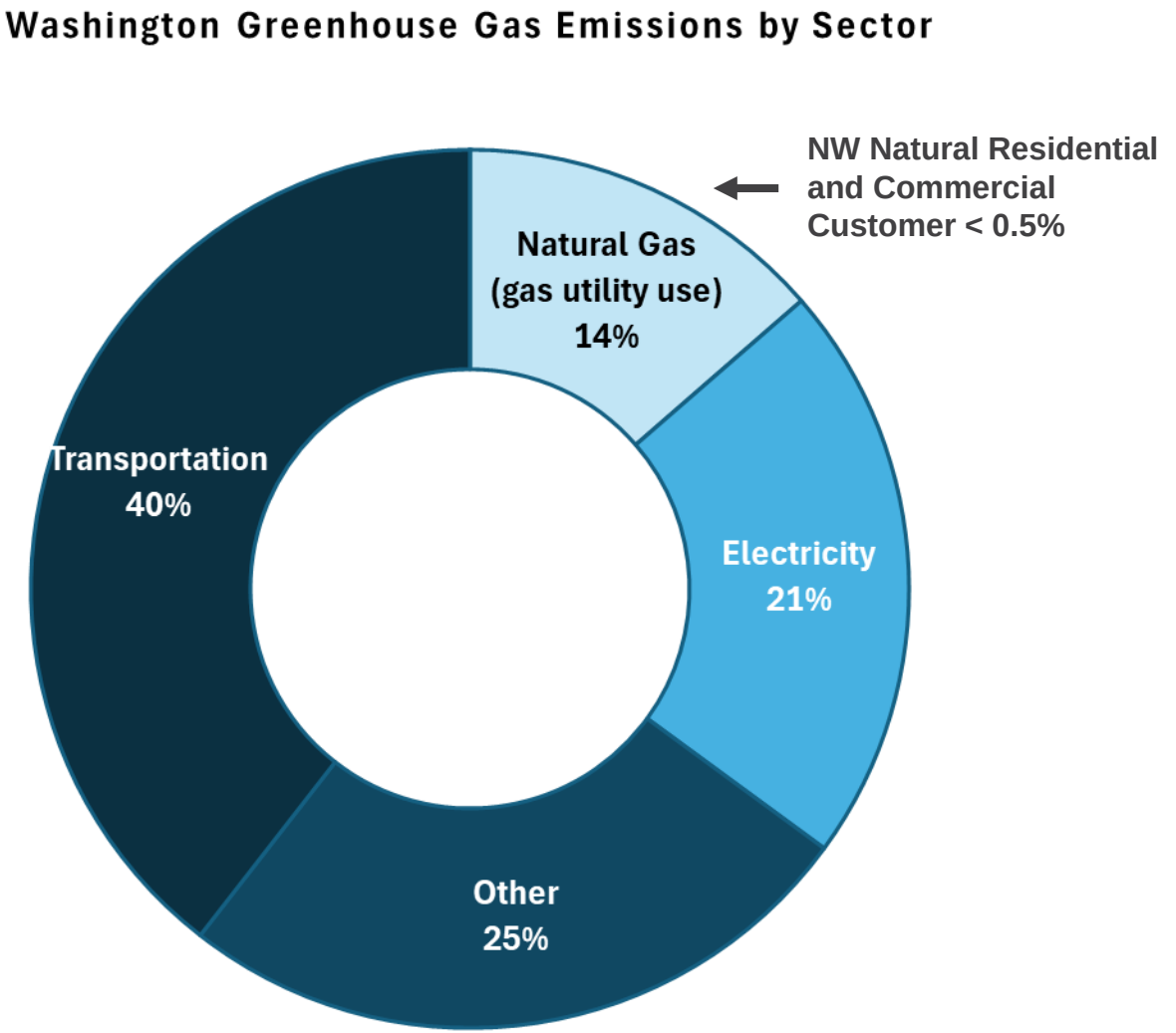
# Energy storage is critical to meeting seasonal demand




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

# State Emissions

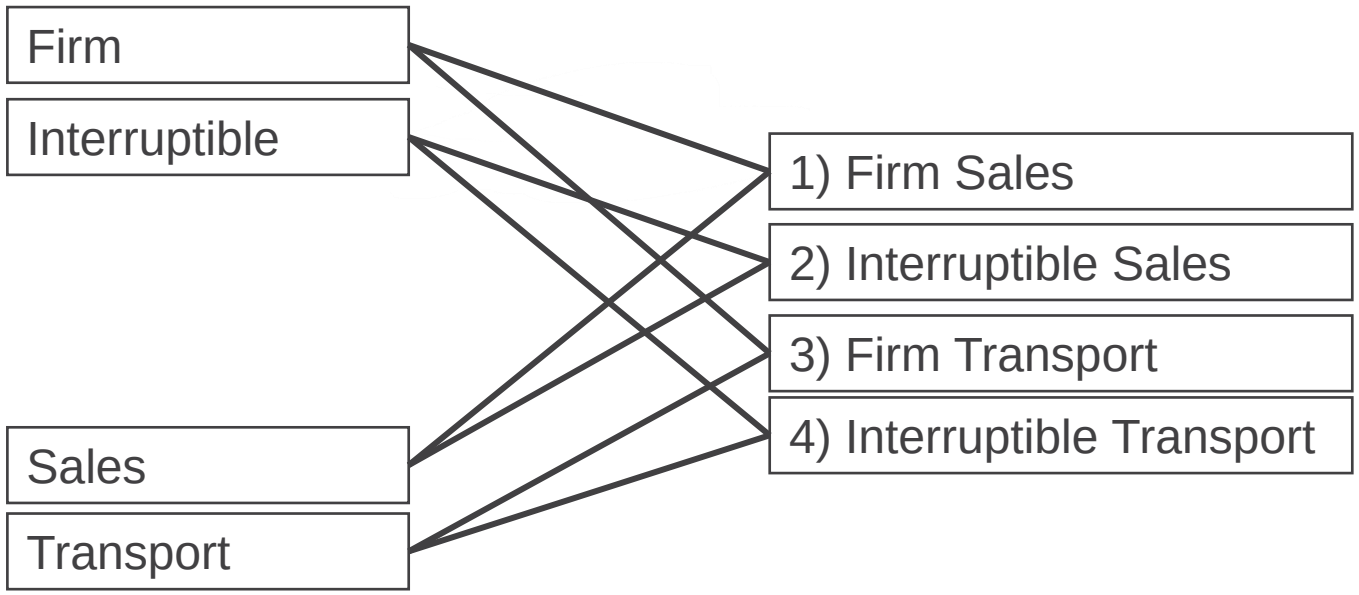


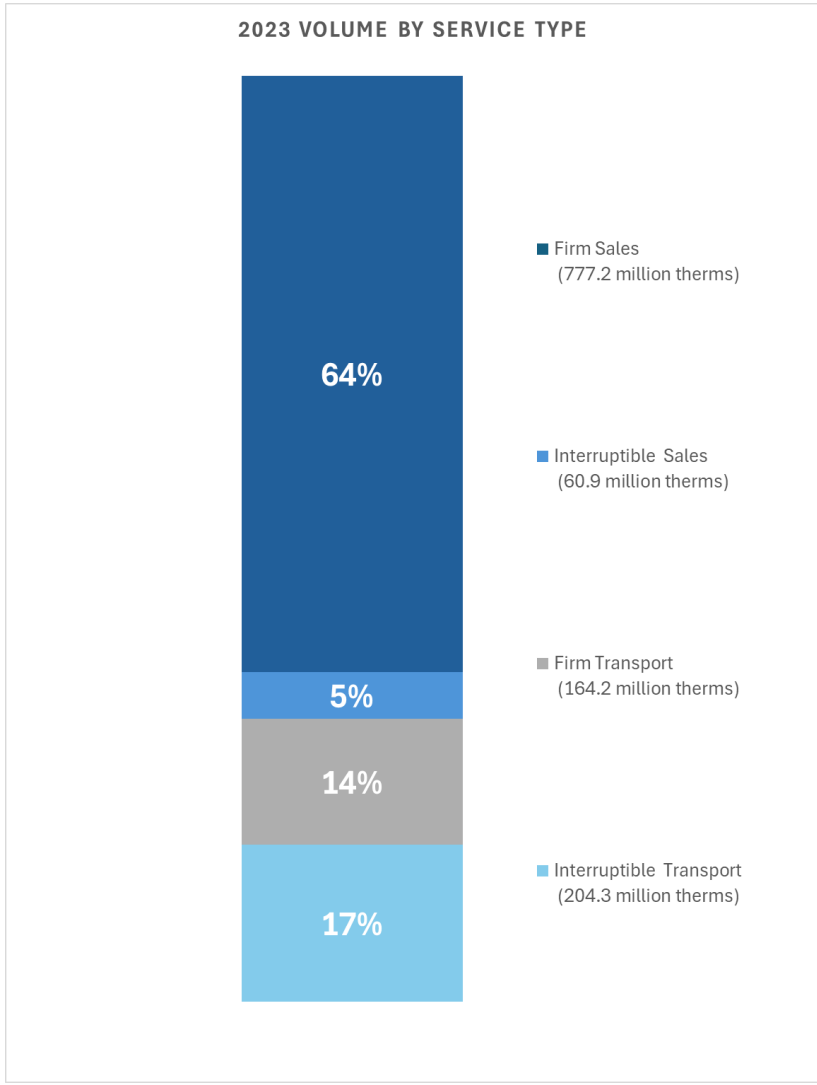




Source: Washington State Greenhouse Gas Emissions Inventory 2019 data

# Types of Services NW Natural Offers

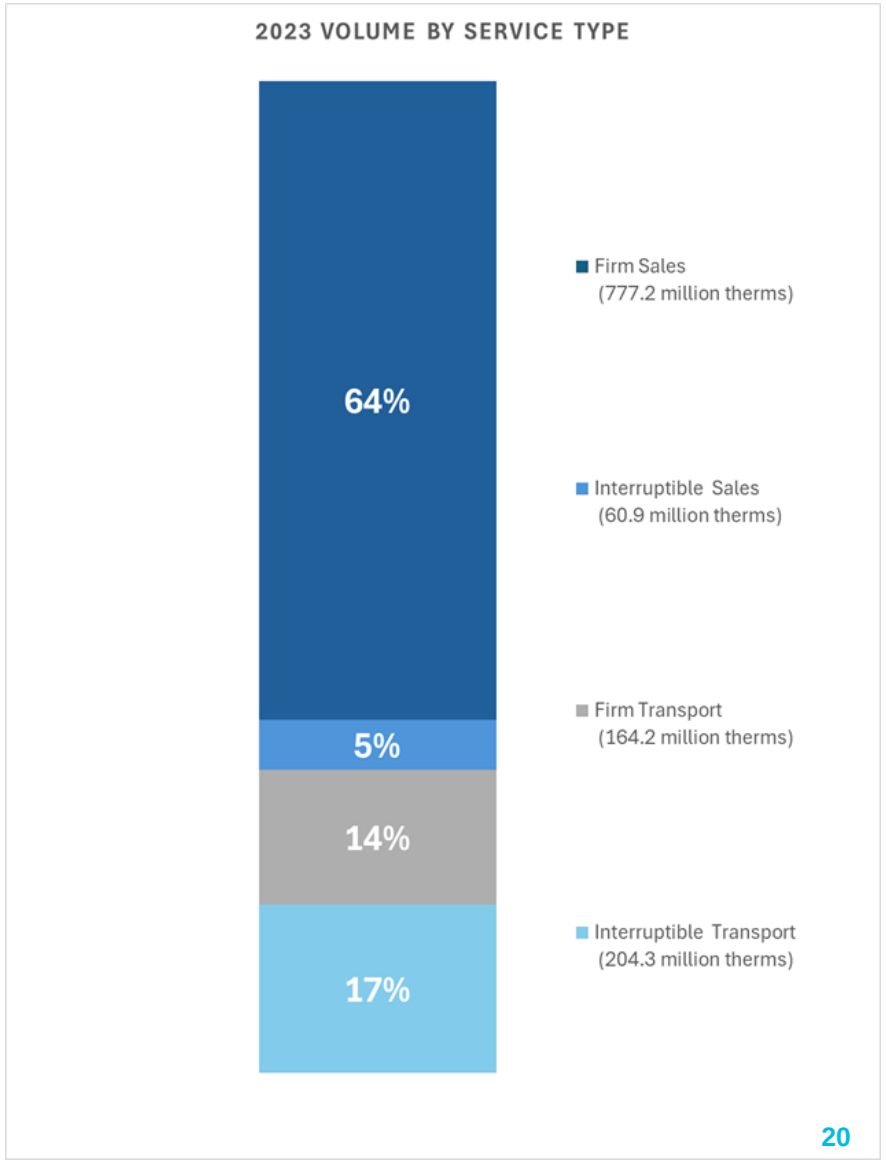
## There are 4 Main Types of Service



# Customer Types and Resource Planning

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

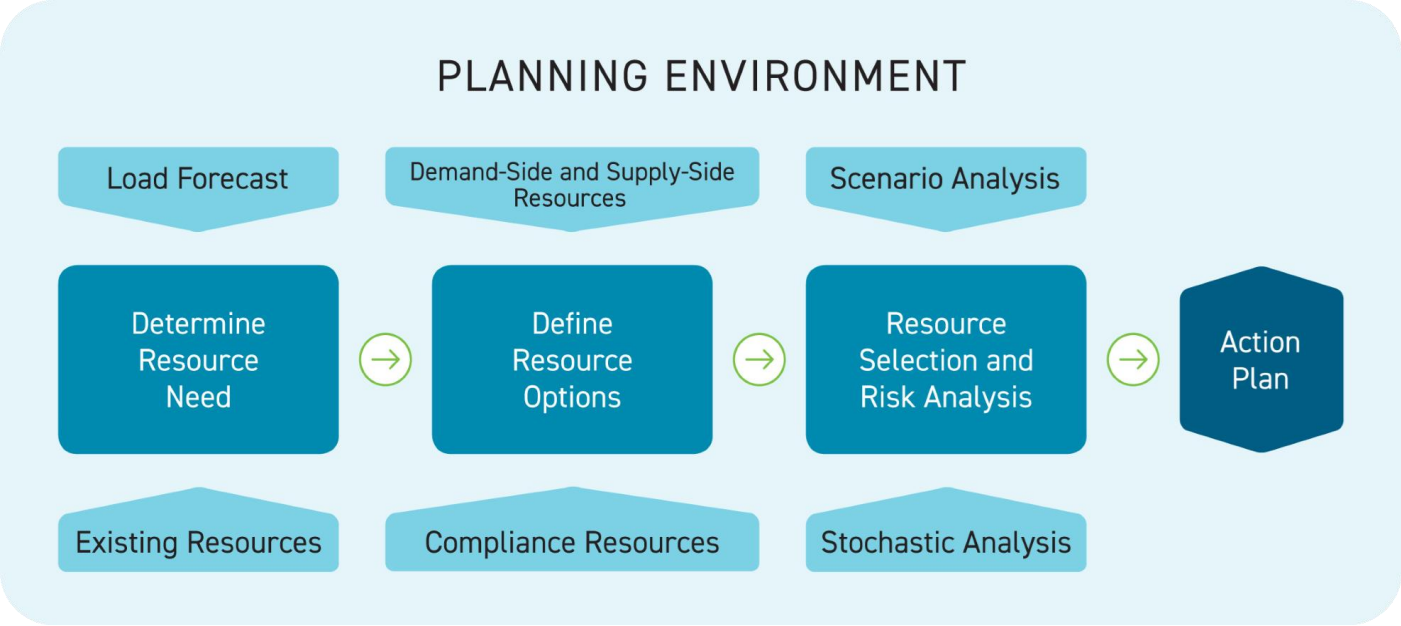


# What is Integrated Resource Planning?

- 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

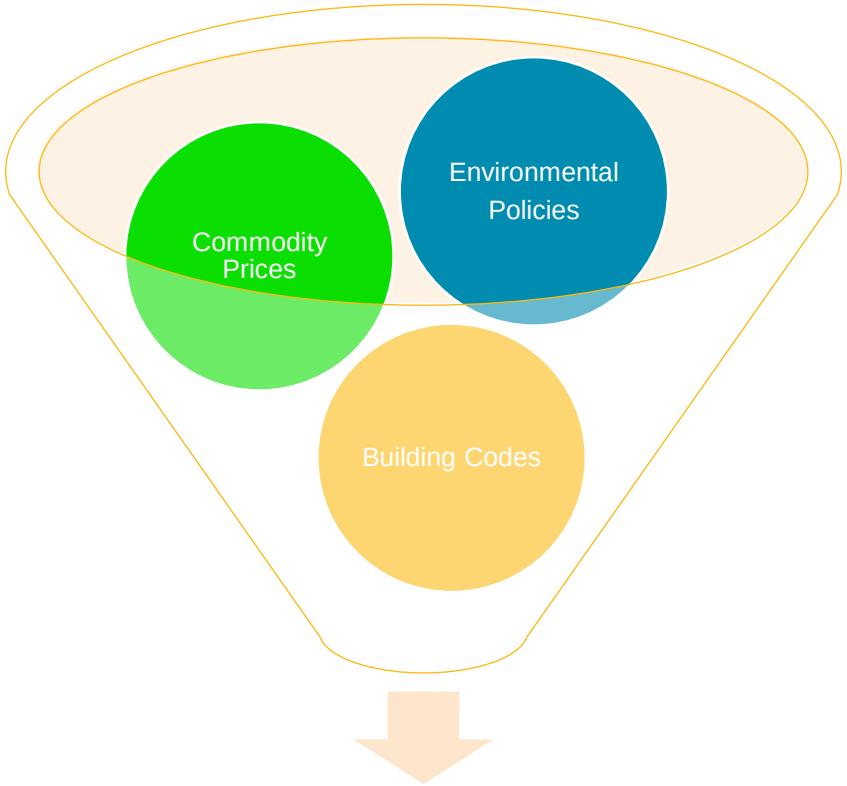


# Planning Environment

# 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 Polices
- Building Codes and Standards
- Commodity Prices
  - Such as Natural Gas or RNG
- Macroeconomic factors
  - Such as business climate




Planning Environment

# Environmental Policies

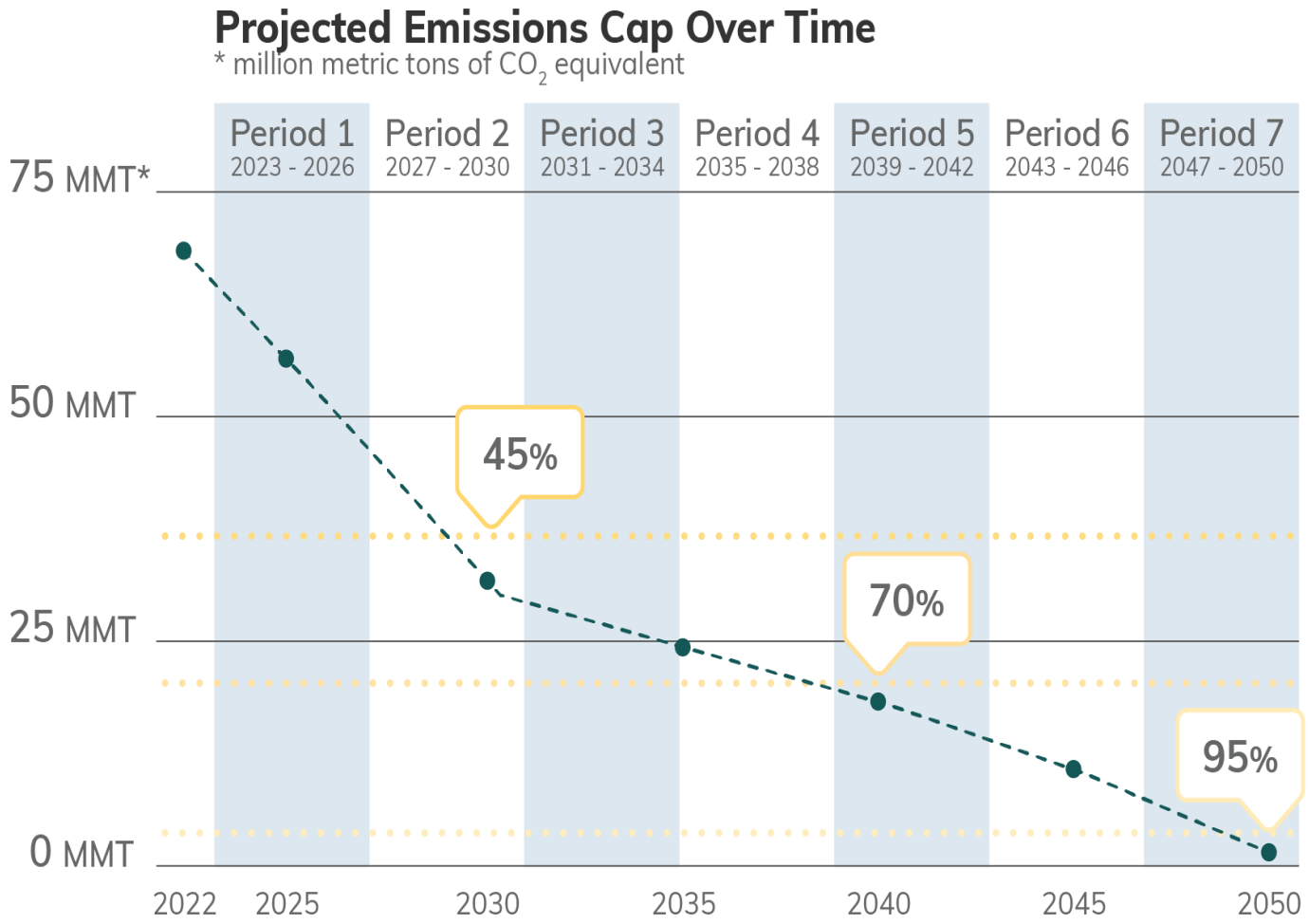
# State Carbon Compliance Programs

- 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)

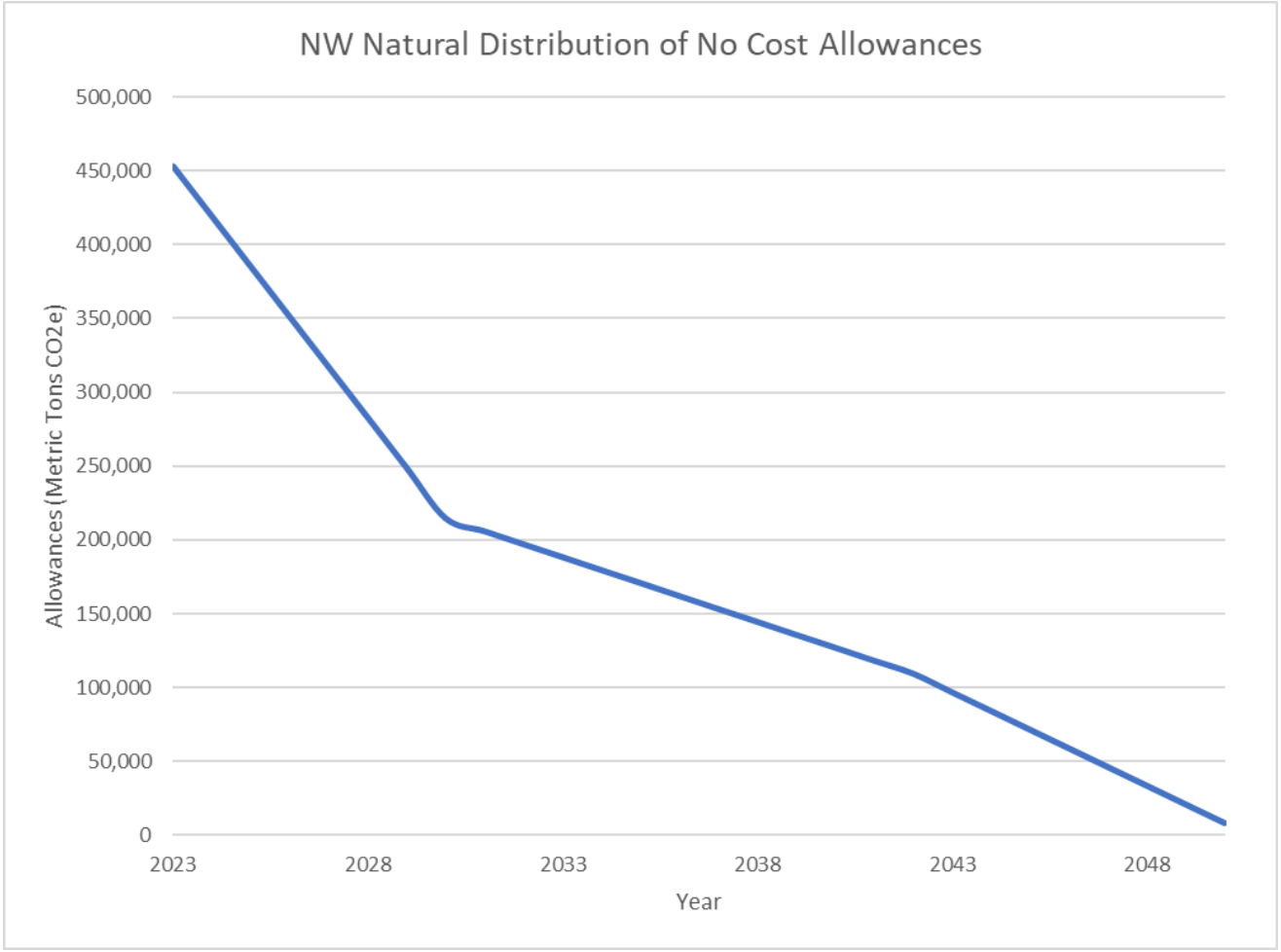
# CCA Cap Trajectory




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

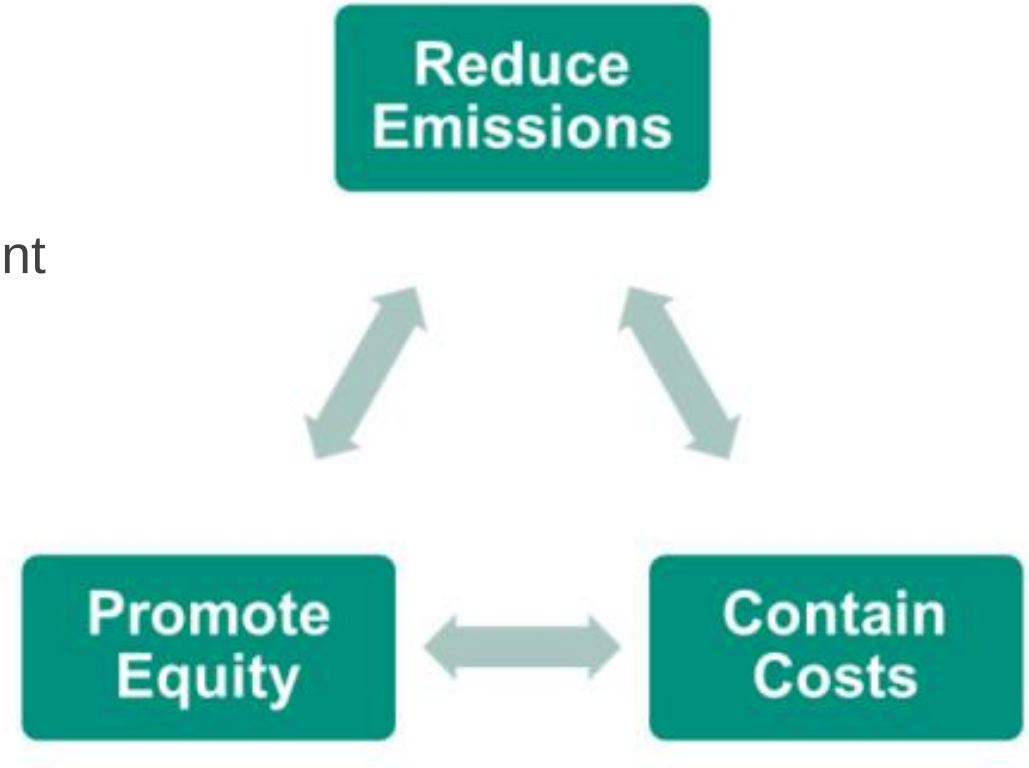
- Point of regulation for all customer emissions except for large sources (>25,000 mt CO2e) or EITE
- Receive some no cost allowances, but required to consign percentage of allowances to auction:
  - Starting at 65% in 2023 and increasing 5% up to 100% in 2030
- ***"Revenues from allowances sold at auction 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

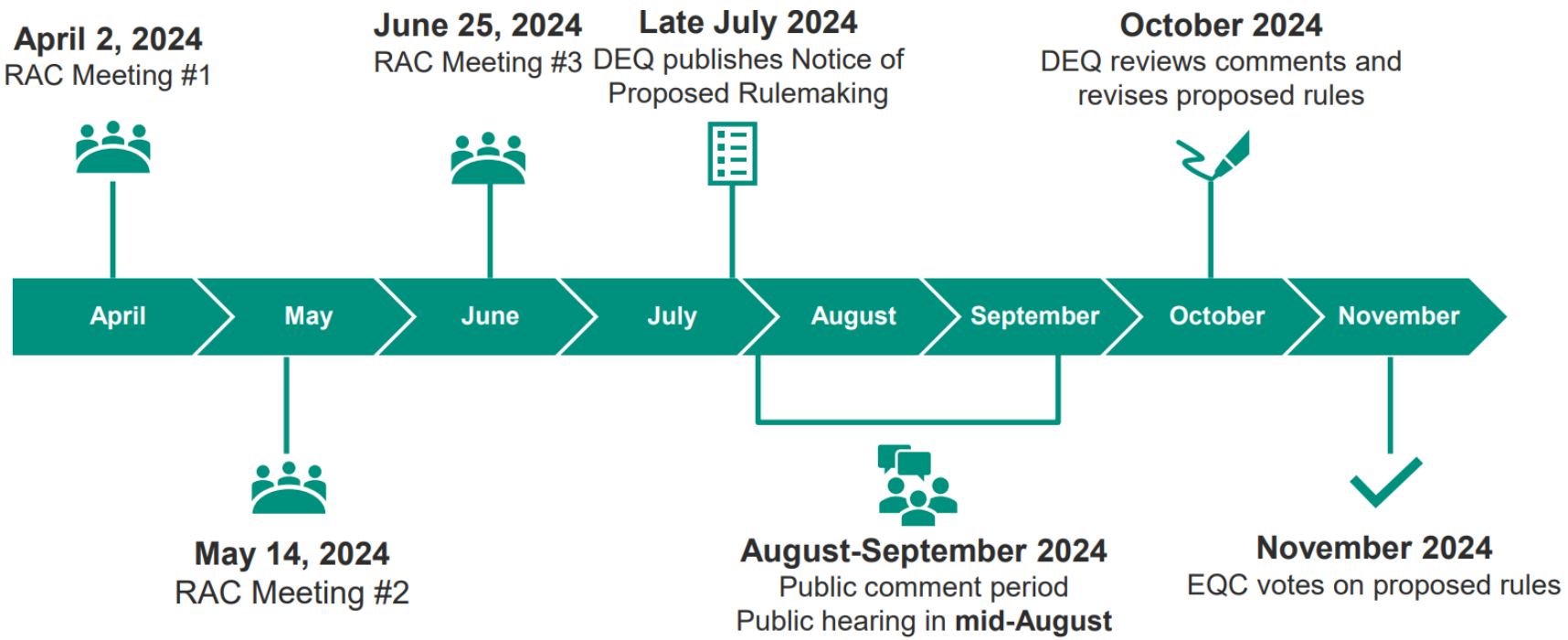
# Original Climate Protection Program (CPP)

- 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



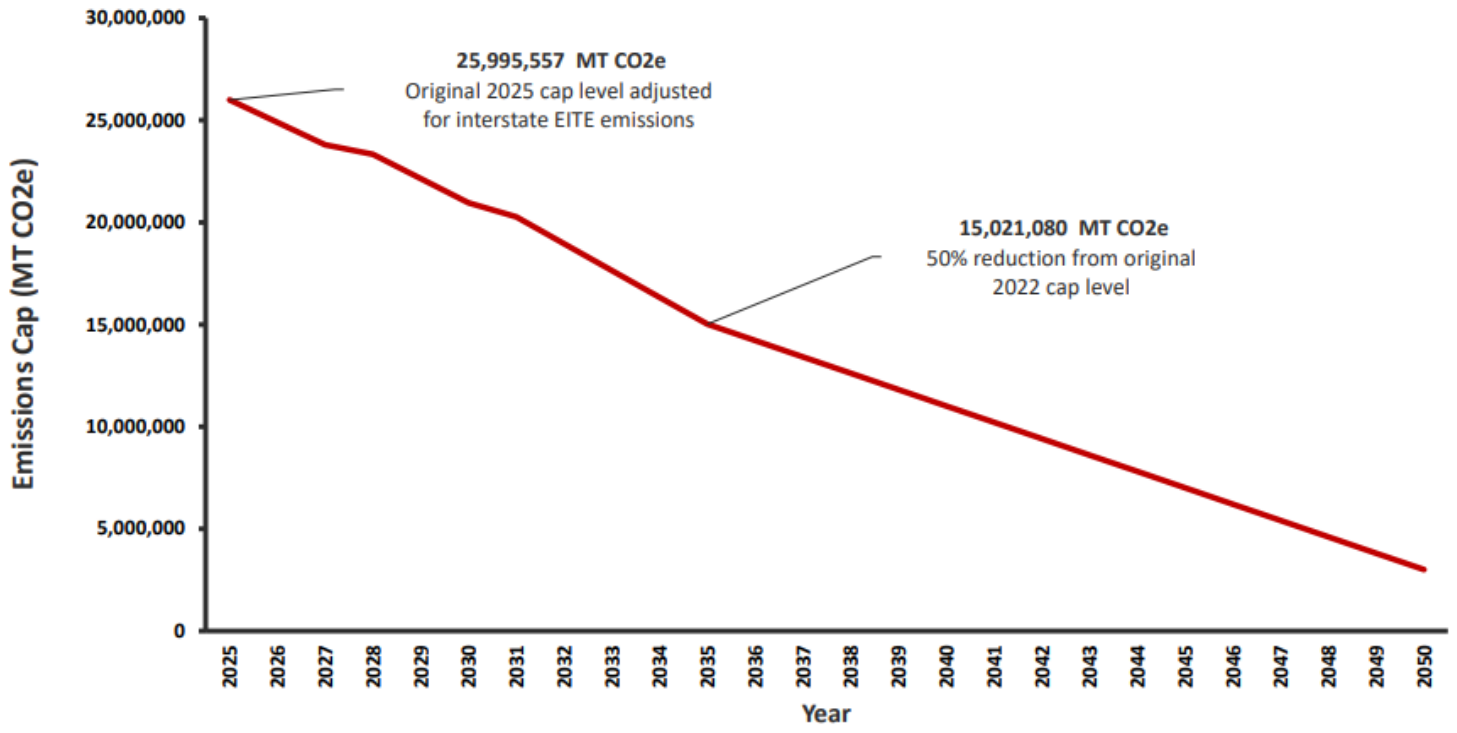
# 2024 CPP Rulemaking

- 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**

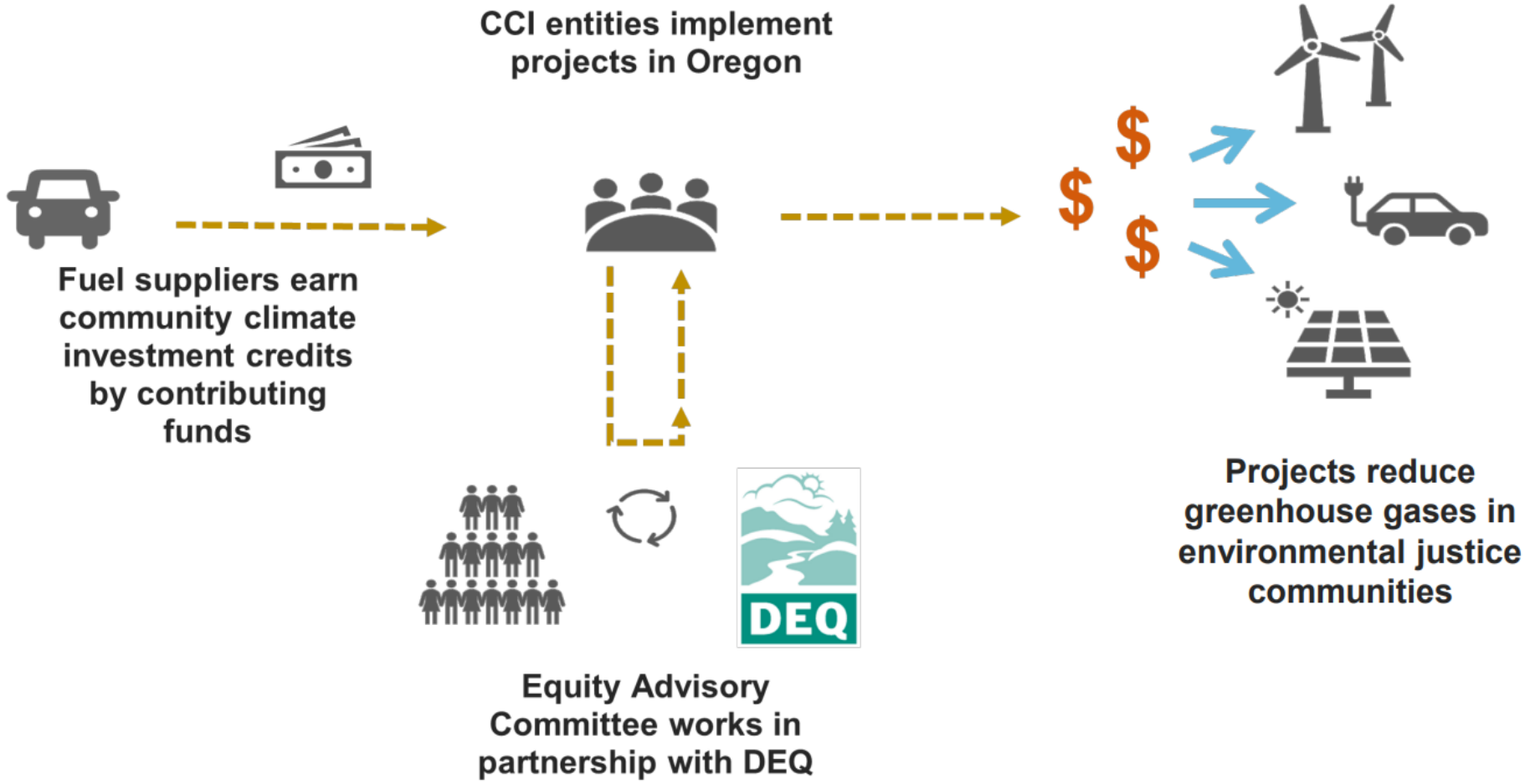
- Very Large Stationary Sources (facilities)
  - Process emissions only

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)




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

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| Residential Codes | Commercial Code |
|---|---|
| <u>RESIDENTIAL: Effective 10/1/2023</u><br>• **"Additional Energy Credits" Table**: above-code efficiency options to comply (per EPCA)<br>• **94% AFUE furnaces** vs. 92% AFUE in previous code<br><br><u>RESIDENTIAL Reach Code: Effective 7/1/2024</u><br>• Based on **national standards**: EnergyStar, Zero Energy Ready Home (ZERH), and Passive House (PHIUS)<br>• Aligns with **incentive programs**<br>• Optional/**aspirational** | <u>COMMERCIAL: Effective Q1/2025 (date TBD)</u><br>• Adoption of **ASHRAE** Standard **90.1-2022** with minor modifications for Oregon<br>• **Pending** upstream development |

# Washington Residential Energy Code Effective March 15th, 2024

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| 2021 Summary - Previous Code | 2024 Changes - Current |
|---|---|
| • **New "Energy Credits" Table**: above-code efficiency options to comply (per EPCA)<br>• **Space & Water Heating Appliances:** compared to electric Heat Pumps via "Fuel Normalization" and Source Energy Factors (SEF)<br>• **Gas Space & Water Appliances**: require more credits vs. heat pumps than prior code | • **Energy Credits Table**: now based on Site Energy Consumption - Greater credits disparity between fuels.<br>• **Gas heating appliances:** more challenging to comply than previous code<br>• **Dual-Fuel & Gas Heat Pumps** eligible for more credits<br>• **Like-for-like replacement** of appliances allowed<br>• **Gas Fireplaces, Cooking and Clothes Dryers:** exempt |

# Washington Commercial Energy Code Effective March 15th, 2024

| 2021 Summary - Previous Code | 2024 Changes - Current |
|---|---|
| • **"Energy Credits" Table:** requires above-code credit packages. Credits are mostly fuel neutral. | • **Energy Credits:** now based on Site Energy Consumption. Greater credits disparity between fuels.<br>• **Dual-Fuel Heating** allowed for water heat without credit penalty but not space heat (Petition Pending)<br>• **Like-for-like replacement** of appliances allowed<br>• **Very challenging for gas appliances**: Significant onsite renewables required to achieve credits<br>• **"Electric-readiness"** required for all gas appliances<br>• **Gas Fireplaces, Cooking and Clothes Dryers:** exempt |

# Washington Ballot – November 2024

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## 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

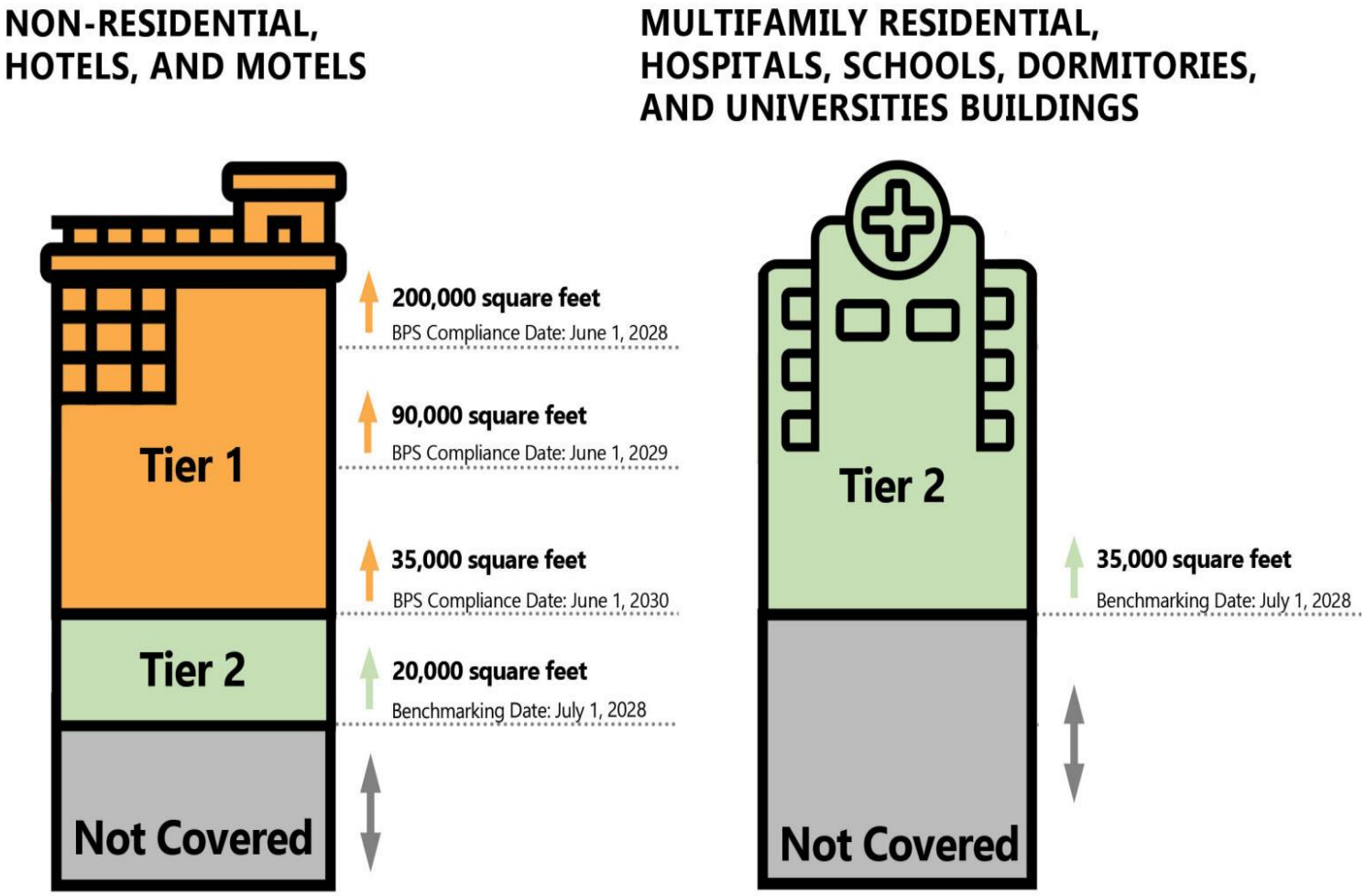
- USA manufacturers and imports must provide Gas furnaces with ≥95% AFUE

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



# 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

NW Natural®

**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

# 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<br>**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

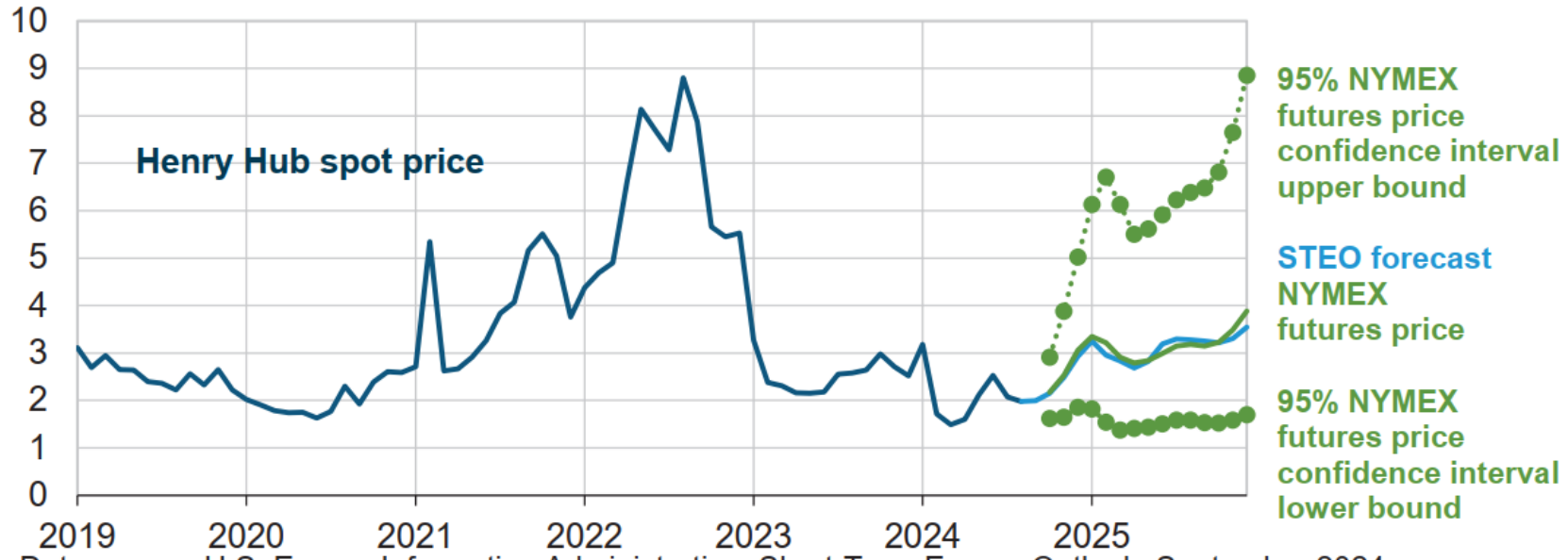
# National prices are low in the near term but rising, with risk skewed asymmetrically higher

NW Natural®

**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.

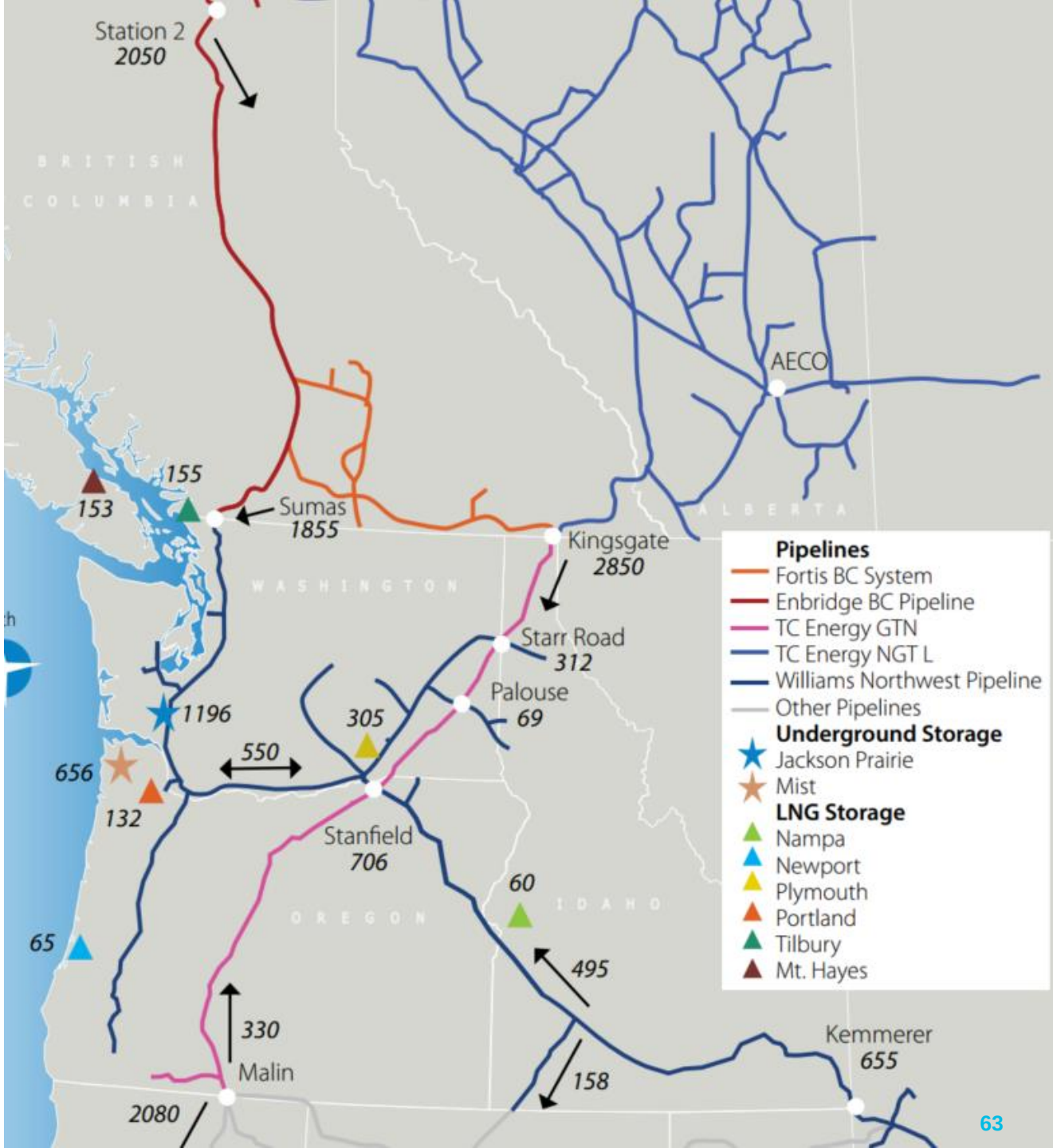
eia

# 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

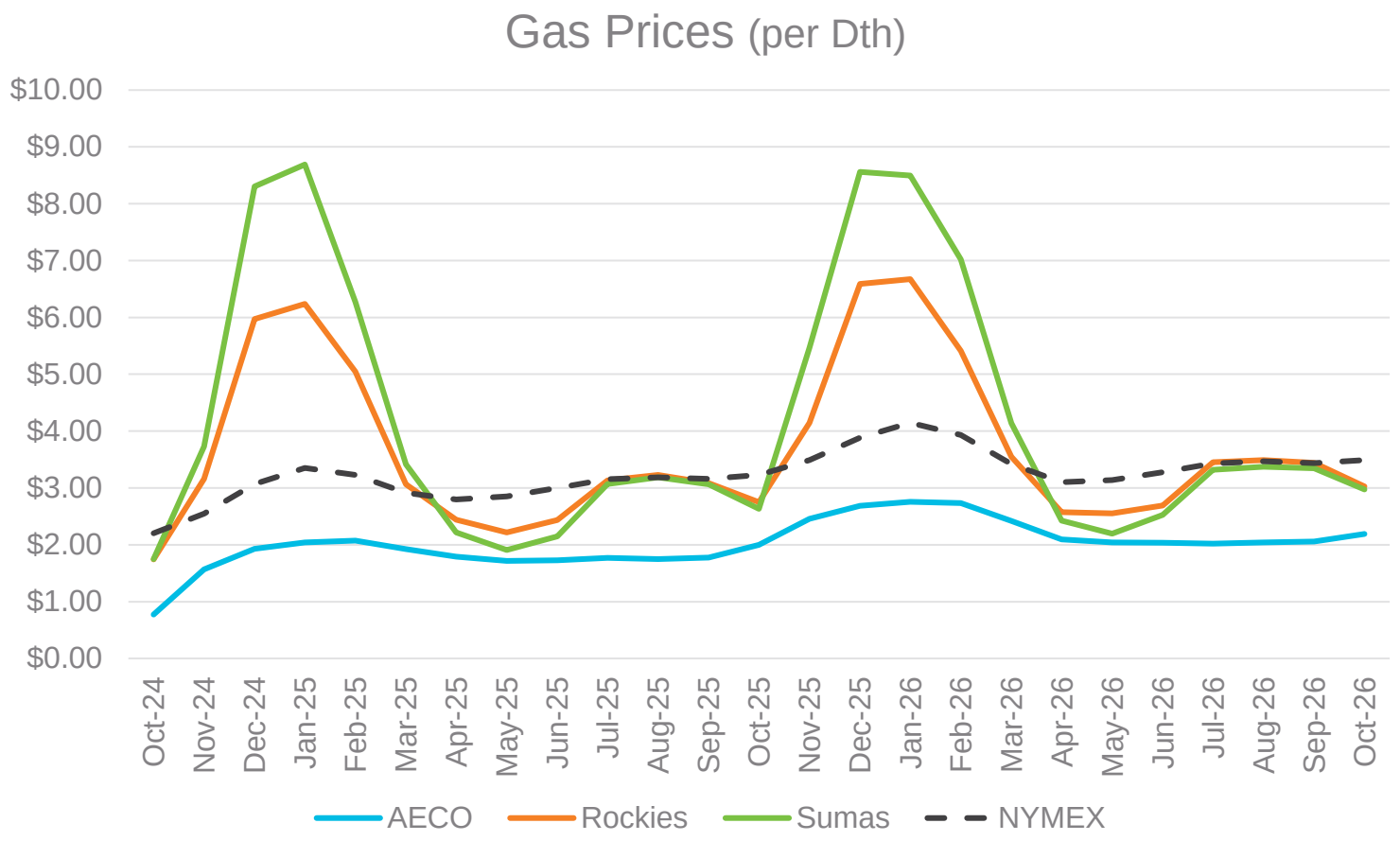


# Pacific Northwest gas system is very tight with more demand being added

- 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

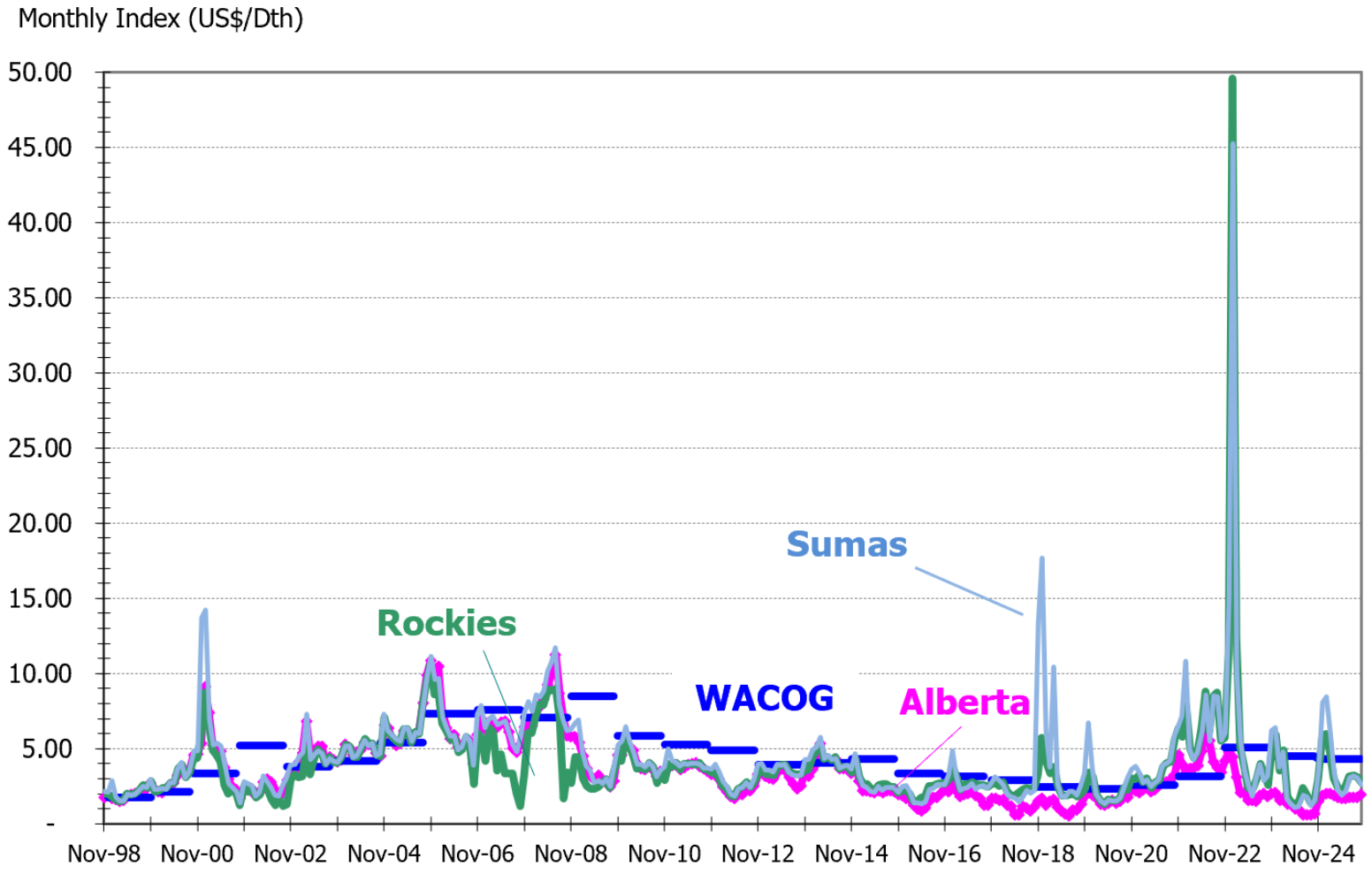
# Our portfolio focuses on reducing customer bill impacts from volatile markets

- 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



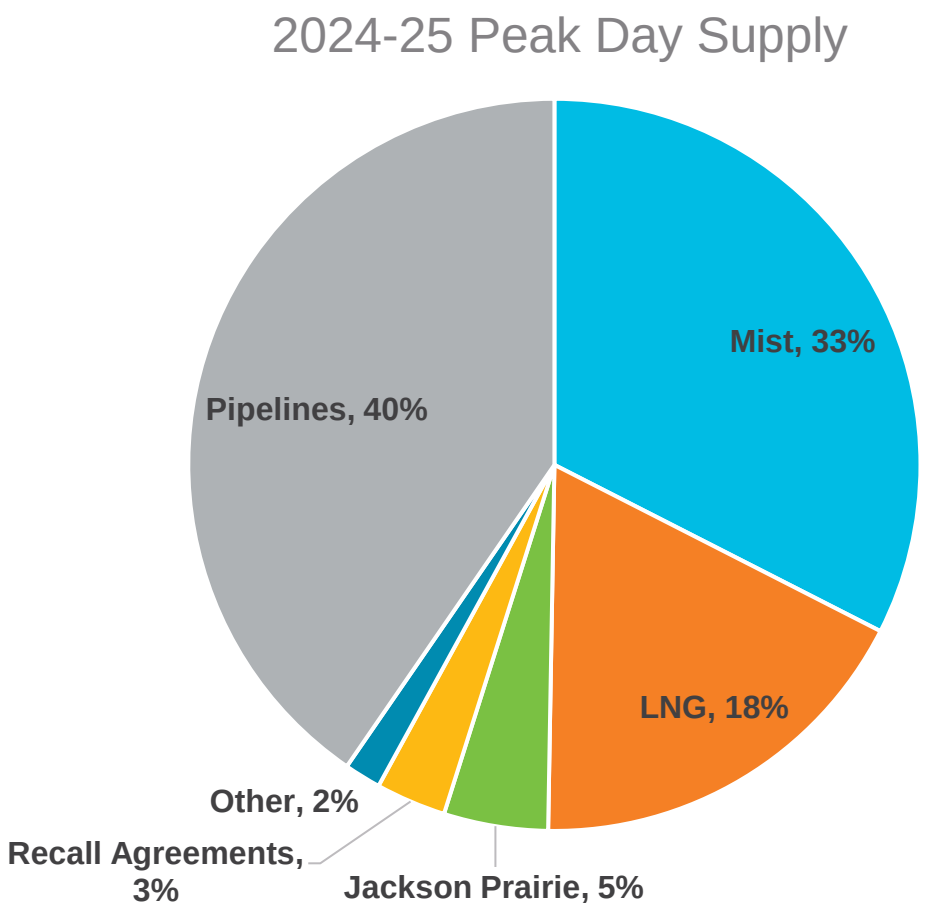
# Commodity rates (WACOG bar) experienced by customers remain stable amidst market volatility

- 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

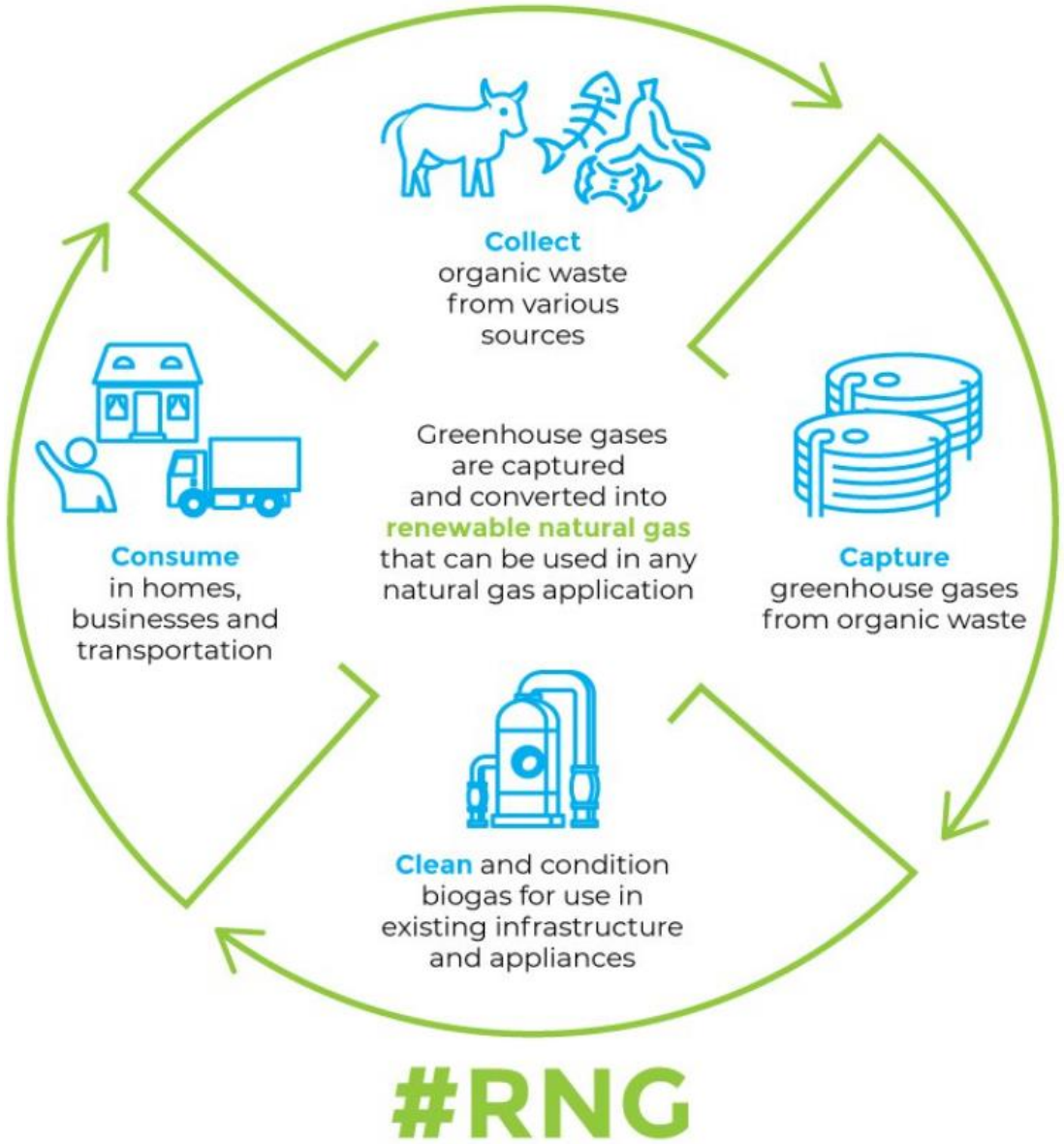
- Washington House Bill 1257 (voluntary biomethane)
- Washington Climate Commitment Act (Emissions cap, similar to Oregon CPP, includes allowances and trade)
  - Reduce emissions below 1990 levels
    - 2030: 45% below
    - 2040: 70% below
    - 2050: 95% below

# What is RNG?

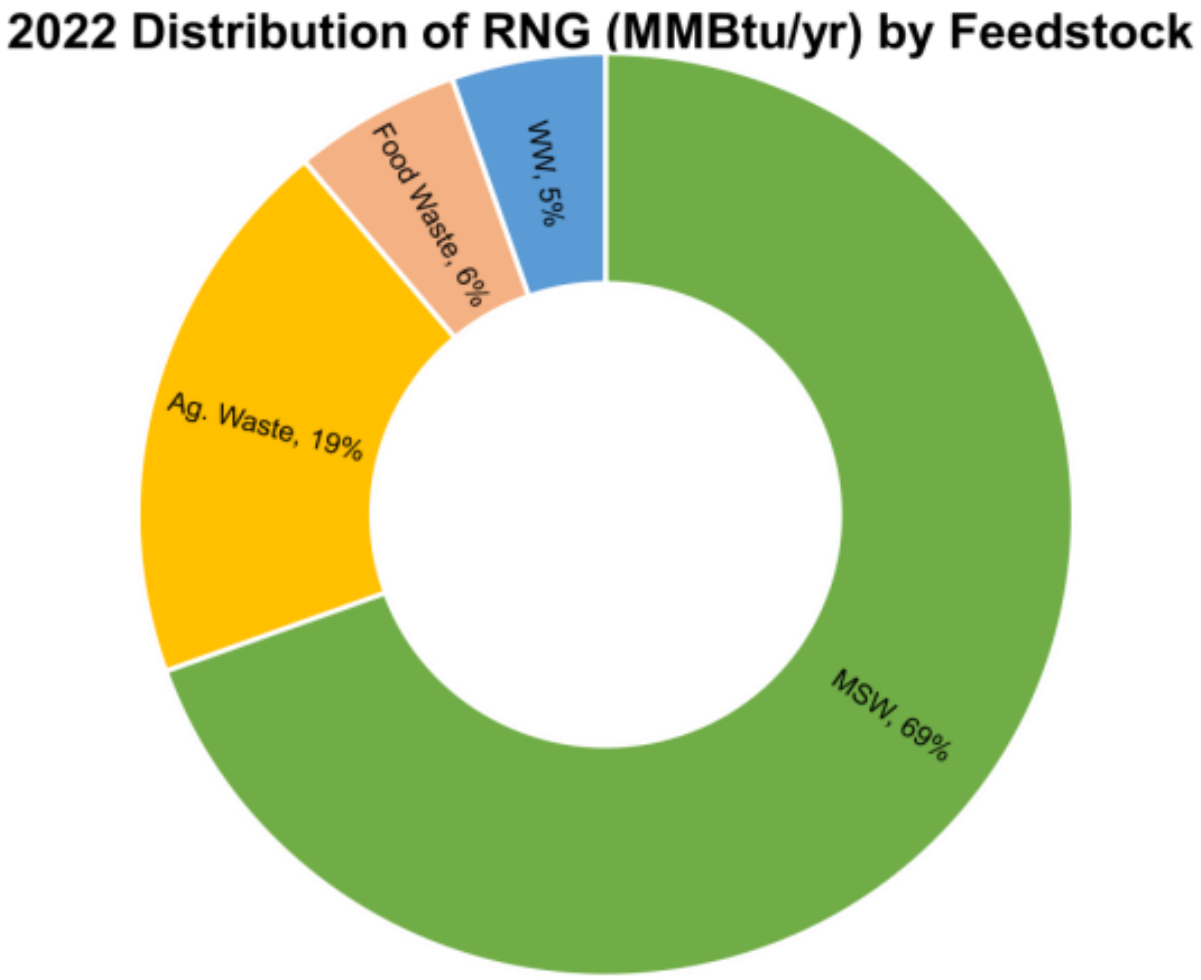
NW Natural®

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

THE COALITION FOR RENEWABLE NATURAL GAS



# RNG: Sources

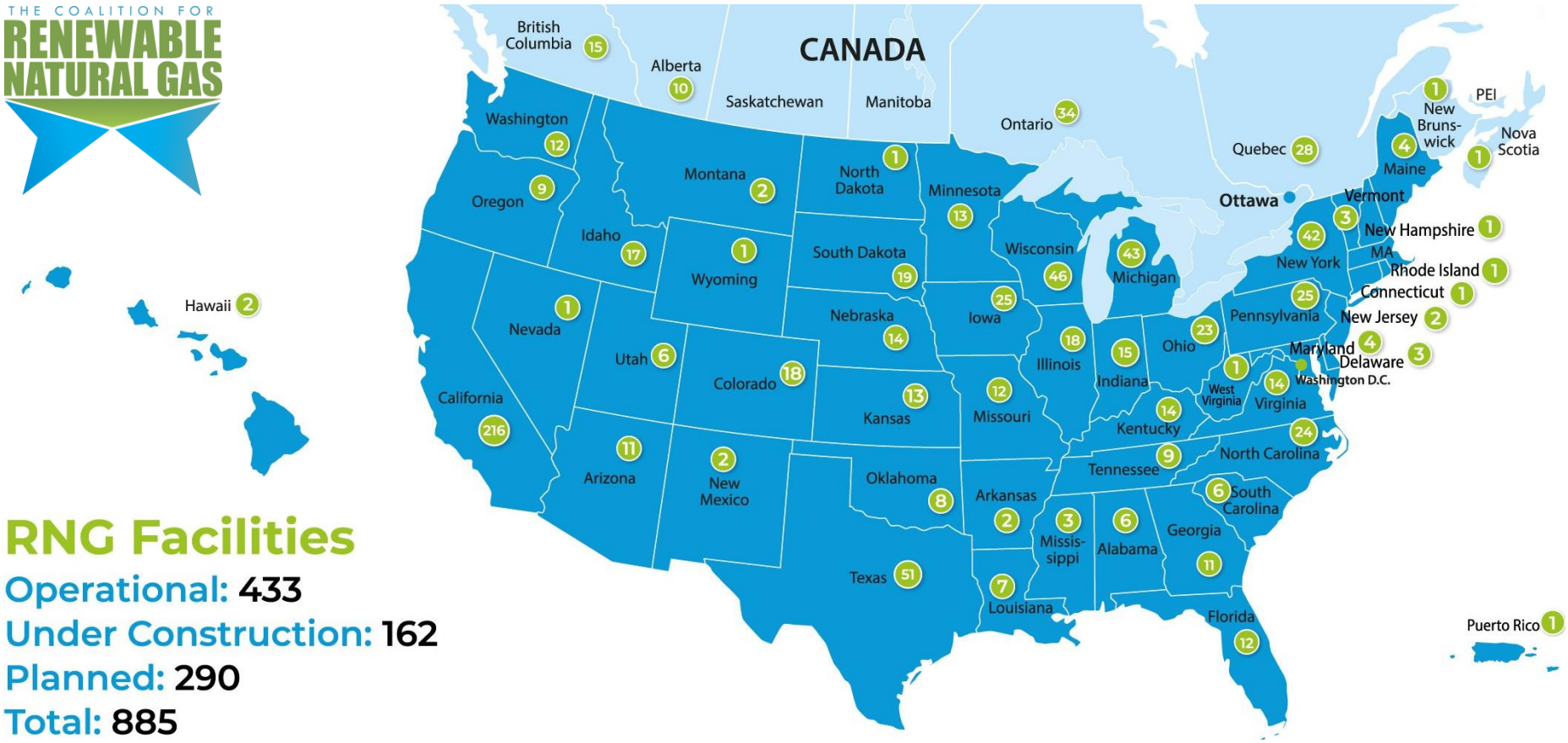



- 19% Agricultural Waste
- 6% Food Waste
- 5% Wastewater
- 69% Municipal Solid Waste

Source: Guidehouse

# RNG: Operating Facilities

THE COALITION FOR RENEWABLE NATURAL GAS




## 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?

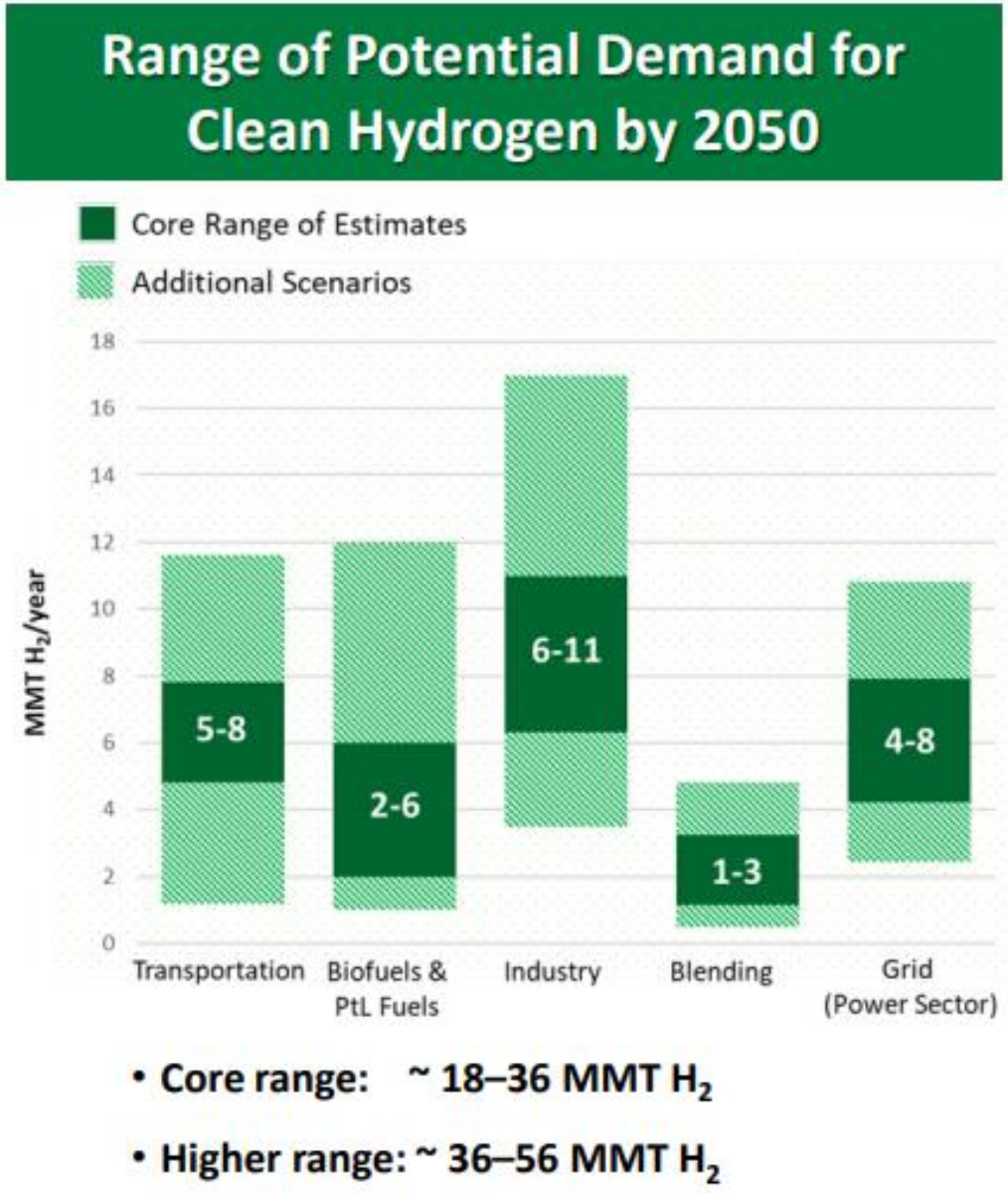
- Clean hydrogen refers to hydrogen produced through electrolysis—separating liquid water into hydrogen—using renewable or low-carbon emissions energy sources, such as wind, solar or nuclear.
- Clean hydrogen can also refer to hydrogen produced using thermal conversion processes with carbon capture and 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

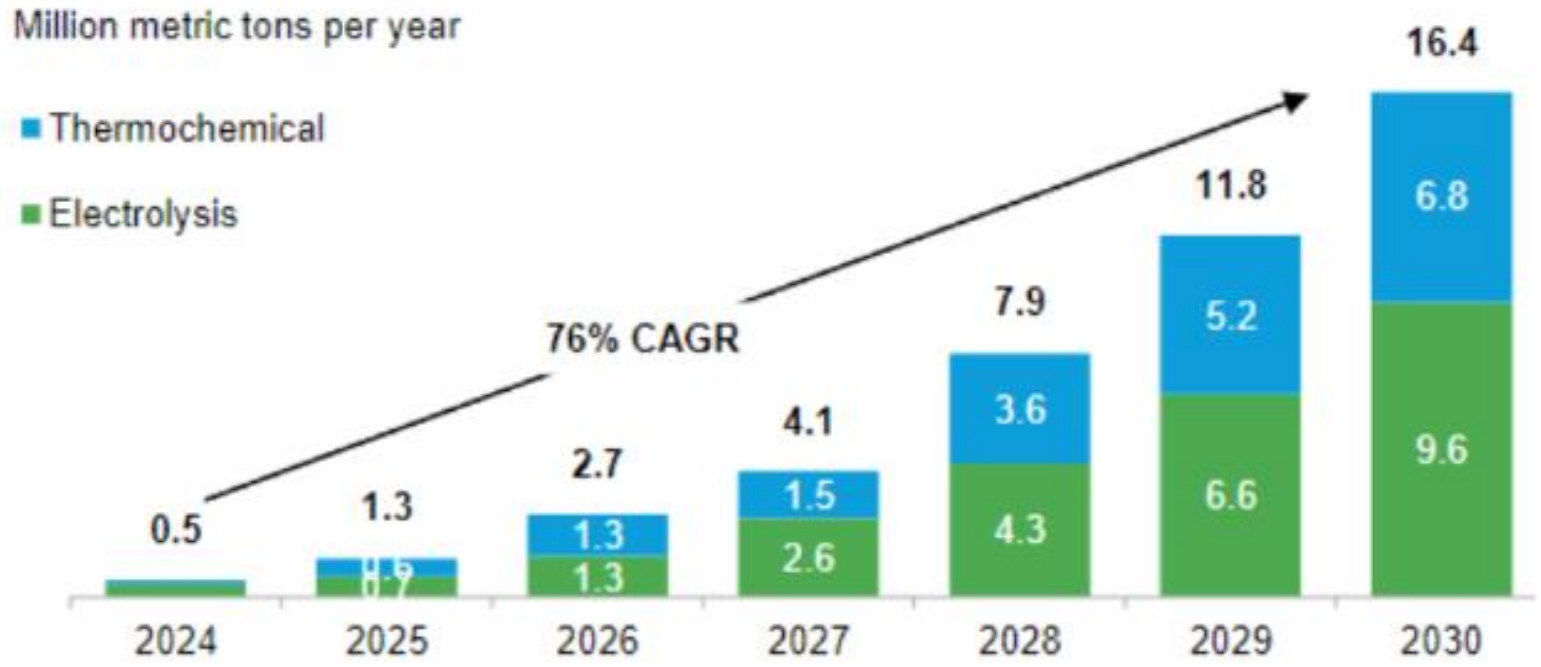



Source: hydrogren.energy.gov

# 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 $H_2$ 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.*

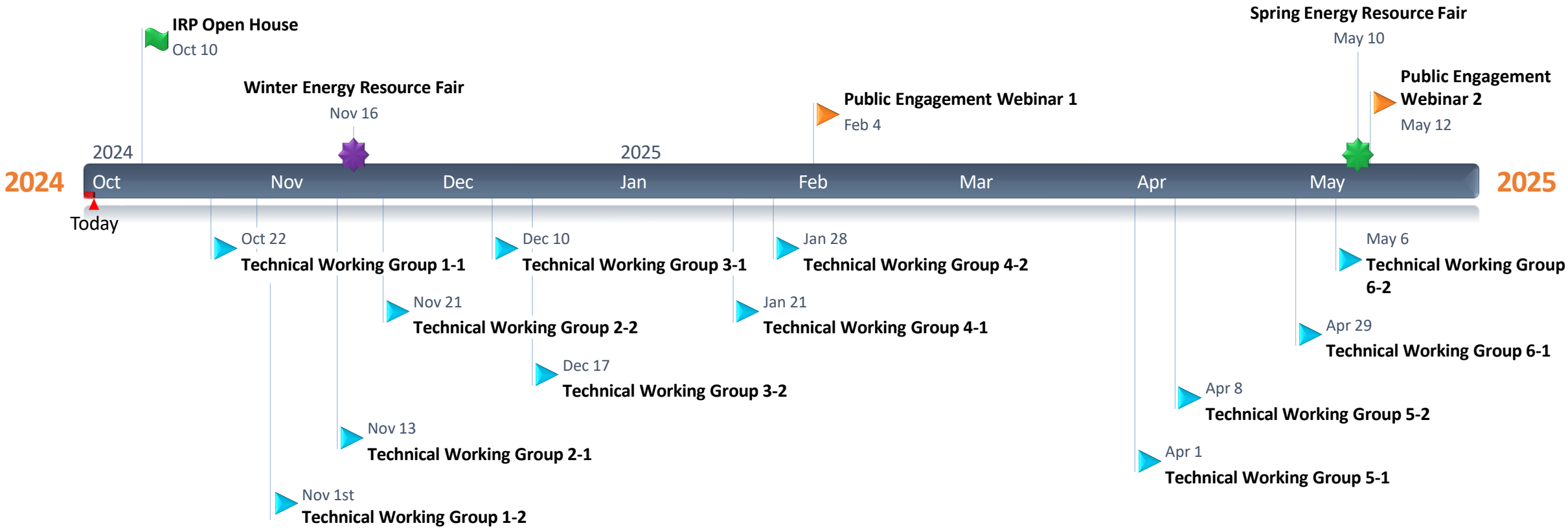
Source: bnef.com

# 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




*Subject to change

# 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 7th |
| **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; Feedback Form

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.** ***Parkrose High School from 11:00am to 2:00pm*** |
| **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

# Feedback Form:

https://www.surveymonkey.com/r/NWNaturalIRP

# Thank you!

## We value your feedback.

IRP@nwnatural.com

IRP Website