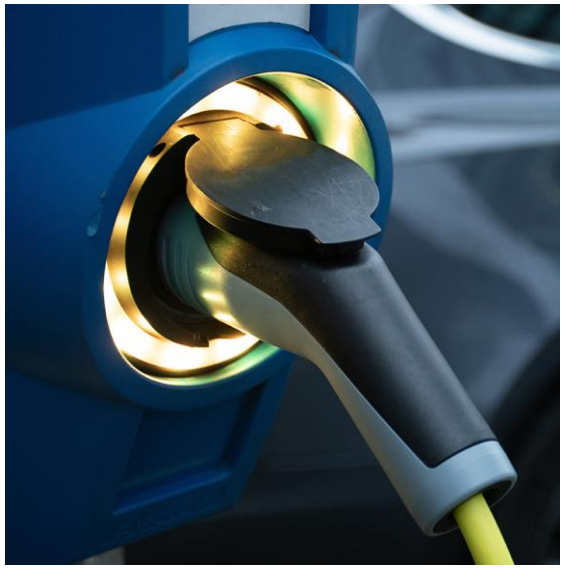
Oregon Department of **ENERGY**



Oregon Energy Strategy Policy Working Group
Low-Carbon Fuels
Breakout Session #4

Michael Freels
April 30, 2025

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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

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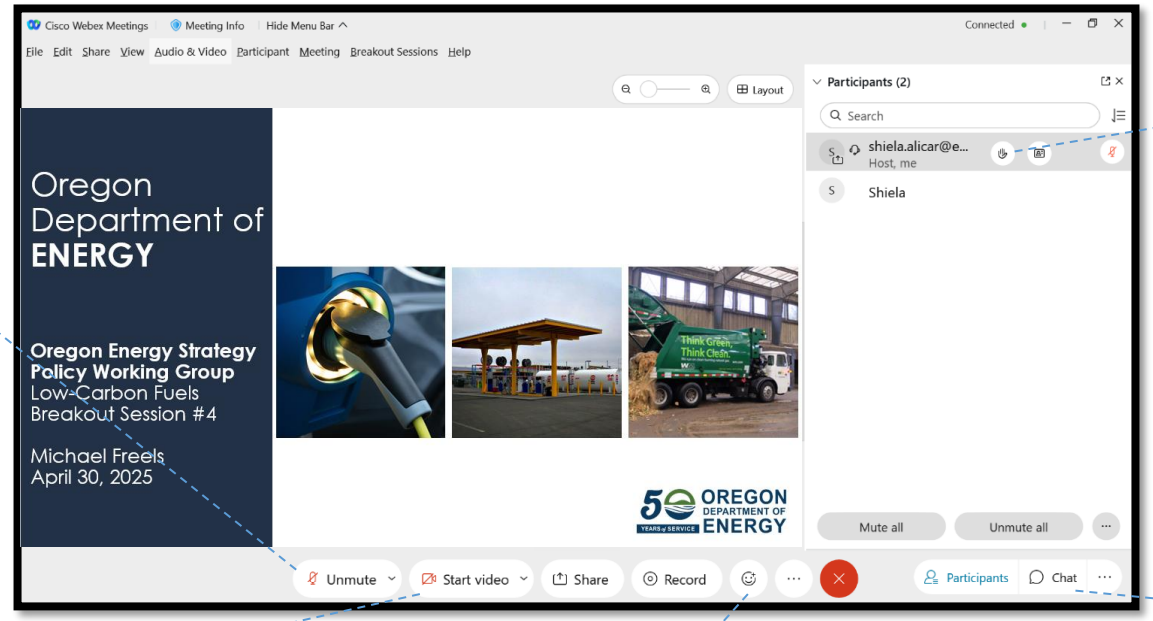
Unmute — *Microphone Off*



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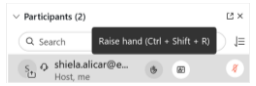

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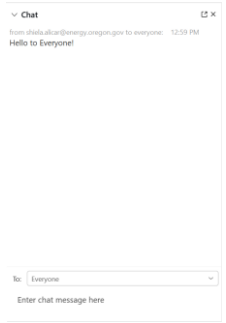
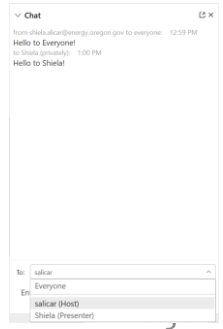
Chat



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

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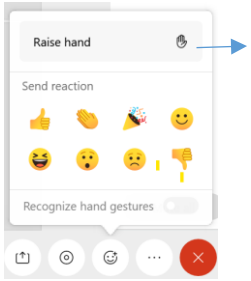
Start video — *Webcam Off*

Reactions



Click to Raise your hand.

Click on Lower hand when you are done.

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 • Customer-side of the meter
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

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PURPOSE OF THIS WORKING GROUP

- Build understanding of learnings coming out of the model, specifically those related to fuel supply and demand.
- Consider Oregon's existing policy landscape.
- Provide feedback on fuel sector priorities, barriers, policy gaps, and opportunities.
- Develop policy actions that could help advance progress toward further decarbonizing the fuel sector.

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
Department of State Lands	Nataliya Stranadko
Eugene Water & Electric Board	Kelly Hoell
Food Northwest	Pam Barrow
Green Energy Institute	Carra Sahler
NW Natural	Brittany Park
OR Dept of Fish and Wildlife	Jeremy Thompson
OR Dept of Forestry	John Tokarczyk
Oregon Business and Industry	Sharla Moffett
Oregon Business for Climate	Tim Miller
Oregon Citizens' Utility Board	John Garrett
Oregon Department of Geology and Mineral Industries	Ruarri Day-Stirrat
Oregon Fuels Association	Danelle Romain
Port of Portland	Cassandra Jackson
Renewable Hydrogen Alliance	Rebecca Smith
SkyNRG	John Plaza
Western States Petroleum Association	Antonio Machado

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INTRODUCTIONS

Please share the following with the group, in the chat:

- Name
- Affiliation
- Share something you're looking forward to this May

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MEETINGS

- April 30, 2 - 5 p.m., Meeting #4 (TODAY)
- May 9, 5 p.m., Deadline for written comments to be considered and incorporated for May 21 plenary session
- May 21, 9 - 11 a.m., Meeting #5
  - Plenary session
  - Report out from all working groups

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Meeting Objectives

- Review policy recommendation development process
- Share new insights from complementary analyses
- Learn about existing fuel policies
- Discuss potential policy actions
- Evaluate potential policy actions from the perspective of the different key considerations

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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.

AGENDA

2:00 - 2:05 pm	Welcome, Agenda, Introductions
2:05 – 2:15 pm	Process and Policy Recommendations
2:15 – 2:30 pm	Complementary Analyses
2:30 – 3:15 pm	Energy Innovation- Policy Examples
3:15 – 3:25 pm	Break
3:25 – 4:55 pm	Review of Potential Policy Actions
4:55 – 5:00 pm	Wrap up and Next Steps

Policy Recommendation Process

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PATHWAYS MODELING PROVIDES DIRECTION

Direction: Liquid and gaseous fuels are critical to meet Oregon energy demand and its climate goals. There are different pathways for decarbonizing fuels, but in all scenarios the fuels we use and how we use them will change over time.

With that direction on the "**what**," we must discuss the "**how**."

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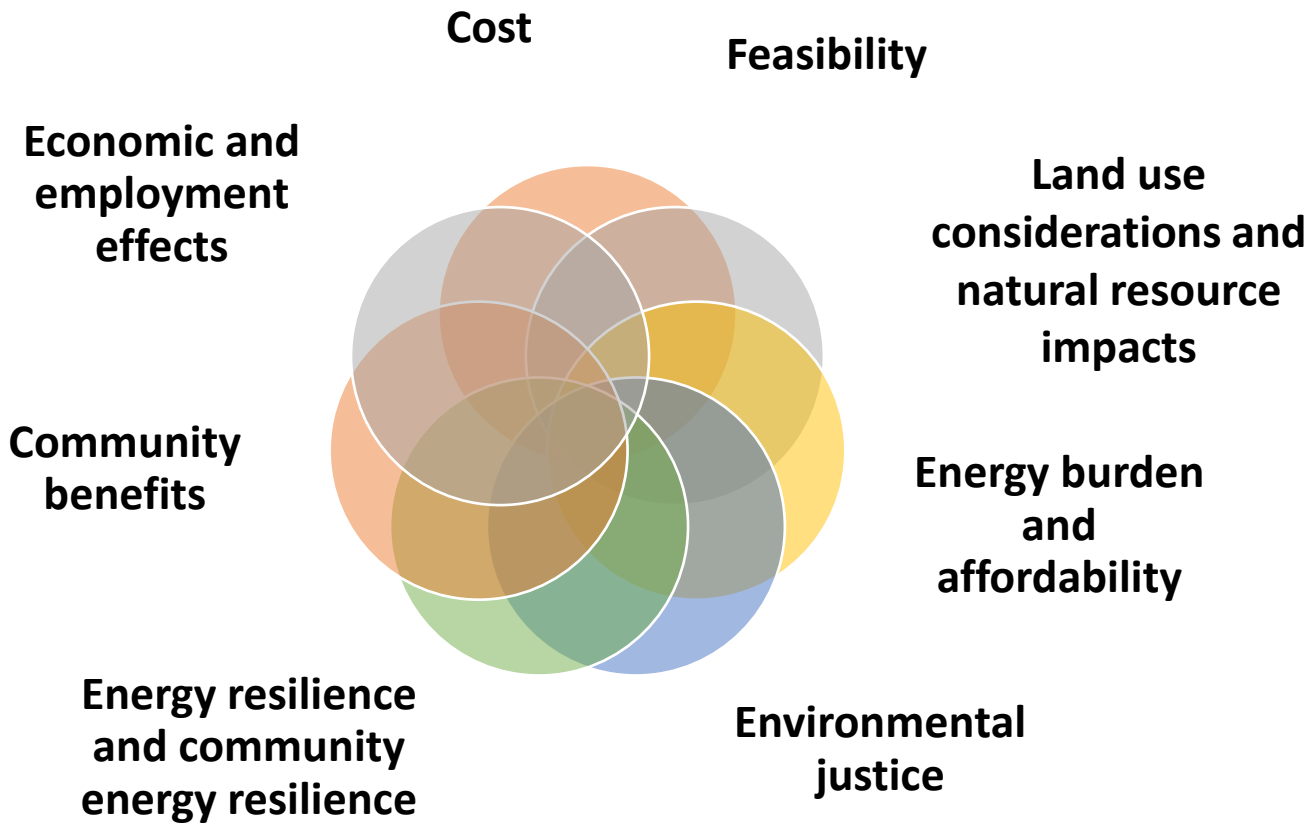
KEY CONSIDERATIONS



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ODOE SET A STRUCTURE FOR DISCUSSION

Meeting 2 | Meeting 3 | Meeting 4

Pathway / key findings	Challenges and Barriers	Proposed strategies to address barriers	Proposed policy actions
Low Carbon Fuel Development			
Need for Fuel Resources to Support the Electric Grid			
Electrification with Strategic Consumption			
Fuel Demand Declines			

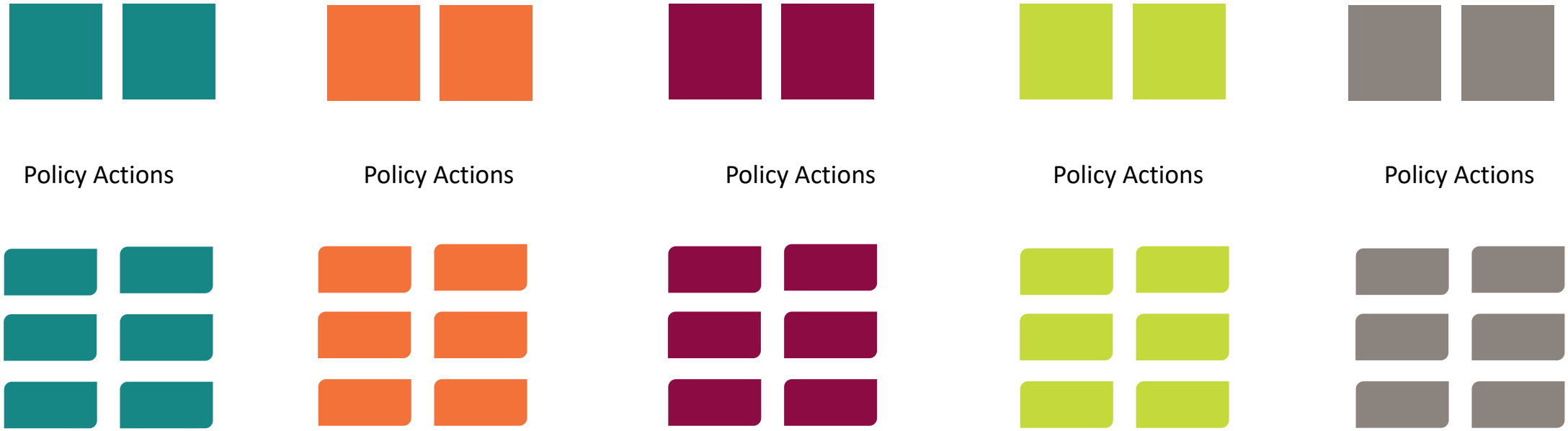
STRATEGIES

To meet its energy policy objectives, Oregon must advance along the following five pathways:

Strategy 1	Energy efficiency and electrification of buildings
Strategy 2	Electrification of transportation and reducing vehicle miles traveled
Strategy 3	Distributed energy resources, including solar PV, distributed batteries, and flexible electric loads
Strategy 4	Clean electricity
Strategy 5	**Low-carbon fuels**

POLICY FRAMING

Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5
Policy recommendations (high level)	Policy recommendations (high level)	Policy recommendations (high level)	Policy recommendations (high level)	Policy recommendations (high level)
Policy Actions	Policy Actions	Policy Actions	Policy Actions	Policy Actions



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POLICY RECOMMENDATIONS

- Promote development of low carbon fuel resources to increase their overall supply, affordability, and availability to all Oregon communities.
- Reduce demand for fossil fuel resources and ease the transition burden to low-carbon fuels in hard to electrify applications in transportation, industry, and electricity generation while retaining resilience and safety.
- Protect existing critical Oregon businesses and energy consumers while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications.

EXAMPLE

STRATEGY	• Low-Carbon Fuels
RECOMMENDATIONS	• Promote development of low carbon fuel resources to increase their overall supply, affordability, and availability to all Oregon communities. • Reduce demand for fossil fuel resources and ease the transition burden to low-carbon fuels in hard to electrify applications in transportation, industry, and electricity generation while retaining resilience and safety. • Protect existing critical Oregon businesses and energy consumers while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications.
POLICY ACTIONS	• *Focused on actionable recommendations with 5-10 year outlook.*

Discuss Complementary Analyses

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COMPLEMENTARY ANALYSES

On April 16, ODOE held a public information session, during which our consultants provided results on the air quality and the energy wallet analyses. They also shared insights on what to expect from the forthcoming jobs analysis.

- Did those results spark any new thinking on barriers or policy gaps you'd like to share?

Energy Innovation

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10 MIN BREAK

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Discuss Potential Policy Actions

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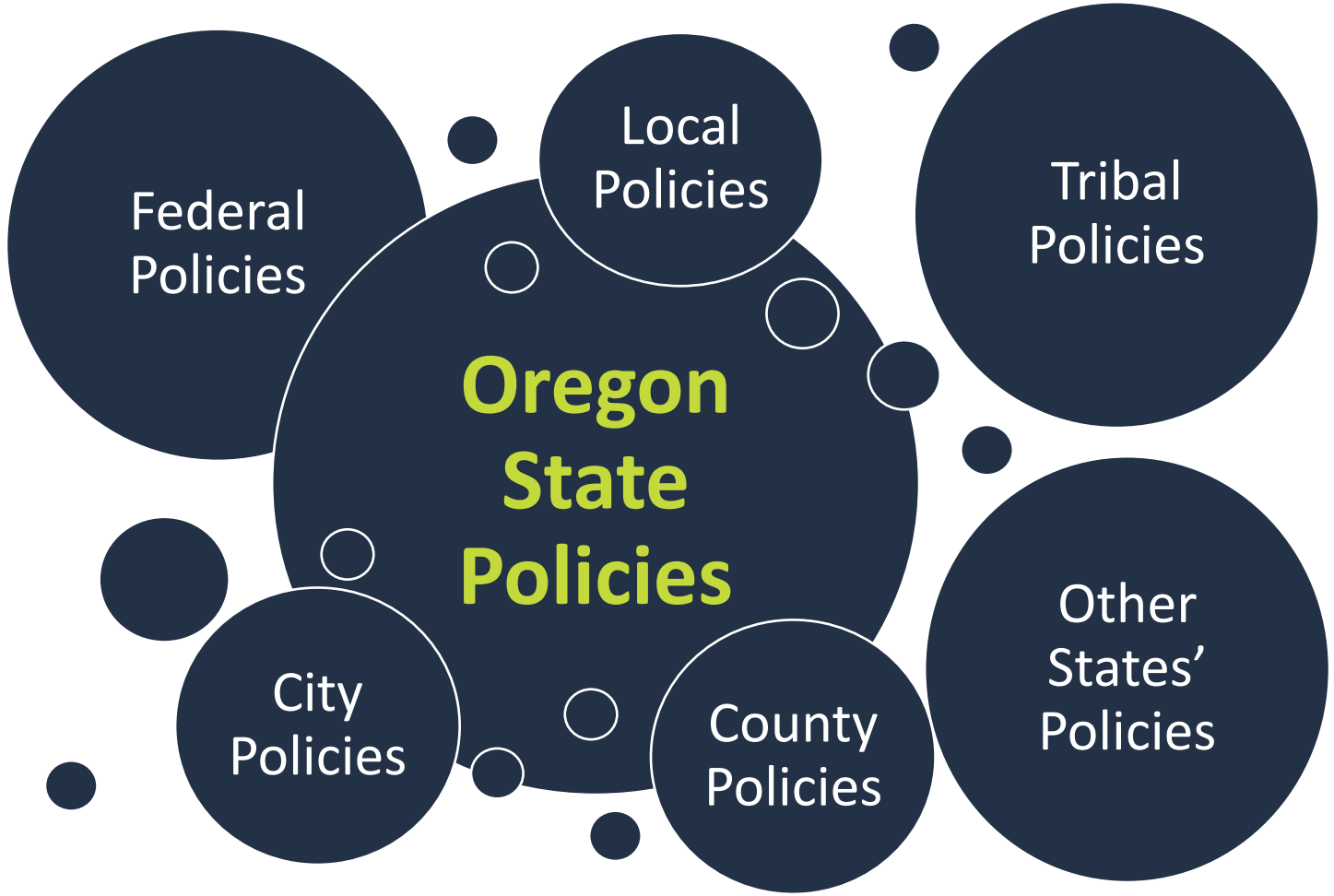
THE POLICY LANDSCAPE

Remember this slide from February 26

There Are Layers of Relevant Policies

- Our focus is STATE-level policies
  - Mandates
  - Incentives
  - Studies / State-led Conversations
  - Programs
    - Example: County Energy Resilience Grant Program
    - *Application deadline February 28, 2025*
  - Other
- Policies at other levels are contextually relevant

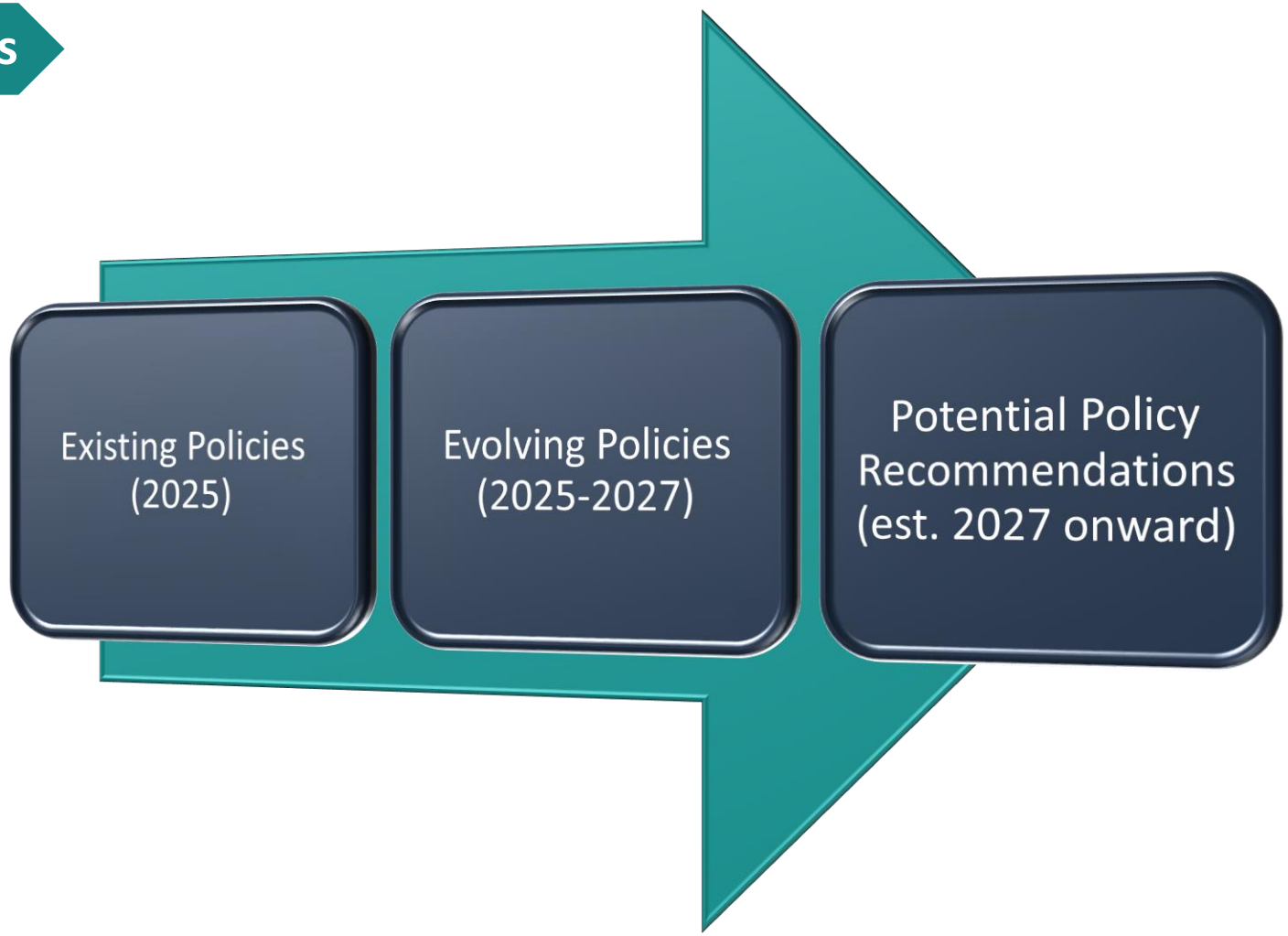


OUR POLICY TIMELINE

Remember this slide from February 26

For Policy Implementation, Timing Matters

- The Oregon Energy Strategy is due November 1, 2025
- Our focus is ‘near-term’ but not ‘right now’
  - Recommendations will likely be aimed at the 2027 Legislative Session
- In addition to considering existing policies, we should aim to recognize (and avoid duplicating) existing workstreams and evolving policies



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PLAN FOR PRIORITIZING GROUP INPUT

We will review and discuss potential policy actions. (*We welcome written comments as well)*

Step 1: ODOE will present a straw proposal with ten potential policy actions. We will address clarifying questions but not yet engage in discussion.

Step 2: We will take a poll on ODOE's ten straw proposal items to gauge interest in discussion of those items today versus additional or alternative ideas you may want to share with the group.

Step 3: We will allocate our time accordingly.

PLAN FOR PRIORITIZING GROUP INPUT

- We will do a “Fist to Five” exercise using a Menti poll on ODOE’s ten straw proposal items to gauge interest in discussion of those versus additional or alternative ideas.
- For each item, panelists will be asked to indicate
  - 0: This idea does not work for me, and we should discuss
  - 1: I see MAJOR issues with this idea, and we should discuss
  - 2: I see MINOR issues with this idea, and we should discuss
  - 3: I see minor issues we can address in written comments
  - 4: I do not have any concerns that I want to discuss today
  - 5: I like this idea as drafted

We will prioritize discussion on any item that receives one or more of these scores (0, 1, 2).

Go to

www.menti.com

Fuel Supply

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Straw Proposal Item #1

Explore opportunities to facilitate low-carbon intensity fuel production facilities in Oregon

Examples of what we've heard:

In order to improve a low carbon fuel transition there has to be a permitting process by which it will allow producers to grow their capabilities, but constraining their ability to do so will just delay any transition plans.

Need more instat production of low carbon fuels

SAF supply and specific SAF policies needed to supply aviation

Improve permitting processes as they can enhance the development of LC projects by reducing delays, promoting investments, expanding feedstock utilization. Improved permitting can remove barriers to scaling production but it is seen as a detrimental move, unfortunately.

H2 storage and pipeline infrastructure is extremely difficult infrastructure to permit. H2 production will most likely occur in eastern part of state. Yet it has to be transported and then stored in urban environments. Imagine the opposition that will occur with large H2 storage at PDX for example

Incentivize in state produciton of low carbon fuels

Innovation funding

Consider ways to reform current permitting and siting for fuels/fuel production facilities to get beyond nimbyism and to better weight the need for a clean energy transition.

work with other states that regulate LC fuels that have an effect on OR.

footprint of these facilities and ability to permit and site

Update Oregon RFS to increase RD/BD supply to the State

Existing Infrastrucutre,

Availability of zero carbon fuels - tied to cost but may be other issues likel siting etc

for low carbon fuels, the more demand from other states the less availability.

Straw Proposal Item #2

Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects.

Examples of what we've heard:

overuse of eastern resources for western benefit

Having objective facts available for policy makers (versus just info coming from competing solutions) as they make decisions

Support for coops of feedstock producers to find scale and reduce costs / share infrastructure (production, transporting materials, etc.)

if demand drives production of biomethane (as opposed to just capturing biomethane already being produced) we must ensure communities are not impacted by water and air quality effects

Impact on wildlife habitat

Land use concerns - how up-to-date are the designations of "high-value farmland," are there places where we can colocate ag and clean energy production?

Consider gathering diverse stakeholders to agree on where renewable diesel facilities should be located

Straw Proposal Item #3

Update and expand Biogas and Renewable Natural Gas Inventory Report to evaluate all biogenic feedstock opportunities in the state and how they can be used for biofuels.

Examples of what we've heard:

if demand drives production of biomethane (as opposed to just capturing biomethane already being produced) we must ensure communities are not impacted by water and air quality effects

expansion of factory farms to produce RNG, impacting air and water quality

Increased subsidies available for existing fuel providers to convert to renewable feedstocks

public concern about carbon intensity of biofuels (swapping food for fuel feedstock)

Consider gathering diverse stakeholders to agree on where renewable diesel facilities should be located

RNG: many feedstocks in Oregon are not economical to develop due to infrastructure gaps, such as dairy manure being plentiful in Tillamook Co. but no natural gas pipeline infrastructure exists for interconnection. This contrasts to CA where pipeline infrastructure is widespread and dairy RNG development is more similarly more widespread.

We need to ensure we are not driving increased emissions by financially incentivizing the production of biomethane

Uses of RNG beyond direct fuel and/or electricity production

Competition for fuels among different end uses - RNG and H2 for NG utilities as opposed to transportation.

The barrier to RNG production in Oregon is access to pipeline infrastructure.

Feedstocks are used at the facilities that produce the finished products and follow a market based behavior.

using RNG for electricity production is one of the lowest cost benefit use cases for RNG. Especially when considering the higher value use cases of RNG as a feedstock for SAF or renewable diesel production

Over the long term, competition for very low CI biofuel

RNG feedstock development barrier: many feedstocks in Oregon are not economical to develop due to infrastructure gaps, such as dairy manure being plentiful in Tillamook Co. but no natural gas pipeline infrastructure exists for interconnection. This contrasts to CA where pipeline infrastructure is widespread and dairy RNG development is more similarly more widespread.

Having objective facts available for policy makers (versus just info coming from competing solutions) as they make decisions

Support for coops of feedstock producers to find scale and reduce costs / share infrastructure (production, transporting materials, etc.)

Straw Proposal Item #4

Funding and technical assistance for investments in fuel innovation pilot projects such as hydrogen, biofuels, thermal energy networks, and geothermal projects.

Examples of what we've heard:

funding and technical solutions for integrating Geothermal, TENs, and energy efficiency

Short-term policy changes (ie, tax credits) impact business decisions to invest in production capacity or allocate supply to Oregon

Funds/incentives/tax credits for pilot implementation of hydrogen or electrification of 'hard to electrify' industrial uses

gas utility pilot projects for TENS

integrating geothermal and TENs systems

Innovation funding

funding and technical solutions for integrating Geothermal, TENs, and energy efficiency

Consider gathering diverse stakeholders to agree on where renewable diesel facilities should be located

No existing fueling network for some fuels, like H2

Providing funding, tax credits (PTC, ITC), or pilots that allows the industry to innovate

Incentivize in state produciton of low carbon fuels

Fuel Demand

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Straw Proposal Item #5

Funding and technical support for industrial and manufacturing demonstration projects incorporating efficiency improvements and low carbon fuel technology.

Examples of what we've heard:

Infrastructure and other fuel distribution incentives especially in rural Oregon to address low economies of scale and to spur needed investments.

Consider support for industrial centers/parks where new fuels can be efficiently distributed -- and where industrial heat and other resources can be efficiently shared / deployed. (Industrial symbiosis.)

Really strong incentives for customers, and for installation of technologies -- not just what outdated 'cost effectiveness' metrics would enable. Need to FULLY value the benefit of DRs -- and early incentives even bigger to drive early parts of the adoption curve, and installation and product markets.

Funds/incentives/tax credits for pilot implementation of hydrogen or electrification of 'hard to electrify' industrial uses

Hand-holding for folks (business, other) as they deal with decisions and adoption issues

existing infrastructure is not well placed to serve the highest and best use of alternative fuels

Providing funding, tax credits (PTC, ITC), or pilots that allows the industry to innovate

Incentivize in state produciton of low carbon fuels

Because we don't know which end uses are hardest to electrify, OR should provide equal transport and stationary incentives for renewable natural gas use

Providing funding, tax credits (PTC, ITC), or pilots that allows the industry to innovate

Innovation funding

Transporting fuels to hard-to-electrify applications after we begin to 'prune' the gas infrastructure (shut off/remove pipes) due to lack of customers and high cost of maintenance.

These fuels should be reserved for the hardest to decarbonize industries; we cannot be heating homes with expensive, valuable fuels when alternatives exist

Straw Proposal Item #6

Study how to improve and decarbonize fuel energy storage across the state to improve statewide resilience.

Examples of what we've heard:

careful evaluation of planned fossil fuel infrastructure to ensure no stranded asset risk

Risks of transporting/piping/storing these new fuels -- we've done a poor job of safely storing fuels so far (high seismic risk, close to populatino, etc.)

Need to FULLY understand the cost of keeping peaker plants (whether new tech, or old tech) available 24x365 -- with ALL the costs, and make that full cost the value of marginal energy -- and then build that value back into DRs, storage, and other alternatives -- and then need to double or triple that value in incentives for early stages of adoption of other technologies.

Reliability concerns around home and business heating on a grid being strained by significant demand increase (data centers on top of natural growth)

Storage. Where and at what cost could H2 be stored for dispatch-able use in OR is not clear to me. Also the feasibility of using what are currently natural gas storage sites for H2 at the same time is not clear to me.

identification of value for built out infrastructure for solutions can provide peaking resources.

Need better estimates of amount of ZCF needed to meet reliability needs in future

Consider gathering diverse stakeholders to agree on where renewable diesel facilities should be located

Existing fuel infrastructure, such as gas stations, underground storage tanks, fuel depots, and pipelines could be at risk of becoming stranded assets.

Battery storage limitations

Power reliability in rural areas if electricity is the only power source.

Cost of keeping a plant available, secure, safe and ready if it's only running a few hours a year; the cost of those few Megawatt hours will be VERY high and would seem we'll see other solutions when we actually stare at those costs

Even if these infra costs are full in the model, what business model and policy / regulatory framework will they need, and will there be political will to support these? e.g. will we be creating new utilities?

identification of value for built out infrastructure for solutions can provide peaking resources.

Straw Proposal Item #7

Revise integrated resource planning regulatory framework for natural gas utilities allowing them to develop innovation plans that meet GHG reduction targets through new resource projects, (hydrogen, thermal energy networks, geothermal, or other innovations) providing greater flexibility and regulatory clarity on resource procurement, project prudence evaluation, and cost recovery for utilities.

Examples of what we've heard:

If you disregard the oil and gas industry now and make it impossible for them to do business they will go to another more frielndly place and will benefit other states than the west coast

Innovation funding

gas utility pilot projects for TENS

Current business model / regulatory framework of gas utilities (ROI-focus) has them wanting to expand their systems -- hence making them push their current product, and thus act in ways that make them vilified by clean energy advocates; Need new regulatory framework so these actors can be fully motivated to be part of the solution.

energy burden to low income customers for these new resource aquisitions

Innovation funding (example Minnesota's Natural Gas Innovation Act)

Providing funding, tax credits (PTC, ITC), or pilots that allows the industry to innovate

Providing more certainty for rate recovery to utilities and other entities willing to invest in renewables.

Villifying the industries currently serving these markets vs. embracing them as key partners to help us transition to the new clean energy economy

Clear Guidelines around prudency determinations will encourage investment

My energy advocacy is focused on the residential building sector. It's uncertain that direct fuel use, through natural gas utilities, will be competitive with electric options. This makes long-term investments in gas distribution system infrastructure today, risky. There is kind of a fork in the road, where some level of commitment to gas or electric long-term investment is needed. Making long-term investments in gas and electric distribution infrastructure simultaneously, without knowing direct fuels will be affordable/available, puts too much burden on ratepayers.

Costs associated with electric grid reliability and power outages

Clarification around if utilities should still be utilizing SB 98 for biogas procurement or focusing on the CPP exclusively

Clarity around Oregon's desire to incur costs through programs such as SB 98 and how those costs will be evaluated for prudence

Clarity around Oregon's desire to incur costs through programs such as SB 98 and how those costs will be evaluated for prudence

Providing supportive policies with Regulatory recovery (predictability/accountability is key!)

Providing supportive policies with Regulatory recovery (predictability/accountability is key!)

Electrification with Strategic Consumption

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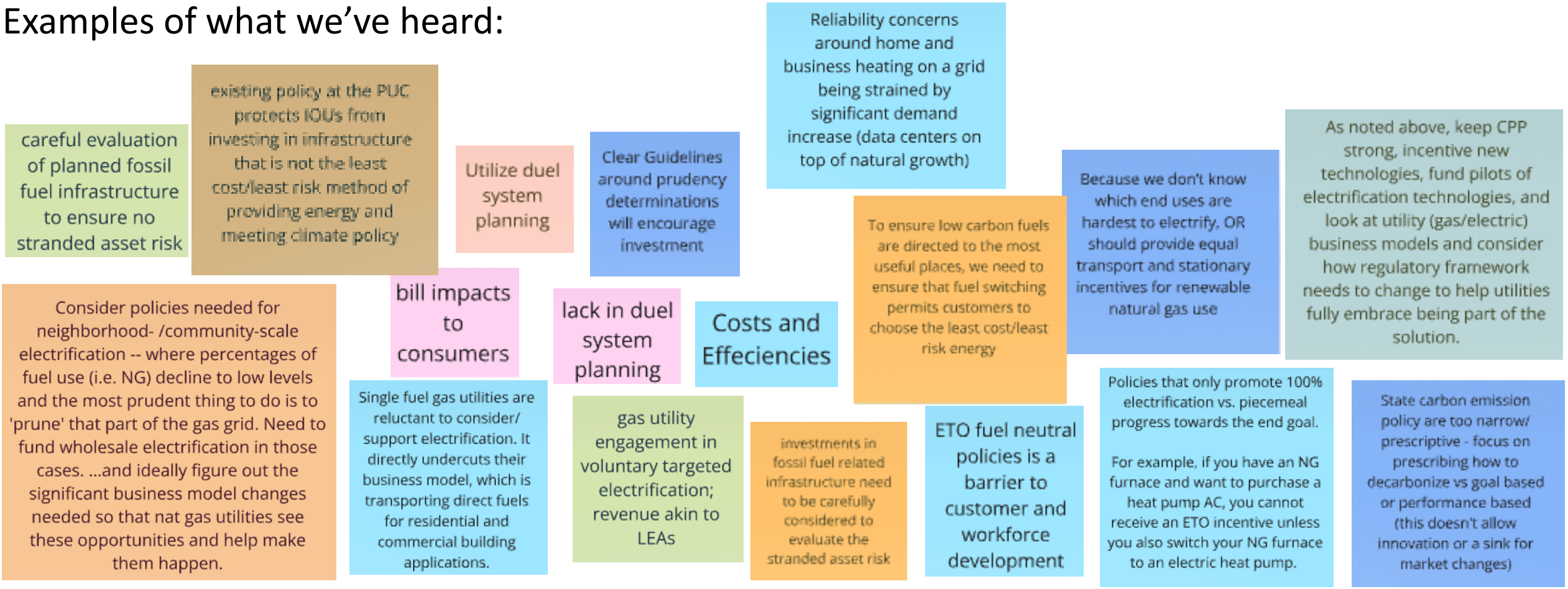
Straw Proposal Item #8

Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels that prioritizes an equitable transition to explicitly include environmental justice communities.

Examples of what we've heard:



Straw Proposal Item #9

Investigate and implement performance-based ratemaking for natural gas and electric utilities

Examples of what we've heard:

gas utility engagement in voluntary targeted electrification; revenue akin to LEAs

investments in fossil fuel related infrastructure need to be carefully considered to evaluate the stranded asset risk

IOUs focused on investments that provide ratebase

Cost Constraints in policies enabling and encouraging low carbon fuel utilization should reflect the market.

State carbon emission policy are too narrow/ prescriptive - focus on prescribing how to decarbonize vs goal based or performance based (this doesn't allow innovation or a sink for market changes)

State carbon emission policy are too narrow/ prescriptive - focusing on specific methods for decarbonization rather than setting goal-oriented or performance-based targets. This limits innovation and adaptability to market changes.

Clean Electricity and Transmission Group:

Funding/financing mechanism discounts building new expensive stuff

1

incentives for performance in key areas as driver for earnings, instead of or in addition to investment

financial incentive to build new vs. reconductor etc.

A disjointed interconnection process and utility incentives for self-generation

Straw Proposal Item #10

Fund a consumer facing energy transition service program to educate and financially support residential and commercial building conversions from primarily natural gas, propane, or oil heat to efficient electric options owned or operated in low income, rural, and disadvantage communities.

Examples of what we've heard:

To ensure low carbon fuels are directed to the most useful places, we need to ensure that fuel switching permits customers to choose the least cost/least risk energy

These fuels should be reserved for the hardest to decarbonize industries; we cannot be heating homes with expensive, valuable fuels when alternatives exist

Need more policies shifting use to low carbon fuels such as City of Portland fuel policy

Really strong incentives for customers, and for installation of technologies -- not just what outdated 'cost effectiveness' metrics would enable. Need to FULLY value the benefit of DRs -- and early incentives even bigger to drive early parts of the adoption curve, and installation and product markets.

Supporting the fewer remaining customers who will face higher costs; POLICY challenge of sharing that increasingly public cost of decarbonization.

Retrofitting existing end uses is expensive, who would bear that cost or would it only be upon replacement?

ETO fuel neutral policies is a barrier to customer and workforce development

In order to decrease demand, energy must first be readily available to everyone. Otherwise, there will not be an equitable approach to energy distribution

Addressing the upfront cost of new technologies even if they save money in the long term

Creating models and decision tools for folks to understand whether to electrify or adopt a LCF solution

Misinformation about the capabilities of electric heat pumps at cooler temperatures.

Meeting the education needed for adoption among business, consumers, etc. -- COST and resources for providing that education

energy burden to low income customers for these new resource aquisitions

Consider policies needed for neighborhood- /community-scale electrification -- where percentages of fuel use (i.e. NG) decline to low levels and the most prudent thing to do is to 'prune' that part of the gas grid. Need to fund wholesale electrification in those cases. ...and ideally figure out the significant business model changes needed so that nat gas utilities see these opportunities and help make them happen.

Heat pump installation can co-necessitate expensive home insulation upgrades, inhibiting equitable utilization of heat pump incentives.

lack of availability and reliability in rural areas

Consider how those most affected by policies are often those who cannot afford newer, more advanced technologies. During transitions, inexpensive and reliable fuels play a crucial role in supporting those who are less fortunate. This factor must be carefully considered in policymaking.

Having objective facts available for policy makers (versus just info coming from competing solutions) as they make decisions

Behavior change is long, slow, and expensive and typically isn't well funded.

gas utility engagement in voluntary targeted electrification; revenue akin to LEAs

Acknowledge this is not exhaustive!

We have gotten input on other potential policy actions and welcome further input!

More examples:

Direct public fleets to prioritize use of low carbon fuels produced in state

Develop legislative goals around low carbon fuel opportunities along the lines of what already has been done for EVs and heat pumps. Such as battery storage etc.

unintended consequences-- unexpected hydrogen leaks, NOx emissions, and costs to retrofit or build power plans/piping

promote partnerships between community colleges and union apprenticeship programs

promote community workforce agreements

duel fuel residential solutions can provide peaking resources. Identification of value for negating need for new Peaker plants. (ie. Replace with home duel fuel systems.)

H2 infrastructure is incredibly important to understand and quantify as a transportation fuel. No existing infrastructure is present for transportation and storage of H2. This is a massive barrier to H2 as a fuel source

Need more policies shifting use to low carbon fuels such as City of Portland fuel policy

Timely adjustments to the OR LCFS so credit prices don't collapse with increasing supplies of low carbon fuels. This has been a significant issue for CA and is hindering investment due to volatility of credit prices.

Plan for Prioritizing Group Input

- We have ~60 minutes for discussion. (*We welcome written comments as well!)*
- We will do a "Fist to Five" exercise using a Menti poll on ODOE's ten straw proposal items to gauge interest in discussion of those versus additional or alternative ideas.
- For each item, panelists will be asked to indicate
  - 0: This idea does not work for me, and we should discuss
  - 1: I see MAJOR issues with this idea, and we should discuss
  - 2: I see MINOR issues with this idea, and we should discuss
  - 3: I see minor issues we can address in written comments
  - 4: I do not have any concerns that I want to discuss today
  - 5: I like this idea as drafted

We will prioritize discussion on any item that receives one or more of these scores (0, 1, 2).

Go to

www.menti.com

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Discuss Potential Policy Actions

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STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Fuel Supply

Promote development of low carbon fuel resources to increase overall supply, affordability, and availability to all Oregon communities.

- Explore opportunities to facilitate low-carbon intensity fuel production facilities in Oregon.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Fuel Supply

Promote development of low carbon fuel resources to increase overall supply, affordability, and availability to all Oregon communities.

- Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Fuel Supply

Promote development of low carbon fuel resources to increase overall supply, affordability, and availability to all Oregon communities.

- Update and expand Biogas and Renewable Natural Gas Inventory Report to evaluate all biogenic feedstock opportunities in the state and how they can be used for biofuels.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Fuel Supply

Promote development of low carbon fuel resources to increase overall supply, affordability, and availability to all Oregon communities.

- Funding and technical assistance for investments in fuel innovation pilot projects such as hydrogen, biofuels, thermal energy networks, and geothermal projects.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Fuel Demand

Reduce demand for fossil fuel resources and ease the transition burden to low-carbon fuels in hard to electrify applications in transportation, industry, and electricity generation while retaining resilience and safety.

- Funding and technical support for industrial and manufacturing demonstration projects incorporating efficiency improvements and low carbon fuel technology.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Fuel Demand

Reduce demand for fossil fuel resources and ease the transition burden to low-carbon fuels in hard to electrify applications in transportation, industry, and electricity generation while retaining resilience and safety.

- Study how to improve and decarbonize fuel energy storage across the state to improve statewide resilience.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Fuel Demand

Reduce demand for fossil fuel resources and ease the transition burden to low-carbon fuels in hard to electrify applications in transportation, industry, and electricity generation while retaining resilience and safety

- Revise integrated resource planning regulatory framework for natural gas utilities allowing them to develop innovation plans that meet GHG reduction targets through new resource projects, (hydrogen, thermal energy networks, geothermal, or other innovations) providing greater flexibility and regulatory clarity on resource procurement, project prudence evaluation, and cost recovery for utilities.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Electrification and Strategic Consumption

Protect existing critical Oregon businesses and energy consumers while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications.

- Integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels while prioritizing an equitable transition to explicitly include environmental justice communities.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Electrification and Strategic Consumption

Protect existing critical Oregon businesses and energy consumers while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications.

- Investigate and implement performance-based ratemaking for natural gas and electric utilities.

STRAW PROPOSAL FOR DISCUSSION AND COMMENTS

Electrification and Strategic Consumption

Protect existing critical Oregon businesses and energy consumers while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications.

- Fund a consumer facing energy transition service program to educate and financially support residential and commercial building conversions from primarily natural gas, propane, or oil heat to efficient electric options owned or operated in low income, rural, and disadvantage communities.

ADDITIONAL POTENTIAL POLICY IDEAS

- Is there a policy concept you would like to introduce and discuss with the group?
- What policy recommendations are you hoping to see in the energy strategy?
- Are there gaps in policies that you think ODOE should consider?
- Are these considerations represented in the policy actions?
  - Cost
  - Feasibility
  - Energy burden and affordability
  - Environmental justice
  - Energy resilience and community energy resilience
  - Community benefits
  - Economic and employment effects

Next Steps

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UPCOMING

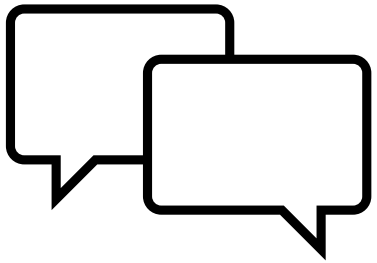
- May 9, 5 p.m., Comment Deadline
  - For input to be considered and incorporated for May 21 plenary session
  - Additional comments welcome later in process!
- Interagency Steering Group, 5/13
- Advisory Group, 5/15
- May 21, 9 - 11 a.m., Meeting 5
  - Plenary session
  - Report out from all working groups

MAY 9, 2025 | 5 P.M.

Deadline for additional comments related to today's meeting

- What additional suggestions (if any) do you have on the policy actions discussed today?
- What policy actions were NOT discussed today that should be surfaced in our list?
- What benefits or risks exist for policy action (or inaction) on the following areas: cost, feasibility, energy burden, environment justice, land use and natural resources, resilience, community benefits, economic effects, and employment?
- If any, what additional suggestions to those action or additional policy actions would you suggest to mitigate risks or leverage benefits?
- Do you have any supplemental information (reports, analysis, testimonials, etc.) related to these policy actions that you could share?

OPPORTUNITIES FOR PUBLIC COMMENT



Provide written public comment

https://odoe.powerappsportals.us/en-US/energy-strategy/

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Thank You!
www.oregon.gov/energy/Data-and-Reports/Pages/Energy-Strategy.aspx

Extra Slides

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Straw Proposal Item #1

Explore opportunities to facilitate low-carbon intensity fuel production facilities in Oregon

From EJ & Equity group:

Examples of what we've heard:

UNDERSTANDING AND BUILDING ON THE ENERGY PATHWAYS MODELING RESULTS

Energy Pathways Modeling Results

Model calculates energy needed to power Oregon's economy, and least-cost way to provide that energy under clean electricity and emissions goals.

Air Quality

Model calculates how changes in air quality affect health outcomes and estimates economic value of those benefits

Energy Wallet

Changes in energy spending for different sample households, impact of timing of investing in efficient, electric technologies

Jobs Analysis

Evaluation of the effects of the pathways analysis on direct, indirect, and induced energy sector employment

Geospatial Mapping

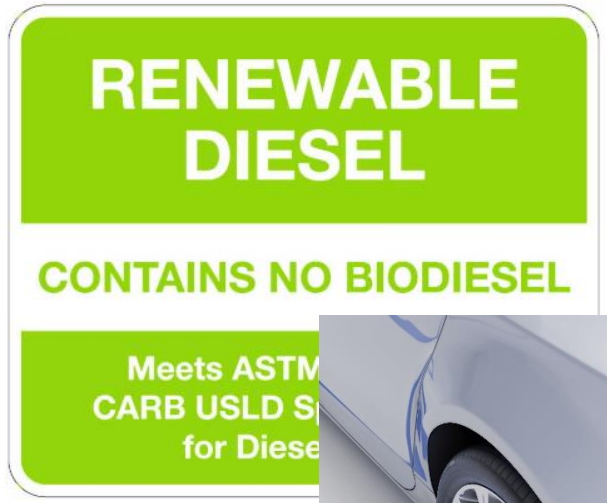
Maps explore community-level energy inequities and relationship to socioeconomic disparities – to help interpret energy modeling results, energy wallet analysis, air quality modeling, and employment effects

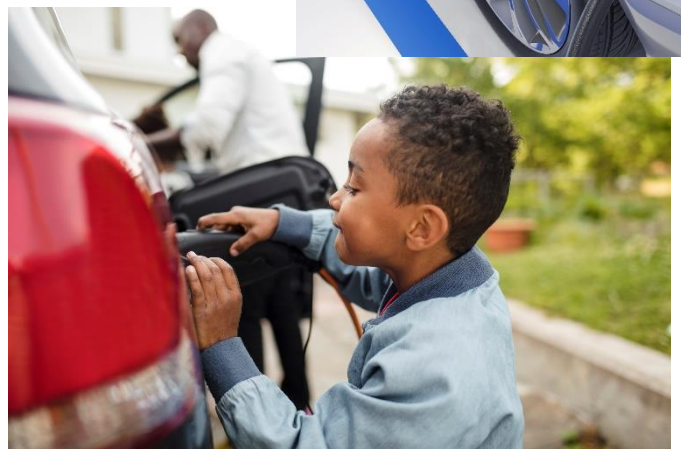
KEY TAKEAWAYS

- All five sample households save money with vehicle electrification in most circumstances
- All five sample households save energy from electrification of home heating, but not all sample households save money from heat pump installation, absent policy support
- Multiple factors impact how great the savings could be from electrification of home heating and transportation
  - Energy prices, cost and access to technology based on household income, technological development, production and supply chain challenges
- Policies are important to enable access to cost savings
  - Education, incentive programs, infrastructure development, access to useable technology, and workforce development
- Upfront costs must be addressed to ensure equal access to the savings from electrification
  - Intentional, explicit policies that ensure environmental justice and equitable solutions are required

REMINDER: FUEL KEY FINDINGS

1. Low-Carbon Fuels: Low-carbon fuels are an increasing proportion of Oregon's energy supply across all scenarios.
2. Dispatchable Capacity: More capacity from low-carbon fuel gas plants or another on demand resource is needed to support the growing electric grid.
3. Electrification: Electrification is more cost effective than adopting low-carbon fuels in many applications.
4. Declining Fuel Demand: Fuel demand declines but fuel remains a significant component of Oregon's Energy System across all scenarios.





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FUEL SUPPLY RECOMMENDATION

Promote and fund development of low carbon fuel resources to increase the overall supply and access by all Oregon communities.

Potential Policy Actions Synthesized from Policy Working Group Discussions:

1. Explore opportunities to facilitate siting or expansion of fuel production facilities in Oregon.
2. Conduct a statewide land-use inventory, update the current land classification, and establish a database of lands suitable for various types of renewable energy and low-carbon fuel development projects.
3. Update and expand Biogas and Renewable Natural Gas Inventory Report to evaluate all biogenic feedstock opportunities in the state and how they can be used for biofuels.
4. Funding and technical assistance for investments in fuel innovation pilot projects such as hydrogen, biofuels, thermal energy networks, and geothermal projects.

Pre-Decision Draft Language

FUEL DEMAND RECOMMENDATION

Reduce demand for fossil fuel resources and ease the transition burden to low-carbon fuels for hard to electrify applications.

Potential Policy Actions Synthesized from Policy Working Group Discussions:

1. Funding and technical support for industrial and manufacturing demonstration projects incorporating efficiency improvements and low carbon fuel technology.
2. Study how to improve and decarbonize fuel energy storage across the state to improve statewide resilience.
3. Revise integrated resource planning regulatory framework for natural gas utilities allowing them to develop innovation plans that meet GHG reduction targets through new resource projects (hydrogen, thermal energy networks, geothermal, or other innovations).
4. *Update existing statewide Renewable Fuel Standard to increase biofuel blending requirement for diesel.*

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Pre-Decision Draft Language

ELECTRIFICATION WITH STRATEGIC CONSUMPTION RECOMMENDATION

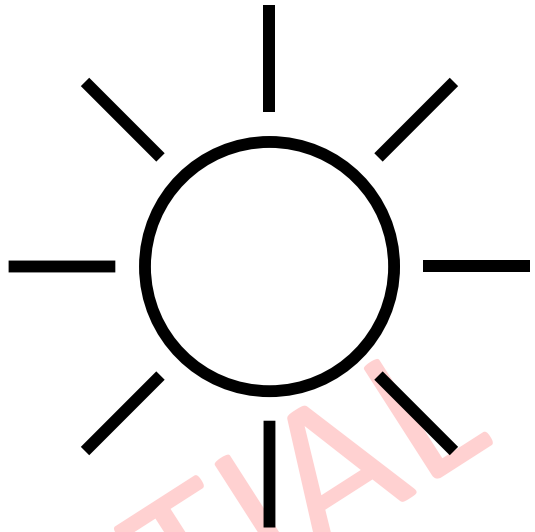
Protect existing critical Oregon businesses while overall fuel demand declines and transitions to low-carbon fuels in hard to electrify applications.

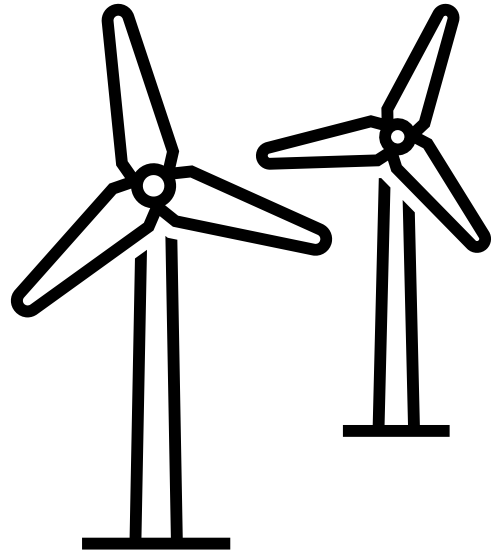
Potential Policy Actions Synthesized from Policy Working Group Discussions:

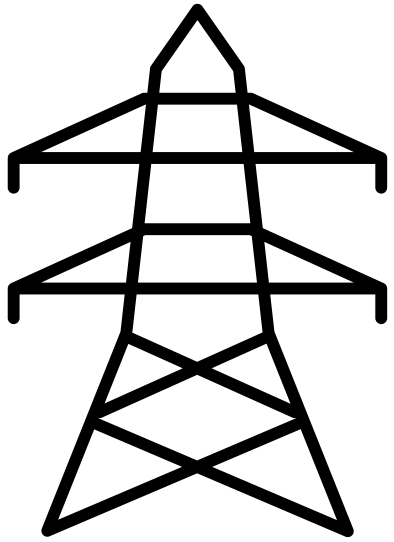
1. Direct OPUC to integrate electric and natural gas resource planning to support the timely and orderly shift to electricity and clean fuels that prioritizes an equitable transition to explicitly include environmental justice communities.
2. Study strategies to evolve fuel supplier business models to decouple revenue from infrastructure and consumer growth, mitigating the risks of business failure and stranded assets.
3. Investigate and implement performance-based ratemaking for natural gas and electric utilities.
4. Fund a consumer facing energy transition service program to educate and financially support residential and commercial building conversions from primarily natural gas, propane, or oil heat to efficient electric options owned or operated in low income, rural, and disadvantage communities.

Pre-Decision Draft Language

Developing Clean Electricity Generation and Transmission







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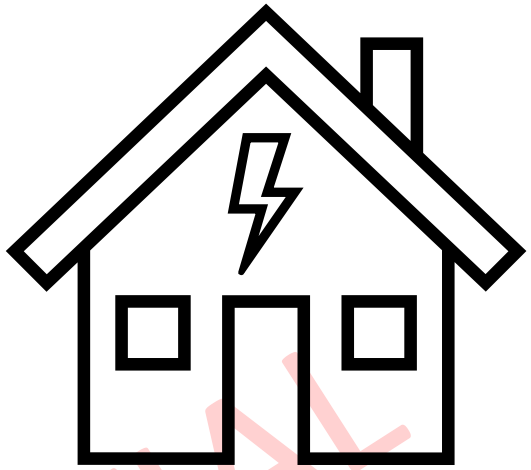
DRAFT POLICY ACTIONS

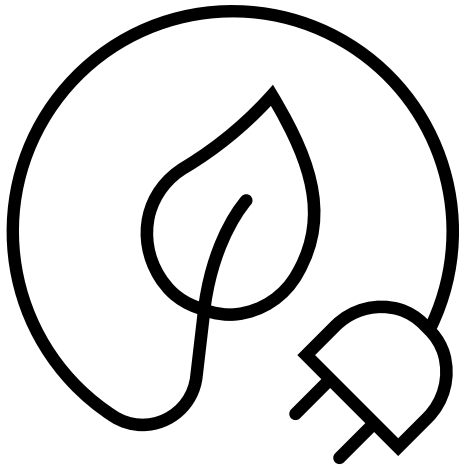
- Direct ODOE to study barriers to project development, particularly barriers affecting projects that do not quickly proceed to construction following siting and permitting approvals.
- Continue and as practicable increase collaboration with neighboring states and regional entities.
- Direct ODOE to study potential for shared risk development models to secure large-scale investments, including long-lead time resources and emerging generation and storage technologies.

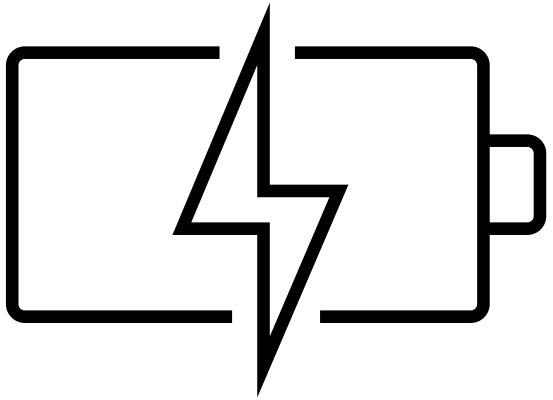
DRAFT POLICY ACTIONS

- Direct the Oregon Public Utility Commission to integrate electric and natural gas resource planning that supports a timely and orderly shift to electricity and clean fuels and prioritizes an equitable transition to explicitly include environmental justice communities.
- Direct the Oregon Public Utility Commission to investigate and implement performance-based ratemaking.

Building Electrification, Energy Efficiency, & Distributed Energy Resources







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BUILDING ELECTRIFICATION RECOMMENDATIONS

Reduce the use of natural gas while maintaining energy system resilience and protecting customers from high future costs.

Potential Policy Actions Synthesized from Policy Working Group Discussions:

Residential and Commercial

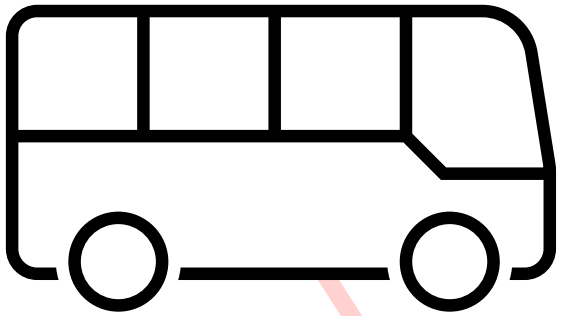
1. **Establish alternate pathway in building codes that requires increased efficiency and envelope measures if natural gas is used for primary heating systems.**
2. **Eliminate incentives for new and replacement natural gas space and water heating equipment.**
3. **Enable natural gas utilities to support incentives for new electric heat pumps in strategic locations that support natural gas distribution system decommissioning.**

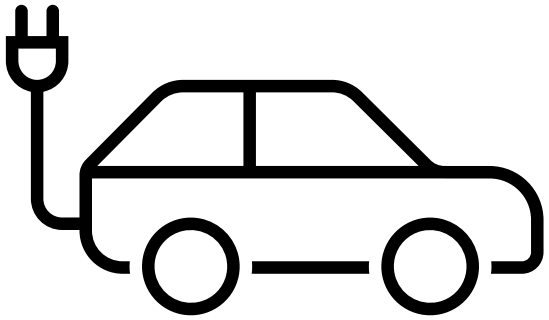
Industrial

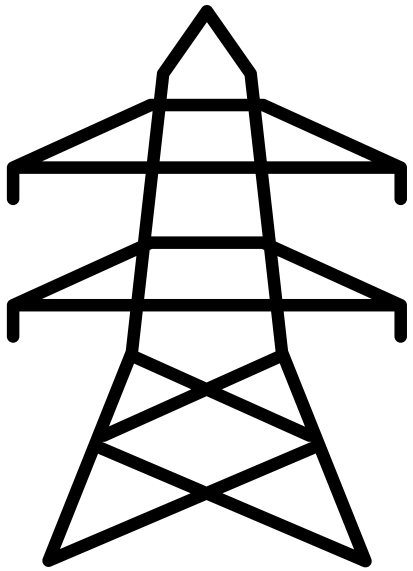
1. Establish a research, development and demonstration grant funding program for leading technologies used in industrial and large commercial buildings, including electrification, low-carbon fuels, and/or energy efficiency.

Pre-Decision Draft Language

Transportation Electrification & Vehicle-Miles-Traveled Reduction







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DRAFT POLICY ACTIONS

- Establish a sustainable source of state funding to support the rapid deployment of charging and fueling infrastructure statewide.
- Establish a working group of state entities and others to develops regulations and standards for hydrogen refueling infrastructure, including station certification and testing protocols as well as safety, fuel quality and consumer protection standards.
- Conduct a statewide study of true cost pricing strategies to better align Oregon's transportation funding mechanisms with state climate goals and the full societal cost of transportation system use.
- Increase the statewide payroll tax commensurate with need to support additional transit funding.
- Increase funding for Oregon's Safe Routes to School and Great Streets programs at levels commensurate with need through increased allocations from the State Highway Fund.

ROLE OF WORKING GROUPS

What the role is:

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

What the role is *not*:

- Revisit the modeling inputs or analyses
- Determine a "best" pathway
- Vote on policy recommendations
- Make final decisions about policy recommendations and actions
- Provide only voice informing this discussion

ENERGY INNOVATION SLIDES

Outline:

- Guiding principles for low-carbon fuels policymaking
- Applying principles to the Clean Fuels Standard
- Lessons and example policies from other jurisdictions
- Discussion and/or topic deep-dives (aiming to save most of the 45mins for this)

Guest presenter will contribute slides 4/29

MEETING OBJECTIVES

- Bulleted List in Calibri Light 24 pt
- Use the same size list on multiple slides
- Use black font

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AGENDA

1:30 p.m.	Topic Title	Presenter and Job Title
1:40 p.m.	Topic Title	Presenter and Job Title
2:10 p.m.	Topic Title	Presenter and Job Title
2:20 p.m.	Topic Title	Presenter and Job Title
2:45 p.m.	Topic Title	Presenter and Job Title
3:10 p.m.	Topic Title	Presenter and Job Title

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.

BASIC SLIDE – CENTURY GOTHIC ALL-CAPS

- Bulleted List in Calibri Light 24 pt
- Use the same size list on multiple slides
- Use black font

CENTURY GOTHIC ALL CAPS 38 PT

Subhead if you want to draw further attention to list

- Bulleted list
- Calibri Light 28 pt or 24 pt
- Black text

Add graphics and photos for visual interest, as appropriate (but don't overcrowd).

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CREATE MORE VISUAL INTEREST IN LISTS

INFO

Heading

Use white space to draw attention to different points you're making.

INFO

Heading

Use white space to draw attention to different points you're making.

INFO

Heading

Use white space to draw attention to different points you're making.

Other Options

This is an alternate page layout. Good for slides where you introduce a topic (circle above), have a pithy explanation (this text box), followed by a list of examples (colored block on the right):

- Example 1
- Example 2
- Example 3
- Example 4
- Example 5

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- Another bulleted list
- Calibri Light 24
- Remember to limit number of words per slide
- This text box looks best arranged with center aligning with center of blue box to right

Or you can lay it out this way.

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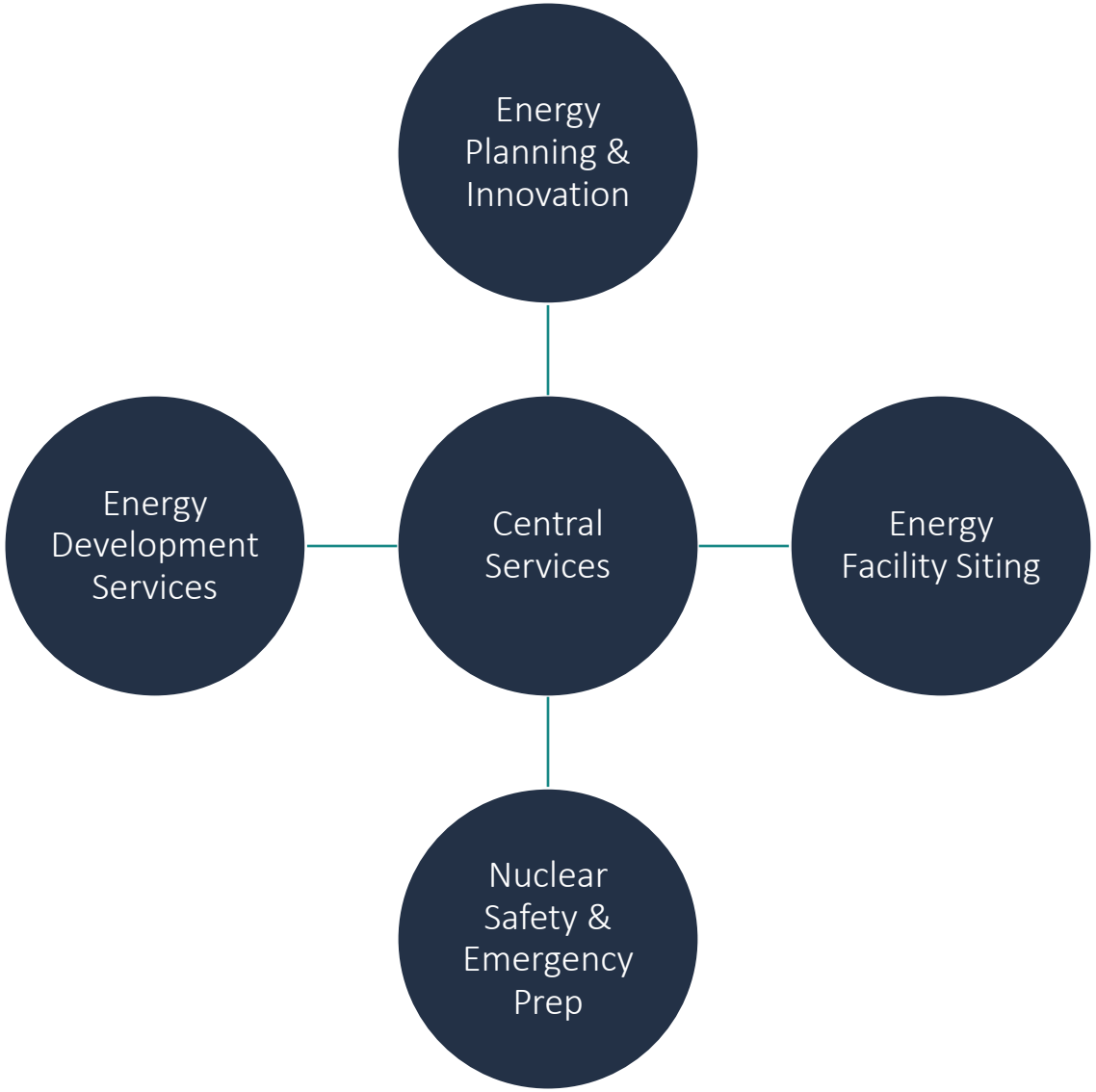
INCORPORATING A GRAPHIC

- This slide provides an example of how to incorporate a graphic into your layout
- Continue your bulleted list …
- … here

Sometimes, if you are just saying one thing, skip the bullets. Not everything needs to be bulleted.



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PRESENTING GROUPS OF INFO

This is a subheading that introduces the groups of information below. You can have up to four categories of information arranged on this slide.

"Bucket" 1	"Bucket" 2	"Bucket" 3	"Bucket" 4
• List of examples	• List of examples	• List of examples	• List of examples

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INCORPORATING PICTURES

Subhead in Calibri Bold

- Include pictures in your presentation. Resize as appropriate before inserting photos, otherwise your file size may be huge
- Here's one example of how to do that
- Remember to check your font: Calibri Light for your bulleted lists

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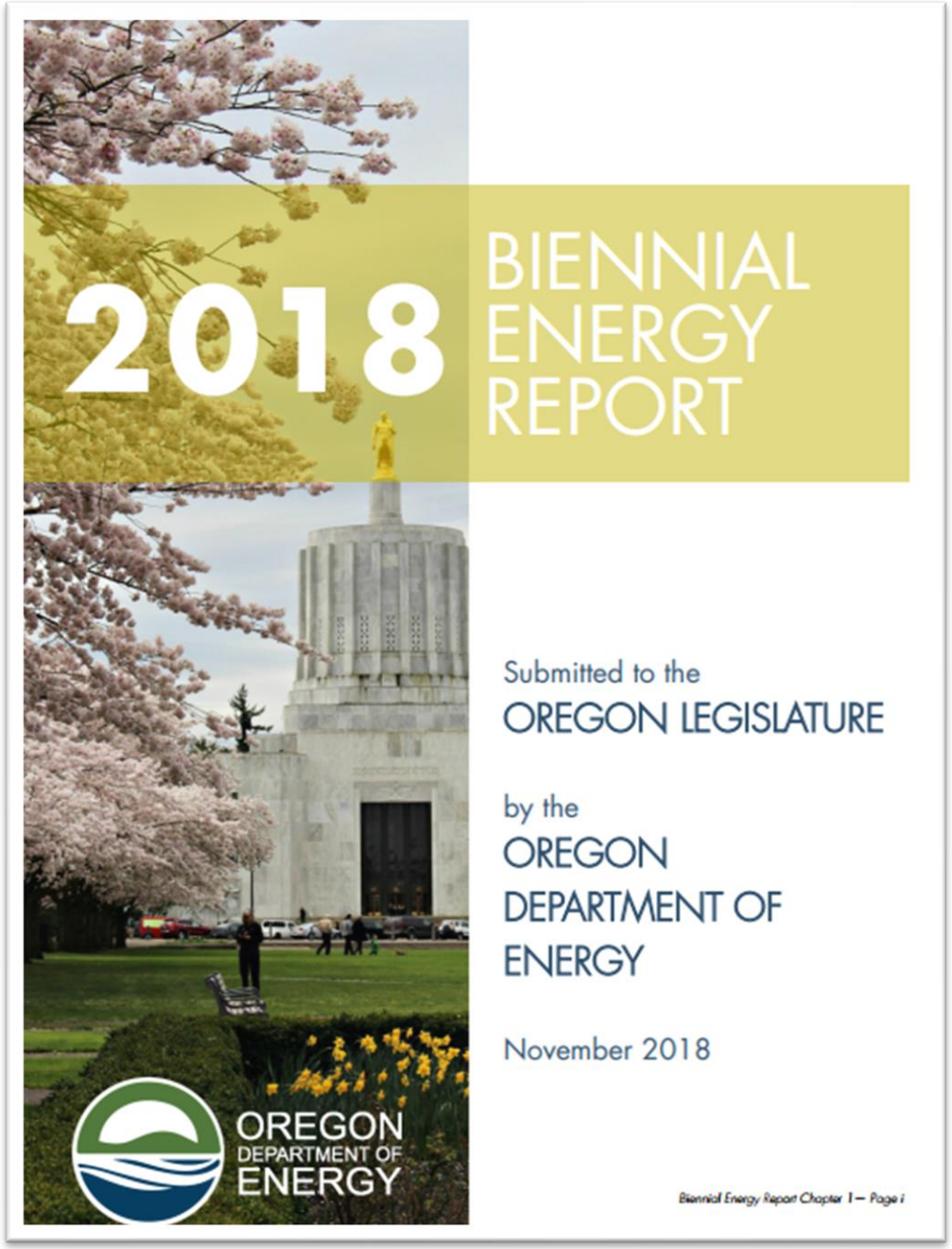
Another Photo Option

- Place the photo to the right
- Add information in a text box or list like this
- You can also include relevant links



energyinfo.oregon.gov/ber

You can add information about what you're showing here. Not every slide needs to have our logo. If it's a busy slide, skip it!

Remember photos are available on the **Z Drive under Photos for Staff Use.**