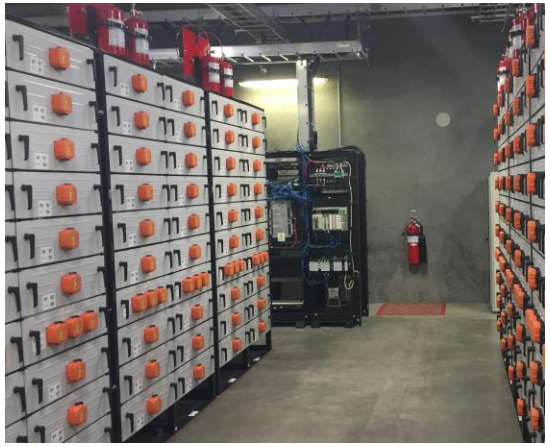
Oregon Department of **ENERGY**



Building Efficiency, Electrification, and DERs Policy Working Group Meeting #2

March 5, 2025

50 YEARS of SERVICE OREGON DEPARTMENT OF ENERGY

OREGON DEPARTMENT OF ENERGY

Leading Oregon to a safe, equitable, clean, and sustainable energy future.

Our Mission

The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

What We Do

On behalf of Oregonians across the state, the Oregon Department of Energy achieves its mission by providing:

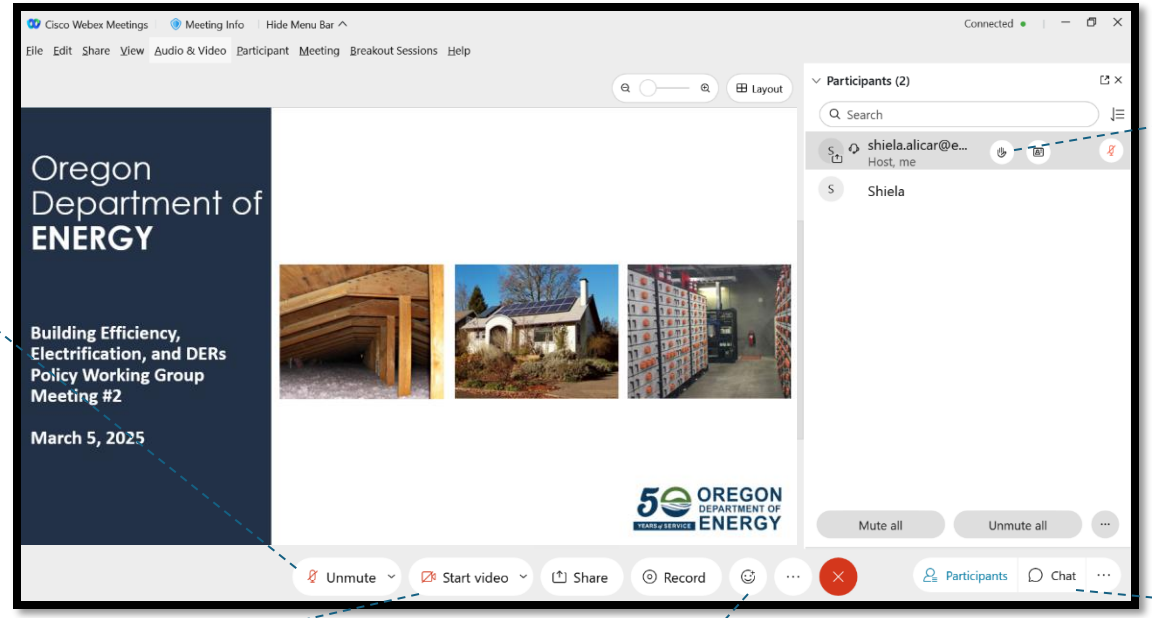
- A Central Repository of Energy Data, Information, and Analysis
- A Venue for Problem-Solving Oregon's Energy Challenges
- Energy Education and Technical Assistance
- Regulation and Oversight
- Energy Programs and Activities

USING WEBEX

Audio Options

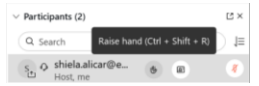
Mute — *Microphone On*

Unmute — *Microphone Off*

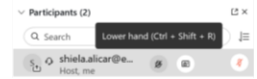


Second Raise Hand Option

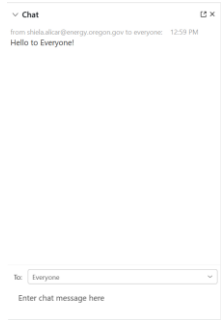
You can also click on the hand next to your name in the Participant list to raise your hand.



Click on Lower hand when you are done.

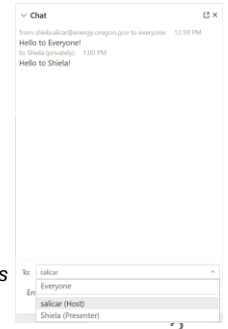


Chat



You can chat to Everyone in the meeting.

You can send a private message to the Host or Presenter (or all Panelists when there is a Panel).

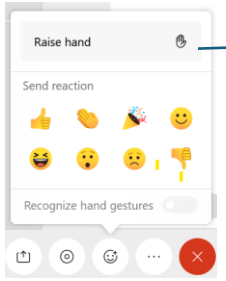


Video Options

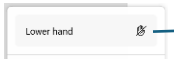
Stop video — *Webcam On*

Start video — *Webcam Off*

Reactions

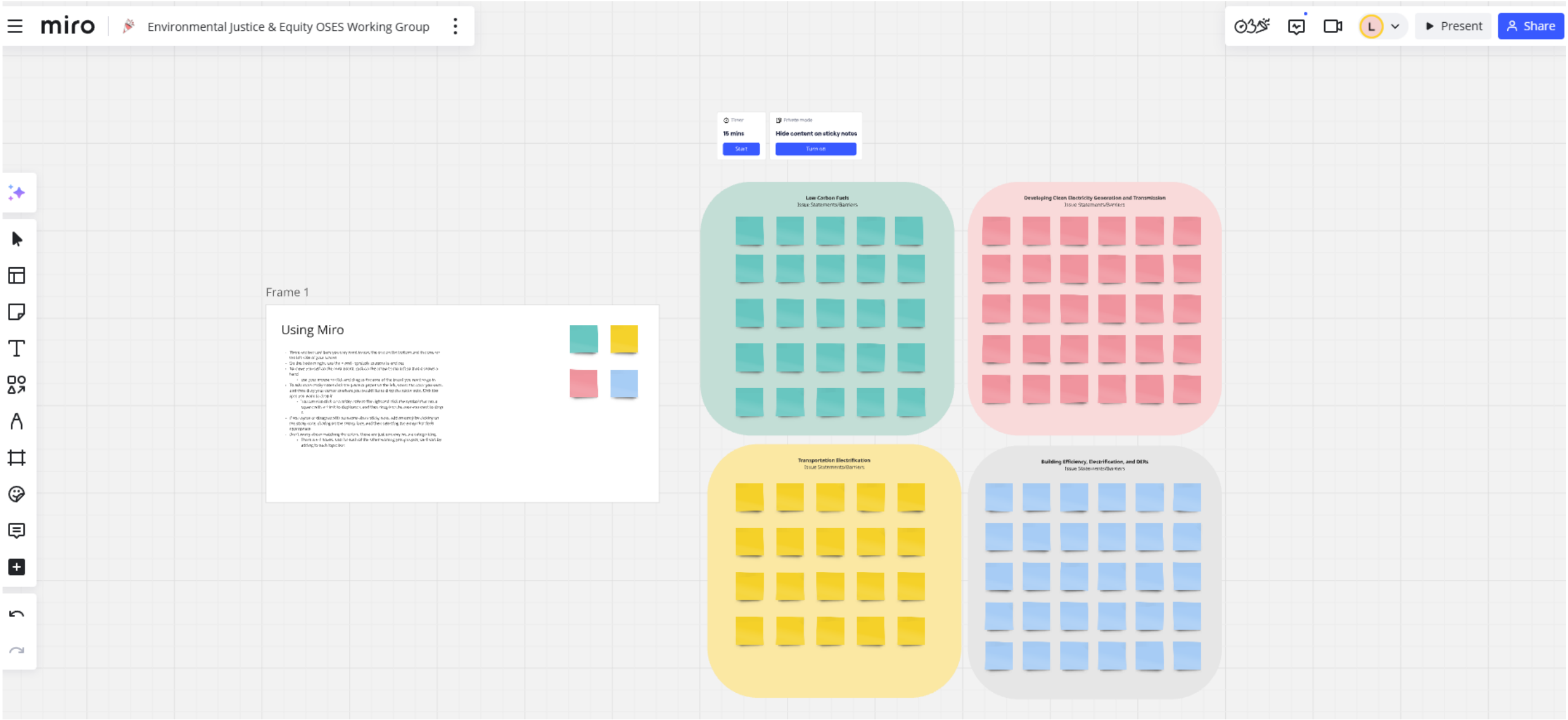


Click to Raise your hand.



Click on Lower hand when you are done.

MIRO BOARD


miro
Environmental Justice & Equity OSES Working Group
Present
Share
Timer
15 mins
Start
Private mode
Hide content on sticky notes
Turn on
Low Carbon Fuels
Issue Statements/Barriers
Developing Clean Electricity Generation and Transmission
Issue Statements/Barriers
Transportation Electrification
Issue Statements/Barriers
Building Efficiency, Electrification, and DERs
Issue Statements/Barriers
Frame 1
Using Miro

INTRODUCTIONS

Please share the following with the group in the chat:

- Name
- Affiliation
- What is one policy area you're hoping to discuss in this group?

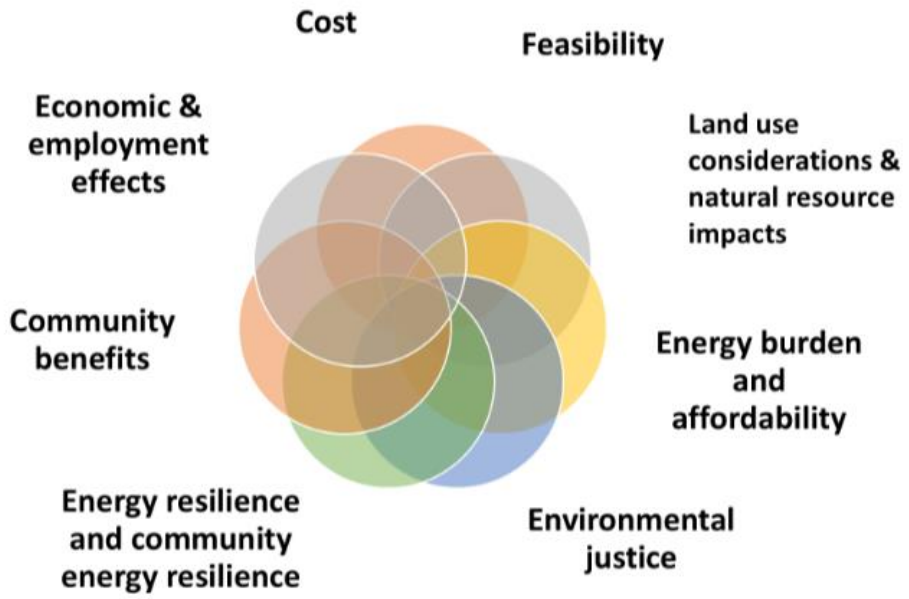
GROUP AGREEMENTS

- Honor the agenda or modify by agreement.
- Listen carefully; seek to learn and understand each other's perspective.
- Encourage respectful, candid, and constructive conversation.
- Keep an open mind.
- Ask questions to clarify and understand why.
- Be open, transparent, inclusive, and accountable.
- Respect differing opinions.
- Seek to resolve differences and find common ground.
- Be conscious of speaking time; step back to allow space for others to contribute.
- Limit chat conversations.

MEETING GUIDANCE

- Focus on providing insight on the barriers to achieving our energy and climate goals.
- Focus on the overarching themes that the model results indicate.
- Consider barriers from the perspective of the different key considerations.
- Offer different perspectives on barriers as appropriate.
- Hold off on identifying solutions since this is the focus of the next meeting.

Energy Strategy Key Considerations



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ROLE OF WORKING GROUPS AND ODOE

Working Groups:

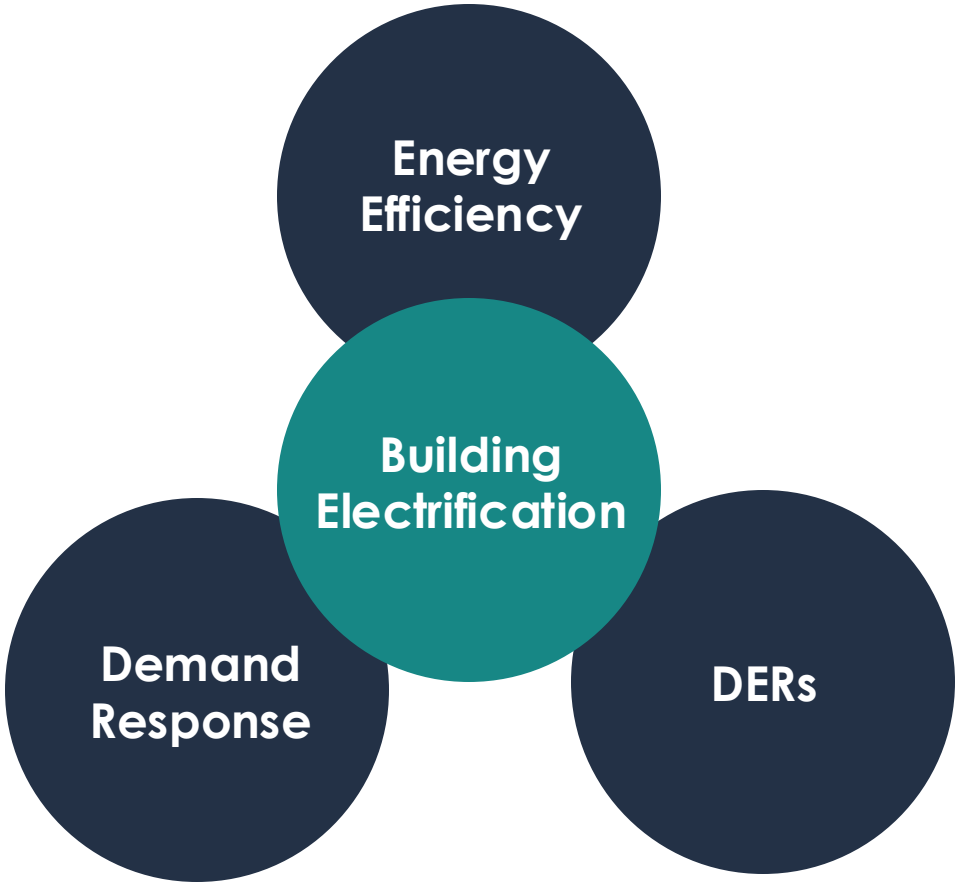
- Substantively engage on results of modeling, technical analyses, and potential pathways
- Consider the costs and benefits of different pathways
- Identify opportunities, barriers and policy gaps
- Surface policy ideas for consideration

ODOE:

- Facilitate meetings with Working Groups and other groups
- Develop and share complimentary analysis to inform policy decisions
- Coordinate, review and compile policy recommendations from many sources
- Make final decisions about policy recommendations to be included in the OSES report.

PURPOSE OF THIS WORKING GROUP

- Build understanding of how buildings and customer-sited resources fit into Oregon's broader energy goals.
- Consider Oregon's existing policy landscape.
- Develop policy actions that could help advance Oregon's goals to decarbonize the electricity sector.



AGENDA

9:00 a.m.	Welcome!
9:10 a.m.	Where are we now? Where are we going?
9:40 a.m.	Brainstorming Exercise: Barriers to residential and small commercial **Building Electrification and Energy Efficiency**
10:10 a.m.	Brainstorming Exercise: Barriers to large commercial and industrial **Building Electrification and Energy Efficiency**
10:40 a.m.	Break
10:50 a.m.	Brainstorming Exercise: Barriers to **Distributed Energy Resources (DERS)**
11:20 a.m.	Brainstorming Exercise: Barriers to **Demand Response**
11:50 a.m.	Thank You! Next Steps

OUR SCOPE

Environmental Justice and Equity	• Role in providing EJ and equity perspectives in the other working groups • Evaluate analysis and develop recommendations related to EJ and equity
Building Efficiency, Electrification, and DERs	• Residential and commercial building systems including energy efficiency and electrification • Customer-sited resources including demand response and renewables
Developing Clean Electricity Generation and Transmission	• Electricity generation and storage in front of the meter • Transmission • Development needs and barriers/competing priorities
Low-carbon Fuels	• Best application of low carbon fuels used in buildings, industry, and transportation • Identification of barriers and potential solutions to production and distribution of fuels
Transportation Electrification	• Light-, medium- and heavy-duty zero emission vehicles (battery electric and hydrogen fuel cell) • Charging and fueling infrastructure • Grid integration • Vehicle miles traveled reduction

STEP BY STEP PROCESS

We are here

Meeting 3

Meeting 4

	Barriers	Proposed strategies to address barriers	Proposed policy actions
Energy Efficiency	*What are the barriers to maximizing the benefits of energy efficiency in Oregon buildings?*		
Building Electrification	*What are the barriers to expanding building electrification*		
Customer Sited Distributed Energy Resources	*What are the barriers to maximizing benefits from customer-sited DERS?*		
Customer sited Demand Response	*What are the barriers to maximizing benefits from customer sited demand response?*		

THE POLICY LANDSCAPE

There Are Layers of Relevant Policies

- Our focus is STATE-level policies
  - Mandates
  - Incentives
  - Studies / State-led Conversations
  - Programs
  - Other?
- Policies at other levels are contextually relevant
  - Utility demand response programs

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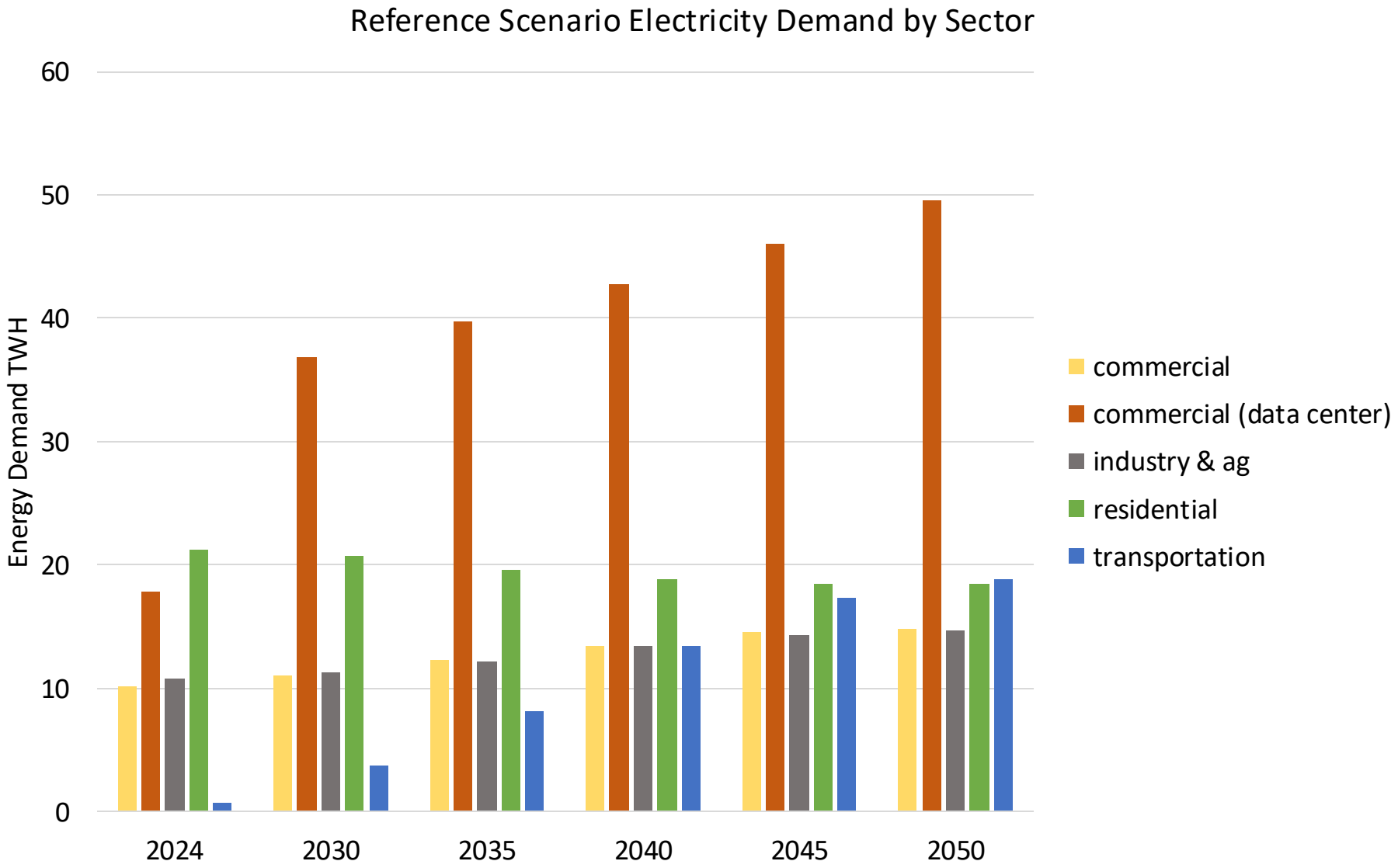
SOME EXISTING POLICIES

Some Existing Policies	Source	BE	EE	DR	DER	ORS	OAR	Utility	OPUC	Fed?	EO?
Oregon Energy Efficiency Specialty Code	EO 20-04, ORS 455-496		X			X	X				X
Oregon Residential Specialty Code	EO 20-04, OAR 918-480-0005 and OAR 918-480-0010		X			X	X				X
Oregon Commercial Reach Code	ORS 455.500		X			X	X				
Oregon Residential Reach Code	OAR 918-465-0050		X			X	X				
Bonneville Energy Efficiency Programs	1964 Fed. PNW Cons Power Preference Act	X	X					X		X	
Public Purpose Charge	HB 3141					X			X		
Bonneville / COU contracts	1964 Fed. PNW Cons Power Preference Act	?	?	?	?			X		X	
CAP Agency Weatherization	1976 Fed. Energy Conservation Policy Act		X			X	X			X	
Building Performance Standard	HB 3409		X			X	X				
Home Energy Performance-Based Whole House Rebates (HOMES)	2022 Fed. Inflation Reduction Act		X			X	X			X	
Community Heat Pump Deployment Program	SB 1536	X	X			X	X				
Home Electrification and Appliance Rebates (HEAR or HEEHR)	2022 Fed. Inflation Reduction Act	X	X							X	
EO 20-04 Energy Efficiency Standards	EO-20-04	X	X	X							X
HB 2062Energy Efficiency Standards	HB 2062	X	X	X		X	X				
Voluntary Building Energy Performance Score Systems	HB 2801		X			X	X				
Net Metering	ORS 757.300			?	X	X	X	X			
Solar Property Tax Exemption	ORS 307.175				X	X					
Residential and Commercial Energy Conservation Rules	OAR 860-030-0000 thru -0075						X				
Utility Distribution System Plans	Order No. 20-485	X	X	X	X			X	X		
Designated State Agency Programs	ORS 469.763	X	X			X	X				
PGE Demand Response	Energy Shifting Programs							X	X		
PGE Smart Grid Test Bed	Smart Grid Test Bed | PGE	X		X	X			X	X		
Pacific Power TOU rates	Choices for Homes			X				X	X		

FUTURE ELECTRICITY LOADS



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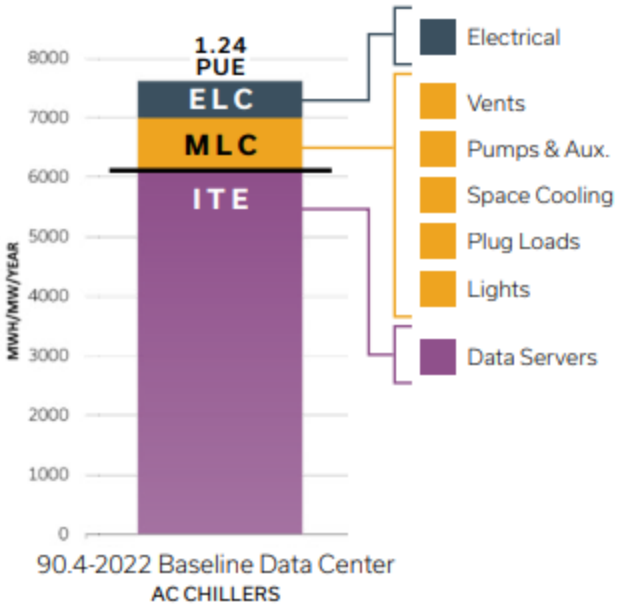
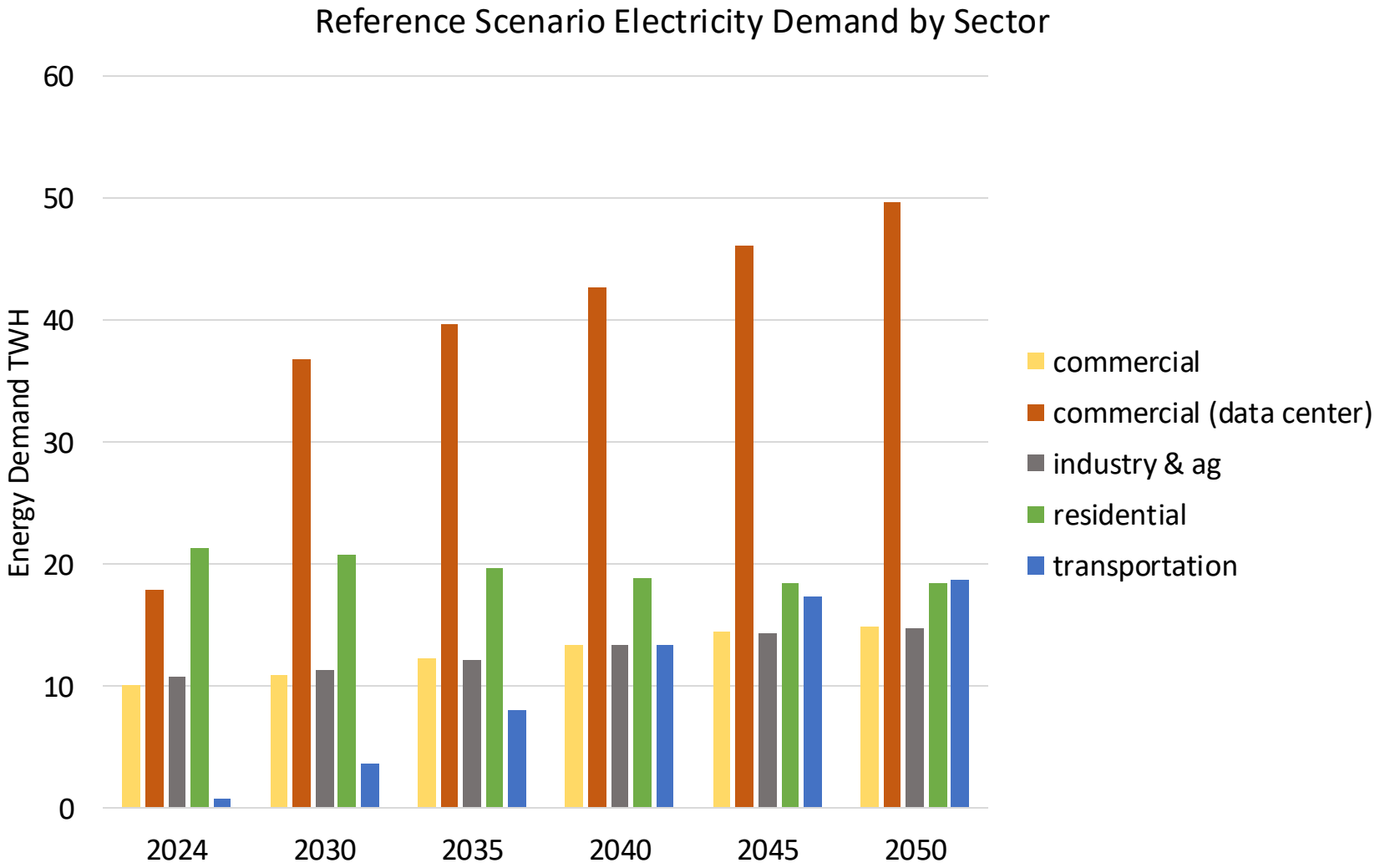
FUTURE ELECTRICITY LOADS





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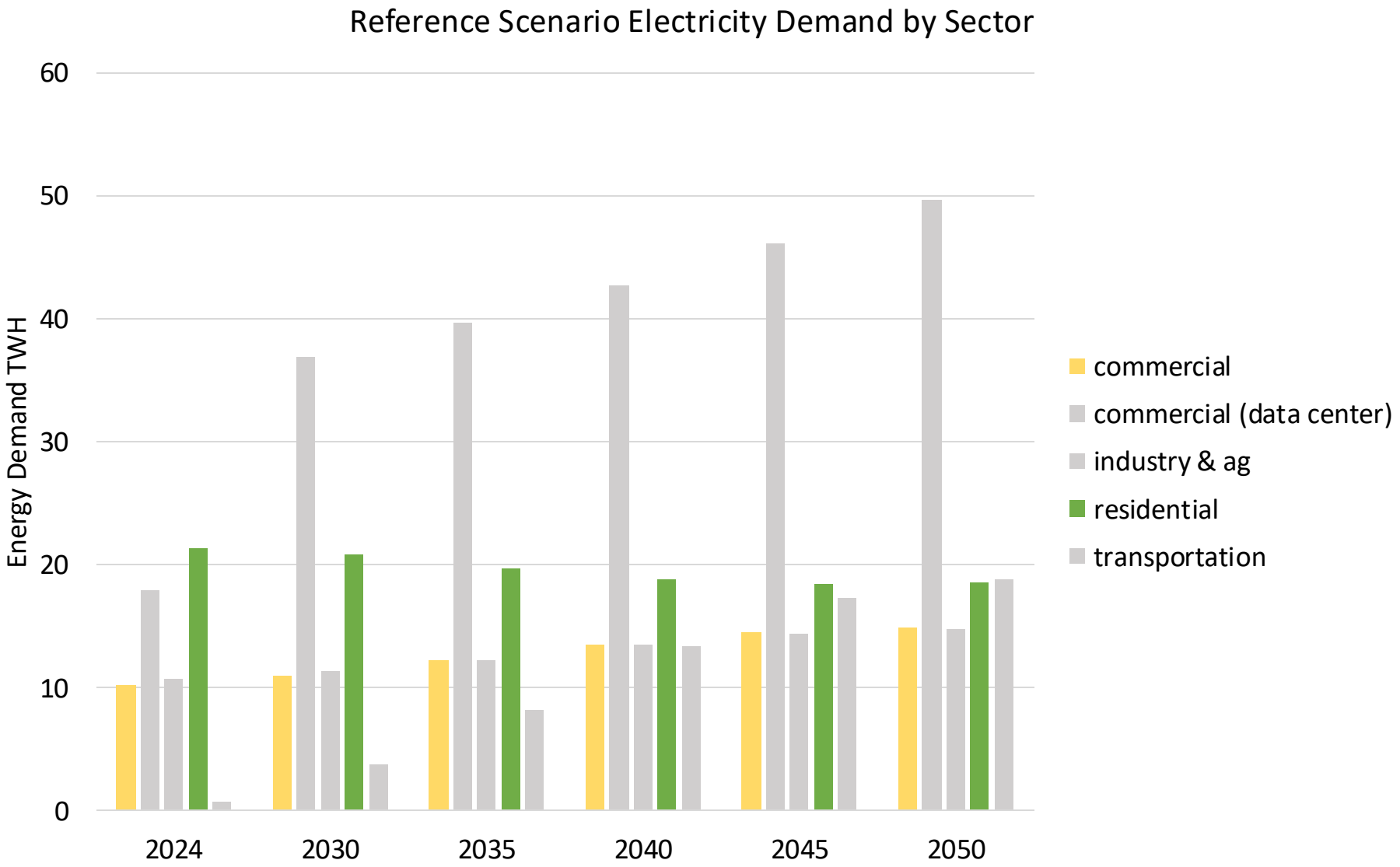
FUTURE ELECTRICITY LOADS



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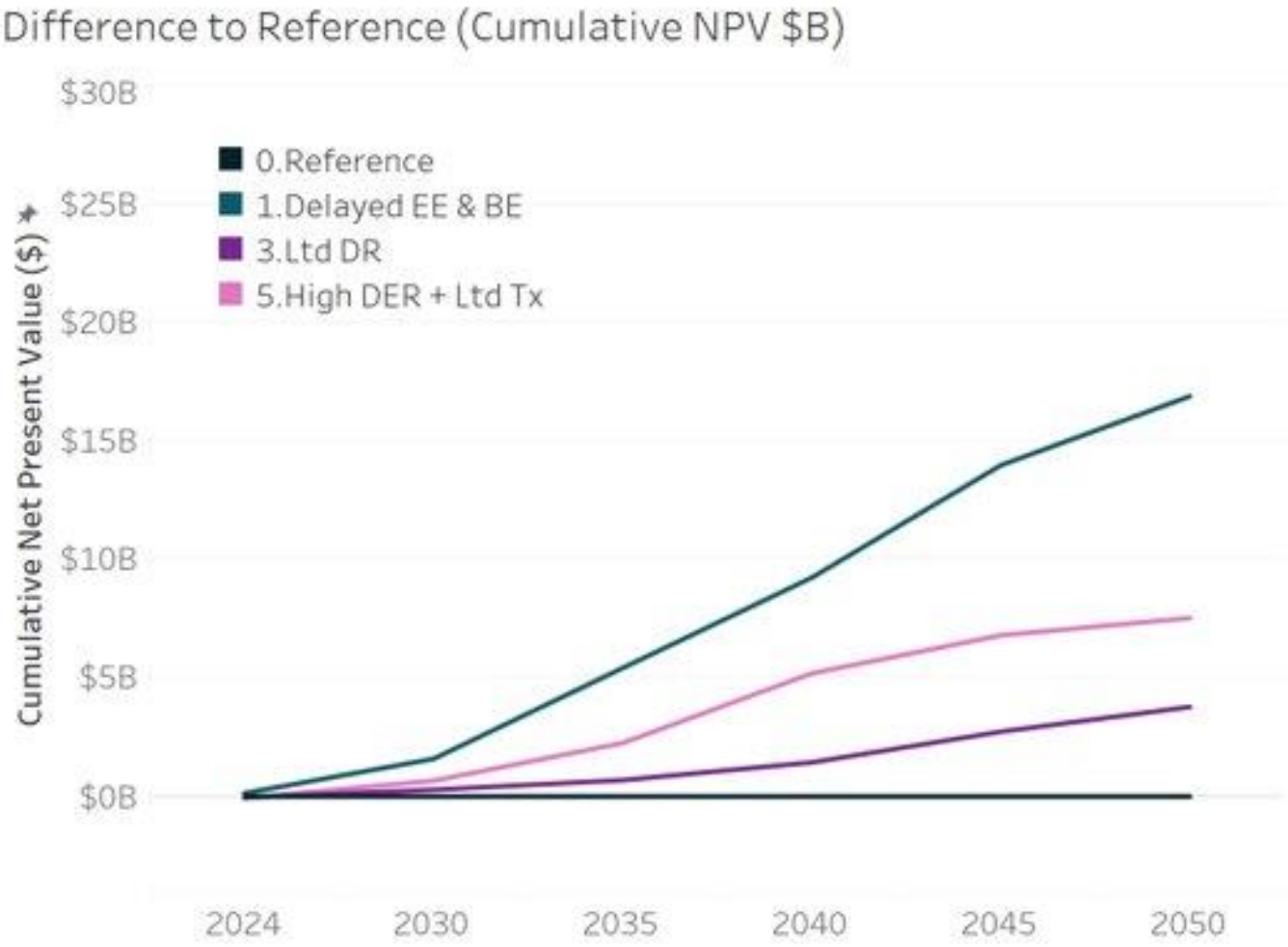
RESIDENTIAL AND SMALL COMMERCIAL BUILDING ELECTRIFICATION AND EFFICIENCY

Delayed energy efficiency and building electrification represents the highest cost of all the scenarios that were modeled.

The model demonstrates that a delay of 10 years in energy efficiency and building electrification results in more than $17B in additional costs through 2050.



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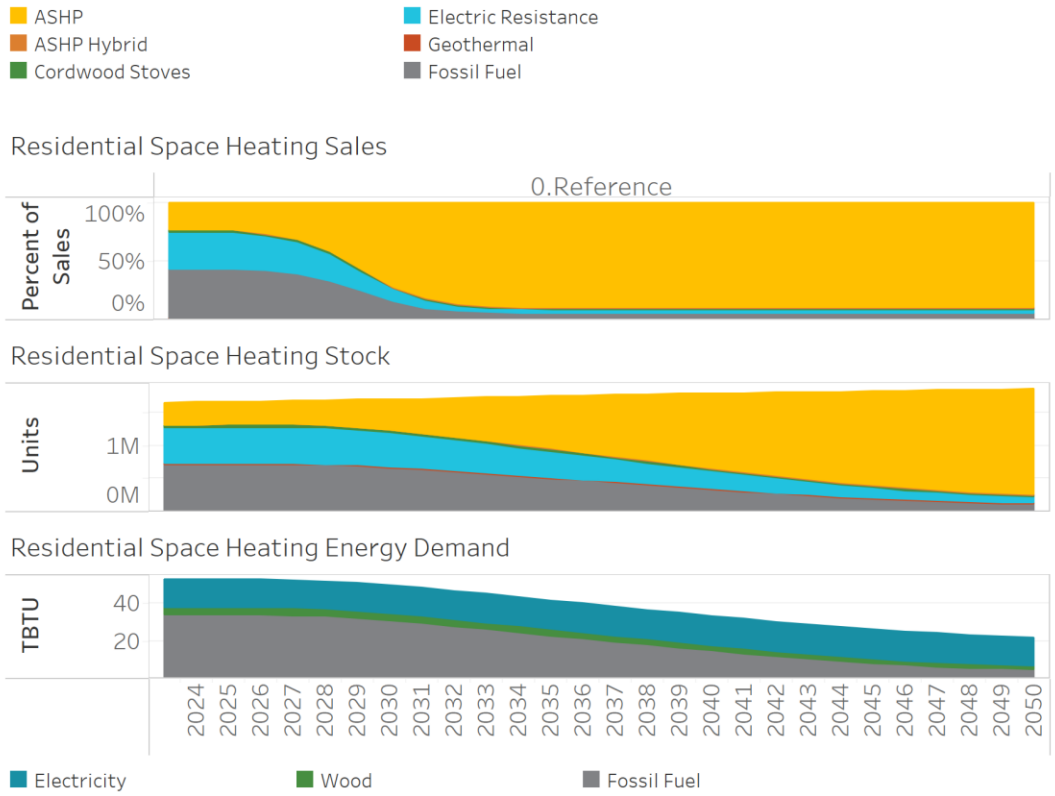
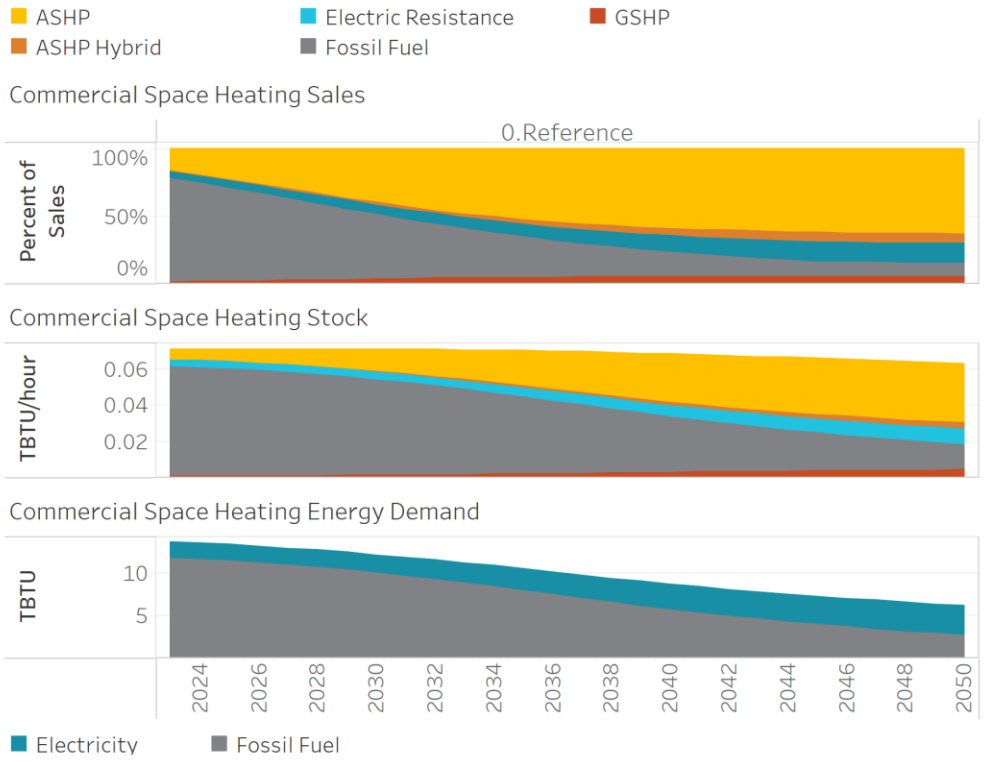
RESIDENTIAL AND SMALL COMMERCIAL BUILDING ELECTRIFICATION AND EFFICIENCY

Building electrification results in system-wide reductions in energy demand.

Model assumes existing policies play out for all space heating technologies

65% electric heat pump sales by 2030; 90% by 2040





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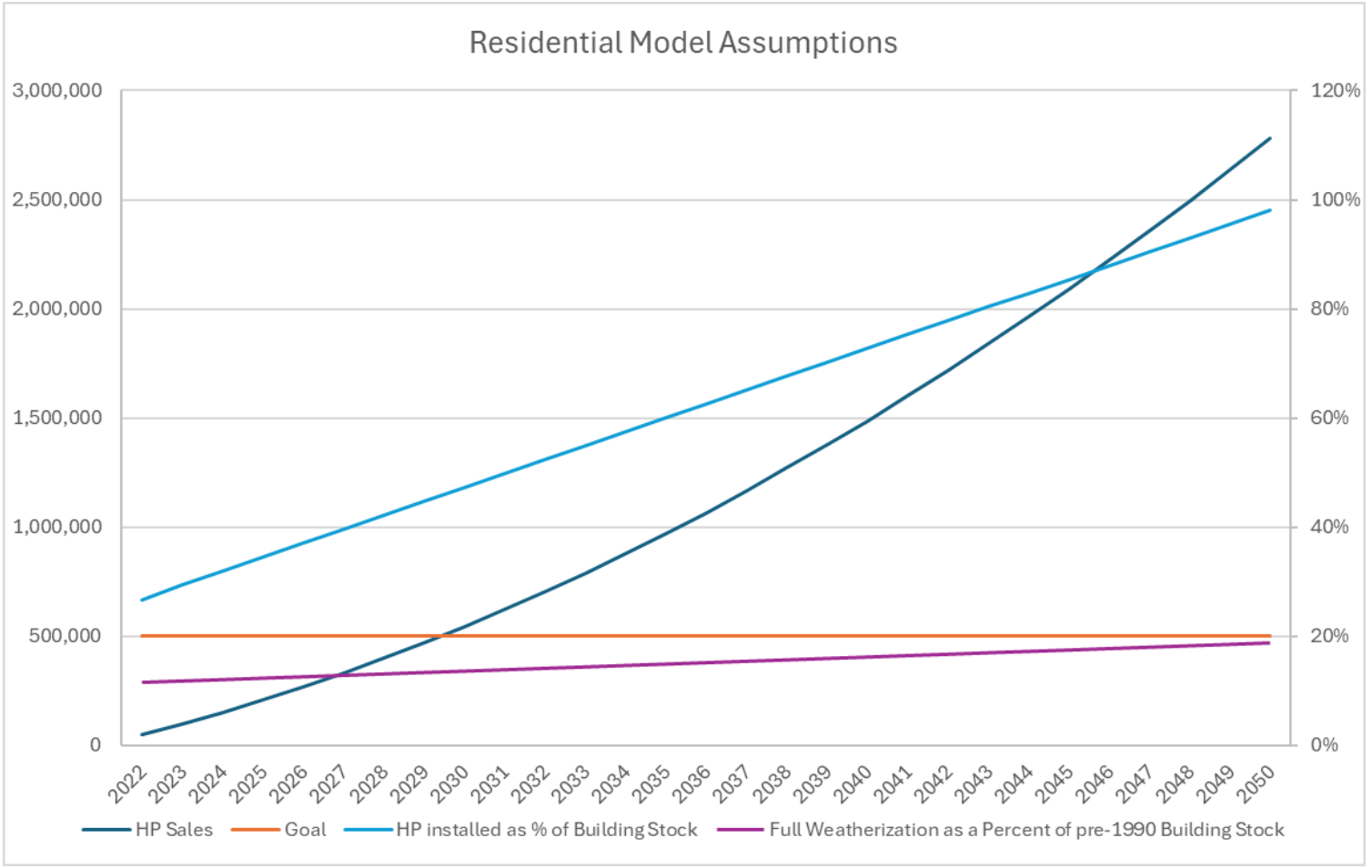
RESIDENTIAL AND SMALL COMMERCIAL BUILDING ELECTRIFICATION AND EFFICIENCY



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QUICK MIRO HOW-TO: NAVIGATING

If you use a mouse:

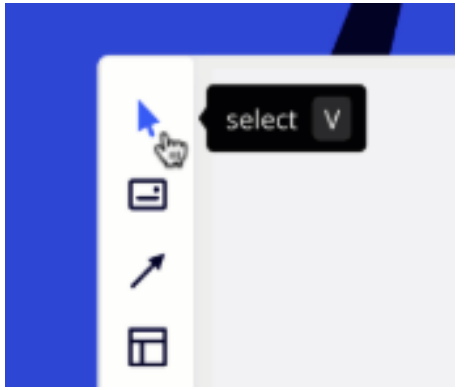
- To move around the board, press the right mouse button and drag
- To zoom, scroll the mouse wheel
- To create the selection field, switch to select tool, click and drag the canvas

If you use the trackpad:

- Slide two fingers to move around the board
- Pinch to zoom
- To select objects, switch to select tool, press and drag the canvas

If you use the touchscreen:

- Drag the canvas to move around
- Pinch to zoom
- Long press and drag to select objects

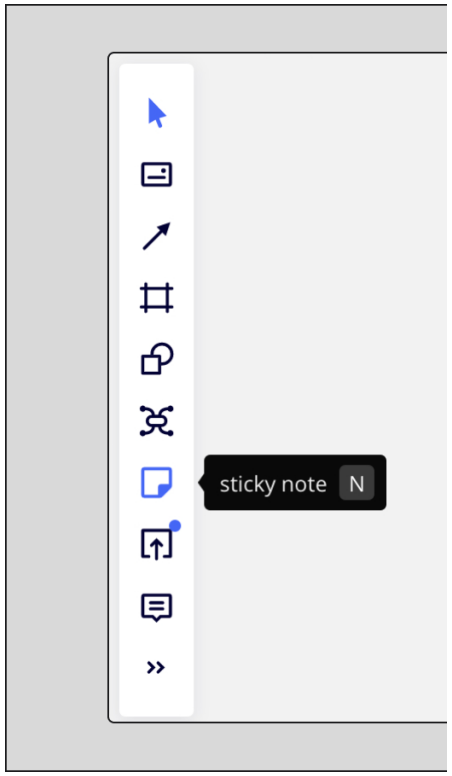


Switch between the ‘select tool’ and ‘hand mode’ in top left

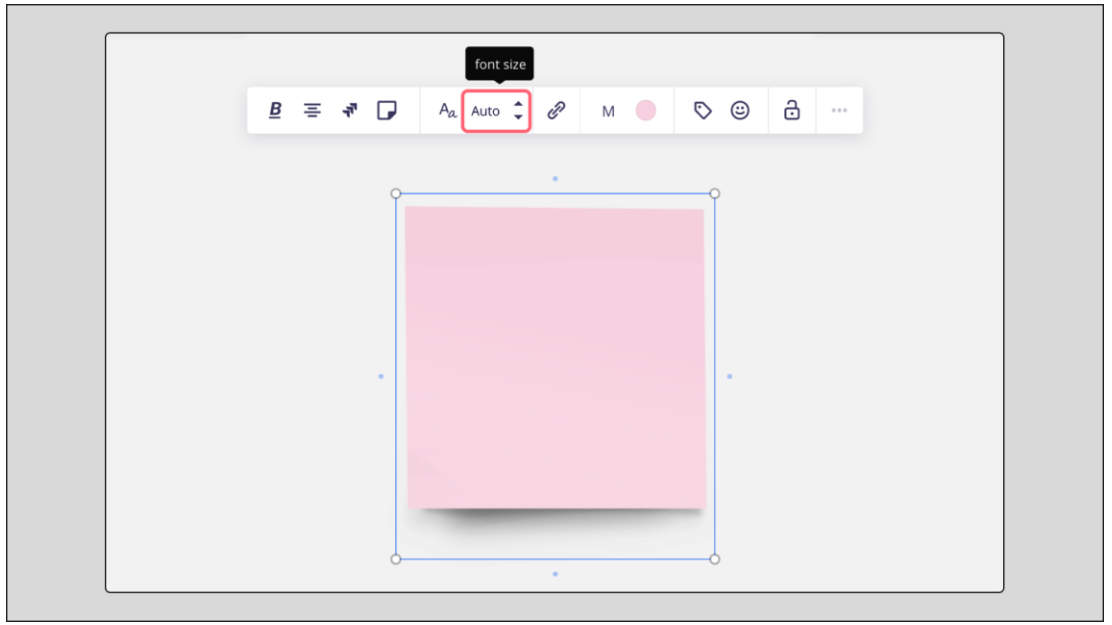
https://help.miro.com/hc/en-us/articles/360017731053-Using-Miro-with-a-mouse-trackpad-or-touchscreen

QUICK MIRO HOW-TO: STICKY NOTES

Step 1: "Click the sticky note icon on the toolbar" (left of screen)



Step 2: "To add text to your sticky note, select it and start typing."



https://help.miro.com/hc/en-us/articles/360017572054-Sticky-notes

Brainstorming Exercise

Question to Brainstorm:

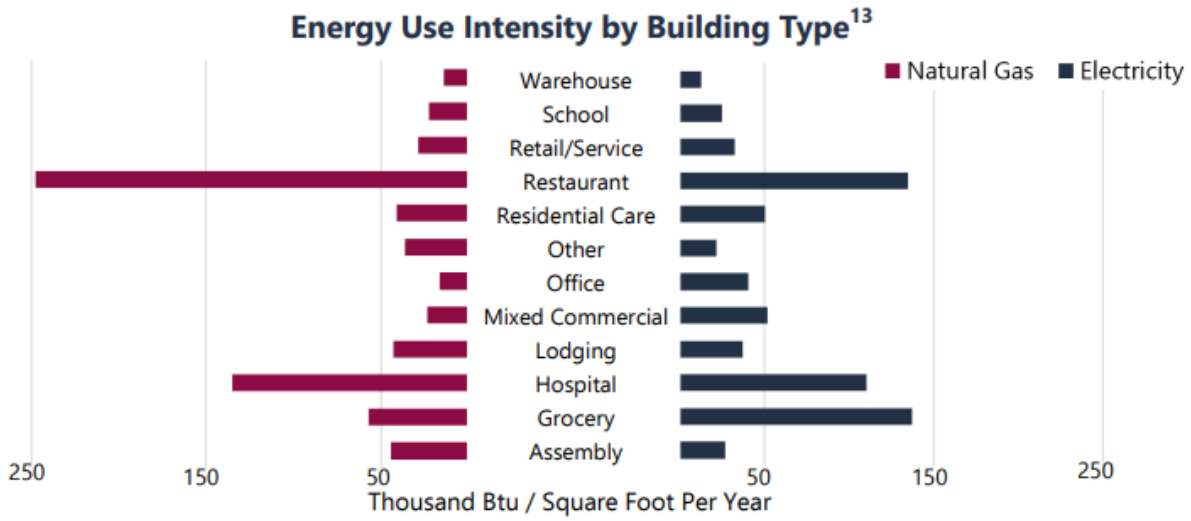
What are the barriers to maximizing benefits from building electrification and energy efficiency in residential and small commercial?

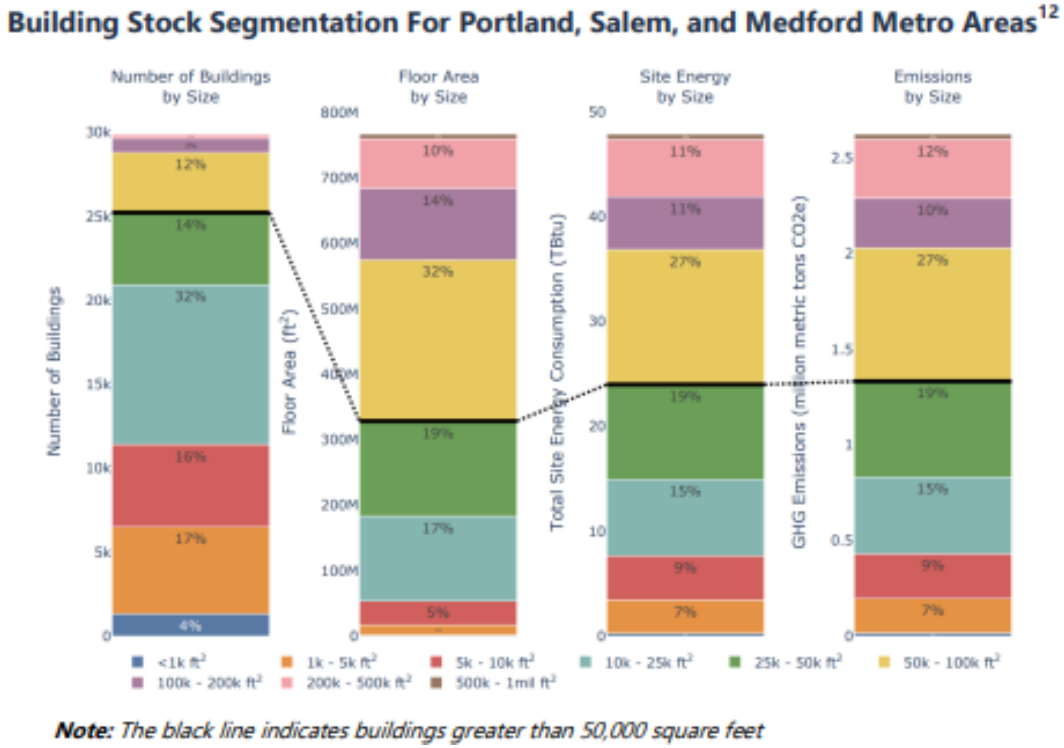
Use the Miro board to post comments.

Barrier ideas to consider adding:

- Financial barriers
- Infrastructure related barriers
- Existing policies
- Other?

LARGE COMMERCIAL AND INDUSTRIAL BUILDING ELECTRIFICATION AND EFFICIENCY





Note: *The black line indicates buildings greater than 50,000 square feet*

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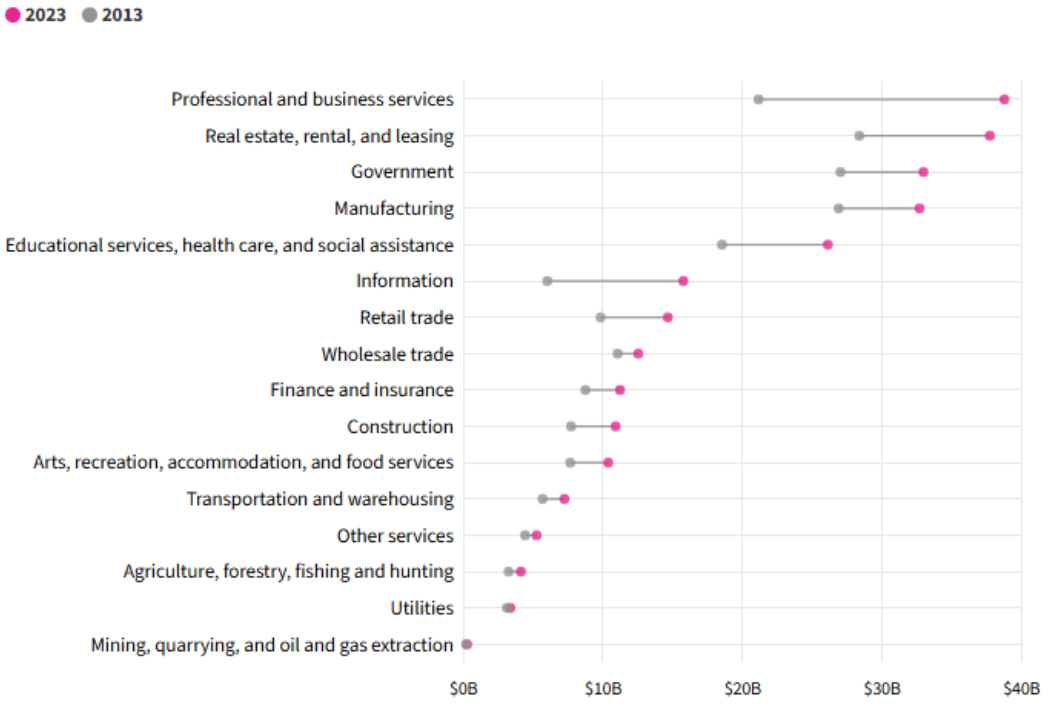
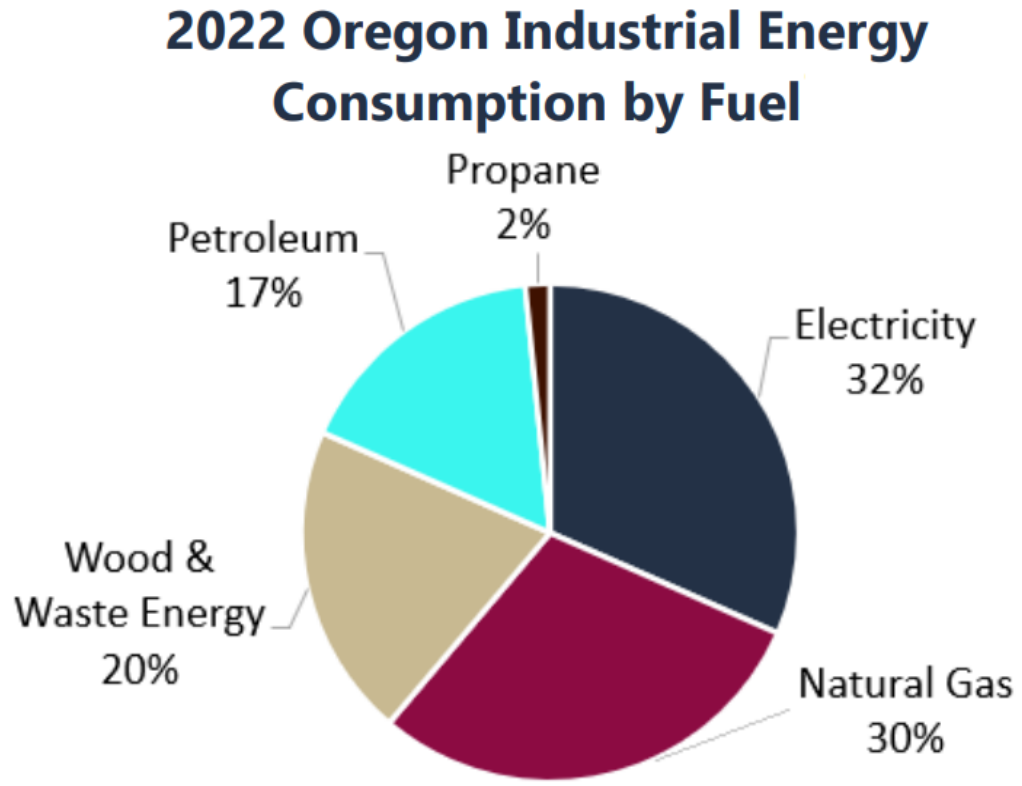
LARGE COMMERCIAL AND INDUSTRIAL BUILDING ELECTRIFICATION AND EFFICIENCY

In 2023, the professional and business services industry contributed the most to GDP in Oregon.

Real gross domestic product by industry in Oregon, chained 2017 dollars



Source: U.S. Bureau of Economic Analysis



Brainstorming Exercise

Question to Brainstorm:

What are the barriers to maximizing benefits from building energy efficiency in large commercial and Industrial?

Use the Miro board to post comments.

Barrier ideas to consider adding:

- Financial barriers
- Infrastructure related barriers
- Existing policies
- Other?

10 MIN BREAK

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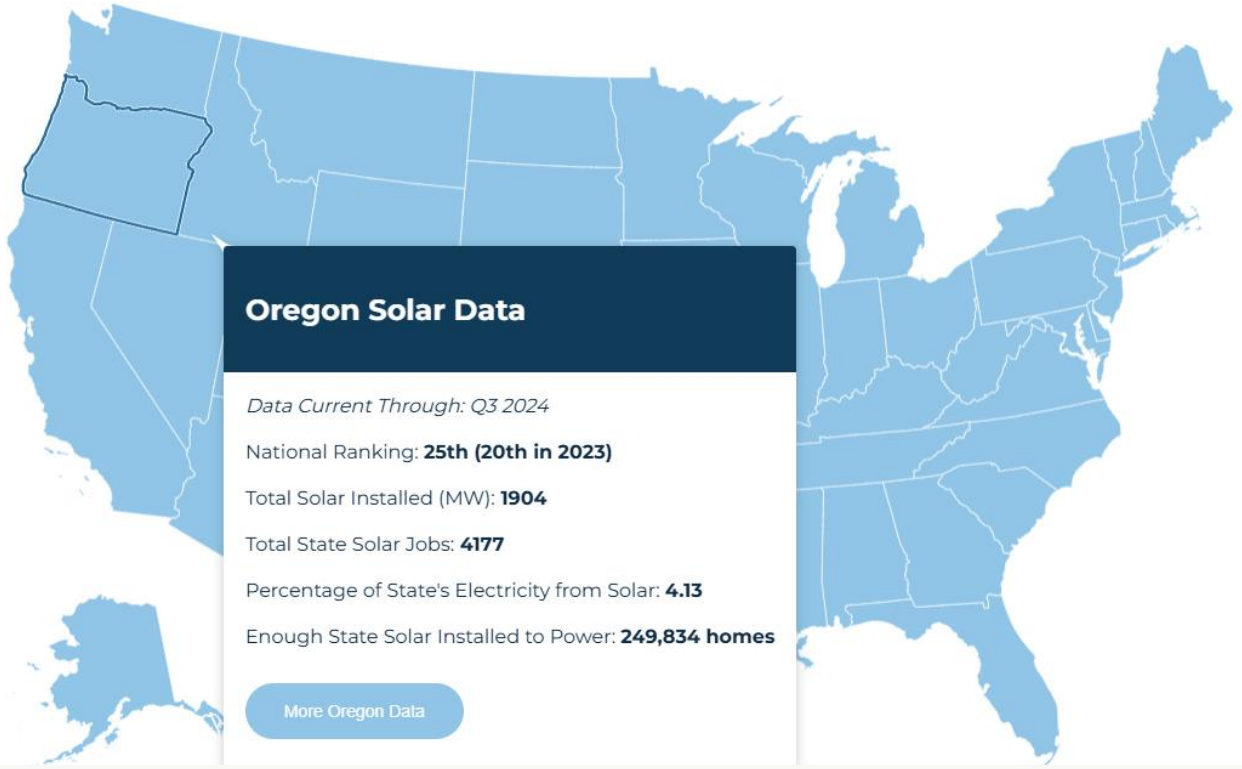
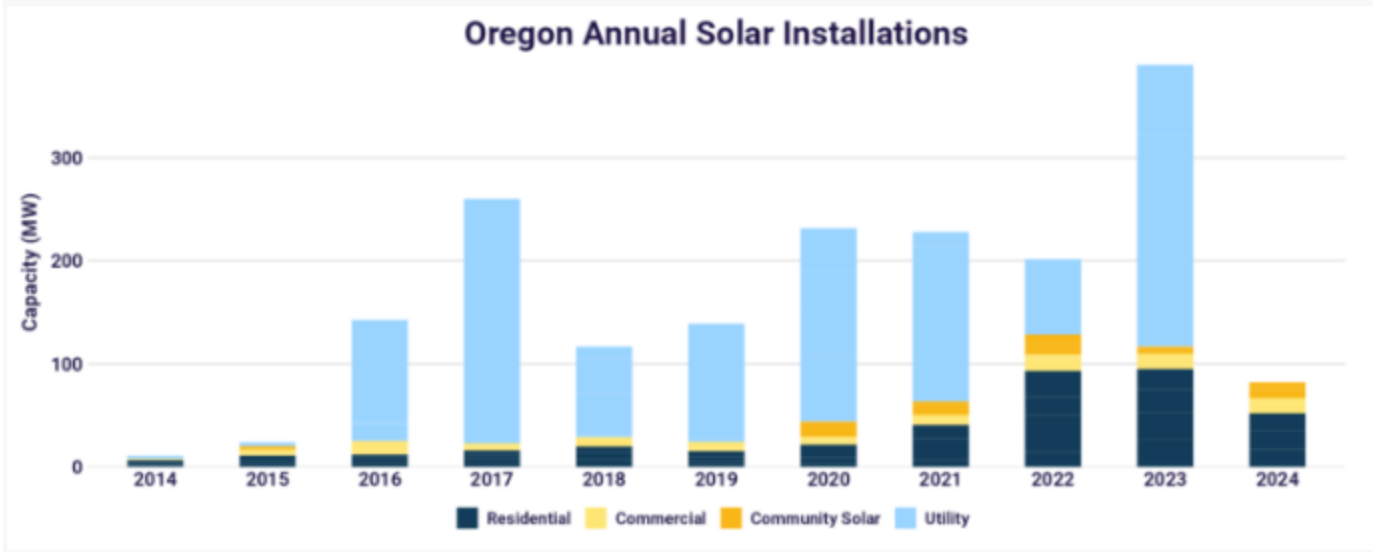
CUSTOMER SITED DISTRIBUTED ENERGY RESOURCES
ROOFTOP SOLAR

Oregon is the median solar state, ranking 25th in the country for total installed capacity.

Total installed solar capacity is about 2GW, generating about 4% of Oregon's electricity





Source: Solar Energy Industries Association, Solar State By State – SEIA

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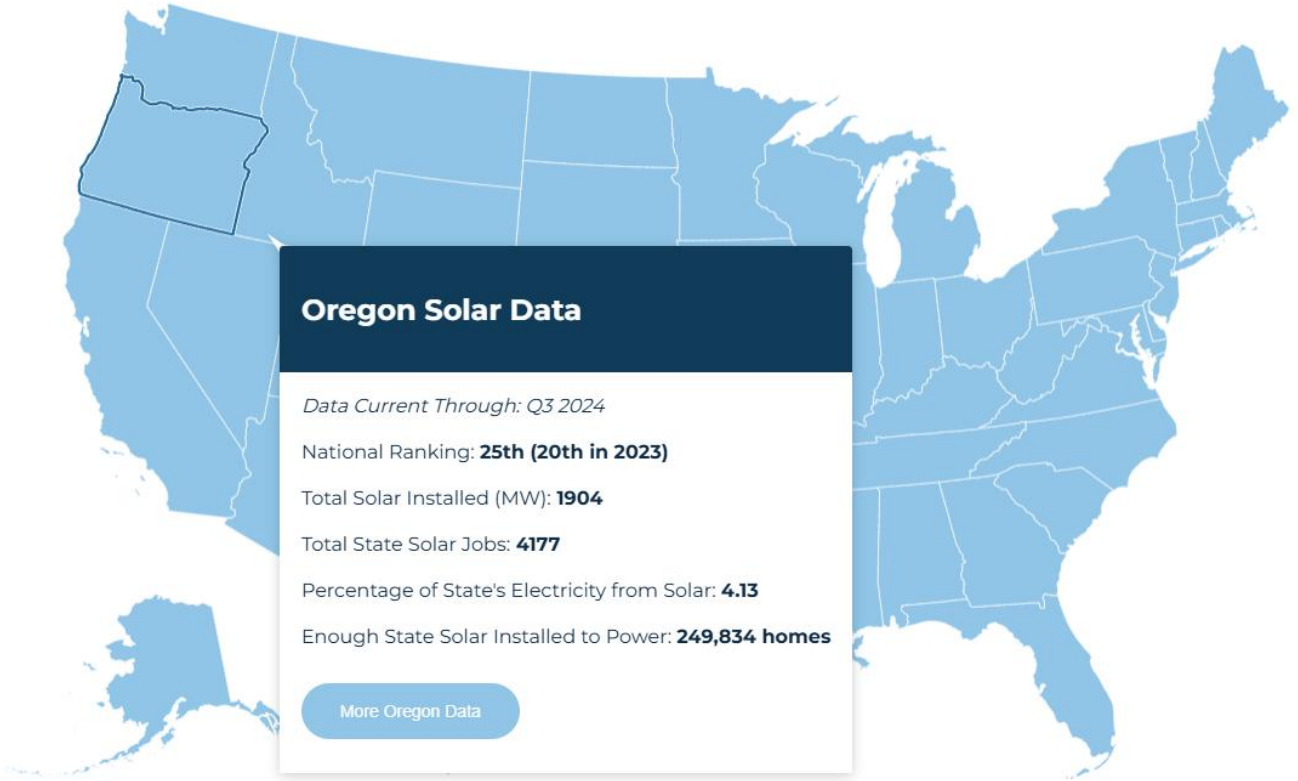

State	Installed Capacity (MW)	% of Total Electricity
Oregon	1,904	4%
Idaho	998	7%
California	49,777	30%
Nevada	7,943	29%
North Carolina	9723	10%

Source: Solar Energy Industries Association, Solar State By State – SEIA

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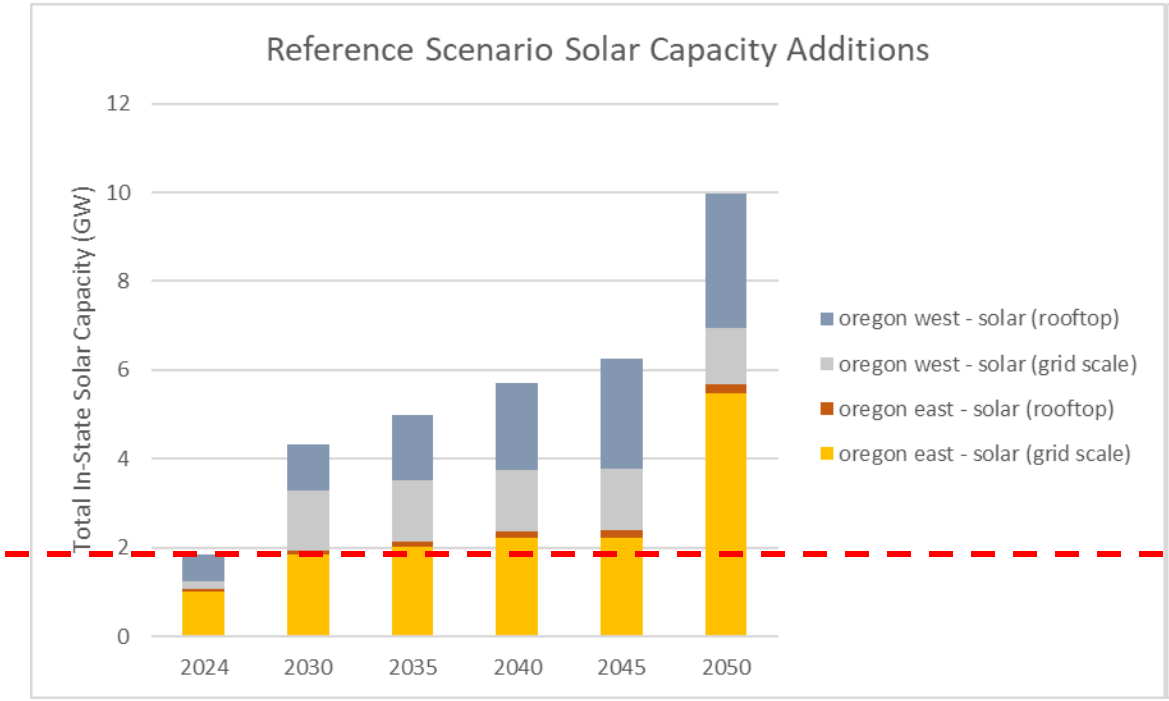
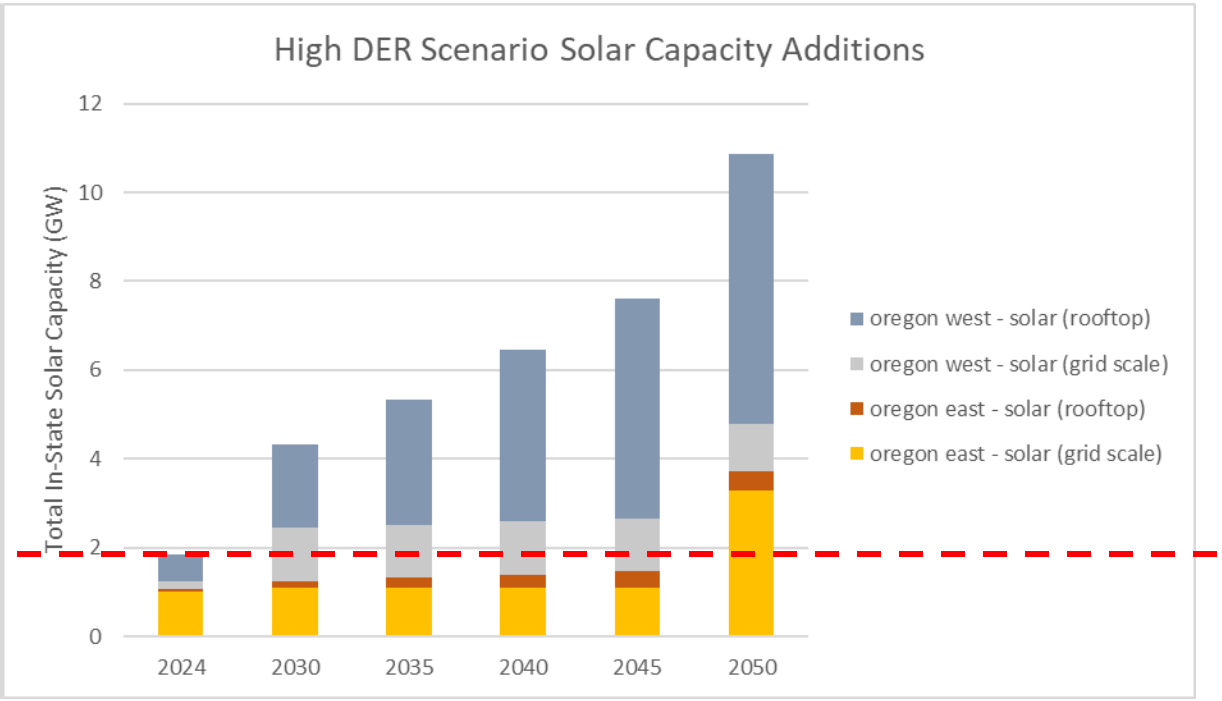
CUSTOMER SITED DISTRIBUTED ENERGY RESOURCES
ROOFTOP SOLAR

Rooftop solar in western Oregon reduces the need for grid-scale solar to be built in eastern Oregon.





An additional 3.2 GW of rooftop solar on the west side saves over 2GW of eastside solar and 15 square miles of land. The Added cost is about $7.5B in 2050

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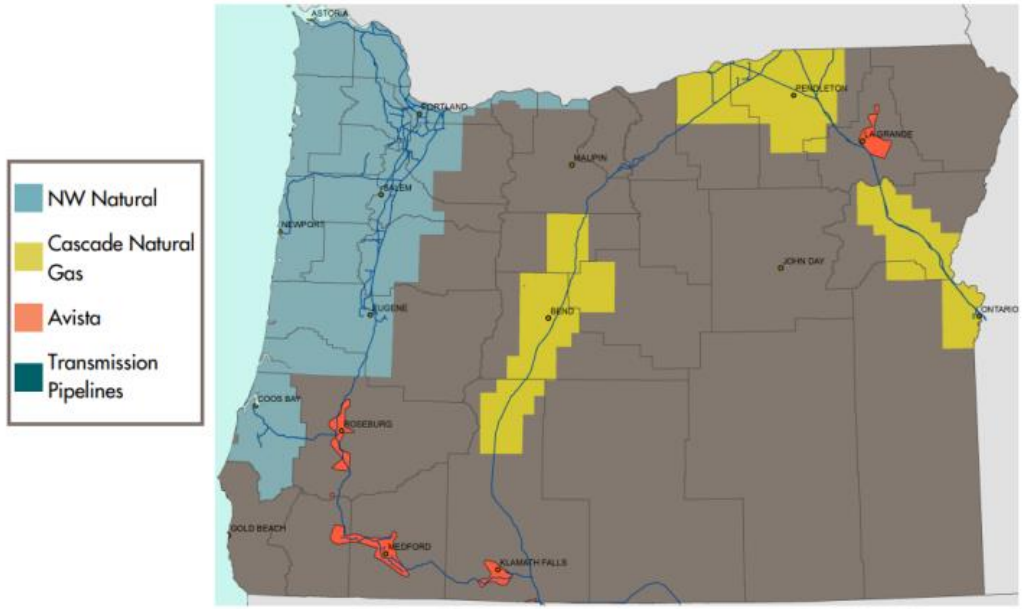
CUSTOMER SITED DISTRIBUTED ENERGY RESOURCES

Figure 6: Oregon Natural Gas Utility Service Territories



Other Considerations

- Role of behind the meter storage
- Regional considerations
- Effects of DERS on local distribution Systems
- Cost of distribution system upgrades
- Who pays?
- “DER ready” households
- Interaction with demand response (stay tuned)

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Brainstorming Exercise

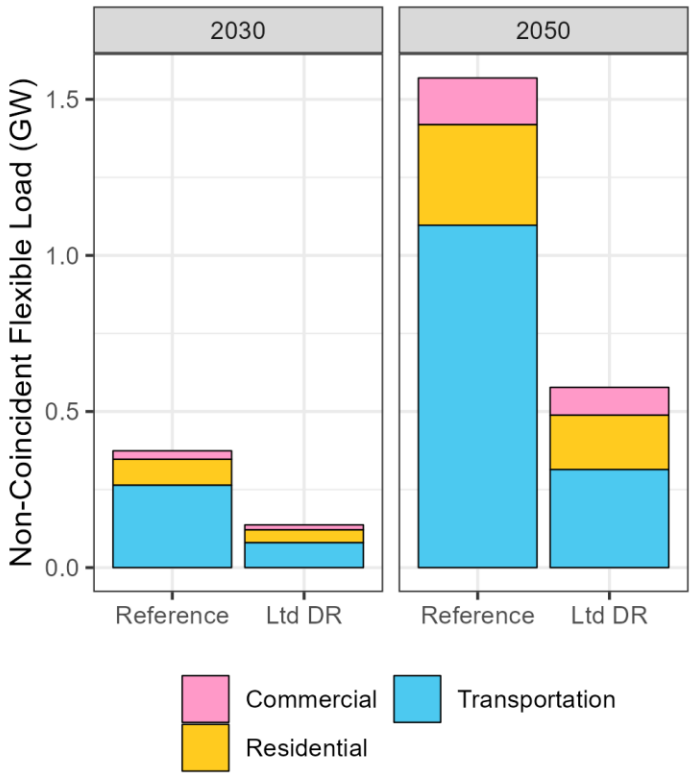
What are the barriers to maximizing benefits from customer sited Distributed Energy Resources?

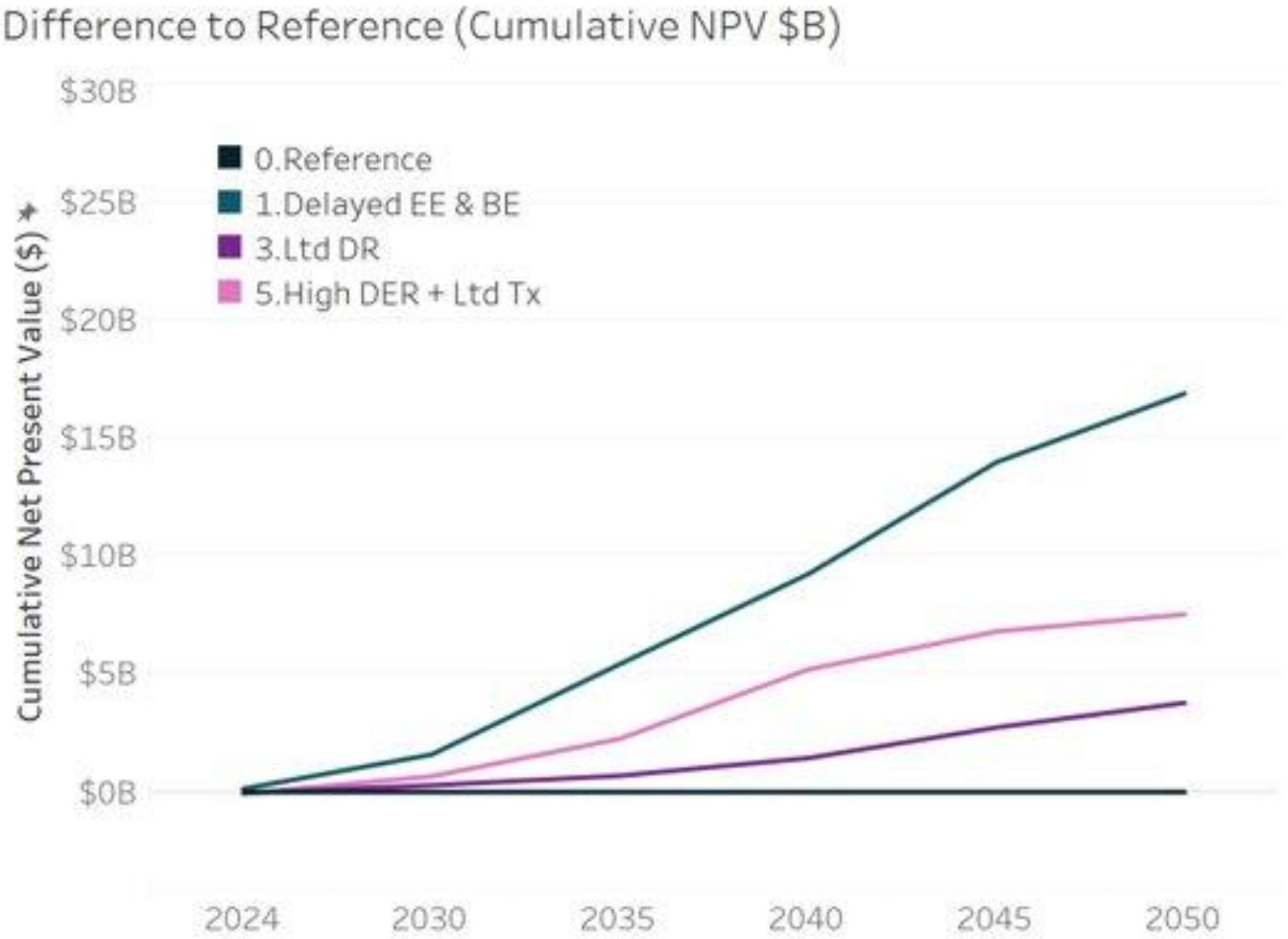
Use the Miro board to post comments.

Barrier ideas to consider adding:

- Financial barriers
- Infrastructure related barriers
- Existing policies
- Other?

DEMAND RESPONSE





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DEMAND RESPONSE

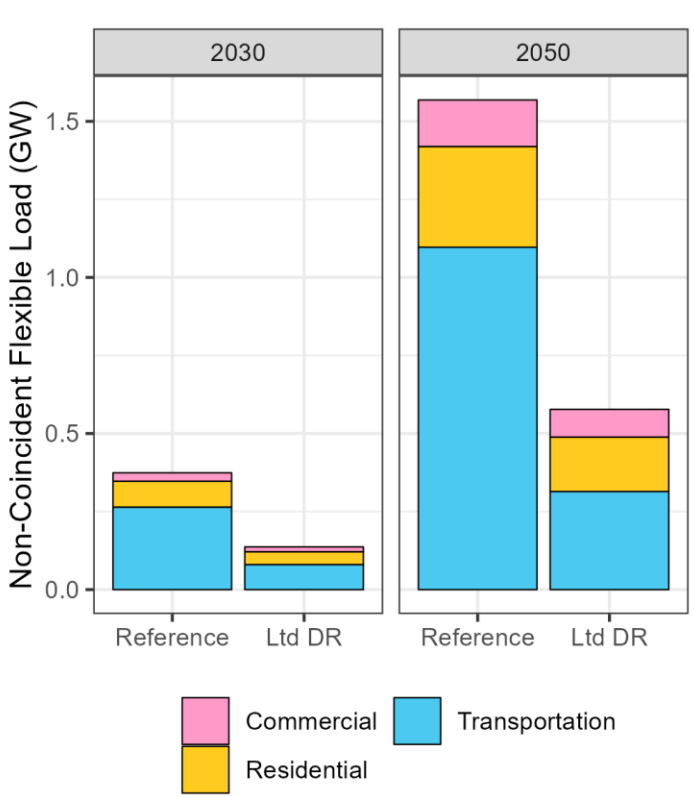

Figure 44. 2026 Reference Case capacity need heatmap

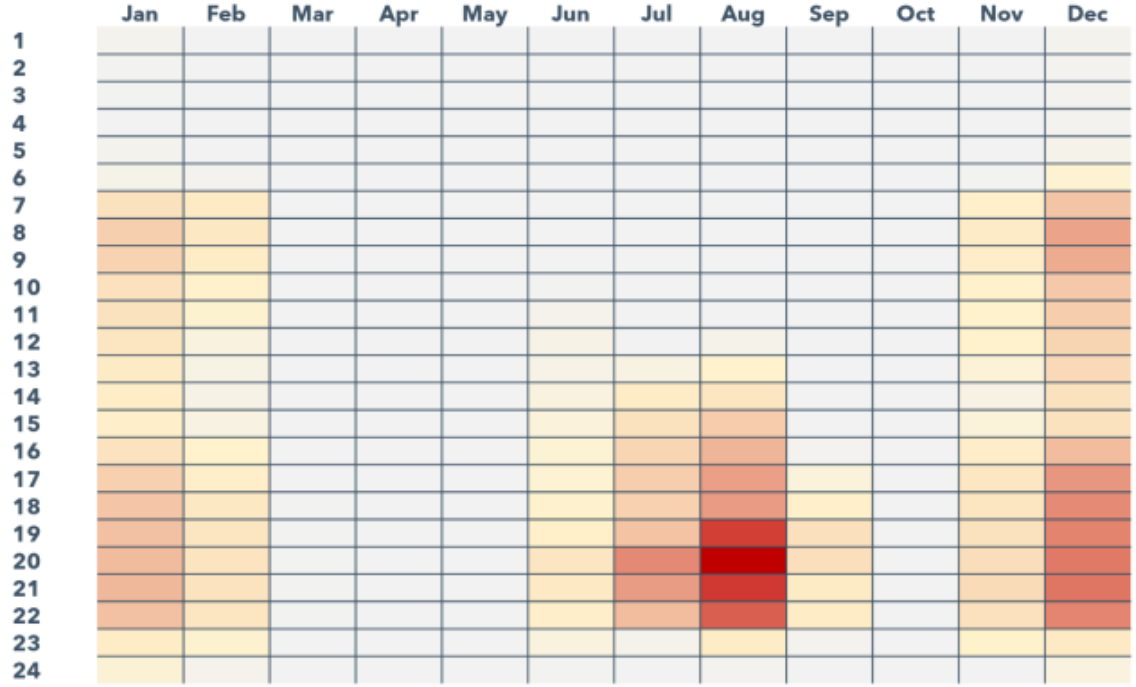

Table 12. Summer demand response/flex load peak impacts

Summer MW peak impacts, achievable potential							
Scenario	2024	2025	2026	2027	2028	2029	2030
High	271	298	310	326	343	359	385
Ref	146	183	211	236	257	274	294
Low	98	118	137	155	173	187	201
Cost-effective, achievable potential (TRC >=1)[133]							
Scenario	2024	2025	2026	2027	2028	2029	2030
High	256	273	278	282	287	287	294
Ref	133	162	183	199	211	218	228
Low	93	110	126	141	155	166	177

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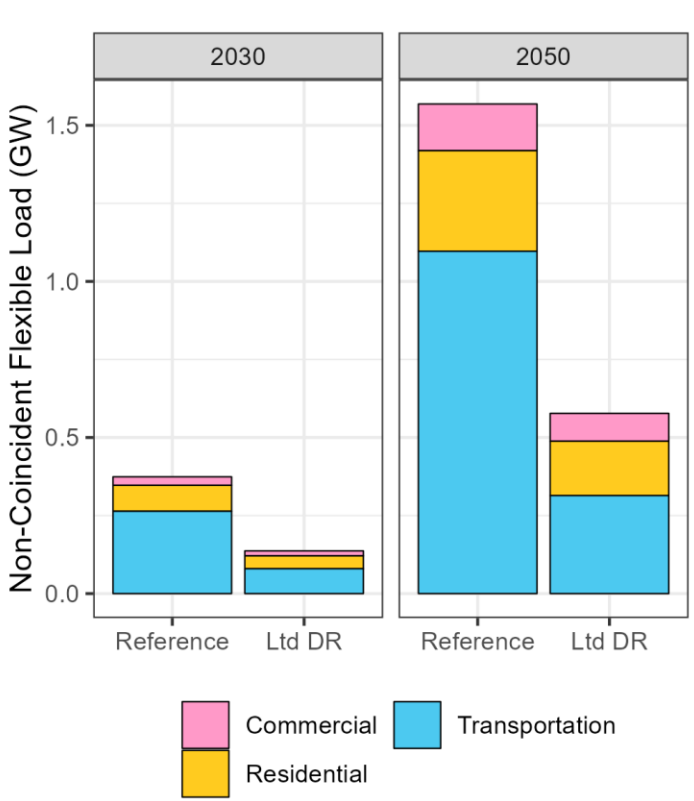
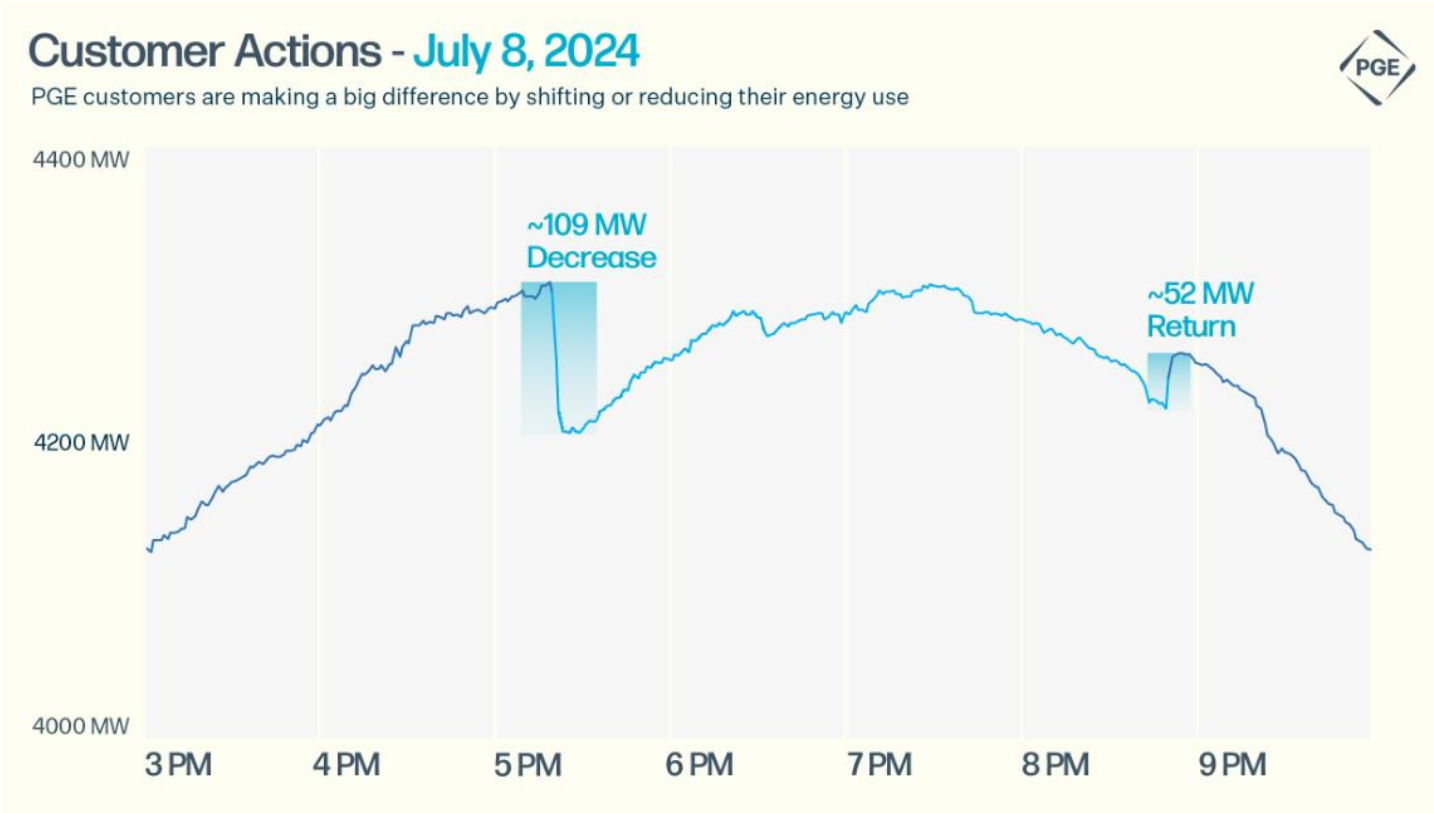
Source: Portland General Electric, Clean Energy Plan and Integrated Resource Plan 2023

DEMAND RESPONSE





Source: Portland General Electric

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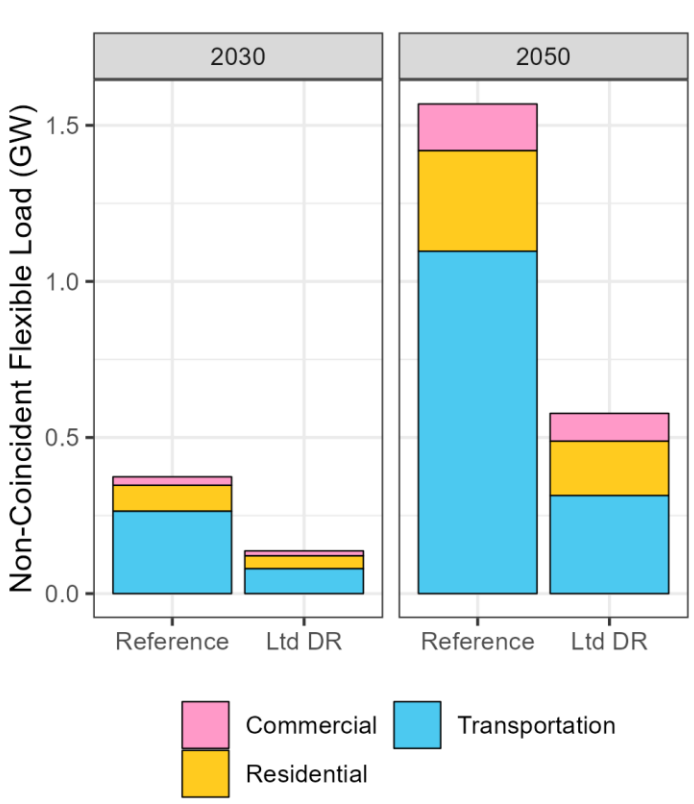
DEMAND RESPONSE



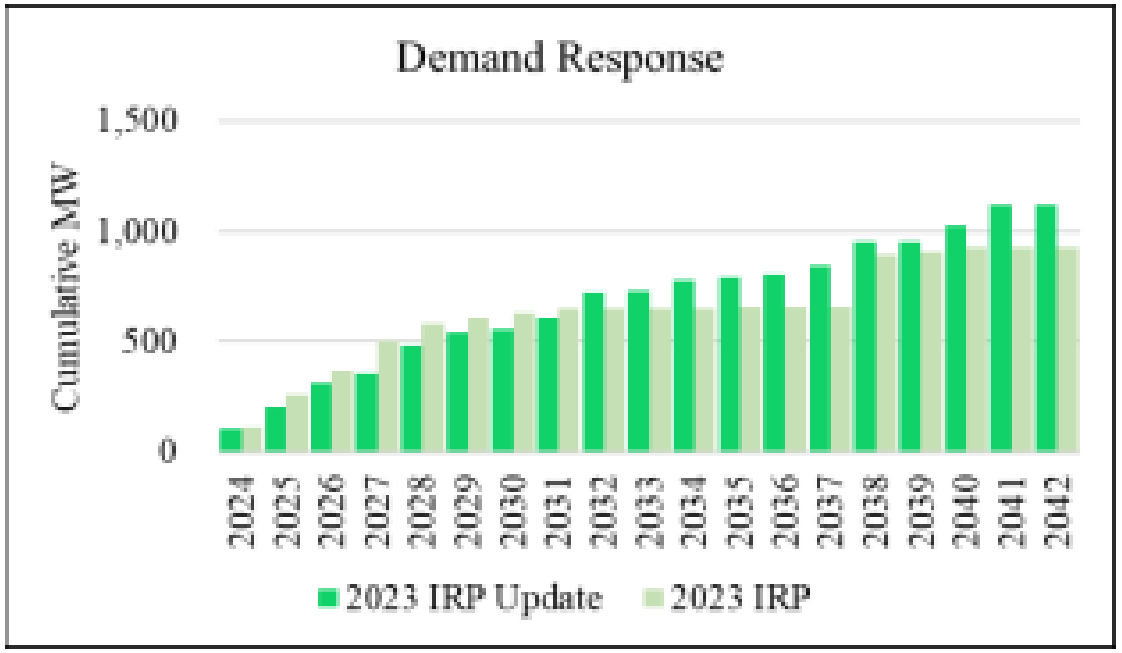
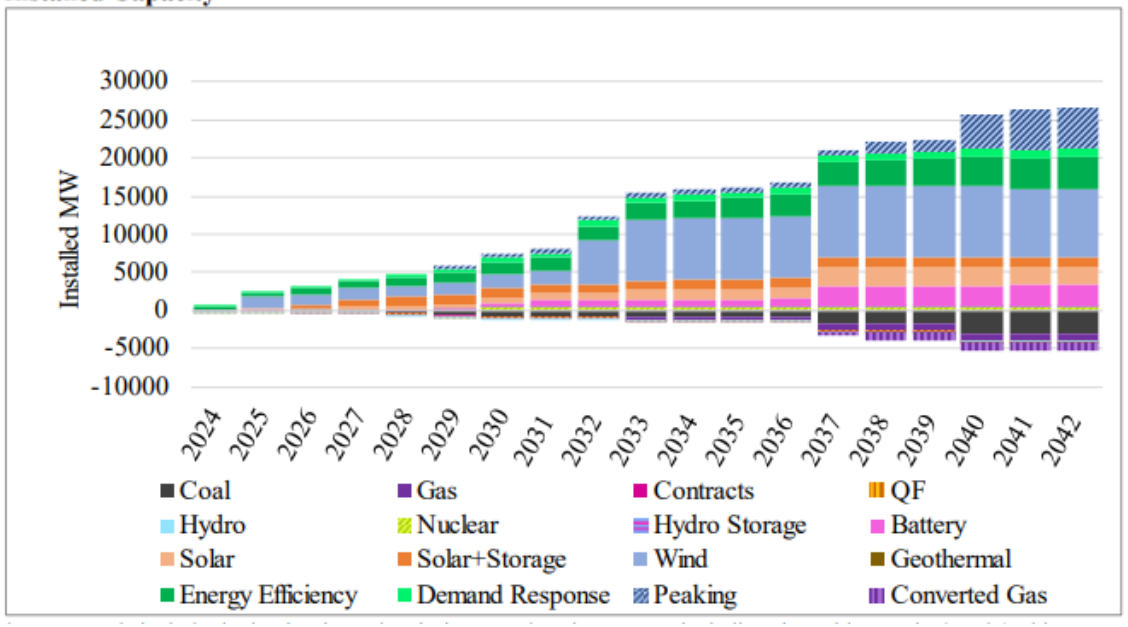
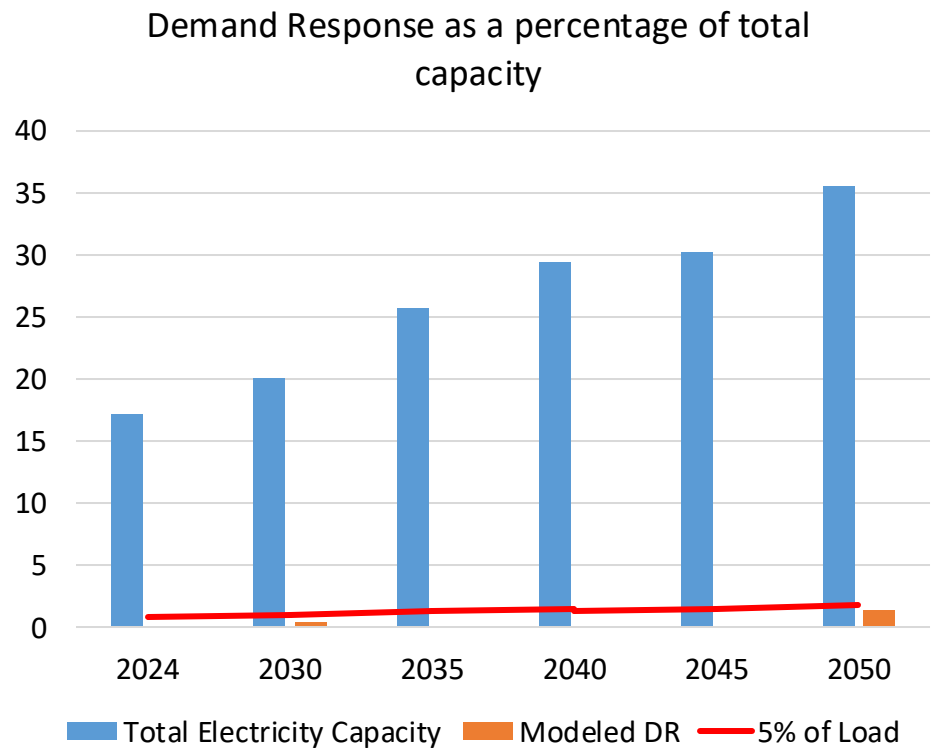


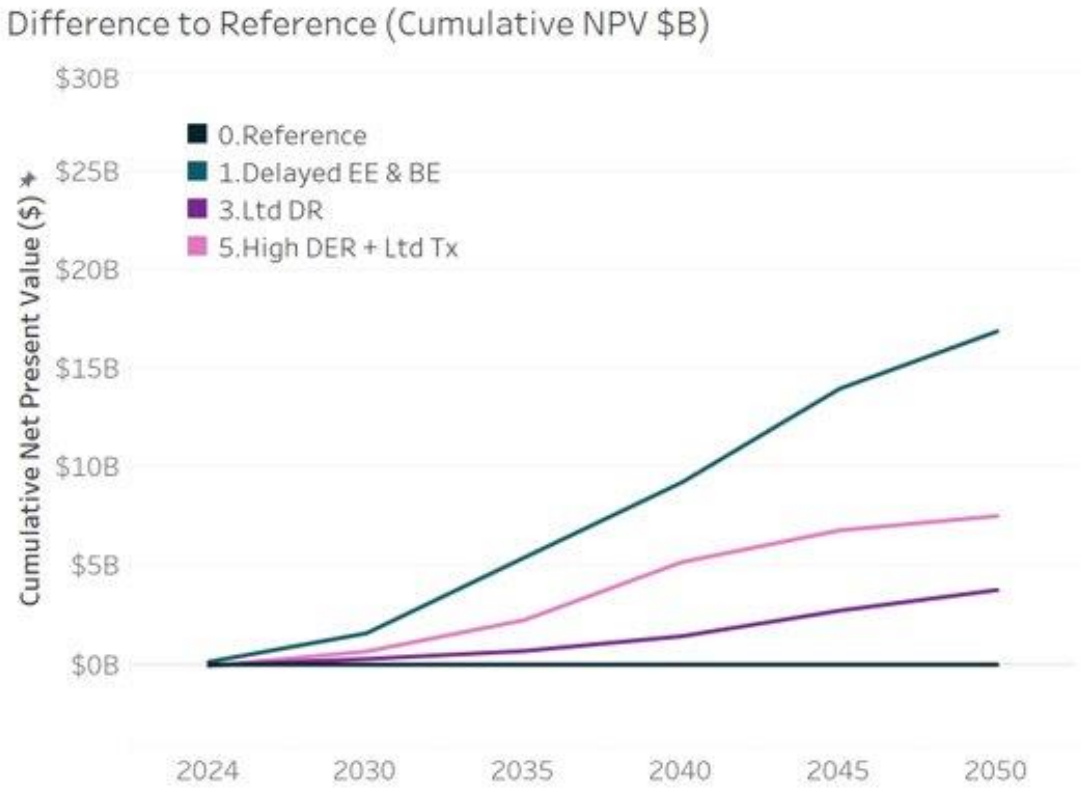
Figure 6.6 – 2023 IRP Update All-State Preferred Portfolio Cumulative Changes in Installed Capacity



Source: PACIFICORP – 2023 IRP UPDATE

DEMAND RESPONSE





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Brainstorming Exercise

What are the barriers to maximizing benefits from demand response?

Use the Miro board to post comments.

- Financial barriers
- Infrastructure related barriers
- Existing policies
- Other?

NEXT STEPS

MARCH 2025

SUN	MON	TUE	WED	THU	FRI	SAT
23	24	25	26	27	28	1
			We are here			
2	3	4	5 MEETING 2 9:00-12:00	6	7	8
9	10	11 OFFICE HOURS 10:00-11:00	12	13	14	15
16	17	18	19 MEETING 3 9:00-12:00	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

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MODELING OFFICE HOURS

February 28 **10 a.m. – 11 a.m.**	Transportation
March 3 **12 p.m. – 1 p.m.**	Fuels
March 7 **10 a.m. – 11 a.m.**	Electricity and Transmission
March 11 **10 a.m. – 11 a.m.**	Buildings
March 21 **10 a.m. – 11 a.m.**	Environmental Justice and Equity
Early April	Complementary Analysis Info Session

THANK YOU

Rob Del Mar

Robert.delmar@energy.Oregon.gov

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