

NW Natural 2018 IRP Update #3

Oregon Public Utility Commission Public Meeting Presentation

May 4, 2021



Agenda

- **Update on 2018 IRP Action Plan**
- **Process and Policy Update**
- **Key Updates in 2018 IRP Update #3**
- **Action Plan**

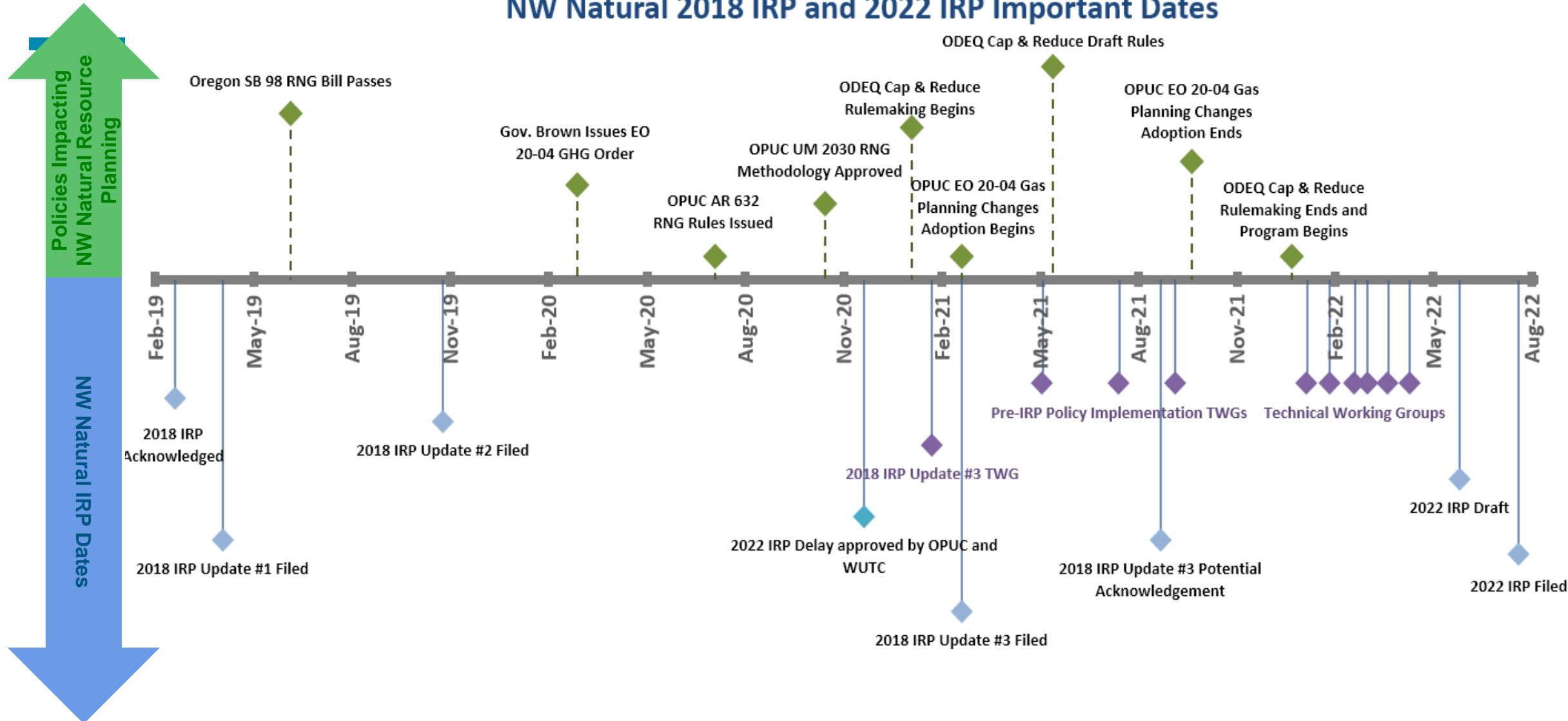


Update on 2018 IRP Action Plan

Action Description	Status
Recall Mist Storage Capacity for the 2020-21 and 2021-22 Gas Years	Updated load projections resulted in no Mist Recall being required for the 2020-21 gas year. Lower cost Citygate deliveries of 5,000Dth/Day are to be deployed for the 2021-22 gas year.
Use "all-in cost" RNG Evaluation Methodology to evaluate RNG resources	Item was not acknowledged, but transitioned to an investigation. Docket no. UM 2030 was started in 2019 and completed October 2020. The RNG evaluation methodology was amended and approved, and is now being used to evaluate RNG resources.
Complete Hood River Reinforcement Project	Construction started and the project was placed into service in September 2020 and included in rates.
Complete Happy Valley Reinforcement Project	Construction started and the project was placed into service in March, 2020 and included in rates.
Complete Sandy Feeder Reinforcement Project	Construction started and the project was placed into service in October, 2020 and included in rates.
Complete South Oregon City Reinforcement Project	Construction started and the project was placed into service in April, 2020 and included in rates.
Complete Kuebler Road (Salem) Reinforcement Project	The project is currently in the planning phase. It's yet to be determined what environmental permits, if any, will be required as final environmental studies are still to be performed. At this time the target is to start construction in the summer of 2021 and finish in Q4 of 2021.
Acquire Energy Efficiency savings via Energy Trust for Oregon for 2019 and 2020	Energy Trust acquired 97% of the 2019 goal on behalf of NW Natural customers. Final 2020 results are still pending.
Acquire Energy Efficiency savings via Energy Trust for Washington for 2019 and 2020	Energy Trust acquired 101% of the 2019 goal on behalf of NW Natural customers. Final 2020 results are still pending.

Where have we been and where are we going?

NW Natural 2018 IRP and 2022 IRP Important Dates







Aligning Short- and Long-term Needs with Policy Environment in Flux

- **Some policy uncertainty has resolved since 2018 IRP...but some big new policies have added uncertainty with large implications**
- **NW Natural anticipates substantial methodological changes in our next IRP to plan for compliance with the outcome of ongoing rulemakings and processes (most notably EO 20-04)**
- **Seeking acknowledgement in this Update of projects based upon current need (i.e. are not dependent upon long-term projections) to address near-term reliability risks**

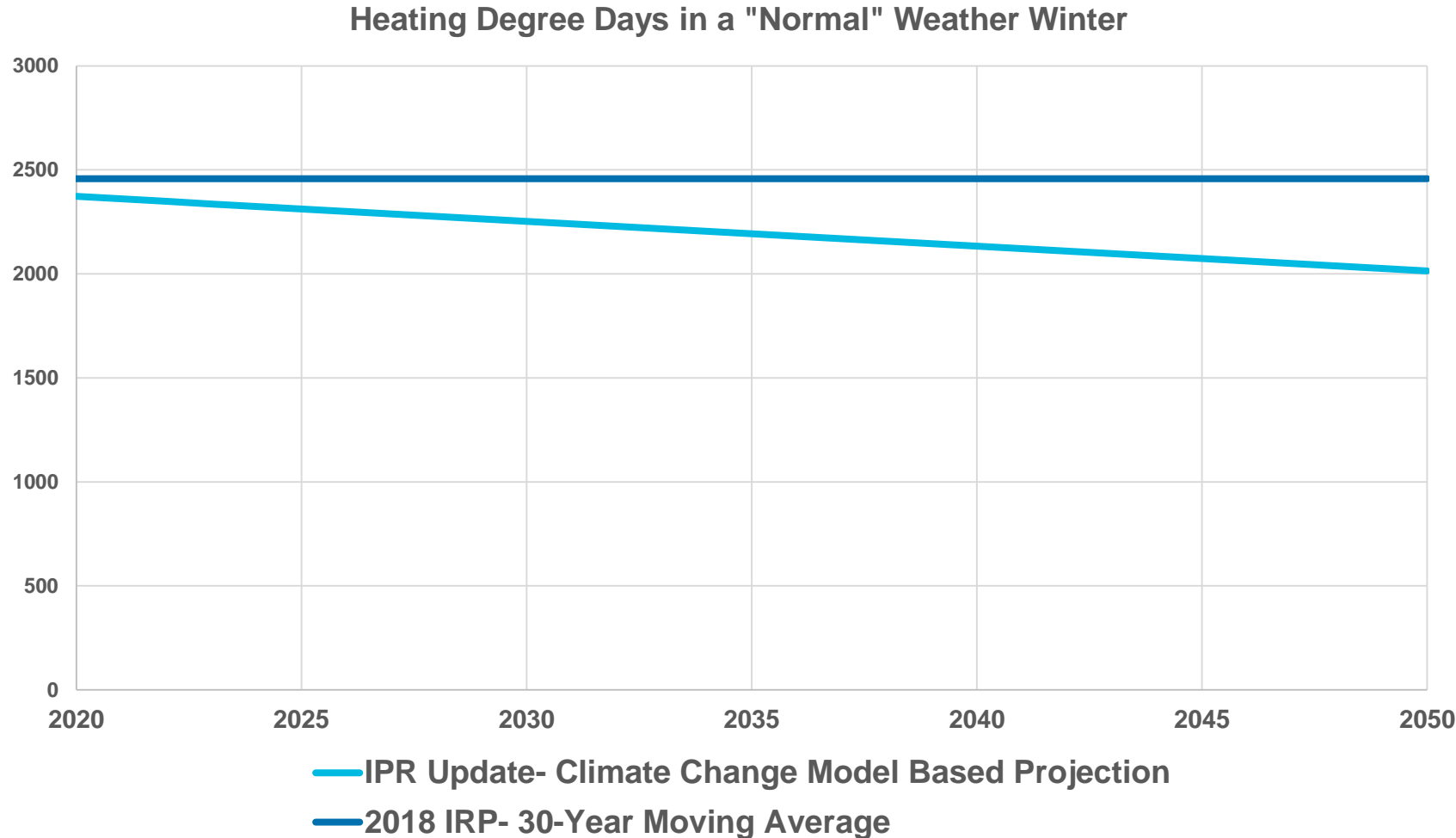
What makes this update different?

- Due to delay, more time between this IRP and the next IRP than usual
- This Update includes more usual, and includes updates to:
 - Gas and GHG prices
 - Load forecasts
 - Avoided Costs
 - Emissions Forecast
 - RNG and Hydrogen market and project information
- This Update seeks acknowledgement of:
 - Replacement of the Cold Box at the Newport LNG facility
 - A distribution system reinforcement project on the North Coast

How will climate change impact resource planning?

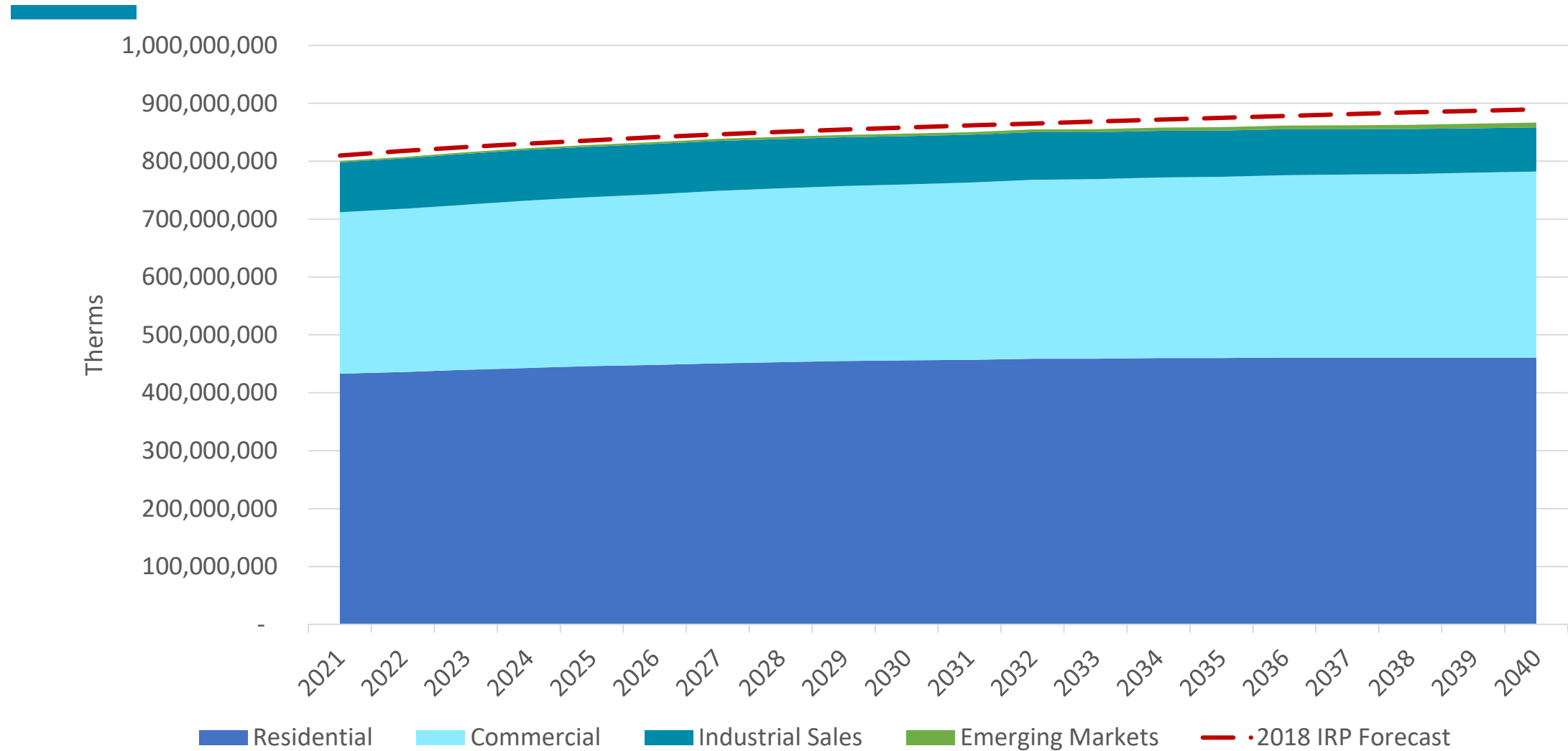
Forecast	Description	Ceteris Paribus (All Else Equal) Impact Direction
Temperature	Average annual temperatures are rising	
Heating Degree Days	Cumulative heating degree days are declining	
Annual Load	Annual load requirements will be less due to less space heating requirement	
Emissions	Lower load requirements will lead to less emissions	

Climate Change Modeling Incorporated into Normal Weather Forecasting



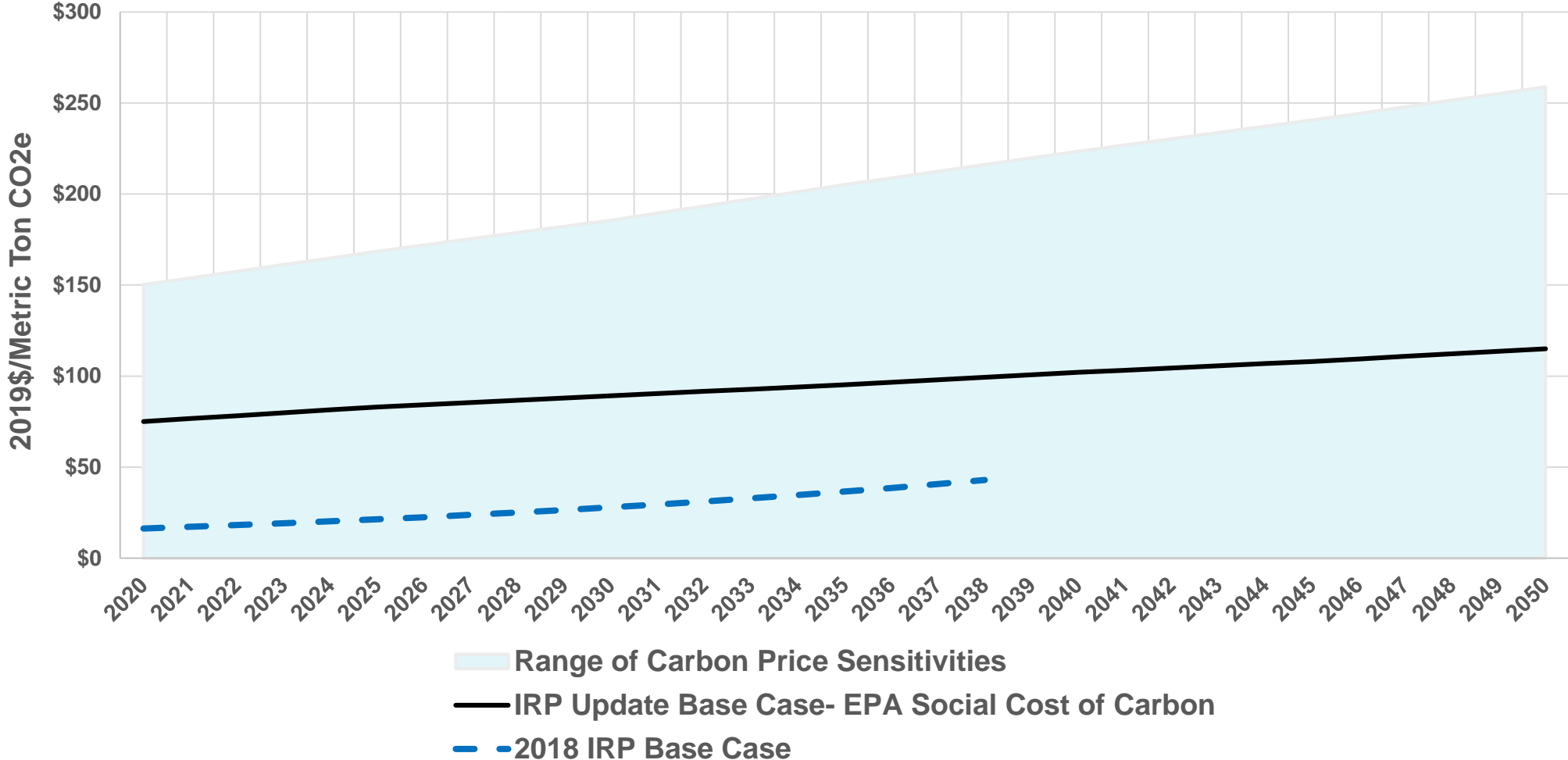
- While there is no indication that cold events are becoming less severe, there is clear evidence heating seasons are getting milder
- Implementing a similar approach to the NWPCC NW Natural now incorporates leading climate change models into weather forecasting
- Results in 3% Reduction in HDDs in 2020 and 18% in 2050

Load Forecast – Sales Schedules

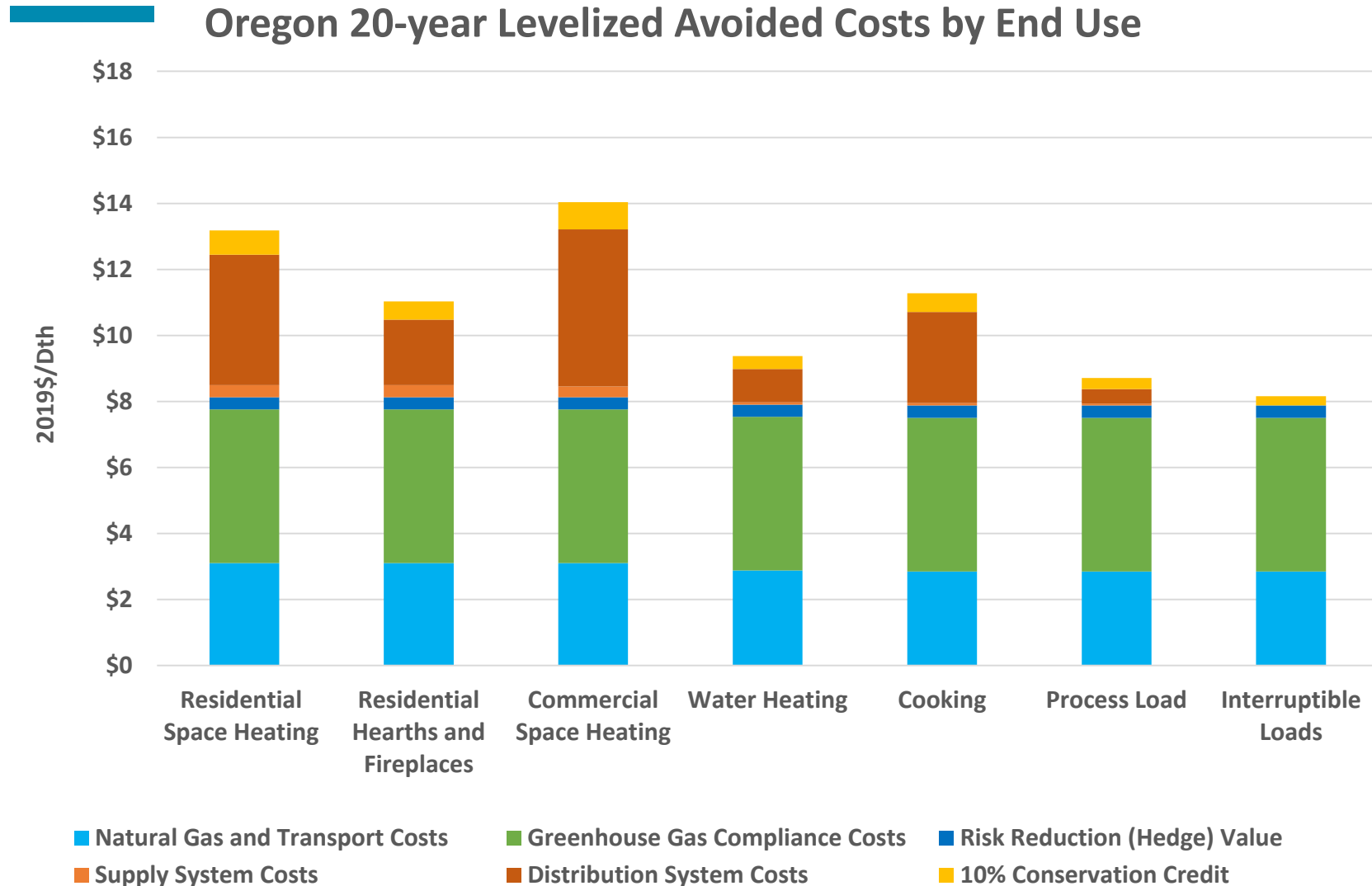


Carbon Pricing Update

2018 IRP Update #3 Carbon Policy Sensitivities



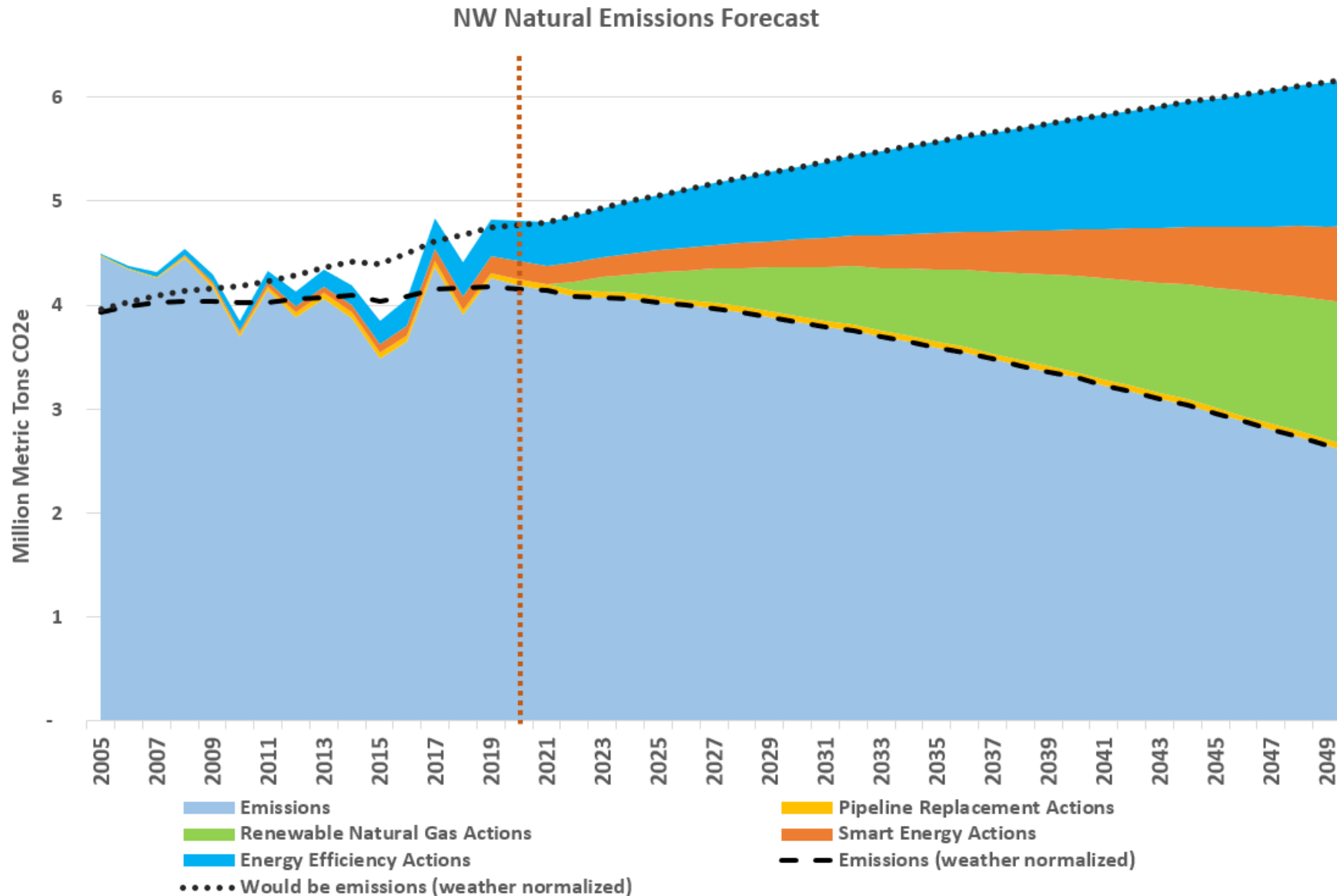
Updated Avoided Costs



Avoided costs are higher than in the 2018 IRP (by about 40% on average) due primarily to 2 factors:

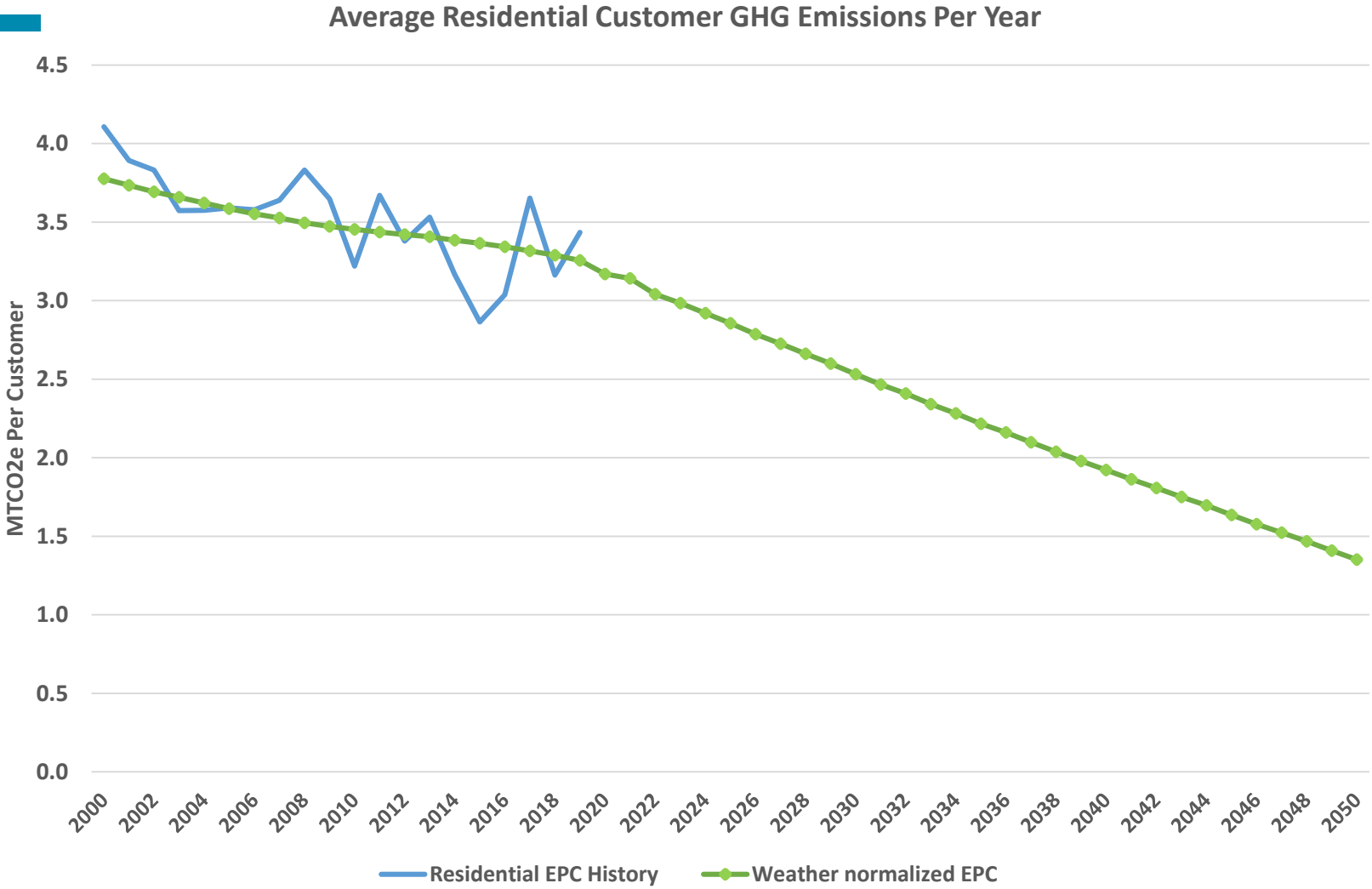
1. Greenhouse Gas Cost Projections: This update to avoided costs includes the social cost of carbon as the base case
2. Updated and more granular distribution system capacity cost estimates

Emissions Forecast Under Current Policy



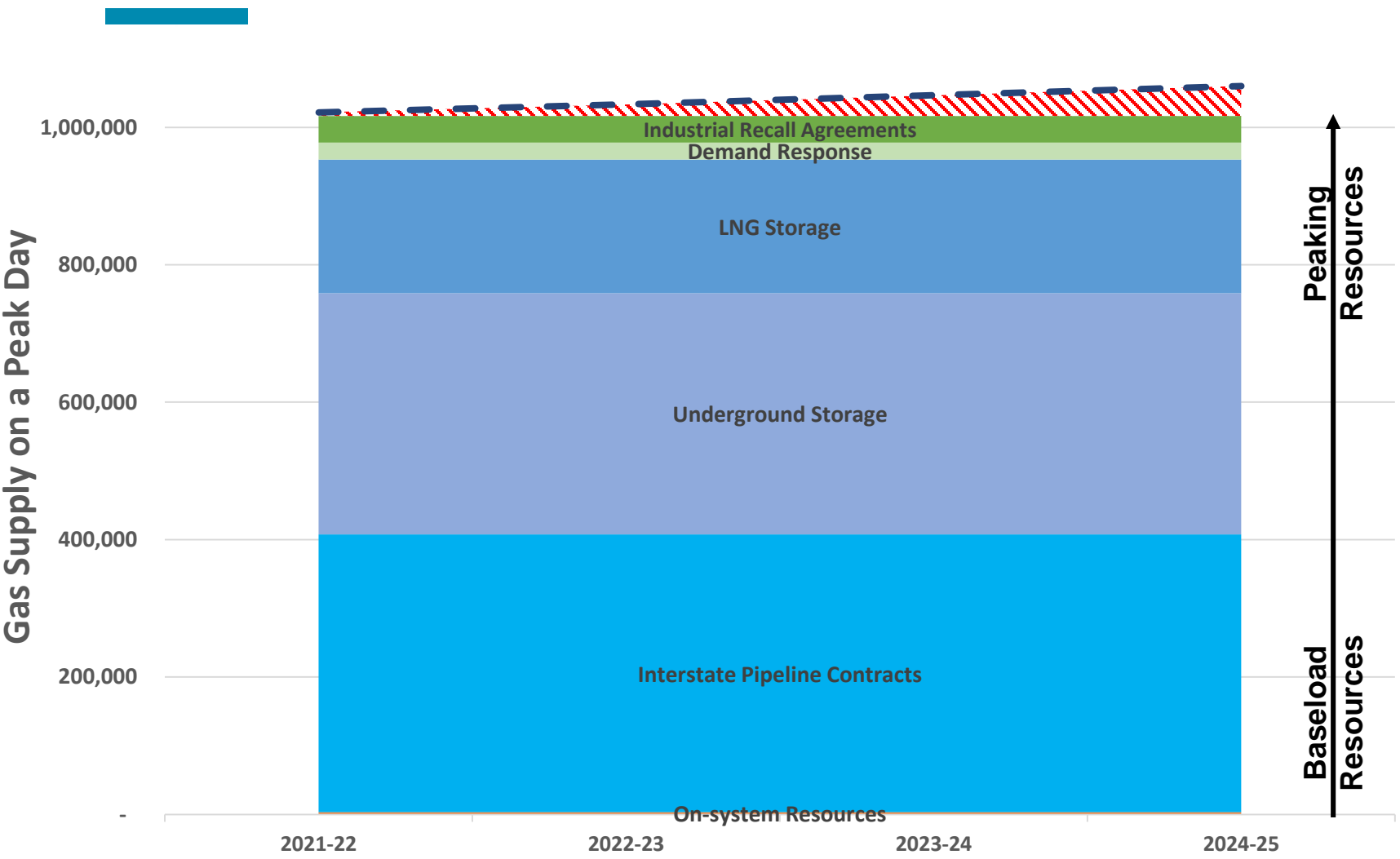
- Emissions from sales customers shown
- Actual emissions will always be “noisy” due to weather variation from year to year
- Emissions are higher than normal weather expectation in years with colder than typical heating seasons (and lower for milder than typical heating seasons)
- Includes expected impact of OR SB 98 and WA CETA
- Does not include expected impact of ODEQ’s cap-and-reduce program, other EO 20-04 related initiatives, or prospective legislation being considered in the 2021 session

Emissions per Customer Decline



- Includes impact of energy efficiency, RNG and the Smart Energy carbon offset program
- Residential Smart Energy program Savings allocated equally to all customers

Near-term Capacity Position and Strategy

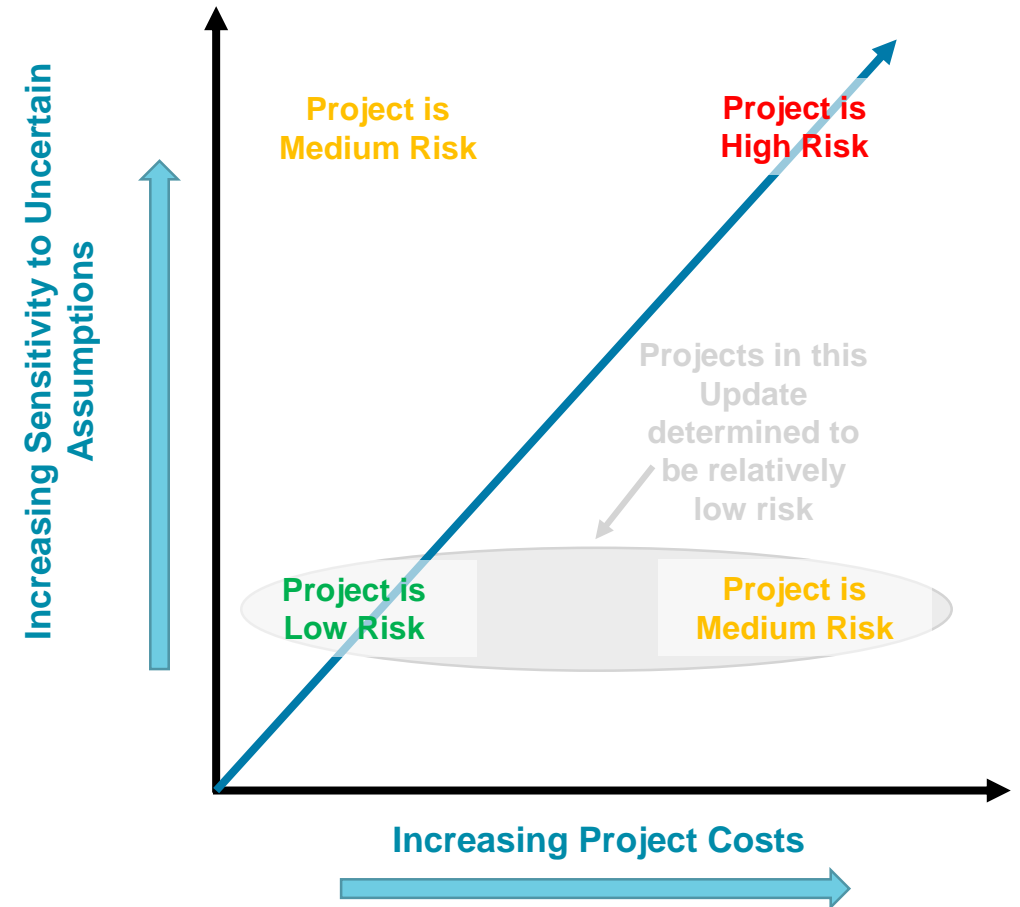


Near-term Resource Strategy:

- More of the same: Recall Mist or rely upon Citygate Deals as needed
- Flexibility of Mist Recall reduces decision lead time

Why are we seeking acknowledgement of these projects now?

- The current uncertainty in the policy environment makes decisions on projects that are dependent upon long-term load projections and/or resource options as the least-cost option riskier decisions to make
- Projects that rely on a current need and are the least-cost solution across the possible range of future outcomes are much lower risk projects
- NW Natural is seeking acknowledgement of projects in this update that:
 1. are needed in the short-term to maintain reliability to meet current loads; and
 3. are the least-cost option regardless of what long-term load materializes; and
 3. not relatively high cost projects



2018 IRP Update #3 Action Plan

Action Item no. 1:

Replace the Cold Box at the Newport LNG facility for a targeted in service date of 2025 at a estimated cost of \$20.5 million to \$26.7 million

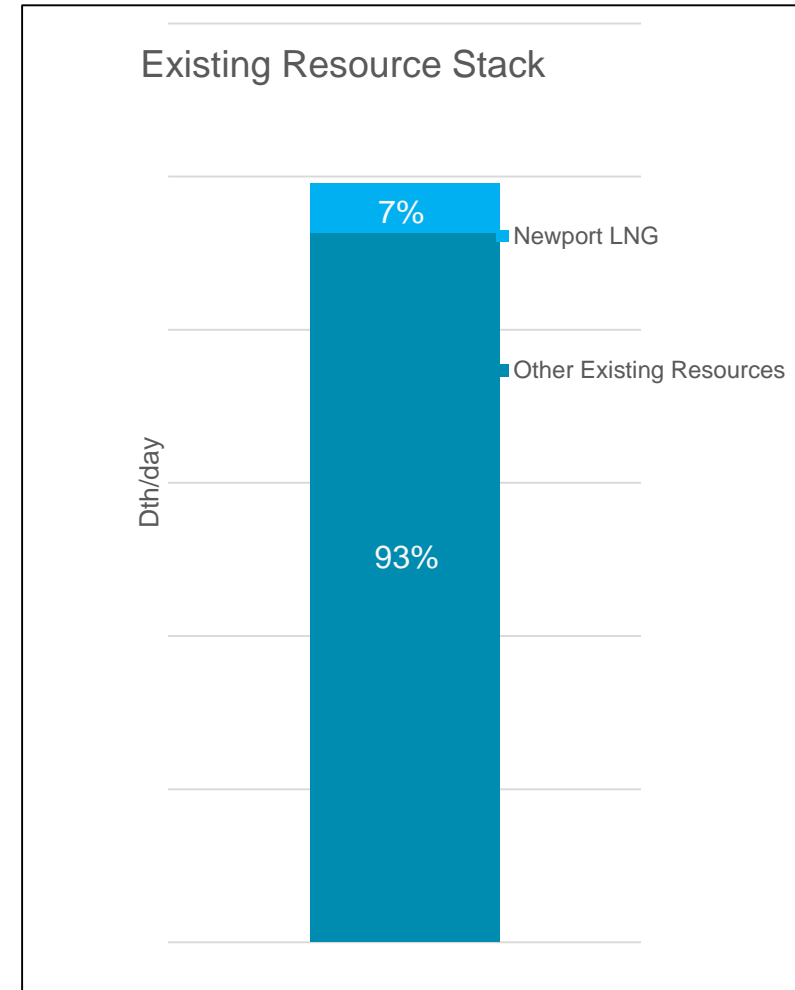
Action Item no. 2:

Proceed with Uprating the North Coast Feeder to be in service for the 2022-2023 heating season at an estimated cost of \$7 million to \$14 million

Newport LNG

- **Built in 1977**
- **1,000,000 Mcf capacity storage tank**
- **LNG Production 5,800 Mcf/day**
- **Vaporization capacity of 100,000 Mcf/day**
- **Current takeaway capacity of approximately 60,000 Mcf/day (65,000 Dth/day*)**
- **Roughly 7% of our current daily deliverability capability**
- **Strategically located to provide distribution system benefits**

*Dth/day can vary based the heat content of the stored gas



Newport LNG Project – Portfolio Costs

Portfolio PVRR (2021-2050)

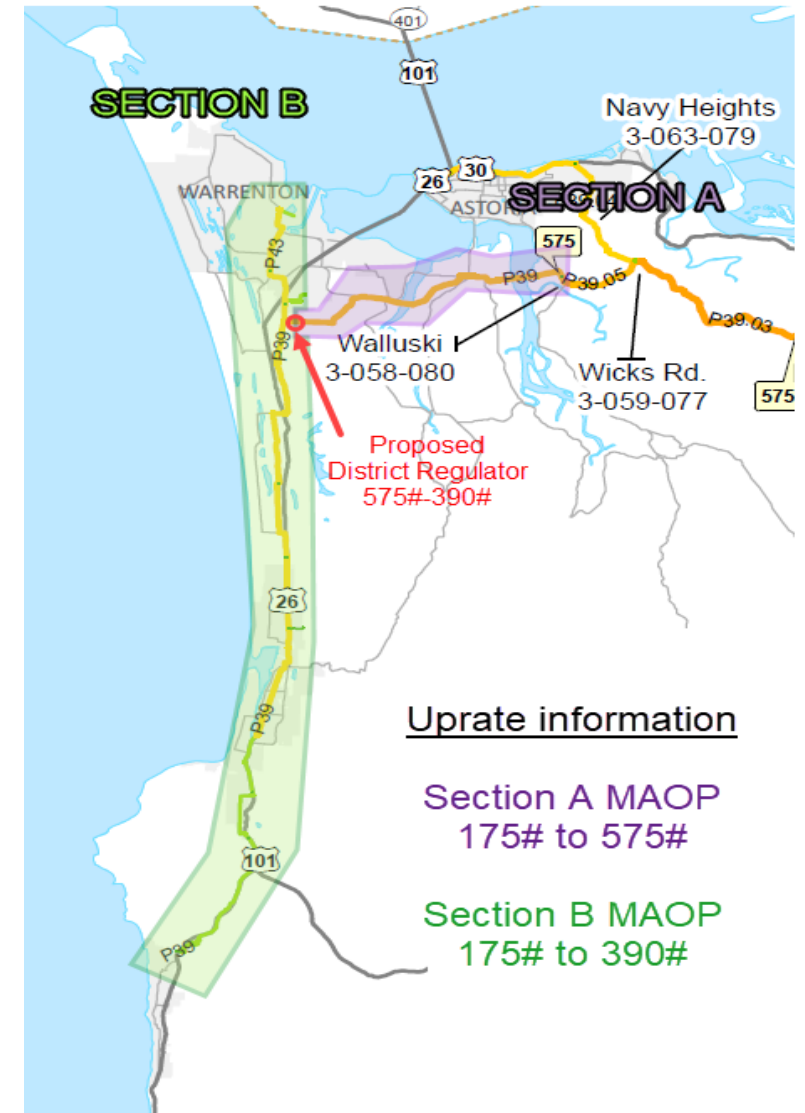
	Fixed Storage Costs	Fixed Pipeline Costs	Supply Variable Costs	Other Variable Costs	Total Portfolio Costs
Cold Box Replacement	\$63 M	\$1,162 M	\$10,548 M	\$69 M	\$11,841 M
Alternative Pipeline	≥\$58 M	≥\$1,312 M	\$10,542 M	\$70 M	≥\$11,986 M
Delta	-\$5 M	\$150 M	-\$2 M	\$1 M	≥\$145 M

Notes:

- 1) Fixed storage costs include the cost of the cold box (or lack thereof), fixed costs for Mist Recall and fixed cost for Jackson Prairie.
- 2) The only difference in fixed pipeline costs are the costs of the alternative pipeline.
- 3) Supply variable costs reflect the difference in optimized gas purchases due to differences in storage capacity of Mist Recall. Supply variable costs include a carbon adder.
- 4) Other variable costs include fuel and variable costs associated with the different gas purchases, storage injections, and optimization of storage capacity.
- 5) Differences in summed totals are attributed to rounding errors.

North Coast Feeder

- Pressure monitoring process put into place as a result of helpful stakeholder and Commission feedback to collect more field measurements
- The procedures verified the need for intervention on the North Coast Feeder
- Section B consists of uprating the high pressure system west of where the 8" (W) terminates from a MAOP 175 psig to 390 psig.



North Coast Feeder

- **Alternative Analyses Complete**
 - Satellite LNG not cost effective
 - Targeted interruptible schedule agreements insufficient

	40-year PVRR
Feeder Uprate	\$7.1M - \$14.1M
Satellite LNG Alternative	\$37.1M
Targeted Interruptible Schedule Agreements	N/A (insufficient)