Oregon Department of **ENERGY**

Oregon Energy Strategy
Low Carbon Fuels
Policy Working Group

Meeting 1
February 12, 2025

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PURPOSE OF THIS WORKING GROUP

- Build understanding of learnings coming out of the model, specifically those related to fuels in Oregon.
- Establish list of existing policies currently delivering progress on goals.
- Provide feedback on fuel priorities, barriers, policy gaps, and opportunities.
- Develop policy actions that could help advance progress toward increased availability and adoption of low carbon fuels.

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AGENDA

TOTAL: 45 MINUTES

- Introductions
- Policy Working Group process
- Key Findings
- Next Steps

WORKING GROUP ROSTER

ORGANIZATION	NAME
Amazon	Charles Knutson
Avista	Tom Pardee
Cascade Natural Gas Corporation	Devin McGreal
City of Portland	Pam Neild
Clean Fuels Alliance	Cory Ann Wind
Climate Solutions	Dave Van't Hof
Coalition for RNG	Sam Wade
CoEnergy Propane, LLC	Bryan Adams
Columbia Willamette Clean Cities	Michael Graham
Eugene Water & Electric Board	Kelly Hoell
Food Northwest	Pam Barrow
Green Energy Institute	Carra Sahler
NW Natural	Brittany Park
Oregon Business and Industry	Sharla Moffett
Oregon Business for Climate	Tim Miller
Oregon Citizens' Utility Board	John Garrett
SkyNRG	John Plaza
Oregon Fuels Association	Danelle Romain
Port of Portland	Cassandra Jackson
Renewable Hydrogen Alliance	Rebecca Smith
Western States Petroleum Association	Antonio Machado
OR Dept of Forestry	John Tokarczyk
OR Dept of Fish and Wildlife	Jeremy Thompson
Oregon Department of Geology and Mineral Industries	Ruarri Day-Stirrat
Department of State Lands	Nataliya Stranadko

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INTRODUCTIONS

Please share the following with the group:

- Name
- Affiliation
- What is a policy area you are excited to talk about?

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UPDATED MEETING SCHEDULE

Wednesday, February 12th (Today) **9 a.m. – 12 p.m.**	Opening Plenary Meeting – All WGs
Wednesday, February 19th **9 a.m. – 12 p.m.**	First Break Out Meeting
Friday, March 14th **9 a.m. – 12 p.m.**	Second Break Out Meeting
Wednesday, April 30th **2 p.m. – 5 p.m.**	Third Break Out Meeting
Wednesday, May 21st **9 a.m. – 11 a.m.**	Final Plenary Meeting – All WGs

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Developing Policy Recommendations

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EXAMPLE: WA ENERGY STRATEGY KEY ACTIONS

- Buildings
  - Replace the direct consumption of fossil fuels, primarily natural gas, with high-efficiency electric heat pumps for space and water heating.
  - Strengthen and deepen energy efficiency programs and standards to focus on avoiding and reducing emissions
  - Adopt specific targets and accountability for greenhouse gas emissions in the built environment

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EXAMPLE: NET ZERO NW KEY ACTIONS

Table 3. Key Actions by Decade from Scenario Analyses

	2021-2030	2030-2040	2040-2050
Core Case	▪ Research and development investments in geologic negative emissions technologies (CO_2 sequestration, land sink measures) ▪ Investments in energy efficiency and transportation and buildings electrification ▪ Reform siting and permitting processes to ensure that the pace of renewable investment and supporting transmission investment keeps pace with demand for clean energy	▪ Hydrogen network development of electrolysis and pipelines, especially to access Montana production ▪ Retrofit retiring coal and gas plans with nuclear small modular reactors ▪ Rapid expansion of renewable generation capacity in the region, taking advantage of Inflation Reduction Act (IRA) incentives through 2035—especially Montana wind ▪ Initial expansion of carbon capture and sequestration, especially in Montana	▪ Continue hydrogen network expansion ▪ Continued renewable generation capacity expansion, especially of less economic resources that were not developed in 2030s (e.g., Washington solar) ▪ Rapid increase in Montana of carbon capture and sequestration ▪ Achieve close to full decarbonization of liquid fuels to achieve net-zero targets ▪ Expansion of carbon sequestration and land-based carbon offsets to achieve net-zero
Non-CO_2 Emissions	▪ Pursue cost-effective strategies to control emissions from non-CO_2 sources	▪ Continue to pursue cost-effective non-CO_2 mitigation measures ▪ Research opportunities to achieve deeper cuts in non-CO_2 emissions	
Transmission	▪ Begin transmission expansion process, as assets take 10+ years to bring online ▪ Regional coordination, permitting reform, detailed studies of different options for specific lines (reconductoring, high-voltage direct current, high-temperature low-sag conductors)	▪ Expand transmission access to Wyoming and Montana to access low-cost wind resources	▪ Continue transmission expansion, including other corridors

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FUEL MATRIX

Pathway	Issue Statement / Barriers	Strategy To Overcome Barriers	Policy Action
Declining Fuel Demand			
Low Carbon Fuel Development			
On Demand Resources for the Electricity System			
Strategic Adoption of Low Carbon Fuels			

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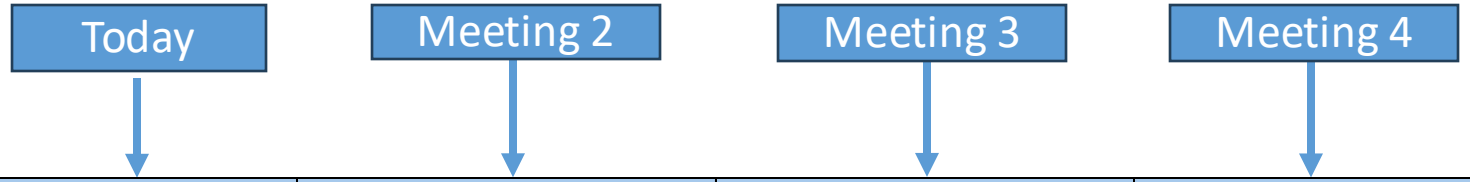
STEP BY STEP PROCESS



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Questions?

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Key Findings

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KEY FINDING #1

Demand declines but fuels remain a significant component of Oregon's Energy System across all scenarios

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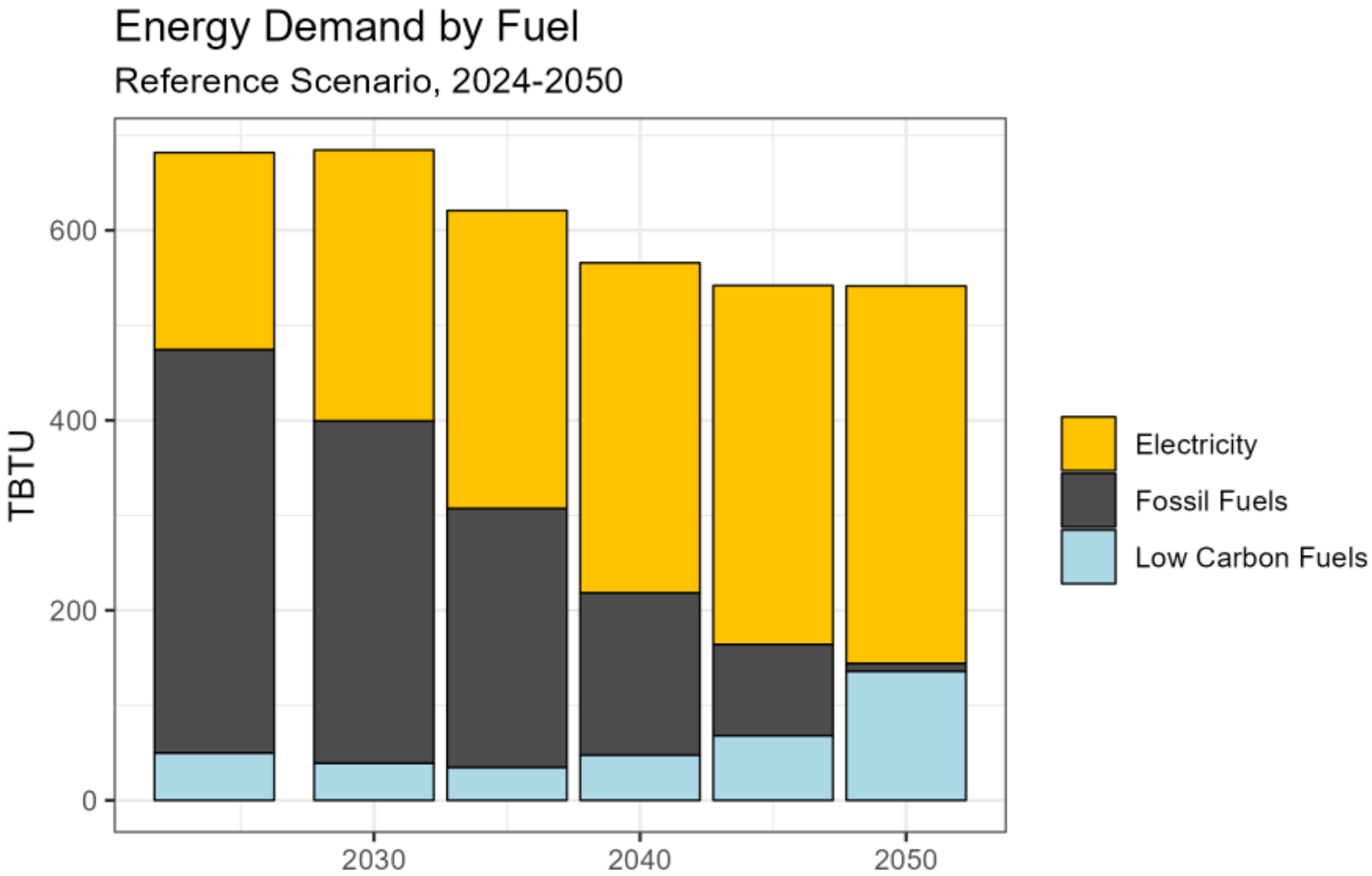
OREGON ENERGY DEMAND BY FUEL IN REFERENCE SCENARIO



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DECLINING FUEL DEMAND

- Fuels remain in 2050 but are significantly less than in 2025
- Electrification drives most of the decreasing fuel demand
- Fossil fuels and low carbon fuels are increasingly used in hard to electrify applications in industry, agriculture, transportation, and as a firm resource in the electricity system.
- Beginning in 2040, low-carbon fuel demand ramps up rapidly to replace fossil fuel demand

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Low-carbon fuels are an increasing proportion of Oregon's energy supply across all scenarios

KEY FINDING #2

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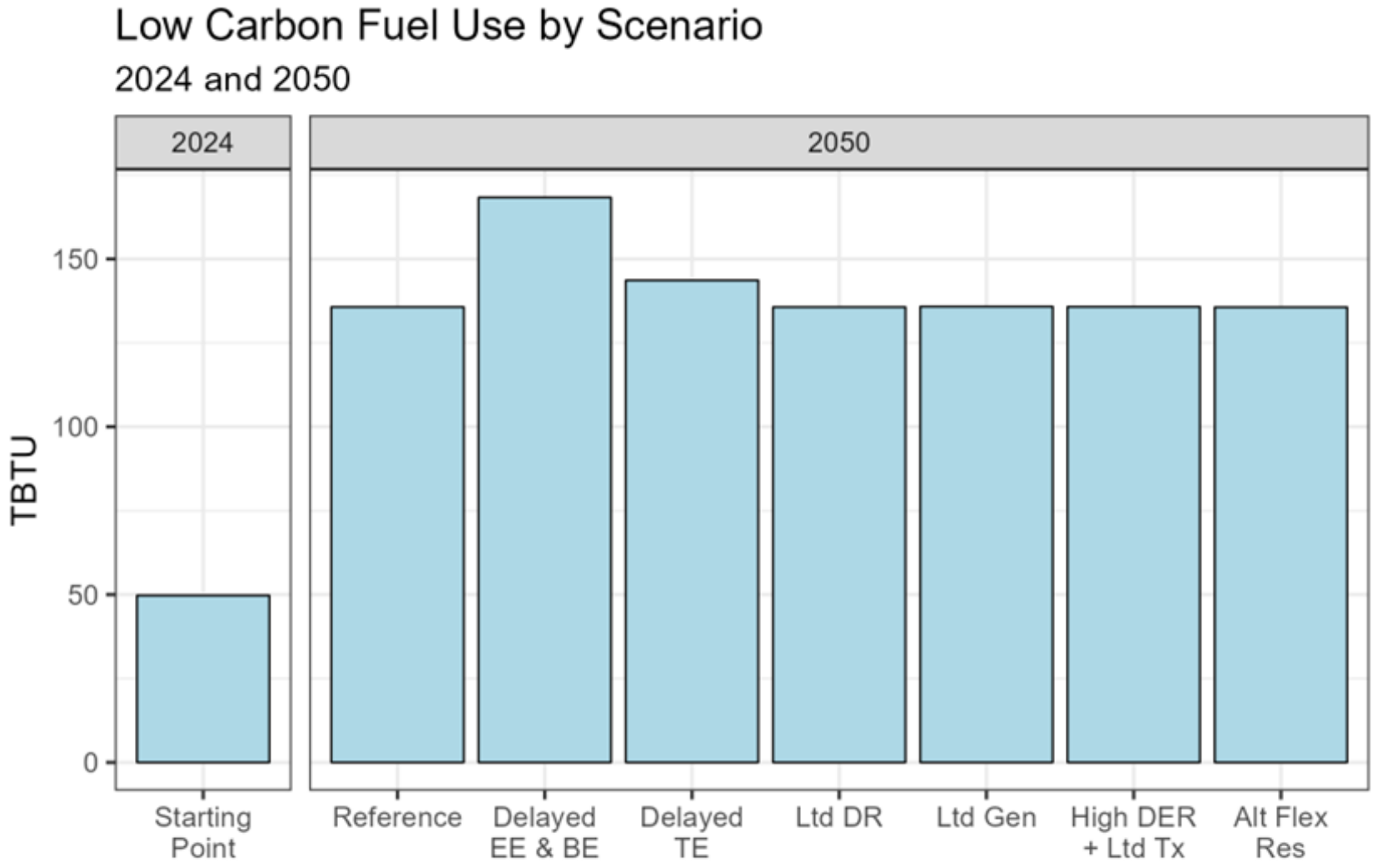
CHANGES IN LOW-CARBON FUEL CONSUMPTION ACROSS ALL SCENARIOS



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LOW CARBON FUEL CONSUMPTION

- Low-carbon fuels are mostly used in the transportation sector today
- Low-carbon fuels power technologies and operations that are the hardest to electrify,
  - high-heat industrial applications
  - hardest-to-electrify transportation: long-haul trucks, aviation, marine, and rail
- All scenarios show an increase in low-carbon fuel demand, even more in the two scenarios where electrification of end uses is delayed
- Hydrogen offers a unique opportunity to serve as a resource for electricity generation and storage, for industrial process heating, or as a transportation fuel

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KEY FINDING #3

Firm dispatchable resources are needed to support the growing electric grid

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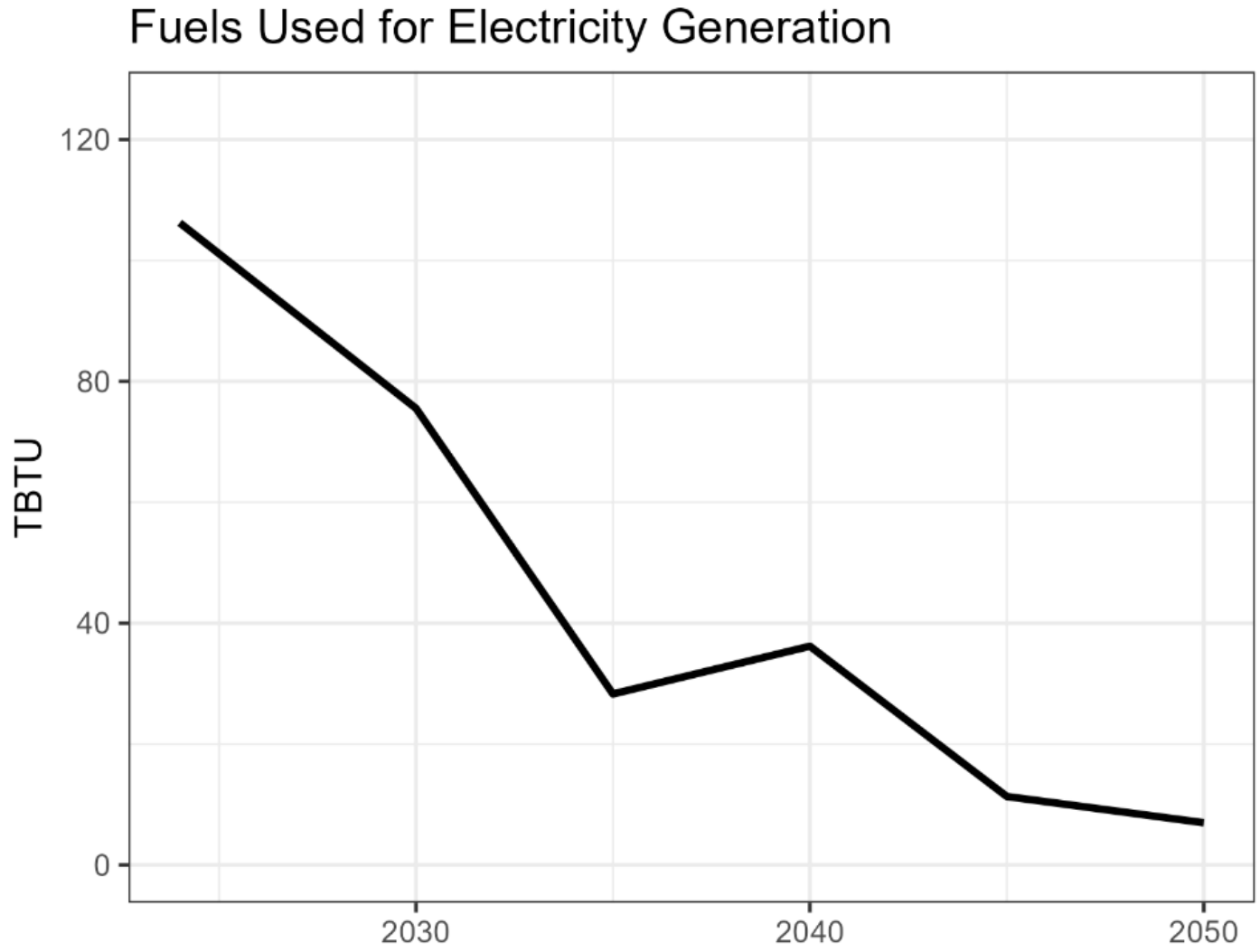
Electricity Generation from Fossil and Low-Carbon Fuels in the Reference Scenario



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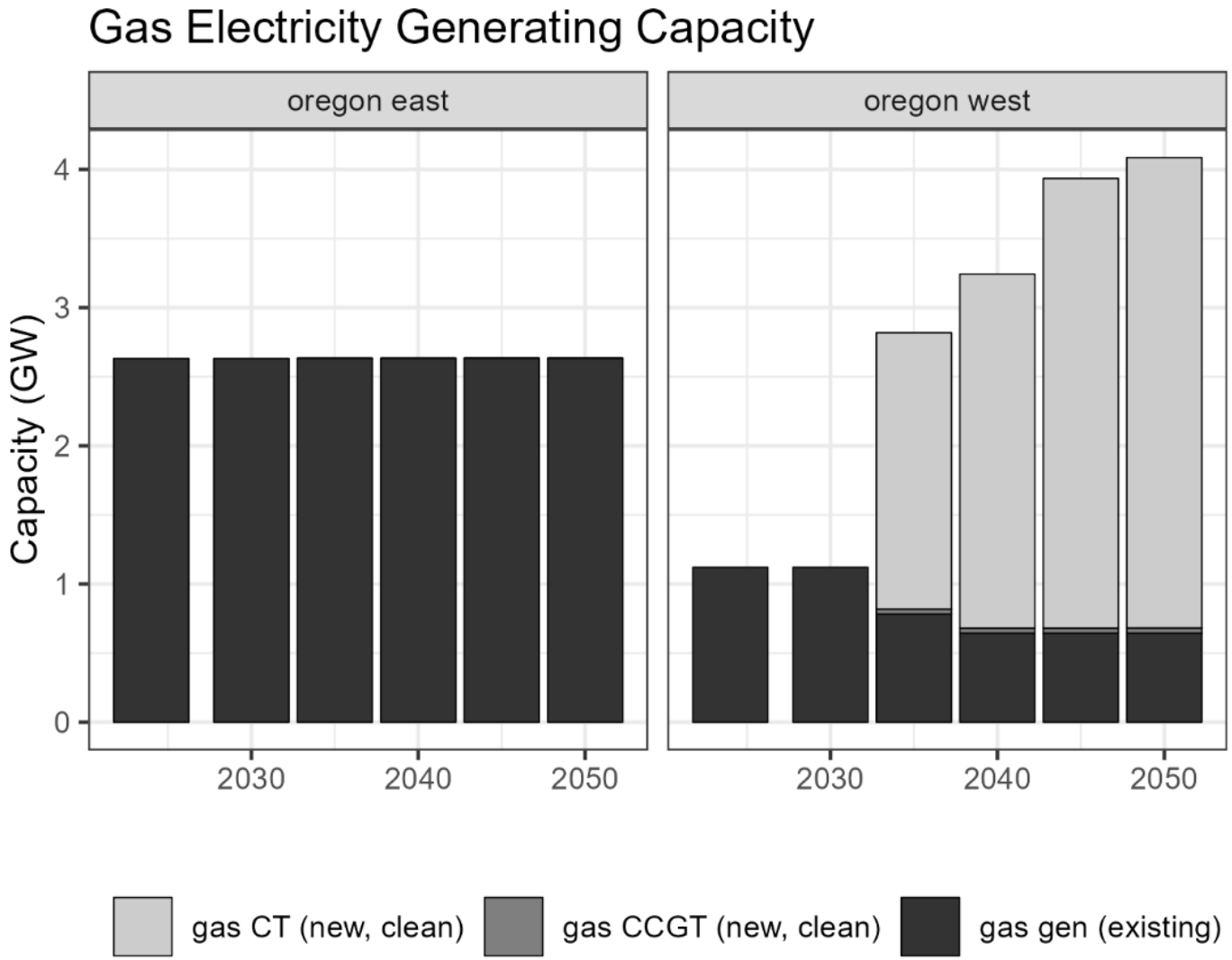

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GROWING FUEL PLANT CAPACITY

- Gas fuel plants are chosen by the model as a least cost option for flexibility and reliability.
- These resources are used infrequently
- Dispatchable power is critical for grid reliability but also overall cost containment.
- The alternative flexible resources scenario tested the value of dispatchable resources by restricting new fuel electricity generation capacity growth in Oregon.

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Electrification is more cost effective than adopting low-carbon fuels in many applications

KEY FINDING #4

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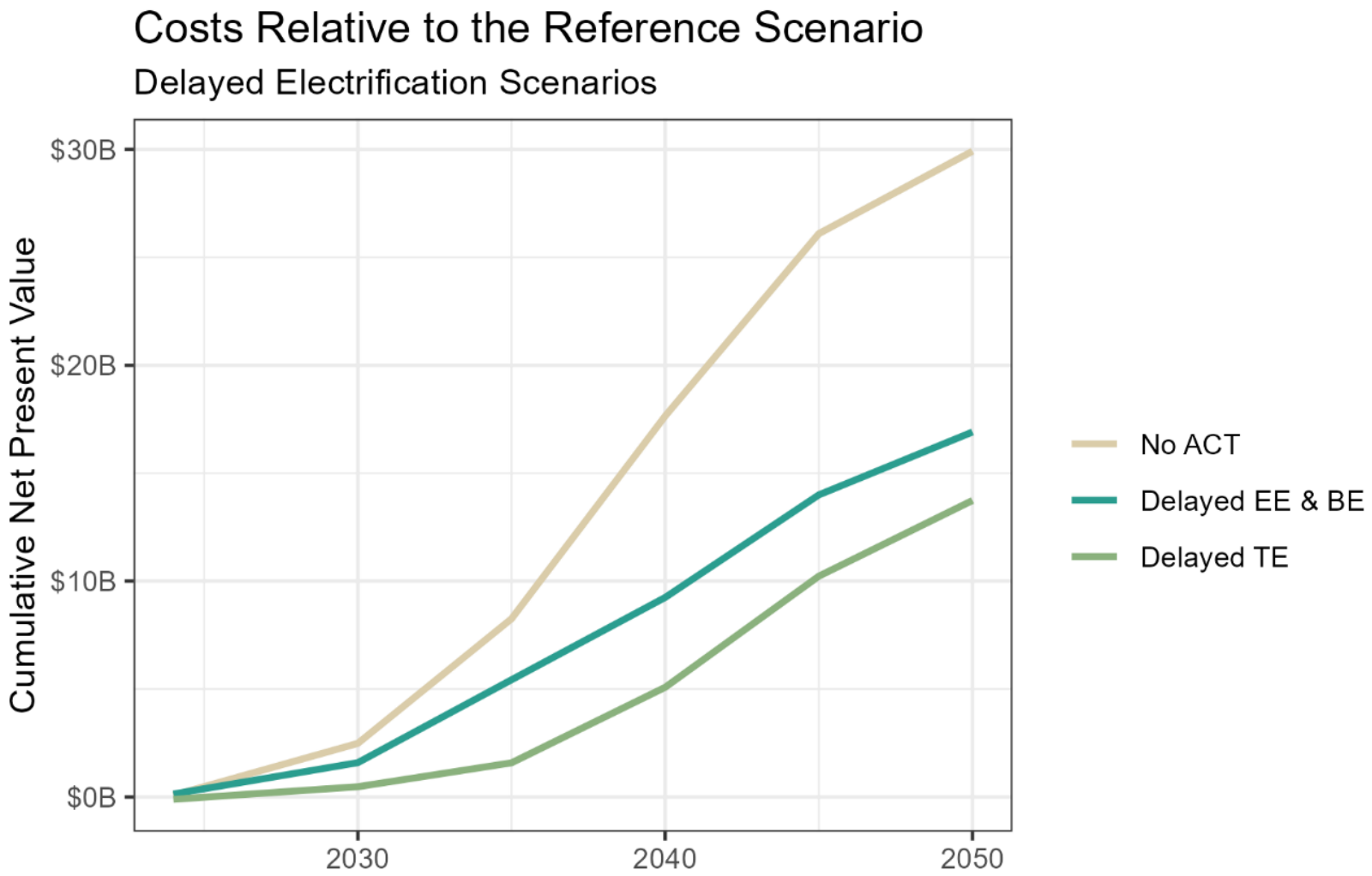
Costs of Delayed Energy Efficiency and Electrification Compared to Reference Scenario



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ELECTRIFICATION OF MOST APPLICATIONS

- Delaying electrification or energy efficiency resulted in increased reliance on fuels
- Modeling results show the least cost pathway to achieving Oregon's energy and climate goals is to electrify end uses as early as possible.
- Low carbon fuels are expensive to produce
- low-carbon fuels are most cost-effective when used strategically for the hardest-to-electrify applications.

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Questions?

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FEB 19 MEETING AGENDA

1. Key Findings
2. Current Trajectories
3. Existing Policies
4. Issues and Barriers

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FOR CONSIDERATION

1. What are the primary issues or barriers in the identified policy pathways?
2. What existing policies are in place to address those barriers?
3. Where are additional policies or programs needed?
4. What do we need to better understand?

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Thank you