Oregon Department of **ENERGY**

Oregon Energy Strategy
Update on modeling results and process

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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

INFORMING DECISIONS

DATA

Reports, Studies, and Dashboards

Biennial Energy Report *Energy by the Numbers, 101s, and Tech Reviews*

Energy Strategy *ENERGYPathways Model*

Solar and Electric Vehicle Dashboards

Renewable Natural Gas Inventory

ANALYSIS

Reports, Studies, Bills

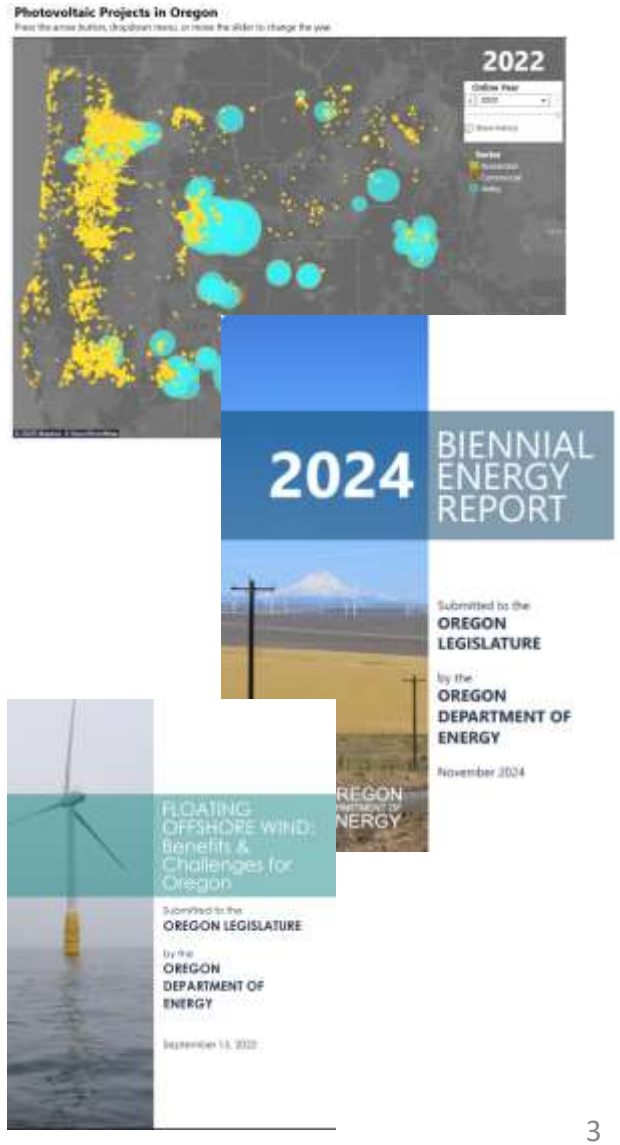
Energy Strategy

Biennial Energy Report Policy Briefs

Studies on specific topics (e.g., zero-emission vehicles, offshore wind, hydrogen)

INFO

Advisory Work, Presentations, Answering Questions



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ADVANCING SOLUTIONS

POLICY OPTIONS

Reports, Studies, and Advisory Work

Biennial Energy Report *Recommendations*

Energy Strategy

Bill Analysis


REPORT RECOMMENDATIONS

Oregon Statute requires the **Oregon Department of Energy to develop a Biennial Energy Report** to "inform local, state, regional, and federal energy policy development, energy planning and energy investments, and to identify opportunities to further the state's energy policies." Statute also says that the department may include "**recommendations** for the development and maximum use of cost-effective conservation methods and renewable resources. " (ORS 469.059)

ODOE's first Biennial Energy Report, published in 2016, included recommendations in four key areas: data gaps, addressing equity and energy burden, planning for the future, and assessing the need for state engagement and investment. In the 2020 report, ODOE did not include a specific list of recommendations, but instead included ideas embedded in topic-specific policy briefs.

To prepare for and draft this report, ODOE staff engaged in stakeholder and public outreach, original research, discussions with other agencies, and reviews of technical studies. Throughout this effort, staff heard numerous ideas for how the state can and should meet its energy and greenhouse gas reduction goals, from those involved in research and development to industry stakeholders to advocates to consumers. Oregonians have many perspectives on the right approach to modernize and improve our energy systems as the state moves from a reliance on fossil fuels to clean energy. There are multiple pathways to achieve the state's goals, and each comes with opportunities and challenges.

Over the past year, a common theme has emerged during the drafting of this and other legislatively directed reports and has formed the basis of our recommendations:

The state would **benefit from an energy strategy** to align policy development, regulation, financial investment, and technical assistance in support of an intentional transition to a clean energy economy. This strategy could identify specific pathways to meet the state's policy goals that maintain affordability and reliability, strengthen the economy, and prioritize equity while balancing tradeoffs to maximize benefits and minimize harms. Ultimately, this strategy could be used to **make informed decisions and motivate action**.

FORUMS

Advisory Groups, Conferences, Engagement

Northwest Power & Conservation Council Advisory Committees

Committee on Regional Electric Power Cooperation and Western Interstate Advisory Board (CREPC-WIRAB) Conferences

Hosting advisory meetings for studies, reports, and other deliverables

ENGAGEMENT

Outreach, Networking, Synthesizing

One-on-one meetings with decisionmakers, organizations, communities

Providing technical and policy expertise and advice

Connecting dots

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ENERGY STRATEGY OBJECTIVE

Produce actionable recommendations on energy policies that will help the state build on the work happening today to achieve the state's energy and climate goals while maintaining affordable, reliable, and resilient energy systems.

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INFORMING THE ENERGY STRATEGY

Advisory Group	Working Groups	Interagency Steering	Listening Sessions	Comment Portal
• Main advisory body • Represents diversity of energy- and climate-focused organizations, geographic locations, and perspectives	• Provide input into the development of the model and policy recommendations • Include members with technical and lived experience expertise	• Ensures alignment with existing state policies, goals, and activities • Includes members from agencies with strong energy ties, including the Public Utility Commission and Departments of Environmental Quality, Transportation, and Land Conservation & Development	• Opportunities to hear feedback from the public at large • Planned at different milestones throughout the process	• Online resource to submit comments about any aspect of the Energy Strategy work and process • Open for the duration of the project

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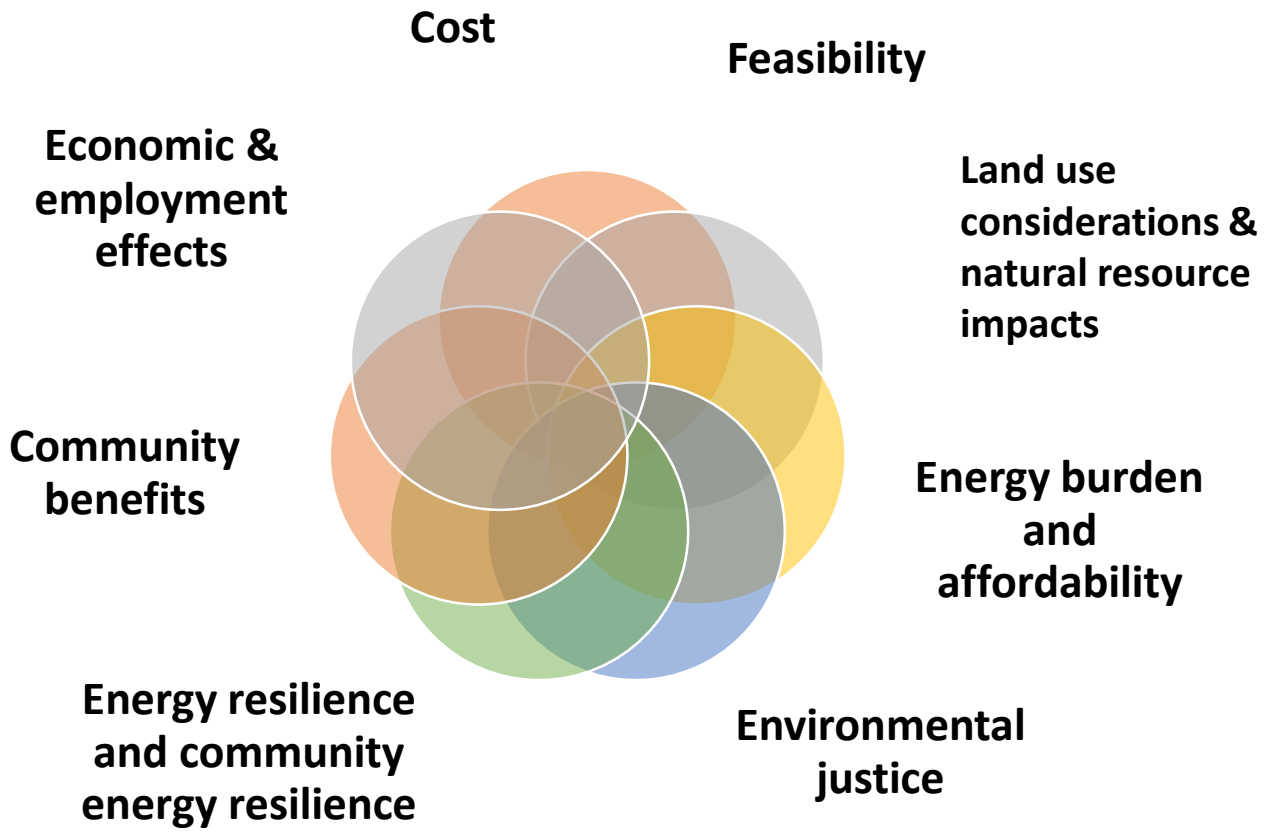
KEY CONSIDERATIONS



ENERGY PATHWAYS MODELING

2024

How do we use energy?

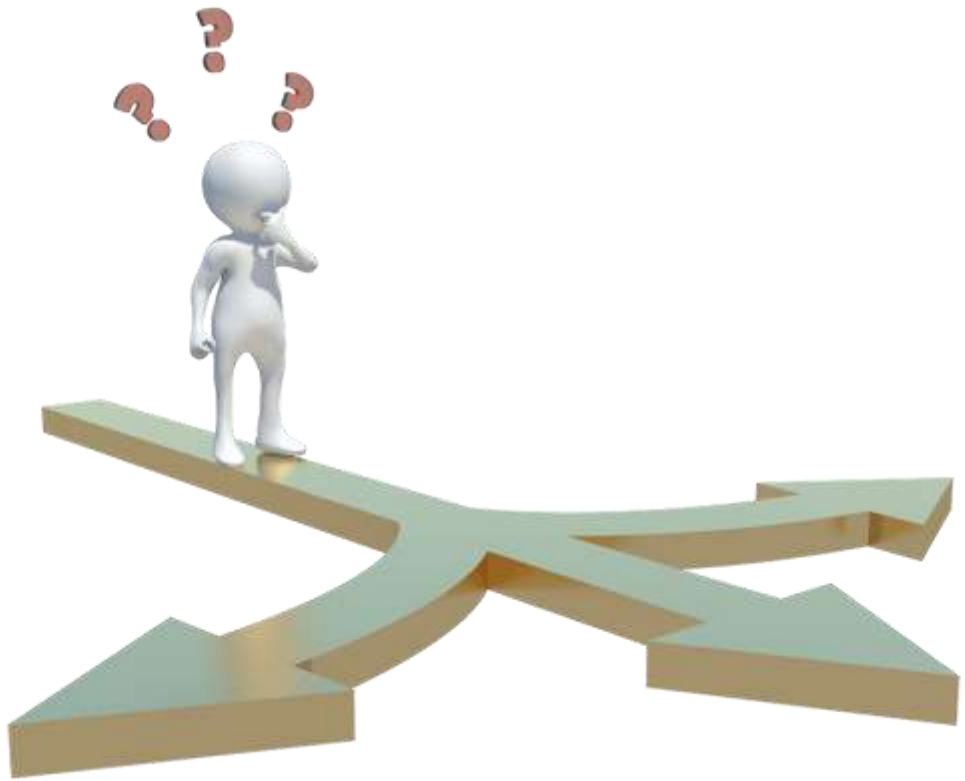
How do we produce and deliver energy?

2030 –2050

Expected changes over time (population, economy…)

Available technologies & costs

What if….?



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KEY STUDY QUESTIONS – DEMAND-SIDE

- What if energy efficiency and building electrification is delayed by 10 years?
- What if there were no electrification targets for medium-and heavy-duty vehicles through 2035?
- What if reaching full zero-emission vehicle sales shares for medium- and heavy-duty vehicles is delayed 10 years, from 2040 to 2050?
- What if there is limited demand response participation?
- What if tech loads were 50% lower than the NWPCC's Supply Adequacy Assessment 2029 mid-high forecast?
- What if per capita VMT remain at today's levels until 2050?

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KEY STUDY QUESTIONS – SUPPLY-SIDE

- What if there are higher levels of rooftop solar and behind-the-meter storage and transmission is limited to reconductoring only (no new build)?
- What if there is limited utility-scale electricity generation in Oregon?
- What might an alternative portfolio of flexible resources for electricity reliability look like?

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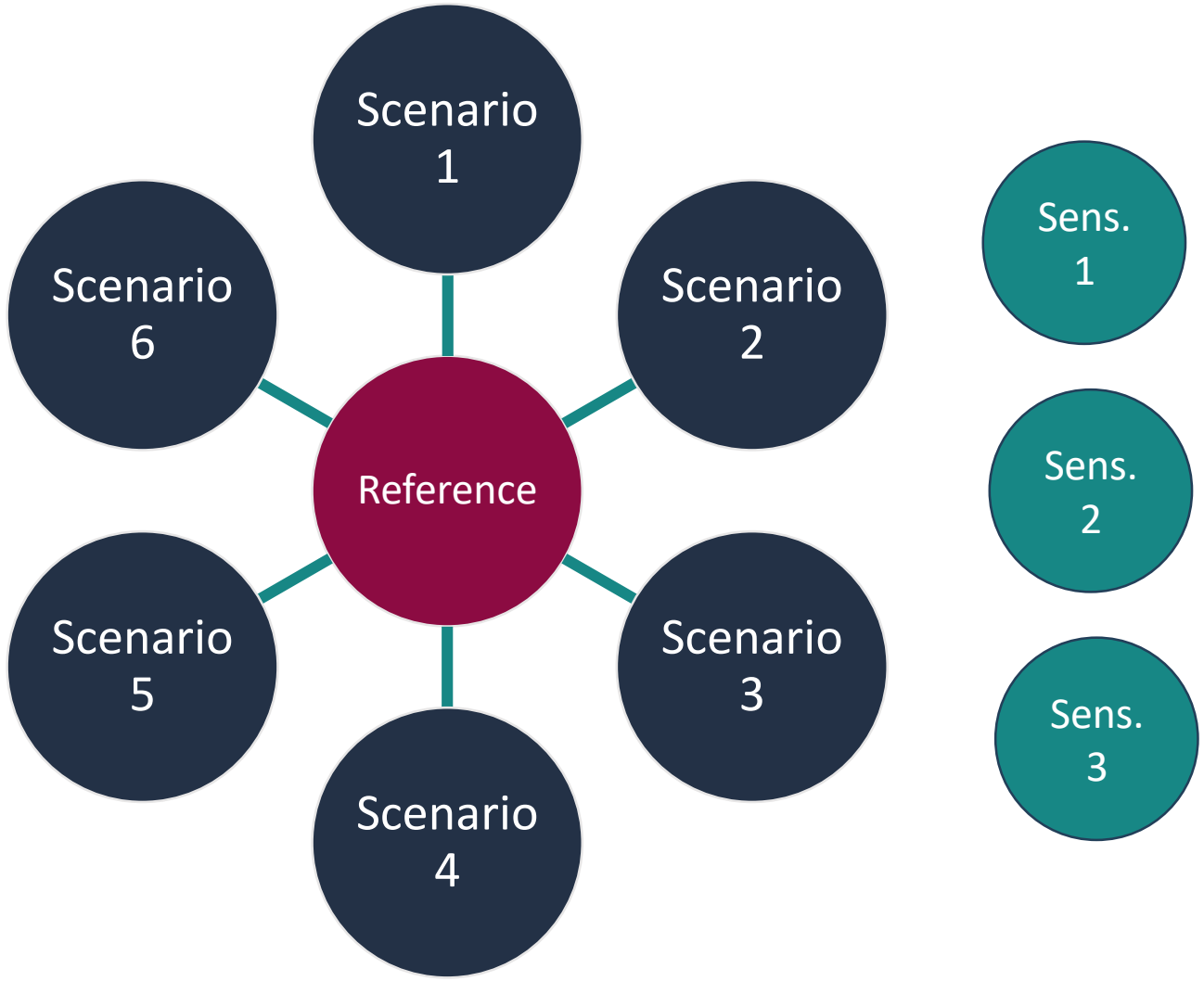
MODEL DESIGN

All scenarios start with existing energy-related policies.

All scenarios end with achieving Oregon's *energy* and *climate* goals.



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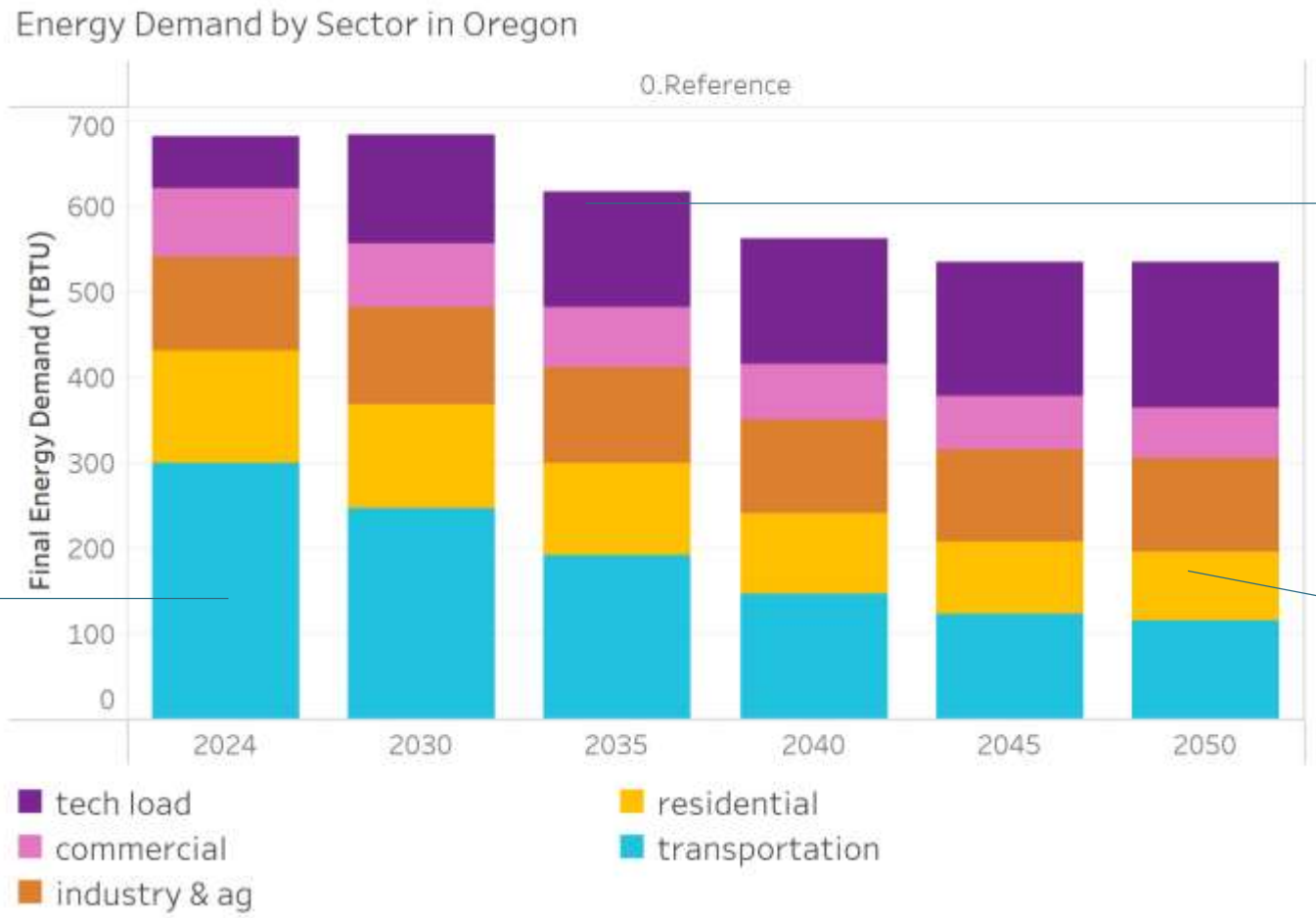
KEY MODELING TAKEAWAYS

- **Electrification and energy efficiency are key** to reducing the size of the overall energy "pie" and to cost containment
- **Fuels play a strategic role** in the transition, with a shift toward clean fuel alternatives toward 2050
- All scenarios indicate a **need to build infrastructure in Oregon**
- **Tech loads are the biggest driver of electricity demand** growth but are also uncertain in when and where they could emerge

KEY MODEL FINDING

EVOLVED ENERGY RESEARCH



Data centers and chip fabrication facilities will likely add significant load to the system

Electrification of cars and trucks delivers the biggest efficiency gains, driving down overall demand

Building electrification and efficiency improvements reduce demand in homes

BUILDING ON MODELING RESULTS

Energy 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.

Energy Wallet
Energy spending and energy burden for different customer types, impact of timing of investing in electrification

Air Quality Modeling
Model calculates how changes in air quality affect health outcomes and economic benefits

Employment Effects
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

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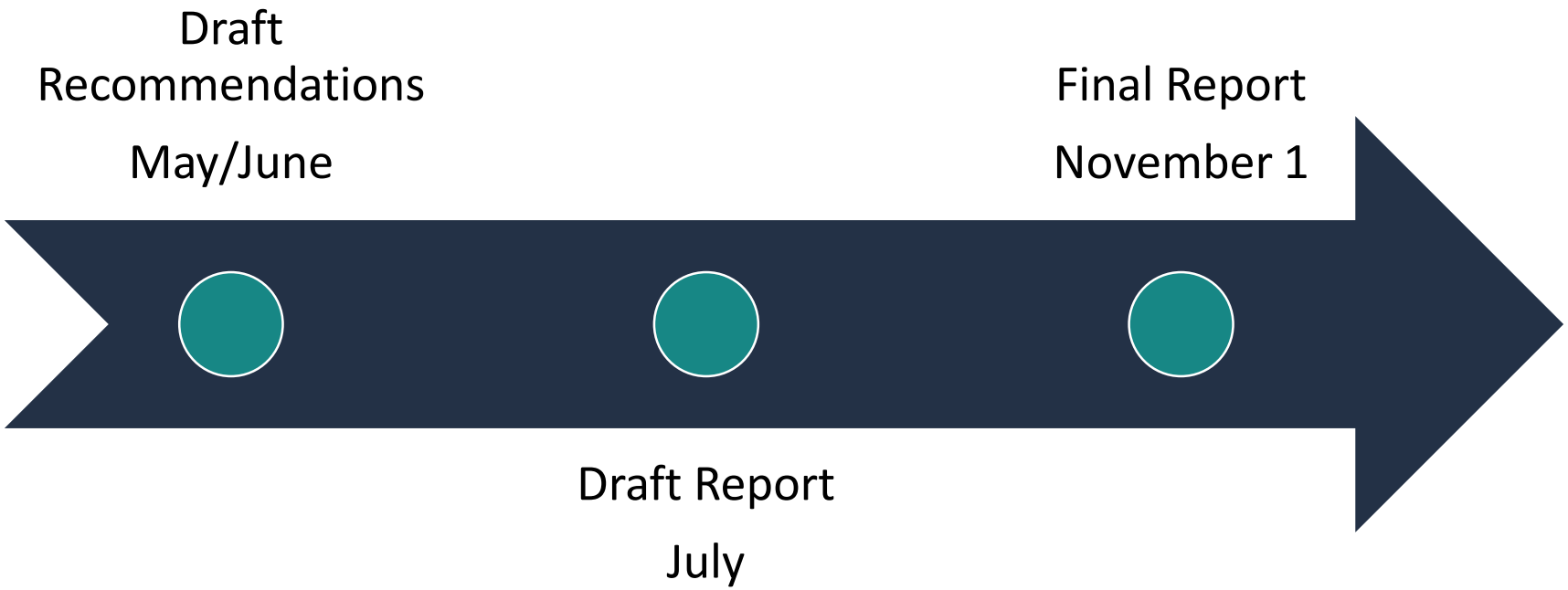
NEXT STEPS



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CAUTIONARY TALE

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Thank you.

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Oregon Energy Strategy
https://www.oregon.gov/energy/Data-and-Reports/Pages/Energy-Strategy.aspx