

Energy Trust Board of Directors

January 24, 2024 Strategic Planning Workshop

**Energy Trust of Oregon
Board of Directors' Meeting**
Hybrid on Zoom and at The Benson Hotel
309 SW Broadway,
Portland, OR 97205
Windsor Room

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PUBLIC ATTENDANCE:

***In person public attendance is limited due to capacity.
Please join the webinar online.***

PUBLIC COMMENT:

There will be an opportunity for PUBLIC COMMENT during the meeting at 1:05 p.m. To request to speak, email meeting host in advance of the meeting at danielle.rhodes@energytrust.org with contact information and interested agenda topic.

The next regular meeting of the Energy Trust of Oregon Board of Directors will be a hybrid meeting and held February 21st, 2024, on Zoom and at 421 SW Oak Street, Portland, OR, 97204.

220th Board Meeting – Strategic Planning Workshop

January 24, 2024



The Benson Hotel: 309 SW Broadway, Portland, OR 97205 – Windsor Room

Register to join Zoom Webinar:

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Agenda	Tab	Purpose
9:00 a.m. Opening (Henry Lorenzen, Holly Valkama, 15 minutes) <ul style="list-style-type: none">Letha Tawney (10 minutes)		Info
9:25 a.m. Strategic Planning Process Overview (Holly Valkama, 30 minutes)		
9:55 a.m. Summary of Board Interviews (Holly Valkama, 30 mins)	Tab 1	Info
10:25 a.m. Interview Summaries (Holly Valkama, 30 minutes) <ul style="list-style-type: none">Joint Advisory Council MeetingEnergy Trust Executive TeamUtilities	Tab 2	Info
10:55 a.m. Break (10 minutes)		
11:05 a.m. Interview Summaries, Continued (Holly Valkama, 25 minutes) <ul style="list-style-type: none">NW Energy CoalitionCitizens' Utility BoardBusiness Perspectives: Business Oregon and Home DepotNational Perspectives	Tab 2	Info
11:30 a.m. Board Learning Topic Paper (30 minutes) <ul style="list-style-type: none">Western Utility Coordination Efforts (Caitlin Liotiris and Elaine Hart)	Tab 3	Info
12:00 p.m. Lunch (65 minutes)		
1:05 p.m. Board Meeting Call to Order (Henry Lorenzen) Invitation for Public Comment (10 minutes) <i>The president may defer specific public comment to the appropriate agenda topic.</i>		Info
1:15 p.m. Board Learning Topic Paper (35 minutes) <ul style="list-style-type: none">Decarbonizing the Energy System to Address the Climate Crisis (Elaine Prause)	Tab 3	Info
1:50 p.m. Inputs to Scenario Development (65 minutes) <ul style="list-style-type: none">Policy Context (Hannah Cruz, 35 mins)Industrial and Manufacturing Trends Relating to Energy (Mike Smith, Project and Custom Track Manager, Energy 350, 30 minutes)	Tab 4	Info
2:55 p.m. Break (10 minutes)		

**Agenda,
Cont.**

- 3:05 p.m. Inputs to Scenario Development, Continued (80 minutes) Tab 4 Info**
- **Regional Power Plan and Looking Forward** (Jennifer Light, NW Power Council, 30 minutes)
 - **Long Term Energy Efficiency Forecasting** (Spencer Moersfelder, Michael Colgrove, 30 minutes)
 - **Planning Considerations Discussion** (20 mins)
- 4:25 p.m. Scenario Planning Overview** (Holly Valkama, 15 minutes) Info
- 4:40 p.m. Closing** (Holly Valkama, 10 minutes)
- 4:50 p.m. Adjourn** (Henry Lorenzen)

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- Summary Report: Citizens Utility Board

Utility Perspectives

- Summary Report: Electric Utilities (PGE and Pac)
- Summary Report: Gas Utilities (Avista, NW Natural, Cascade)

Business/Industry Perspectives

- Summary Report: Business Oregon
- Summary Report: Home Depot
- **Summary Report: National Perspectives**

Tab 3 Board Learning Topic Papers

- Western Utility Coordination Efforts
- Decarbonizing the Energy System to Address the Climate Crisis

Tab 4 Strategic Planning Input Briefing Papers

- Policy Context
- Long Term Energy Efficiency Forecasting

Tab 1

Board Interviews for Strategic Planning Summary

Themes

- There is a tension Board members seek to reconcile: Energy Trust’s grant agreement is a policy-driven charter that directs funds to a specified group of customers using a defined cost-effectiveness model. At the same time, there is a desire to bring greater benefits to historically underserved groups that may be constrained by these cost-effectiveness models. The economics for equity do not work within the constructs of the existing cost-effectiveness model.
- Energy trust has many unique strengths, including its stable funding and “people power” (both deep staff expertise and strong partnerships throughout the value chain). Where should Energy Trust deploy its strengths to further the clean energy transition?
- The Board has diverse thinking, particularly about a broadening of Energy Trust’s role.
- The Board seeks to address biases and remove barriers to inclusion in this strategic planning process, and ultimately reflect this in the plan and Energy Trust’s work.

Summarized Responses by Question

1. What do “customers,” stakeholders, and our communities need from Energy Trust? [What’s your definition of “customers” for Energy Trust?]

- The definition of “customer” is interpreted differently by Board members. Most Board members follow this definition:
 - Utility ratepayers, who are funding the electric and gas systems under the jurisdiction of the OPUC PPC
 - Additional gas utility agreements have extended beyond the original IOUs.
 - Customer is tied to “the money”—if it’s ratepayer dollars, then Energy Trust should focus on, serve, and benefit the collective of ratepayers
- Other definitions of “customer” included:
 - The end customer, who ultimately receives program offers, e.g., industry.
 - The intermediate customer, who partners with Energy Trust to deliver programs to end customers
 - Regulators setting the policy
 - Utilities
 - The underserved/underrepresented. They will see a larger impact/benefit
 - One that broadens the current scope: Serve other IOUs in the region, outside Oregon
- Customer needs:
 - Awareness of Energy Trust and what Energy Trust offers
 - Clear program guidelines, including requirements, process, timeline, checklist
 - Accessibility of offerings. One-stop shop, almost a concierge service or case manager—a single point of entry where a customer’s path to energy efficiency and clean energy is facilitated. With cultural awareness, Energy Trust is responsive to differentiated customer needs.
 - As much zero carbon resources as possible, at the lowest possible cost
 - Confidence that Energy Trust is responsibly spending to procure energy efficiency and renewable resources without overspending

Board Interviews for Strategic Planning Summary

- Make energy efficiency the easy choice for ratepayers. Remove barriers
- The statutory scheme that established Energy Trust has not changed. 75% of PPC funds are for energy efficiency, meaning stay focused on reducing costs at a system level.
- Stakeholder needs:
 - Transparency around how Energy Trust does its work, the value of the resources it procures (energy efficiency and renewables), and how the organization fits into the equation of energy.
 - Stakeholders need Energy Trust to help them achieve their missions in a way that works for them. This involves intentional engagement.
 - Clear communication from Energy Trust to set clear expectations. Stakeholders have specific outcomes they want from Energy Trust, and sometimes Energy Trust can't deliver them, or at the level desired.
 - Thought leadership on methodologies and measures of cost effectiveness.
 - Ability to test new ideas—presently constrained by regulators
- Community needs:
 - A real partner, who is an expert in this space, who is neutral
 - Build trust and relationships, especially in rural communities
 - Communities have small staffs; they need Energy Trust support
 - Communities are different and types of communities are different (e.g., not all tribes are the same; not all Hispanic/Latino communities are the same). Energy Trust needs to support those differences differently and be adaptive
 - Similar to customer needs, just a collective action
 - Community needs are beyond efficiency. Economic development is a top priority. Potential opportunity for impact is expanding.

2. What is (or could be) Energy Trust's unique role of value? What does (or could) Energy Trust do better than all or most?

- Energy Trust is the honest purveyor of **information**, providing evidence of the efficacy of energy efficiency. It has the potential to play a central role in the ecosystem of the clean energy transition.
 - Energy Trust has unique and expert **information** that can lead to broader social impact (beyond energy efficiency savings). How can the information be disseminated to benefit broader social issues, like housing and community economic development (even if it is not critical path to Energy Trust's operations)?
 - The role of **information** to customers and stakeholders is key. As an example, utilities seek to impact specific communities in a more targeted way. Energy Trust data and expertise can be important to this.
- Not only is Energy Trust the creator of programs, but a **conduit or coordinator** for various organizations and funding sources that enables a suite of decarbonization solutions for all of Oregon and/or SW Washington. The outcome would be more customers reached and higher savings and generation.
 - It is uniquely positioned and in tune with the part of the energy ecosystem that delivers programs. Utilities, government organizations, and others (e.g., ODOE, PCEEF) are not similarly positioned.
 - Energy Trust's ability to pivot and adapt further supports this role.

Board Interviews for Strategic Planning Summary

- There is more confusion as more organizations hand out dollars and tax incentives. The braiding of people's money is getting noisy and complicated for customers. Energy Trust, being the one who hands out incentives, is less valuable than being an organization who helps others/organizations navigate these opportunities.
- Energy Trust has unique value in its “**people power**,” in addition to distributing incentives, grants, etc. The ability to spend dollars building and leveraging expertise, networks, community, and CBO relationships is fundamentally important and unique.
- Energy Trust is unique in its focus of procuring energy efficiency and the relationships needed to affect this (**the delivery system**). This is not the core mission or competency of other organizations.
 - The **statewide delivery infrastructure** is positioned to reach rural, urban, and marginalized communities.
 - Energy Trust has deep experience using incentive models to deliver outcomes.
- Energy Trust's **holistic view** of the landscape allows it to play broad roles. This would allow it to expand its present geographic coverage, and expand beyond energy efficiency and small-scale renewables, into work in Demand Management (DM) and other areas related to the climate goals of Oregon. A broadened role in DM needs to be in partnership (not competition) with the utilities, so they maintain their customer relationships. This could require a change in the grant agreement.
- Energy Trust is a **brand** which has name recognition and influence. Part of the brand is a **trust** because Energy Trust is a non-profit. It has a respected, unbiased staff. There is no other organization like Energy Trust in Oregon.
- **Funding flexibility**—Within certain boundaries, Energy Trust is allowed to act with ratepayer funding without competition. Energy Trust also has the capability to attract multiple funding streams.

3. What types of biases have influenced the work of Energy Trust and how would you like to see these addressed in this strategic planning process?

- Most Board members acknowledged that Energy Trust has focused on large customer segments, in areas of greater population density. Some do not see it as a bias versus it was a natural place to focus, given the energy efficiency potential and relatively lower cost to procure.
 - The historical bias has been around ‘what is the cheapest energy efficiency to procure?’ This has superseded other public goods that are derived from energy efficiency. Figuring out how to do both is needed.
- There has likely been an unconscious bias that people who interact with the energy system are ‘like me’ (white, upper-middle class, live in single family homes, and interact with the energy system in a set number of ways). Energy Trust realizes this and is working hard to address. Unlocking this will be a critical part of garnering a large portion of the remaining energy efficiency.
- Energy Trust wants to be seen as inclusive, understanding, and meeting the needs of customers traditionally underserved, but it hasn't put sufficient effort into how to do that effectively.
- In some situations, Energy Trust seeks to be more equitable and inclusive, but statutory and regulatory requirements constrain it or create a tension as it also must meet certain energy efficiency savings goals.

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4. How can this planning process address barriers to inclusion in the development of the strategic plan and contribute to equity in those Energy Trust serves?

- Develop metrics to demonstrate Energy Trust is delivering benefits on the ground. It's known that money is being distributed; what are the outcomes?
- Bring more diversity in perspectives to the Strategic Planning Committee. Its membership is not highly diverse.
- Be intentional about hearing from and collaborating with diverse communities. When we don't start with equality and justice at the center, opportunities may be missed. Use the DAC more in the strategic planning process.
- High transparency
- Be careful about how 'top down' this planning process is. We want to set the strategic direction with staff, who are closest to the work.
- Look at this plan with fresh eyes. Energy Trust has significantly changed since the last plan.
- The attitude of this planning process needs to be 'reach higher on the tree.' During the last strategic plan, there was concern that all the low hanging fruit of energy efficiency had been picked. Equity is even higher on the tree. More people power and partnerships are central, even if it is a more costly process.

5. What question(s) do you want the next strategic plan to address through the strategic planning process?

Big Picture

1. What is Energy Trust's unique role in the eco system in the next 10 years, in the face of affordability, reliability, and decarbonization challenges?
2. With the big transition in Oregon with respect to energy needs, how can Energy Trust be a thought leader, one that demonstrates how community perspectives can be incorporated into solutions development for energy programs and into public processes, such as regulatory proceedings?
3. What's the long-term viability of Energy Trust? In 20 years will Energy Trust work itself out of business? Are there diminishing returns of energy efficiency as a lever?
4. How will Energy Trust become a top-of-mind name for customers?
5. What are threats to the organization? Outside forces?
6. What impact is Energy Trust chartered or directed to create, beyond cost effective acquisition of energy efficiency, e.g. broader community impacts, resilience, impacts on vulnerable communities? What does that mean for uses of dollars that are considered "non-cost effective" today?
7. Does Energy Trust's core charter need to evolve as part of our strategic path forward? When the charter was established, reduction of GHG (clean energy transition, electrification, fuel switching/substitution) was not incorporated. Cost effectiveness criteria is a limitation in terms of what Energy Trust could do.

Who Energy Trust serves and partners/works with

1. Update on who have we not served and why?
2. How will Energy Trust address DEI in a way which is appropriate to the goal of inclusion, while being respectful of cost to others? How can Energy Trust create the balance? [We'll draw a line and explain why we drew it there.]
3. How will Energy Trust solidify its relationship with Indigenous communities?

Board Interviews for Strategic Planning Summary

4. How does Energy Trust reach a large percentage of demographics presently not being reached? How does Energy Trust make it sustainable?
5. The risks facing utility customers are substantial, even without decarbonizing. Distributing incentives isn't sufficient. How does Energy Trust amplify utility and partner expertise such that the sum is greater than its parts?
6. How does Energy Trust better partner with the utilities to ensure highest and best use of ratepayer funds, especially with the emergence of the importance of community and customer based clean energy resources?
7. Who does Energy Trust need for partners? Expansion is needed, e.g., the labor shortage issue.
8. What does Energy Trust continue to outsource to contractors versus in-house? Thinking about Transactional vs Relational, and the how the Contractor model may not fit well.

Energy Trust's work

1. Has Energy Trust moved the needle—why or why not?
2. What is success as quantified in an end goal? Where will Energy Trust be by 2030? What will intermediate milestones be (can be a range)?
3. What will be the points on which to pivot? There is much evolving (politics, climate change).
4. How can Energy Trust procure more and broader funding for projects, that goes beyond providing staff?
5. Will Energy Trust look at areas outside the grant agreement? What about funding?
6. What are the boundaries for staff to do InnDev work?

6. Looking towards 2030, what are drivers that could significantly affect the world in which Energy Trust operates?

- Significant **increase in cost** for utility customers over the next 10 years (wildfire mitigation costs, natural gas pipeline constraints, infrastructure costs for growth and hardening, storms)
- The rate of **Electrification** is going to accelerate. Many of the targets are without plans, e.g., no gas or diesel cars after 2035. There will need to be immense coordination of the ecosystem. This evolution will also have to align the market forces and the players who will economically benefit from the transition. This poses risk of players trying to stop the use of monies in ways that don't align with their strategies/paths.
- Measurement and Evaluation **models of cost effectiveness** are starting to constrain Energy Trust's opportunities. To evolve forward, these will have to evolve.
- The tension of keeping the utility grid in balance is growing, which increases the risk of brownouts. Can the **balance of dual fuels** help reliability while looking at reduction of carbon impacts?
- **Evolving role of energy efficiency** in an evolving grid
- Continued **movement away from fossil fuels**
- **Load growth**—type, significant size, and regional implications
- Climate change: **Errant climate events** trend (growth is likely)
- **Decarbonization**—local, state (Oregon's climate commitments), and federal policies
- **Politics** – next presidential and gubernatorial elections
- **Policy Changes – Regulatory**
- **Funding pipeline** (non-PPC): Will the flow continue, redirect, or limit the current state?
- **Economy**: Inflationary pressures
- **Scientific/technology advancements**, e.g., power storage
- The **workforce** isn't developed to deploy the solutions in a way that is necessary.

Board Interviews for Strategic Planning Summary

* Follow-up: What associated opportunities could exist for Energy Trust?

- Opportunities with state funding. Energy Trust can be more efficient than some agencies.
- Energy Trust could use its purchasing power to buy large quantities of items used for programs and keep the customer costs down.
- Its position in the suite of decarbonization solutions: Will it be the service provider for storage solutions, electrification, or EVs/charging stations?
- Energy Trust is well positioned to adapt because of its delivery system. This is scalable with low risk.
- Energy Trust could influence customer capital investments with more energy efficiency options.
- Energy Trust Board members and staff are generally not living in communities of poverty and some of the other underserved communities. We'll need to trust others to inform us.
- An Energy Trust loan product where the reduced energy usage covers the debt service.
- Looking across the portfolio of opportunities and optimizing the initiatives.

7. What competitive forces should be considered in the 2025-2030 time horizon (relative to the space Energy Trust has traditionally, and singularly held)?

- Many Board members did not think Energy Trust has competitors or should consider that there are competitors. Their rationale and thoughts included:
 - In the energy efficiency and small-scale renewables space, Energy Trust is regarded highly for its experience, expertise, and accomplishments. Other organizations want to learn from it, and Energy Trust should fill that role. There's room for everyone.
 - Relationships should be collaborative. If Energy Trust is focused on others as competitors, it's not serving the customer. Energy Trust should pursue unique opportunities for partnering.
 - We are all in this to make the world better and conserve our earthly resources. We shouldn't be competing.
 - Given the enormity of the need, more than Energy Trust is needed to meet the needs, so there shouldn't be competition.
 - If Energy Trust stays within the grant agreement, there isn't competition in Oregon.
 - Utilities and the OPUC are not competitors, but Energy Trust receives revenue from them. If they are not satisfied, it can impact Energy Trust. A close relationship with utilities is needed to understand and meet their needs.
- Competitors identified:
 - Community Choice Aggregators (as in California), who may offer new and better ideas over Energy Trust.
 - Although not necessarily a competitor, there is going to be an on-going point of tension about how energy efficiency layers in with other demand-side technologies. Utilities are deeply involved with flexible load. Energy Trust will need to help customers understand what's being implemented, by whom, and how it all works together. If not, it could find itself in competition with utilities.
 - Not an organization, but the customer share of wallet is the potential competition around what gets the customer's attention: energy efficiency or flexible load offerings?

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- The State has wanted to connect with Community Based Organizations, but they would view Energy Trust as more accountable and neutral (based on brand reputation).
- In the space of working with underserved/marginalized communities, there are others doing this work. Energy Trust may not be the best organization to do the work and should not bring it in-house.

***Follow-up: How might Energy Trust respond, prepare, or interface with these organizations?**

- Related to share of wallet for energy efficiency and flexible load offerings, the best response is to figure out how to do both.
- Focus outside large counties (Multnomah, Clackamas, Salem) who do not have resources doing similar work, e.g., CBOs (faith-based, language-specific).
- Restructure of programs that isn't just incremental, but holistic.
- Energy Trust may not be big enough to do something about the workforce development because it may be the whole educational system.
- Energy Trust may be too late to the federal funding opportunity—even though it could be very good at filling a role funded with these dollars.

Tab 2

Joint Advisory Council Strategic Planning Input Session – Discussion Summary

January 10, 2024

Meeting Participants:

Oswaldo Bernal, OBL Media
Terrance Harris, Oregon State University
Jonathan Belmont, Bonneville Power Administration
Ryan Harvey, Pacific Power
Kari Greer, Pacific Power
Les Perkins, Farmers Irrigation District
Indika Sugathadasa, PDX HIVE
Lisa McGarity, Avista
Noemi Ortiz, Cascade Natural Gas
Susan Badger-Jones, special projects consultant
April Snell, Oregon Water Resources Congress
Mark Rehley, Northwest Energy Efficiency Alliance
Charity Fain, Community Energy Project
Andy Cameron, Oregon Department of Energy
Brikky King, Fairway Mortgage
Joe Abraham, Oregon Public Utility Commission
Kerry Meade, Northwest Energy Efficiency Council
Angela Crowley Koch, Oregon Solar + Storage Industry Association
Laney Ralph, Northwest Natural
Josh Peterson, University of Oregon
Martin Campos-Davis
Jeff Bissonnette, NW Energy Coalition
Alan Beane, GeoGrade Constructors LLC
Jaimes Valdez, Portland Clean Energy Benefits Fund
Jake Wise, Portland General Electric
Rhea Standing Rock, Sunlight Solar
Christopher Banks, Urban League of Portland
Dolores Martinez, EUVALCREE

Key Themes

Throughout the Joint Advisory Council meeting, discussions in all small group breakout sessions centered around these key themes:

1. Focusing on reaching customers who have traditionally not benefitted from energy efficiency and small-scale renewable energy programs and services will be key to equitably meeting decarbonization goals.
 - Energy Trust is well-positioned to partner with others to develop and deliver energy efficiency and small-scale renewable energy programs that directly benefit **historically underserved customers**.
 - Energy Trust has experience and relationships with Community-Based Organizations (CBOs) whose input will be necessary to effectively deliver clean energy solutions to diverse communities.
 - Energy Trust is a trusted benefactor of consumers with positive brand recognition.
 - Energy Trust has a proven ability to deliver clean energy programs in a coordinated way with clear messaging.
 - Opportunities where Energy Trust can improve:

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- More up-front effort to understand community needs and build awareness
 - Increased partnership with CBOs
 - Provide training opportunities, as subject matter experts, to equip partners with capabilities needed to deliver clean energy solutions
2. Because of the shortage of workers who can install and maintain new energy efficiency and renewable energy equipment, **workforce development** is necessary to meet energy efficiency and renewables goals. Simultaneously, this is an opportunity to meet equity goals by supporting disadvantaged communities and bolstering rural economies through technical training programs.
 3. **Affordability** will be a major concern for rate payers, in terms of their energy bills and their ability to finance project costs to access incentives for energy efficiency and renewables.
 - Cost of capital is currently high
 - Inflation in other costs of living is putting pressure on customers' ability to absorb further rate increases or make investments in energy efficiency or renewables
 4. **Resiliency** issues will be paired with energy going forward—energy supply, disaster mitigation and awareness, and economic resiliency.
 5. There will be a substantial **increase in funding** for energy efficiency and small-scale renewables programs. With that influx of resources, it will become more important to ensure programs are delivering as intended. Leveraging well-vetted trade allies and performing quality assurance work will be a key component to delivering value to ratepayers and program participants.

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Detailed Notes by Question

This additional detail is provided to illuminate the themes noted above, and to provide specific ideas that may be acted upon now or after the strategic plan is adopted (i.e., we didn't want to lose this good thinking.)

Question 1: What large trends (economic, environmental, political, regulatory, etc.) are likely to have a significant impact on how your organization (and/or Energy Trust) operates over the next 6 years?

- **Political shifts** will drive changes at all levels – global, national, state, and local. For example, the OPUC has an upcoming appointment, and 62 countries are having elections this year.
- **Decarbonization** will continue to dominate policy discussions. This includes decarbonizing the economy, using efficiency to reduce use and renewables to bolster supply, and prioritizing least cost, least carbon resources. Decarbonization of buildings and transportation makes electric switch critical.
- **Climate variability**, uncertain weather patterns and increased frequency in natural hazards will drive interest in decarbonization, clean tech, the energy system and personal energy use.
 - Demand for summer cooling is mandatory. All multi-family housing needing to have cooling will impact the grid, building design, workforce, HVAC systems.
 - Interest in personal and community resilience will intensify. Energy as a health and safety issue will be a bigger concern in future.
- Electric system **load growth** due to population and commercial activity (e.g., data centers and semiconductors).
- Concern over **equity** of energy programs will continue to grow. As customers and customer advocates are becoming more aware of disparities, they will push to ensure funds are spent in an equitable way. Customers and customer advocates will look for funds to be targeted to hard-to-reach populations and those that haven't typically benefited from programs in the past (communities of color, people whose primary language is not English, economically disadvantaged people, rural communities, tribal communities, etc.).
- **Demographics** in Oregon will continue to shift with more people moving to the state.
 - Younger people in the industry have different ideas and expectations.
 - Trends in eastern Oregon include rural towns like Hermiston growing rapidly because of development of irrigation agriculture and food processing.
 - Some areas are losing population due to the loss of sawmills and timber.
 - Many people who moved to the North Coast to work remotely during the pandemic and are now moving back to Portland.
 - With rising vacancy rates in cities, there is a mounting crisis for the commercial real estate industry. This has implications for supply and demand for energy.
- **Technology development** is driving change:
 - Developments in electric technologies: heat pumps, electric vehicles
 - Energy applications for non-energy technology, including:
 - Better utilization of data and setting up data streams and data sharing – demand response will require more direct data connection.
 - Artificial Intelligence – can it speed up the transition to cleaner buildings and more clean resources safely? For Oregon Department of Energy,

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there could be practical applications, such as with residential energy scoring.

- Advancements in technology and increased data sharing between customers and utilities will require education and outreach because some will be reluctant to share data for privacy reasons, and others will not proactively make technological upgrades needed to participate.
- Think about how to better gather and use both quantitative and qualitative data for the betterment of customers.
- **Costs** are a driver. Consumers are experiencing comprehensive price inflation at an above-normal rate, notably in their utility expenses. Customers expect utilities to keep costs low and manage energy burden. There will be resistance to further utility rate increases.
- **Supply chain shortages** continue and are not expected to improve.
- For CBOs there are substantial **funding opportunities** coming, e.g., \$350M from PCEF in the next 5 years focused on low-income energy efficiency.
- Additional destabilizing factors:
 - Instability in the Middle East
 - Potential for additional pandemics
 - Pressure on availability of other natural resources (e.g., water).

Question #2: How do you see your customers/communities changing over the next 6 years? What do you think their main needs/desires/priorities/challenges are going to be? What are some of the strategies you've adopted in your organization, or are considering, to address these priorities/challenges?

- More work must be done to fully understand **community needs** and build community **awareness** and **accessibility** of programs.
 - More effort to serve low-income households.
 - Ensure outreach materials are multilingual, in an accessible format, and demonstrating relevance to customers.
 - Programs are challenging to navigate; there is a need to streamline the way customer information is provided (e.g., income eligibility).
 - CBOs can help customers realize benefits. For example, having Individual Development Accounts to save to get appliances later. Consider community projects that serve 10-15 households.
 - Folks that are in the home provide a lot of insight. Understanding the lived experience is more valuable than ever before.
 - How can we support the work that the Tribes are already doing, e.g., learning at seminars how to be part of this process?
 - Make sure new programs don't replicate past inequitable funding structures; add racial and economic equity components.
 - Increased diversity in the energy sector, e.g., at OPUC and Energy Trust.
 - Ensure opportunities for the Oregon Black community are a component of Energy Trust's programs and activities. This will be important to contribute to a successful Oregon economy.

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- Alleviate bottlenecks within community action agencies, who are trying to push out resources in low-income communities.
- The digital age has changed how we communicate with customers, do outreach, and deliver programs. Some customers don't engage with or have trouble navigating digital forms of communication (e.g., applications for rebates). Alternative methods are needed to reach these various groups.
 - CAPs are helpful as boots on the ground. There are people who rely on traditional means, like the radio or bill inserts, versus technology-enabled communication.
- **Affordability** is a priority need.
 - Income inequality is rising at an accelerated pace. Energy efficiency and energy bill mitigation (e.g., community solar) can help reduce the energy burden.
 - There is a small portion who care about energy and where it comes from; most just want energy to be affordable.
 - Utilities are committed to partnering with Energy Trust on co-deployment. Rate discounts, efficiency and demand response are all opportunities to reduce bills. By encouraging customers to shift load to off-peak times, utilities save cost by not having to purchase power at high prices.
 - BPA is focused more on low-moderate income assistance.
 - Financial mechanisms are needed to incentivize energy efficiency and renewable energy, while people are struggling to pay the basic bills.
- Customers are focused on **resiliency**. Many connect resiliency with disaster preparedness, specifically from fires. However, there are some who think of resiliency in terms of the growing number of people unable to pay for energy or make investments to reduce energy costs.
 - For community resiliency projects, like battery storage and distributed generation, there are gaps in terms of who owns and operates. Often, private businesses are hesitant to take on the responsibility of maintaining something for the grid or the rest of the community. Figuring out maintenance mechanisms is a big barrier to getting projects started. There are also barriers related to financing the projects.
 - Customers who are energy burdened are already impacted in terms of resiliency. People are having their power shut off because they can't pay their bills, not just because of power outages. How can Energy Trust make sure people are safe when they can't afford their bills or repairs?
 - Traditionally, large utility customers stabilized utility rates. However, due to ever-increasing load, infrastructure, and resiliency requirements, they are becoming a destabilizing force to the grid and utility rates. They could also impede progress on decarbonization goals.
- Customers need assistance to leverage available **funding**.
 - CBOs need guidance on customer education, so they can take advantage of funding opportunities.
 - Clean Energy Project (CEP) is really focused on educating people; doing a lot more education sessions around affordability, distributed energy, before and after projects helps customers understand utility interactions and energy.
 - Continue to advance movement on strategic energy planning in rural areas, such as Wallowa County's recent energy plan developed with support from Wallowa Resources. Because they now have a plan in place, they are positioned to

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- pursue funds to invest in microgrids, infrastructure upgrades, and expanded renewable energy resources.
- Serving **commercial real estate, multi-family homes, and renters** has particular challenges and requires more strategic programs and outreach:
 - Zoning changes are allowing more housing to be built (e.g., split lots) and are having a large impact on cities, including transportation, traffic, energy use.
 - With rising commercial vacancy rates in cities, there is a mounting crisis for the commercial real estate industry. This has implications for supply and demand for energy and the composition of our cities.
 - A shift to thinking about the building as a whole instead of incremental pieces of equipment will open new opportunities.
 - Renters are 50% of PacifiCorp's (PAC's) service territory. They pay into programs but can't participate. How will they be supported?
 - Consider investment in non-regulated affordable multi-family development.
 - Identifying landlords is a challenge, but important because they have power to make decisions for their property.
 - Tenant education programs are needed.
 - A framework for avoiding displacement and mitigating rent increases is needed. There is work on developing agreements with landlords to improve units while keeping residents in them.
 - Must address split incentives to get solutions for multi-family building residents' health, bills, and comfort.
- **Workforce capacity** is needed – installers, engineers, line workers.
 - The mentorship program that Energy Trust has is very helpful.
 - Getting hands-on experience will be important for people and having the right people to coordinate is important to ensure equitable workforce development.
 - Oregon Human Development Corporation (OHDC) trains people to get clean energy jobs, which spurs growth.
 - Community colleges, such as Blue Mountain Community College, that used to have robust trade programs, no longer have the critical mass to sustain them. Some programs depended on the existence of certain faculty members who are now retiring and not being replaced.
 - Helping people recognize the value of trade careers can be an entry point to engaging underserved populations.
 - Make it easier to get into apprenticeship programs.
 - There is a need for workforce training and development programs (grants and strategic program deployment) for energy efficiency auditors and installers, for those who haven't historically had access.
- Ensuring that customers who make energy upgrades receive high-quality advice, products and workmanship is important. We need to prioritize a well-vetted trade ally network.

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Question #3: How can Energy Trust work with others – utilities, government, customers, communities - to optimize everyone’s participation in this important work?

- Energy Trust could serve as a **convener** of different stakeholders and represent the people that we serve to help identify solutions.
 - Energy Trust is uniquely suited to play a convening role and help communities access funding (e.g., creating and filling out templates, helping navigate administrative processes, facilitating collaboration between utilities and local groups) and address resiliency.
 - Various funders and program administrators could **co-design programs** and **share information**. Lots of different programs launching, and all agree on the end state, there will be more success working backwards from that – an outcome-based approach with shared partnerships.
 - Share income qualification and eligibility measures
 - Share what is working
 - Share what’s being heard from various groups, so groups aren’t being asked the same questions from multiple support organizations.
 - Data sharing agreements between agencies and shared platform to track payments.
 - Having feedback loop that shares how info was used and how it shapes the outcome. E.g., Portland Clean Energy Community Benefits Fund (PCEF) publishes comments and shows how it impacts programs.
 - Energy Trust can support coordination with other service providers to help customers in a community understand all the incentives and assistance available for the different fuel sources and utilities. There is lots of well-intended funding, but we need to have shared outcomes across organizations.
 - Energy Trust can convene “town halls” to provide information and help make connections between different groups to share information and resources.
- Increase and improve **communication** to increase the visibility of how different customers benefited from Energy Trust’s services and programs. These stories that we tell in our marketing pieces can increase representation, access, support, and sense of belonging of diverse communities in the energy world. This could be rural communities, urban communities, communities of color, etc. There are resilience stories to tell. How can we tell the stories of the communities that we’ve helped in times of natural disasters.
 - Increase awareness and knowledge of ways to participate in Energy Trust programs.
- **Leverage other organizations** and existing networks who are connected to communities Energy Trust seeks to reach:
 - Utilize CAPs for program development. For example, the dual-fuel heating pilot program didn’t solicit much input from the community until the program was fully created.
 - Invest in CBOs to build capacity so they can have stability in the future. What is Energy Trust already doing that can be enhanced? How can Energy Trust continue to grow into the role working with CBOs?
 - Energy Trust is trying to do too much, and it can hinder CBOs. Consider taking a step back, understanding the other players involved, and consider when Energy Trust is not the best fit for certain work.

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- Energy Trust’s role in providing funding is valuable, but challenging contracting structures and processes can be a barrier.
- Energy Trust is hiring lots of new people. Should it have been supporting CBOs hiring staff instead?
- Energy Trust could pay for young people to go through training programs to do needed jobs at CBOs, e.g., scholarships.
- Energy Trust has demonstrated flexibility in other ways, including deadline extensions, identifying additional funding, and providing letters of support. This kind of flexibility is necessary and beneficial for young organizations attempting new things.
- Partner on customer messaging to priority populations the CBOs serve.
 - A larger partnership with Oregon Housing & Community Services (OHCS), who administers the Low-Income Home Energy Assistance Program (LIHEAP) and weatherization programs, could extend Energy Trust’s reach and outcomes.
- **Rural areas** and the communities within those geographies are diverse communities. To expand programs and services requires working closely with these smaller populations.
 - Invest in local trade schools, so students can attend locally versus moving out. This will have a positive impact on those economies.
 - For communities that are engaged in energy planning, it would help to have more transparency into longer-term planning information from utilities.
 - Be present in more communities and provide more opportunities for people to participate in programs.

Question #4: Given the world we may be operating in, what’s possible because Energy Trust exists? In other words, what unique value does Energy Trust provide (or could it provide) — distinct from other organizations?

- Energy Trust fills a unique niche in providing financial incentives, technical assistance, and information in a manner that is **trusted, neutral, and unbiased**.
 - Energy Trust does this for individuals, businesses, and others in a way to fill their unique needs.
 - Energy Trust’s dissemination of ratepayer funds is without a profit motive.
 - These organizational characteristics make Energy Trust effective as a conduit to share information and make it accessible, especially in the low-to-moderate income spaces.
 - Energy Trust has a high satisfaction rate, public trust, and brand recognition.
 - Energy Trust brings all energy efficiency under one house. Energy Trust can share different services and opportunities across utilities and fuel types with a wider array of benefits, which sets them apart.
 - Energy Trust has a unique perspective on utility needs and a broader mission than utilities, with focus on customer needs. It brings those two sides together.
 - Energy Trust serves both electric and gas utilities. It is unique that Energy Trust can coordinate between the two. How do gas utilities meet peak demand for the electric utilities? How do we coordinate amongst gas and electric utilities to optimize performance for customers, reduce costs, and reduce carbon emissions?

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- Energy Trust provides trusted vetting of the quality of the work from contractors. As more organizations enter this space, Energy Trust could assist with consumer protection issues.
- Energy Trust's unique **non-profit structure** may allow it to be effective beyond traditional energy efficiency and small-scale renewables programs.
 - Data management.
 - Weaving together multiple/additional funding sources.
 - Providing incentives while focusing on equity.
 - Pacific Power can apply for grants, but they need others to manage that funding. Energy Trust might be able to assume this type of role.
 - Is it possible that Energy Trust could partner with other states, an Energy Trust for the nation? Think larger.
- Energy Trust has an **established delivery model**.
 - Energy Trust has a statewide presence, with lots of field staff based in the communities it serves.
 - Energy Trust communicates well with utilities and understands their goals and system needs. Energy Trust also has strong connections with trade allies and program management contractors that have payment systems and other infrastructure in place. It is like a well-oiled machine, and that strength can be expanded into areas like resilience.
 - There is a suite of activities connected to Demand Response. The question is where Energy Trust's unique capabilities could add value.
 - Future areas for Energy Trust include resilience and supporting decarbonization more generally, including fuel-switching.
- **Funding mechanisms** need to change. Many programs are reimbursement based; upfront capital is required to access them. Energy Trust is an expert in this area and could be a thought leader to develop alternative incentive and funding systems.
 - Energy Trust is a continuing, stable funding source; that's unique from other funding sources, like foundations.
 - The way Energy Trust incentives are set up with CBOs is a challenge. The CBO has to float significant investment up front. Some CBOs don't have the cash flow. PCEF has overcome this through providing upfront funding/grants. Energy Trust should consider doing the same.
 - Consider speeding up the reimbursement process. For example, there should be a fast-track reimbursement for trusted installers.
 - Energy Trust could value non-energy benefits from measures like insulation with resilience potential.
- Energy Trust also has a demonstrated ability to **evolve and innovate**.

**Executive Team
Strategic Planning Input Summary**

Thematic Points

- There are multiple areas where Energy Trust could expand its role of value beyond traditional energy efficiency savings and small-scale renewables generation to support local, state, and federal energy objectives and policies. This requires:
 - Clarity from the Board to pursue expansion, specifically where, or where not
 - Funding beyond PPC dollars, in some areas
 - Potential changes to the grant agreement

- Energy Trust must expand benefits to customers we have historically underserved.

- Expanding partnerships with other providers, funders, and community-based organizations offers a multiplier effect, if well executed. Funds and expertise can be leveraged, and more customers can be reached. Partnerships can also enable bundled offerings without over-burdening customers to work with multiple, separate entities.

Summarized Responses by Question

1. **What do "customers," stakeholders, and our communities need from Energy Trust? [What's your definition of "customers" for Energy Trust?]**
 - The customer (target customer segment) definition for purposes of the strategic plan are energy users in Oregon and SW Washington, with the opportunity to explore building capacity to expand beyond these geographies. Executive Team member thinking included:
 - The target isn't just ratepayers because Energy Trust takes a long-term view in realizing market transformation, where everybody could benefit. An example is LED bulbs that provide market transformation and benefit to the whole system and customers beyond IOU utility ratepayers.
 - If the mission is about carbon and energy, then everyone benefits—there is a public benefit in energy efficiency being the least cost resource.

 - Customer needs include:
 - Help to affordably heat, cool and power homes and businesses (i.e., information, incentives, and other financial support).
 - Guidance (both educational and technical) and partnership in finding energy solutions within a complex set of often competing priorities.
 - An easy way to take action – no matter who one is, where one lives, and how much money one has, or does not have.
 - Movement of the energy system to a more equitable and sustainable place.

 - Stakeholder needs include:
 - Confidence that Energy Trust is supporting their organization's mission and customers.
 - Utilities generally need services and benefits that can be integrated with utility system planning and achieve regulatory objectives. More specifically, utilities need reliable

Executive Team Strategic Planning Input Summary

- energy savings, coupled with load flexibility at a cost that considers the increasing pressure on rates.
- Utilities want certainty in planning for investments and recognition for customer solutions.
 - Earnest collaboration on short and long-term goals.
 - Transparency in how Energy Trust uses ratepayer funds.
 - Delivery of equitable access to all communities.
 - Confidence that Energy Trust is driving operational, technological and outreach innovation.
 - Funders, policymakers, and governments need transparency, expertise, consulting, reporting/accountability, and responsiveness to requests.
 -
 - Community needs include:
 - Assistance planning for an uncertain future that includes more climate extremes, less grid reliability, less affordable energy, and other decarbonization challenges.
 - Co-created solutions to address resiliency, environmental sustainability and economic (development) benefits.
 - Programs and offers that serve customer needs.
 - Engagement in ways that demonstrate Energy Trust understands their priorities and needs and are working from an informed position of partnership to help identify how energy efficiency and renewable energy solutions meet those priorities and needs. They also need us to be as flexible as we can within our constraints to help co-develop solutions based on their own ideas and our experience and expertise.

2. What is (or could be) Energy Trust's unique role of value?

Existing points of value:

- Delivery infrastructure for energy efficiency and small-scale renewables projects
- Trusted partner, with a highlight on transparency and consistency
- Thought leader in clean energy
- Stable funding with the OPUC and utility partners
- Mentorship, incubation, consulting, and/or subcontracting opportunities for newer organizations as they stand up their own offerings and delivery capabilities

Opportunities to consider, which could require additional funding sources:

- Serve the whole state of Oregon (including non-IOU utility customers)
- Leverage existing infrastructure for incentive processing for other public purpose focus areas (health, water. . . .)
- "Navigator" role to guide customers through the many options (beyond those offered by Energy Trust alone) for funding and support related to clean energy offerings

**Executive Team
Strategic Planning Input Summary**

3. **What types of biases have influenced the work of Energy Trust and how would you like to see these addressed in this strategic planning process?**
- Some of the organization’s biases result from the grant agreement and regulatory policies:
 - Securing all cost-effective energy efficiency at low cost (or lowest cost) has been the primary bias. This means much of Energy Trust’s work has been centered around urban areas with density of population. As such, and until recently, this created a disconnect between Energy Trust’s services and vulnerable communities who could significantly benefit from these services and that we are now prioritizing.
 - Economic cost-benefit decision criteria didn’t consider other customer and community values, and equity and environmental justice objectives. This strategic planning process should acknowledge that these values and objectives are a growing interest of regulatory bodies, and they should be integrated into the purpose and processes of Energy Trust as it delivers integrated utility-system benefits.
 - Bias towards activities that reduce ratepayer costs.
 - Bias towards activities that can be scaled to minimize administrative costs. This has resulted in a bias toward large-scale vendors.
 - Fuel neutrality. In a new era of decarbonization, should Energy Trust support customers to make choices about fuels considering additional benefits or objectives? Should one fuel be incentivized over another?
 - Bias against activities with short-term costs for long-term benefits that are harder to quantify but benefit customers or the organization’s future ability to serve customers.
 - Energy Trust’s success delivering programs a certain way to certain customer groups may have created bias to maintain this “formula.” The current challenge, and the one that will continue through the next strategic plan period, is to adjust program delivery to reach previously unreached customers.
 - A general perception that working with customers Energy Trust has historically underserved would inevitably be more expensive and potentially violate cost-effectiveness requirements has limited Energy Trust’s historic attention to those customers. The strategic planning process needs to recognize that higher levelized costs does not necessarily equate to non-cost-effectiveness and that the plan acknowledges that learning curve investments to better understand and work with these communities and customer groups are reasonable expenditures. Where Energy Trust learns that supporting some of these customer groups cannot be achieved under existing cost-effectiveness criteria, the planning process should emphasize the importance of serving these customers with other sources of funding and expand the definition of core services beyond those that provide cost-effective support to the electrical grid and gas systems.
 - Commitment to existing culture or structures. As Energy Trust moves into a growth or evolution mode, these norms, cultural ideologies, processes, etc. may no longer serve Energy Trust well.
4. **How can this planning process address barriers to inclusion in the development of the strategic plan and contribute to equity in those Energy Trust serves?**

Executive Team
Strategic Planning Input Summary

- Actively engage diverse voices beyond Advisory Councils. It's essential to cast a broad net to ensure representation and to prioritize visionary steps that promote equitable access to energy efficiency initiatives.
- Energy Trust has a growing community of interested or invested stakeholders; continue to build outreach to and among them.
- Intentional placement of an equity lens over the draft strategic plan
- Obtain input from Board's DEI committee and DAC members who have familiarity with strategic planning processes.
- Get the perspective of ratepayers who have not participated to get their view.

5. What question(s) do you want the next strategic plan to address through the strategic planning process?

- Must any expansion of purpose or major areas of work only be leveraged with energy efficiency or small-scale renewables or are there additional areas of focus for us? An example of the unknown is fuel switching.
- What role in the state's decarbonization efforts do board, stakeholders, the OPUC and utility partners think Energy Trust has?
- Is decarbonization equivalent to energy efficiency, and therefore a part of Energy Trust's purpose? If yes, what is Energy Trust's role?
- Is environmental justice part of Energy Trust's purpose? Does it show-up in goals?
- Are demand response and resiliency a part of Energy Trust's purpose (even if energy efficiency wasn't a benefit or renewables weren't an option)? If yes, how will this be considered relative to PPC funds?
- How can we work more actively to export our business model and successes to other jurisdictions to support their decarbonization efforts?
- What is the Board direction relative to new funding and other funding sources influencing customers in the market (they are not the same thing)?
 - Working with other funders on braiding and co-funding strategies versus securing new funding for the organization.
 - Is it a goal to diversify funding sources?

6. Looking towards 2030, what are drivers that could significantly affect the world in which Energy Trust operates?

- Labor market constraints
- Economic variability, which may slow or accelerate customer adoption
- Utility rate trends. To what extent is energy efficiency demand elastic?
- Changes in the political dynamics of the state and federal governments
- Regulatory landscape
- Other funding sources influencing customers in the market and emerging funding opportunities

Executive Team
Strategic Planning Input Summary

- More energy efficiency and renewable energy program administration entities serving the same customers we are serving, e.g., PCEF, Seeding Justice
 - Policy and community drivers (local, state, and federal) will have greater interconnectivity with utilities and utility system planning. These include interests in energy, climate, and resilience plans.
 - Community organizations want a more active role in serving communities, accessing funding, and designing or co-designing solutions.
 - Growing attention to, and funding for, adaptation strategies for climate change, extreme weather events and the possible devaluation of mitigation strategies, such as energy efficiency and renewables. Shift in the importance of flexible grid solutions.
 - Technology developments and supply chain conditions
- 7. What competitive forces should be considered in the 2025-2030 time horizon (relative to the space Energy Trust has traditionally, and singularly held)? [organizations doing similar work]**
- Communities or contracted delivery entities that can offer customer programs like those Energy Trust delivers.
 - Due to the financial opportunities available in the clean energy market, new entities will arise who are potentially able to do this work more efficiently due to being set up as a private or unregulated organization that focuses on clean energy technology or solutions. In a future with significant rate increases, this heightens the need for a strategy to ensure that the needs of Energy Trust's utility partners are being met beyond energy savings. Energy Trust must ensure awareness of the public benefits of Energy Trust and its work.
 - Other energy-focused entities are staffing up, potentially limiting Energy Trust's ability to attract the right talent.
 - Offering broader services that verge on social services could place Energy Trust in a footprint of other state agencies or Community Action Agencies.
 - As utilities shift to capacity concerns and begin administering Demand Response programs, they may view energy efficiency as a DR strategy, and therefore may want to propose joint DR/EE programs. This would add complexity to the Energy Trust model and may introduce competition for combined program delivery.
 - In the area of funding opportunities, community-based organizations are starting to view themselves as competitors to Energy Trust.

Interview Summary: Northwest Energy Coalition Alma Pinto, Lauren McCloy & Jeff Bissonnette



Category: Energy Advocate Stakeholder

Key Takeaways

1. Trends impacting utilities and Energy Trust that will drive change in and increased demand for energy efficiency:
 - There are multiple changes anticipated in the region's energy supply: Lower Snake River Dam replacement, build out of transmission network to meet load growth, better market integration, expansion of the energy imbalance market and movement toward the day ahead market.
 - Energy costs and consumer prices will continue to increase due to the investment necessary to meet carbon emissions targets and market volatility. High costs will be a new normal. This makes energy efficiency essential. We need to be ahead of the current processes we have (e.g., avoided cost docket) to get in front of dramatic price hikes.
 - Customer-side resources are an important part of the solution. Proactively and efficiently scaling energy efficiency will help offset increased system costs and should continue to be a robust planning consideration at with Energy Trust staff and the board.
 - Additional measures and technologies that aren't cost-effective or commercially viable now will be needed by 2030 and beyond. Changing market transformation work and program structuring over the next 6 years would allow them to be incorporated once viable.
 - Decarbonization, resiliency and energy efficiency goals are being integrated along with a strong consideration for affordability and equity. There is need and opportunity to address these issues more comprehensively. For example, Energy Trust should think long-term about its role with community resources and customer-side resources, and consider developing programs focused on community resiliency in times of emergencies.
2. Barriers to carbon reduction goals that Energy Trust could influence:
 - Workforce development will be incredibly important to achieve energy efficiency and renewables growth targets.
 - Increased equity will be needed to meet efficiency goals, e.g., people with fewer resources, outside of urban areas, with language barriers, etc. Targeted outreach and working with community-based organizations will be important.
 - Relative to cost-effectiveness, Energy Trust is well-positioned with its partnerships, implementer role and technical expertise to take a lead role facilitating changes to cost-effectiveness. The exceptions process alone is evidence that it is not working. We need to reevaluate the traditional way of thinking about efficiency now that we are in a decarbonizing world. Energy Trust's non-partisan role continues to be of unique value.

Interview Summary: Northwest Energy Coalition Alma Pinto, Lauren McCloy & Jeff Bissonnette



3. Given the dynamism in the energy space and the time span of the strategic plan, it will be important to periodically check in with the plan to make sure Energy Trust is proceeding in a way that makes sense. Similarly, there should be check-ins with progress against energy efficiency and emissions reductions targets to ensure the plan will make the progress needed to meet those goals.
4. Energy Trust should demonstrate to stakeholders that it has heard them and should be more transparent in decision-making processes. For example, Energy Trust could reflect what stakeholders shared in memo form and link that to program or policy decisions and the strategic plan. The Commission's decision memos are an example.

Interview Summary: Citizens' Utility Board

Bob Jenks, Jennifer Hill-Hart & John Garrett

Category: Energy Advocate Stakeholder (Consumer)

Key Takeaways

1. Trends impacting utilities and Energy Trust that will drive change in and increased demand for energy efficiency:
 - Oregon decarbonization policies are significantly impacting customer and utility costs and will continue to do so. Recent legal decision on Climate Protection Plan (CPP) does not change the mandate for gas utilities to decarbonize but does delay and complicate it.
 - Weatherization and energy efficiency will be more valuable than ever as costs hit the system.
 - There is a shift in focus to capacity as the primary concern when it comes to energy efficiency and renewables. This changes the value proposition of certain measures depending on end-use timing (business vs residential).
 - The most challenging scenario for electric utilities is managing winter heating loads due to electrification of natural gas heating end uses and more intermittent non-emitting winter energy supply.
 - Incentives that encourage the expansion of natural gas infrastructure (e.g., natural gas-heated homes, appliances) will decrease, as there is greater pressure to decarbonize.
 - Transportation-related electricity loads and load management will be evaluated to ensure new load is balanced on the system and doesn't exacerbate peaks.
 - Robust demand response will be necessary to manage electricity loads, and there is a role for Energy Trust alongside the utilities and Northwest Energy Efficiency Alliance.

2. Risks to further decarbonization efforts:
 - Customers could be stranded on the natural gas system, especially customers with low incomes.
 - Renewable natural gas and renewable hydrogen are still in development but it is questionable whether they can effectively replace fossil natural gas due to unproven technologies and competitive environment.
 - There are needed changes in transmission and markets:
 - Energy markets must be able to track resources so buyers know what kind of energy they are purchasing in order to meet their emissions obligations.
 - Energy markets and transmission need to be done on a regional basis, not a utility basis.
 - Backlash from rate increases could dampen the commission's willingness to fund additional work that increases rates. Even though Energy Trust is cost-effective, those

Interview Summary: Citizens' Utility Board Bob Jenks, Jennifer Hill-Hart & John Garrett



costs are front-loaded. However, increased rates increase the value of efficiency measures or off-setting use with small scale renewables.

- Changes in net energy metering agreements could reduce the value of distributed solar for customers. Solar needs to be paired with storage to be valuable to the grid.
- Shortage of workers is an existing condition and future risk to support needed additional scale of energy efficiency and renewables.

Category Summary: Electric Utilities



Participating Utilities:

1. PacifiCorp (Pac)
2. Portland General Electric (PGE)

Key Takeaway / Insights

- 1. The rate of changes is far greater than expected.**
 - This relates to the clean energy transition, climate variables, environmental justice, and load growth. For example, PGE saw its 10-year load forecast double in less than six months, as the demand for AI and social media are driving expansions in data centers.
 - Abnormal energy flows have been at record levels for the past three years and are expected to continue, especially with the El Niño effect.
- 2. The electric utility challenge is balancing reliability, resiliency, and affordability with the decarbonization transition.**
- 3. The customer relationship with electricity is changing.**
 - There is significant customer rate pressure (13-20% increases in 2024), with more expected given clean energy investments.
 - With electric rates rising and electricity playing a growing role in people's lives, the average customer's relationship with its utility and electricity is changing. It will be important for customers to understand how the upfront costs of the clean energy transition will eventually reduce the energy cost percentage of their overall wallets. This will require education.
 - Customer digitalization will expand, as they seek to have greater control and interaction.
- 4. In light of utility 2030 goals (reduce emissions by 80% from a base level average by 2030 while maintaining reliability and mitigating cost) and forecasted electrification, utilities are pursuing multiple avenues to achieve their goals:**
 - Virtual Power Plant (VPP), including Demand Response, Storage, Solar, Customer-sided resources
 - Distribution System Planning
 - Distributed Energy Resources (DERs)
- 5. Energy Trust is a valued partner of electric utilities in meeting their goals, both historically and looking to 2030.**
 - By working closer on the supply and demand sides of the equation, peak load reductions can be achieved cost effectively. Working interconnectedly, even co-deployment, ensures optimal success for programs like microgrids, small-scale community-based renewables, demand response and others.
 - Energy Trust and the electric utilities are rooted in their communities. It will be important to work together to maintain trust, and streamline and coordinate activities, so as not to confuse customers and deliver cost efficiently.
 - One utility noted they value the wealth of customer, community and measure data Energy Trust can bring to the table when targeting groups together.
 - New methods need to be tested, especially to reach historically underserved customers. It will be important for all organizations to have a measurement and impact focus, to ensure funds are being effectively invested.

Category Summary: Electric Utilities



- With considerably more funding sources available, Energy Trust and utilities with other organizations have an opportunity to collaborate for the best interest of customers. If done clumsily, the opportunity to provide the best value to customers may be missed.

Participating Stakeholder Organizations:

1. Avista
2. Cascade Natural Gas
3. NW Natural

Key Takeaway / Insights

- 1. Natural Gas utilities remain committed to their decarbonization goals and will continue to pursue emission reductions.**
 - Rule changes will impact the mechanisms they use to meet their targets.
 - Renewable fuels and energy efficiency have roles in decarbonization. They seek to drive scale for both.
 - The natural gas utilities see innovation in energy efficiency programs as key to achieving their goals:
 - Support advancement of emerging technologies (e.g. gas heat pumps).
 - Energy efficiency program design (e.g. behavioral energy efficiency, targeting priority customers).
- 2. Significant load growth from new customers is not expected; however, electrification projections are below expected levels. Consequently, renewable fuels and efficiency will both be key to meeting load demand over the next six years.**
 - The biggest driver of load is still space heating.
 - The biggest swings are with industrial customers. Process heat will be a swing, depending on economic development.
- 3. Electrification faces significant challenges, and gas fuels will continue to have an important role going forward.**
 - The expense of the transition is greater than what policymakers anticipated. Increased utility rates and wider price inflation will reduce the appetite for investment in the necessary infrastructure.
 - The natural gas infrastructure bolsters energy system resiliency, which is being reflected by a shift in customers toward low- and dual-use.
 - There is a deficit in workforce readiness to install and maintain new electrical technologies at scale.
 - Electrification will strand low-income and other hard-to-reach customers on the gas system, adding to the economic pressures they already experience.
- 4. Energy Trust's partnership is foundational to meeting decarbonization and equity goals.**
 - Program co-branding with Energy Trust provides additional credibility.
 - Energy Trust's flexibility, responsiveness, and innovative approach helps gas utilities navigate rules and requirements changes.
 - Having a single resource for all energy customers helps link customers seeking to reduce electricity use to efficiency measures that reduce their natural gas use as well.
 - There is an opportunity to increase partnering to serve hard-to-reach customers. Better coordination will maximize effectiveness and ensure customers aren't confused by uncoordinated offerings. The gas utilities have strong relationships with Community Action Partnership agencies (CAPs), organizations charged with eliminating the causes and conditions of poverty, and work directly with them to support programs for low-income customers.

Interview Summary: Business Oregon, Michael Held & Colin Sears

Category: Business (Manufacturing)

Key Takeaways

1. The energy transition is driving rapid change. Additional trends and issues will impact economic growth in Oregon:
 - The political shift towards decarbonization will continue with more Inflation Reduction Act (IRA)-like programs. There is also interest in replicating federal CHIPS act-like investments within other manufacturing sectors. Complimentary programs would then be created at the state level. (CHIPS is a federal act authorizing significant new funding for semiconductor manufacturing)
 - Energy supply and energy sources are of increasing concern for companies looking to locate or expand in Oregon. Companies more frequently want to ensure their energy source is carbon neutral. Seeing new projects with energy demand at record levels.
 - For economic development, greater connectivity between Business Oregon and energy providers will be paramount. How are we meeting those large and small users' energy needs? How is the energy needed and where is it needed? Conversations about having X amount of energy needed by Y date are more complicated and difficult.
 - There is potential for increased manufacturing in Oregon due to productivity gains that can be accomplished here and rising labor costs overseas. New manufacturing will incorporate more automation. This shift will require more energy-intensive processes and equipment that will increase load [on the utility system].
2. There are specific sectors and companies growing in Oregon. This creates opportunities for Energy Trust to work with expanding manufacturers and emerging partners and suppliers:
 - With the next wave of investment in semiconductors in Oregon, expecting \$40 Billion investment over the next four years. Of 15 planned projects, about a third are large and will be really energy intensive. Those companies pursuing large projects are really sophisticated.
 - Other emerging investment areas that create opportunities:
 - Recycling and other circular industries that use recycled materials, like concrete production
 - Renewable energy, solar manufacturing, and batteries
 - Off-shore wind development in Oregon, California, Washington, and British Columbia
 - Daimler Trucks - will be producing electric long-haul trucks in Oregon
 - Carbon capture startups

Interview Summary: Business Oregon, Michael Held & Colin Sears

3. The energy transition is occurring rapidly and could result in major disruption and dislocation for business customers, particular small to medium size businesses. Energy Trust has an opportunity to support and increase participation and expand offerings for this segment:
 - Energy efficiency adoption would increase if Energy Trust could reduce the investment burden for business customers, especially small to medium sized businesses. This could be through longer amortization, higher subsidies or other creative approaches. With more support, estimate adoption could increase by as much as 50%. Interest is there.
 - Develop programs with higher incentive levels targeted specifically at small businesses, or a scale of incentives within programs to progressively incent smaller businesses.
 - Make programs easier for customers to digest; provide energy planning advisors or partner more with technical service providers to help businesses identify and pursue opportunities. This is especially impactful for small manufacturing businesses that have a difficult time dedicating resources to develop energy-related plans.
 - Offer resiliency-related programs. There is significant concern among small and medium size manufacturers around the impacts of shutting down operations due to outages caused by wildfire or other stress on the utility system. (Large manufacturers plan for this very carefully already.)

Interview Summary: Home Depot, Art Christianson

Category: Business (Commercial / Retail)

Key Takeaways

1. Energy and energy efficiency are important to Home Depot from an Environmental Social Governance (ESG) and EPA Scope 3 (carbon emissions indirectly generated) reporting perspective. While Home Depot recognizes that the biggest impact they can have is via the products they sell, moving customers to buy energy-efficient products is not a significant part of their strategy or something they focus on.
 - Energy efficiency is not usually top-of-mind for their customers.
 - Customers are focused on feature-sets (not energy efficiency) and price, so Home Depot will continue focus on delivering the products and feature-sets customers want via the channel(s) they prefer (in-store, online, etc.) at the best price point they can.
 - Home Depot does not do a lot of planning around utility trends but does want to position itself to support utility programs and pass incentives on to their customers and remain competitive with their peers. They have engaged with stakeholders to help guide rules and program development based on what they've seen work or not work, and Home Depot's capabilities.
2. Relevant trends in the next six years :
 - Further expansion of utility programs focused on non-lighting products.
 - A continued need for approach to retail that delivers straight forward and consistent information across all channels as customers continue to leverage multiple channels for a single transaction.
 - Significant impact from Inflation Reduction Act programs (IRA) – waiting to see how IRA is implemented state-to-state and impact on customer demand (assortment, volume, etc.).
3. Suggestions for Energy Trust and Utilities:
 - Make programs as frictionless as possible for consumers by minimizing burden on customer to supply data and focusing on true mid-stream programs like Energy Star Retail Products Platform Program (ESRPP) where retailers are provided with incentives from utilities and other energy efficiency program sponsors to change their inventories and sell increasing numbers of ENERGY STAR certified products.
 - If you are going to collect data as part of a program, make sure it is purposeful and actionable.
 - Make sure rebates/incentives are sized in relation to the product cost to drive consumer behavior.

Participating Stakeholder Organizations:

1. American Council for an Energy Efficient Economy (ACEEE)
2. Consortium for Energy Efficiency (CEE)
3. Clean Energy States Alliance (CESA)
4. National Resources Defense Council (NRDC)

Key Takeaway / Insights

- 1. Over the next 6 years, energy efficiency will be critical to meet increased energy demand and balance the system. The demand for energy efficiency will accelerate, but it will need to be more targeted to accomplish over-arching greenhouse gas emissions reduction, reliability, and affordability goals.**
 - Energy efficiency's scope or definition will expand to include electrification, electric vehicles, demand response, and resiliency.
 - There will be a decline in the traditional kilowatt-hour approach to energy efficiency in favor of time- and location-specific foci at reducing energy use.
 - Energy efficiency and renewables programs will need to be treated as an integrated portfolio of offerings that work in concert towards decarbonization, rather than as siloed measures. It will be important to consider how they work together to decarbonize and balance the energy system.
 - Issues of community resiliency and environmental justice will also need to be considered in developing and administering a portfolio of energy efficiency and small-scale renewables programs. An equity or environmental justice framework should incorporate issues like workforce development, historically underserved communities, and those displaced by the energy transition (e.g., fossil fuel industry workers).
- 2. Meeting the growth in demand for energy efficiency and small-scale renewables will require additional resources and innovation in program structure and delivery. While innovations are being tested, traditional energy efficiency program models should not be discarded. Both are needed.**
 - New sources of funding are providing the ability for energy efficiency to accelerate.
 - Historically underserved communities need to be targeted with focused resources. This will require innovation in how cost-effectiveness is measured, and a broadening of the benefits measured to include more non-energy components.
 - Programs and benefits should be stacked, coordinated, and delivered as a "one-stop-shop".
 - Fuel-neutral solutions, like weatherization and continuous commissioning of buildings, need to be expanded. Where possible programs need to align with the natural capital cycle of buildings. To reach scale, programs need to be inserted into existing systems, rather than operating outside of them.
 - Minimize friction for customers. True mid-stream market programs, online marketplaces with rebates embedded in the price, and other turn-key solutions will increase customer up-take of energy efficiency measures.
 - Develop partnerships with community-based organizations to target historically underserved customers. This is a diverse group that will require tailored approaches aligned with organizations that are known and trusted by the target audience.
 - Build and leverage relationships with trade allies and incentivize them to drive scale.

3. Alignment of energy efficiency and small-scale renewables programs to meet broader decarbonization, resiliency and equity will create new spaces where Energy Trust could choose to engage:

- Non-energy benefit measurement and cost-effectiveness test customization.
- Scaling of resiliency-focused technology like batteries as part of solar installations.
- Electric vehicle programs that promote charging at times that help balance the grid.
- Support for medium and heavy duty EV's that would improve air quality in low to moderate income corridors.
- Expand consumer education and research on innovative approaches. Energy Trust's network of partnerships, technical expertise, and mandate to serve utility customers positions it to add value in this space.

4. Risks exist for energy efficiency and small-scale renewables programs:

- Buy-in from political leadership and commissions to fund programs at a time when customer rates are increasing, and customers are experiencing the impacts of inflation.
- Net metering agreements becoming less generous to the consumer, which could decrease investment in solar.
- Availability of a sufficiently sized and trained technical workforce to install and maintain energy efficiency measures and small-scale renewables. This can also be viewed as an area of opportunity for Energy Trust to make an equity-focused impact.
- Impacts of electrification and an increase in renewables to the current transmission system and energy markets. Development of a regional transmission organization will be key.
- The energy transition exacerbates inequality and leads to unintended consequences:
 - Fossil fuel workers or those who work in other carbon-related industries.
 - Those who could be left behind to pay for the gas infrastructure because they aren't able to make investments in solar or electrification.

Tab 3

Western Utility Coordination Efforts Board Learning Paper

Prepared by Caitlin Liotiris and Elaine Hart
January 2024

There are several ongoing efforts in the West to improve how utilities coordinate with one another in planning and operations. These efforts are in various stages of development or operation, and all generally aim to provide efficiencies and assist with the transition of the electric grid, including the implementation of clean energy policies. These efforts will impact Oregon and its utilities over the coming years, though the precise outcome is highly uncertain.

This paper reviews the many Western energy market and regional collaboration efforts and previews potential outcomes. It also considers what changes might mean for Energy Trust, including potential impacts to the value of energy efficiency in Oregon.

Introduction

The electricity landscape in the West is changing rapidly due to the adoption of clean energy policies and the competitiveness of clean technologies. These changes and the challenges they present for the grid have led Western utilities and other stakeholders to evaluate a host of different ways to improve collaboration and the sharing of resources across some of the regulatory and institutional barriers that exist. Coordination between utilities allows for more efficient utilization of resources and transmission to reliably meet electricity demand. Regional collaboration in planning and operations is especially valuable for systems with large amounts of variable renewables because it allows utilities to make use of renewable resource diversity over much larger areas than their individual footprints.

Many regions of the country have achieved this type of widespread collaboration through the development and operation of organizations known as Independent System Operators (ISOs) and Regional Transmission Organization (RTOs)¹. The West has experienced many failed efforts to establish a large-scale ISO or RTO; the only existing organization of this nature in the West, the California ISO or CAISO, has unique governance challenges that have prevented it from expanding across the region.²

In recent years, the West has seen successful efforts to establish some of the services that ISOs or RTOs offer, but on a more incremental basis. At present, there are numerous efforts that appear to be on a successful path to further expand the way utilities coordinate on a regional basis.

Regional Collaboration Efforts in the West

Western Power Pool's³ Western Resource Adequacy Program (WRAP)

WRAP Purpose: Deliver a region-wide approach for assessing and addressing the adequacy of electricity generation resources to improve reliability, enact consistent rules and reduce the amount of generation resources necessary to serve load.

WRAP is a first of its kind Resource Adequacy (RA) program designed to meet the unique needs of the West.⁴ The program enables participants to share resources to reliably meet the combined demand across the program footprint. This collaboration leverages load and resource diversity to ensure resource adequacy with fewer resources than would be needed if each participant relied only on their own resources to meet their own load. It also creates a single, consistent set of RA program rules across participants. Bonneville Power Administration (BPA), PacifiCorp and Portland General Electric are participating in WRAP.

WRAP has been approved by the Federal Energy Regulatory Commission (FERC) and is currently working toward its first non-binding season of participation. Once WRAP becomes binding, there will be financial penalties for participants who do not meet the requirements of the program. WRAP includes a Forward Showing Program, which occurs seven months in advance

¹ The terms ISO and RTO effectively represent the same concept and this paper uses them interchangeably. The general concept will be called an "RTO," but it is important to understand that entities like the California ISO provide the same services and functionality as an RTO.

² Specifically, CAISO's current governance structure, which includes a Board of Governors appointed by the California Governor and confirmed by the California State Senate, is problematic for utilities that are not within California to join and has led to the development of creative governance structures for other services CAISO offers, including the creation of the Western Energy Imbalance Market (WEIM) Governing Body.

³ Western Power Pool, formerly known as Northwest Power Pool, provides programs and services to coordinate utility operations in the West.

⁴ <https://www.westernpowerpool.org/about/programs/western-resource-adequacy-program>

of a given season, as well as an Operational Program. Energy efficiency contributes to the program to the extent that it affects the utility's forecasted load. While the timeframe of the Forward Showing Program is much shorter than the planning horizon in utility Integrated Resource Plans (IRPs), there are ongoing efforts to consider how WRAP participation might be reflected in IRPs to ensure the benefits of regional collaboration are reflected in planning decisions. In Oregon, the Oregon Public Utility Commission is considering participation in WRAP as an alternative to shorter-term yet-to-be-adopted state-level resource adequacy requirements (Docket UM-2143).

Real-Time Energy Markets: CAISO's Western Energy Imbalance Market (WEIM) & the Southwest Power Pool's⁵ (SPP) Western Energy Imbalance Service (WEIS)

Real-Time Energy Market Purpose: Allow participants to efficiently trade energy resources in real-time to provide cost savings, support renewable integration and improve reliability.

Real-time energy markets facilitate energy transactions *within* the operating hour. While these markets only account for roughly 5-10% of all energy transactions, they can be especially helpful for integrating renewable resources, which can ramp up and down quickly. Real-time energy markets, like CAISO's WEIM and SPP's WEIS, increase the size of the footprint and the diversity of resources over which intrahour balancing occurs. CAISO's WEIM became operational in 2014 and its participants make up roughly 80% of the load on the Western electrical grid, including most of Oregon. Some of the remaining entities in the West (primarily in Colorado and parts of Wyoming) participate in SPP's WEIS.

Despite limitations to the scale of these real-time markets, due to factors like transmission and resource commitment and scheduling decisions, both of these markets have provided significant economic benefits from the more efficient sharing of generation across a broader footprint and the avoidance of renewable curtailment. For instance, WEIM has avoided more than 2.1 million MWh of renewable curtailment in CAISO, allowing what is likely mostly solar generation to be used to serve load outside of the CAISO footprint rather than be wasted.⁶ Additionally, these markets, which have been in operation in the West for nearly a decade, have provided participants with experience in organized wholesale markets. This, in turn, has created additional comfort with their structure and an interest in expanding the reach and functions of energy markets, including to a day-ahead function discussed below.

Day-Ahead Energy Markets: CAISO's Extended Day-Ahead Market (EDAM) and SPP's Markets+

Day-Ahead Energy Market Purpose: Build on the benefits of real-time markets by allowing participants to coordinate and economically schedule and commit supply to meet expected demand in the day-ahead timeframe.

Both the CAISO and SPP have proposed new "day-ahead market" constructs in the West. Day-ahead markets build on the benefits observed in real-time markets by facilitating coordination between participants into the day before operations, when operators make most scheduling and commitment decisions. Day-ahead markets can provide economic, reliability and environmental

⁵ Southwest Power Pool is the RTO in the Central US.

⁶ See the CAISO's *WEIM Benefits Report: Third Quarter 2023*, Table 7, available here:

<https://www.westerneim.com/Documents/iso-western-energy-imbalance-market-benefits-report-q3-2023.pdf>

benefits through joint scheduling across a region, without adopting all of the requirements of an RTO. Standalone day-ahead markets (outside of an RTO) are not yet operational in the West but are in various stages of development and regulatory approval. CAISO's Extended Day-Ahead Market (EDAM) proposal was recently approved by FERC.⁷ And SPP's Markets+ is nearing a tariff filing with FERC in early 2024. Both markets are currently targeting being operational in 2026.

The concept of a day-ahead market, in the absence of a more complete RTO, has not yet been tested in operation. But it has been under discussion and development by the market operators, utilities and other stakeholders for years and has been designed to meet the unique needs of the West, including greenhouse gas (GHG) accounting for state policies that place a price on carbon emissions from electric generation. Each day-ahead market has proposed its own, slightly different, mechanism for addressing GHG costs for programs that place a cost on GHG emissions (such as California and Washington's programs). Both markets may also consider, at a later date, how to accommodate GHG and clean energy policies for states like Oregon, which do not currently subject utilities to carbon prices. The implementation of both policies to address GHG pricing and non-pricing programs within the day-ahead markets may impact market prices observed in these day-ahead markets.

Regional Transmission Organizations (RTOs): SPP's RTO-West and Other Potential RTO Structures

RTO Purpose: Provide reliability and economic benefits through broadly enabling coordination across the footprint, including economic optimization of resources, maximizing use of transmission, planning for future transmission needs and jointly coordinating resource adequacy.

RTOs can offer additional benefits beyond those offered by real-time and day-ahead markets. To unlock the full benefits of regional coordination, RTOs involve jointly agreed upon rules for functions that extend beyond electricity market operation, for example resource adequacy, long-term transmission planning, and transmission cost allocation. In the West, there have been many failed efforts to stand up new, large RTO footprints, but recent state legislation (for example in Colorado and Nevada) and interest from utilities has renewed the push to form an RTO in the West. One effort, SPP's RTO-West that would be concentrated in parts of Colorado and Wyoming, is planned to be operational by mid-2026. There is also interest in expanding CAISO's services across the region, through transitioning CAISO into a western RTO, though this transition would require changes to CAISO's current governance structure.⁸

Potential Outcomes

While there is broad interest in building on the existing regional collaboration efforts and energy markets in the West, there is significant uncertainty around how the various – and in some cases competing – efforts will shake out over the next several years. The next six to 12 months may be critical in determining the footprints for day-ahead markets in the West, as various utility participants may make decisions committing to one market or another. For example, BPA is currently in the midst of a public process that will likely determine its market direction. And these decisions could reverberate into other market developments (including impacting the footprint of

⁷ On December 20, 2023, FERC approved CAISO's proposed EDAM tariff filing (in Docket ER23-2686) with one exception related to a proposed transmission revenue recovery mechanism. Early in 2024, CAISO will begin work on a revised proposal to address this issue.

⁸ A group of state regulators recently issued a letter proposing creation of a new, independent entity which might allow for regional market formation to include the CAISO footprint. Efforts are early and the structure is still being developed. Additional information can be found here: <https://www.westernenergyboard.org/wwgpi/>.

the current real-time markets in operation in the West). There is interest from some stakeholders in influencing the market decisions that will be made by individual utilities given the impact those decisions could have across the region. While there are some predictions around how energy markets and footprints might develop, there is little certainty and significant interdependencies of decisions between potential market participants that a range of outcomes is possible.

Western energy markets and regional coordination are in a time of dynamic change and Oregon and its key participants will be central in determining the broader landscape across the West. All major load serving entities in Oregon have joined the WRAP. The date they will make their participation binding (subject to financial penalties for non-compliance) is likely to occur in 2027-2028. Additionally, all major load serving entities in Oregon participate in a real-time energy market, specifically the CAISO-operated WEIM. However, there are potentially diverging interests for day-ahead market participation by Oregon utilities. PacifiCorp has announced it will participate in the CAISO's EDAM. However, other entities in Oregon are still considering their choices. BPA is hosting a day-ahead market workshop process with the hopes of issuing an indication of which day-ahead market it may join in early to mid-2024.

It is important to understand that utility participants that participate in a day-ahead market must also participate in that same market's real-time structure. Thus, should any participant in WEIM choose a day-ahead market operated by a different market operator (e.g., a WEIM participant chooses to join Markets+), they will need to exit the real-time market they are currently in and move to the real-time market that is part of the day-ahead market they have elected. If Oregon entities opt to move into another day-ahead market, there is the potential for lost benefits from the wide footprint and diverse resource set offered through the WEIM.

What This Means for Energy Trust

Utilities could target energy-efficiency measures that support needs for the broader system.

Improved regional coordination through the expansion of markets and development of regional programs like WRAP will likely impact the value that energy-efficiency measures bring to Oregon customers. In principle, the value of energy-efficiency measures within regional markets and programs should reflect regional needs in addition to individual utility needs. For example, the value of a space heating efficiency measure in a winter-peaking utility might drop if that utility is able to coordinate planning and/or operations with utilities that are summer peaking and have excess resources available in the winter. In this case, coordination may provide a lower cost solution to challenges that might otherwise be solved through an efficiency measure. In other cases, coordination may reveal new opportunities for efficiency measures to support the regional grid more broadly. For example, regional coordination might spur the winter-peaking utility to pursue more space conditioning efficiency measures than they otherwise would to support the regional grid during periods of stress in the summertime.

Regional market development and coordination activities are unlikely to materially impact small/customer-owned renewables, as development of these resources is usually driven more by local factors than regional market dynamics.

The impacts on energy efficiency cost-effectiveness will depend on how utilities treat regional markets and coordination programs within their IRPs.

It is well understood that achieving decarbonization while maintaining reliability and affordability will require utilities to coordinate with one another to leverage load and resource diversity across the region. Studies have shown that energy efficiency remains a key pillar of decarbonization

even when coordination challenges are overcome.^{9,10} Regional coordination and expanded energy efficiency are, therefore, companion solutions that are both needed to achieve the goals of policies like House Bill 2021 in Oregon.¹¹ However, traditional cost-effectiveness analysis may instead frame these solutions as competitive with one another. For example, it has been shown that access into California markets with periods of excess solar generation lowers market prices in the Pacific Northwest. Under a traditional cost-effectiveness framework, this may lower the perceived value of energy efficiency. However, when viewed more holistically, energy efficiency in the Pacific Northwest reduces the total amount of renewables needed in the West to achieve GHG reductions. Regional coordination can – but will not necessarily – help facilitate this more global view.

At its best, regional market and program expansion could help to target energy-efficiency measures that support a more globally optimal solution for the region and distribute those benefits fairly to participating utilities and their customers. Whether regional coordination realizes this potential for Oregon customers will depend not only on regional market and program design, but also on how Oregon utilities account for regional markets/programs and energy efficiency in their IRPs and energy-efficiency avoided cost calculations. Realizing the full value of energy efficiency in the context of regional markets and regional programs may require modifications to these practices as markets and programs develop. For example, targeting energy-efficiency measures to account for regional needs may require utilities to consider how WRAP participation affects the capacity contributions of those measures in their IRP analysis. The value of energy efficiency in Oregon may also be affected by how markets reflect GHG and clean energy policies across the footprint. Depending on how they are designed, policy-based seams in carbon pricing or carbon accounting could make it more challenging to realize the full value of energy efficiency across the region as a whole.

Efficiency measures that enable demand response and load flexibility may be significantly impacted by market expansion.

The expansion of markets in the West could also unlock new opportunities to expand demand response and load flexibility. Depending on market rules, it may be easier to monetize the benefits of demand response and load flexibility programs and energy efficiency measures that enable load flexibility could see greater market value. Market expansion could also bring demand response aggregators into the space, which could accelerate adoption of demand response in Oregon. But this would complicate the demand-side management landscape and potentially increase coordination challenges between Energy Trust and organizations that pursue demand response.

Fractured market development is possible and could impact the value of energy efficiency.

Various papers have pointed out that more geographically diverse and comprehensive market structures lead to lower costs and better support clean energy policy goals.¹² The opposite is also true – that smaller or less geographically diverse and less comprehensive market constructs can create or retain barriers to renewable diversification and decarbonization. A system with two different day-ahead market footprints will have more market inefficiencies than a single market that encompasses both footprints. The benefits of market expansion will be limited under this

⁹ See for instance E3, “Deep Decarbonization in a High Renewables Future: Updated Results from the California PATHWAYS Model,” California Energy Commission, CEC-500-2018-012, June 2018. Available at: <https://www.energy.ca.gov/sites/default/files/2021-06/CEC-500-2018-012.pdf>.

¹⁰ See for instance Evolved Energy Research, “Exploring Pathways to Deep Decarbonization for the Portland General Electric Service Territory,” Portland General Electric 2019 IRP External Study A, April 2018. Available at: <https://downloads.ctfassets.net/416ywc1laqmd/6KTPcOKFILvXpf18xKNseh/271b9b966c913703a5126b2e7bbbc37a/2019-Integrated-Resource-Plan.pdf>.

¹¹ HB 2021 establishes requirements for Portland General Electric and PacifiCorp to reduce the GHG emissions associated with meeting Oregon load by 80% in 2030, 90% by 2035, and 100% by 2040. Among other requirements, HB 2021 also requires those utilities to consider impacts (including environmental, health, and economic impacts) to environmental justice communities in their plans.

¹² See for instance the *State-Led Market Study: Market Regulatory Review*, prepared by Energy Strategies, July 2021, available here: <https://www.energystrat.com/s/Final-Roadmap-Market-and-Regulatory-Review-Report-210730.pdf>.

scenario and the value of energy-efficiency measures may depend on the footprint of the market in which the utility participates. Some measures, which help mitigate the increased costs or emissions associated with remaining market inefficiencies, may see more value. For example, if one footprint is winter peaking and the other summer peaking, the former may pursue heating efficiency measures while the latter pursues cooling efficiency measures. The best solution for the region may involve pursuit of both heating and cooling efficiency measures in *both* footprints, but limits to coordination may obscure this insight.

Ultimately, impacts to energy efficiency in Oregon will depend on which markets Oregon utilities choose to participate in (if any), how those markets are designed, and how the utilities evolve their IRP analysis and energy-efficiency avoided cost calculations in response to those developments. This is a dynamic time with respect to both regional markets and energy-efficiency analysis – all of these topics are the subject of ongoing discussion at both the state and regional level. Achieving good outcomes for customers will require continued thoughtful dialogue and adaptability on the part of organizations like the Energy Trust.

Decarbonizing the Energy System to Address the Climate Crisis

Board Learning Paper

Prepared by Elaine Prause
1/24/2024

The climate science is clear: The current and future health of our environment and society depends on our success in removing greenhouse gases from our atmosphere. The Intergovernmental Panel on Climate Change to the United Nations has determined our climate system is in crisis, requiring deep cuts to greenhouse gas emissions by 2030 to limit impacts of global warming.

In Oregon, recently mandated carbon reduction targets have placed an acute focus on how utilities will decarbonize to achieve climate targets. Electric and gas utilities alike are searching to identify clean energy resources they can leverage to meet carbon reduction targets.

This paper provides a high-level perspective on decarbonization policies at an international, national and state level. It also covers implications for Energy Trust and how programs can evolve and adapt in conjunction with a changing policy environment to achieve carbon reduction objectives.

The Science Behind the Need for Decarbonization

The release of carbon dioxide and other heat trapping gases known as greenhouse gases¹ (GHGs) into our atmosphere, through natural and human induced processes, has led to the phenomenon known as global warming. Over time, this warming has disrupted the natural balance of environmental systems, leading to more severe weather events and overall changes to the climate with detrimental impacts to the health of the environment and humanity. Regions all over the planet have experienced some noticeable negative hardship from climate change.

A recent report from the United Nations' Intergovernmental Panel on Climate Change (*IPCC 2023*) says limiting warming to around 1.5°C requires global emissions be reduced by 43% by 2030. Continued emissions will lead to increasing global warming and will intensify multiple dangers. The good news is that urgent, significant and continued reductions in GHG emissions should slow global warming within two decades and could lead to noticeable changes in the atmosphere within a few years.

Decarbonization is the removal of carbon from a system. Decarbonizing the atmosphere is achieved by eliminating emissions from combustion of fossil fuels and absorbing excess carbon from the atmosphere by capturing and storing carbon. The voluminous evidence of current impacts and the modeling of future impacts have helped inform how significantly and abruptly society will need to decarbonize the atmosphere to mitigate further damage and to avoid reaching a catastrophic state.

The Policy Directing Decarbonization

The international community has been working on an agreement to reduce carbon emissions since the Kyoto Protocol² was adopted in 1997 through the United Nations Framework Convention on Climate Change. Nearly 200 parties committed to limit and reduce GHG emissions in accordance with agreed individual targets.

As climate science and our understanding of actions and impacts have developed over time, policies have followed suit. More recently, the Paris Agreement adopted in 2015 is a legally binding treaty with the goal of limiting the increase of global temperatures to below 2.0°C above pre-industrial levels.³ In 2021, the Biden administration re-entered the United States in the Paris Agreement and set aggressive national carbon reduction targets to achieve a 50% reduction of GHG emissions by 2030.⁴ And just last month, the 28th session of the United Nations' Conference of the Parties (COP 28)⁵ concluded with 123 countries pledging to triple renewable energy generation capacity by 2030 and double the average annual rate of energy-efficiency improvements from around 2% to over 4% every year until 2030.⁶

Like international and federal policies based on IPCC guidance, recent GHG emissions reduction mandates in Oregon embody magnitude and timing reductions. In 2020, Executive Order 20-04 led to the establishment of Oregon's Climate Protection Program (CPP), which limits GHG emissions from direct use of fossil fuels, including the sales of natural gas utilities.⁷ Major fossil

¹ The main gases responsible for global warming include carbon dioxide, methane, nitrous oxide, and water vapor. Carbon dioxide is the primary greenhouse gas, accounting for 79% of all GHG in 2021 ([EPA](#)). Methane is 11.4%

² [Kyoto Protocol- UNFCCC.int](#)

³ [The Paris Agreement, UNFCCC.int](#)

⁴ [White House Fact Sheet: President Biden Sets 2030 GHG Pollution Reduction Target, whitehouse.gov](#)

⁵ "Parties" are the countries that have adopted the UN Climate Agreement and who meet annually to focus on climate change.

⁶ [COP28: Global Renewables And Energy Efficiency Pledge](#)

⁷ [EXECUTIVE ORDER NO. 20-04, Oregon.gov.](#)

fuel GHG emitters, including gas utilities, must meet GHG reduction goals of at least 50% below a base cap average of 2017-19 emissions by 2035 and at least 90% below the base cap by 2050.⁸

In 2021, the passage of HB 2021⁹ established emissions reduction mandates for Oregon’s two investor-owned electric utilities to 80% below baseline emissions levels by 2030, 90% below baseline emissions levels by 2035 and 100% below baseline emissions levels by 2040. Baseline emissions levels are calculated as the annual average emissions associated with electricity sold to retail consumers in Oregon for 2010, 2011 and 2012.

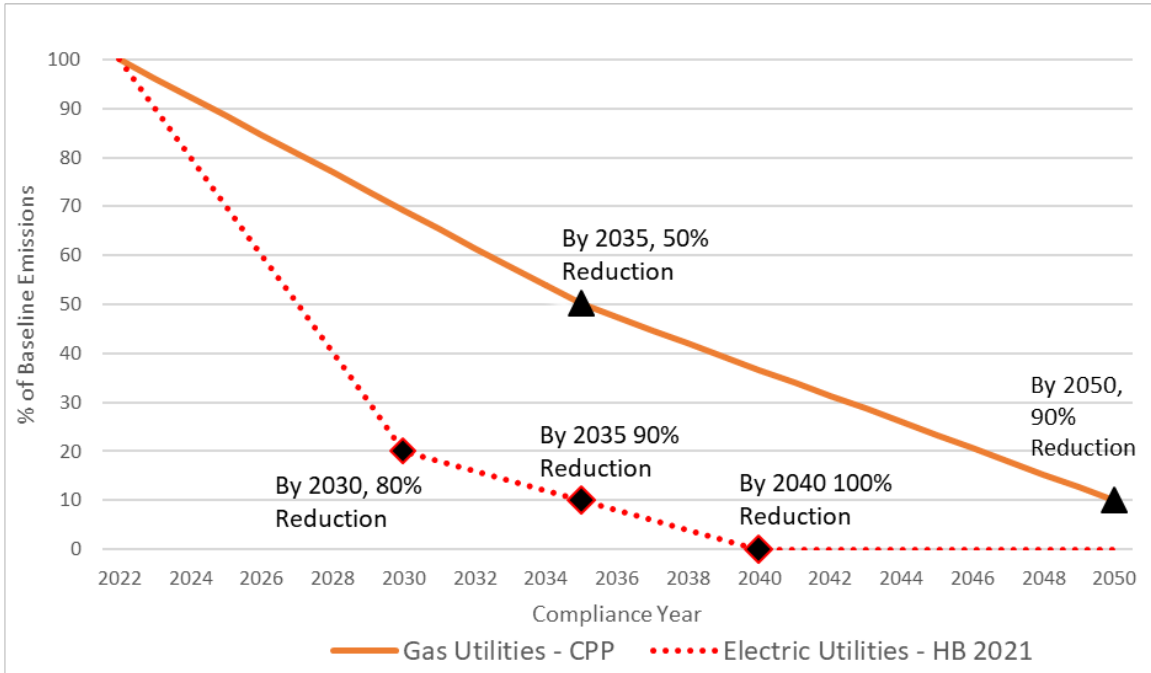


Figure 1: CO₂ reduction mandates for Oregon investor-owned utilities

Notable within the recent federal and state policies for decarbonization is the inclusion of equity considerations that will greatly impact the way decarbonization actions are implemented. For example, all supporting federal legislation to fund the implementation of climate targets such as the Inflation Reduction Act passed in 2022 and the Infrastructure Investment and Jobs Act include energy justice requirements. Through the Federal Justice 40 Initiative, 40% of overall benefits of the multi-billion dollars in investments must go to disadvantaged communities.¹⁰

Oregon climate policy also speaks to the way emission reduction goals are to be achieved. HB 2021 requires utilities to engage in meaningful consultation with Tribes, to form Community Benefits and Impacts Advisory Groups to guide community considerations and assess opportunities to improve resilience and reduce energy burden, and to examine opportunities of community-based renewable energy to offset fossil fuels.

Decarbonizing the Energy System

Once emissions reduction goals are established, the focus shifts to implementation. This daunting task is made more complex by the economy-wide nature of emissions and multiple facets of

⁸ December 20, 2023, the Oregon Court of Appeals ruled that the CPP administrative rules are invalid because the Oregon Environmental Quality Commission (EQC) and the Oregon Department of Environmental Quality (DEQ) did not comply with heightened disclosure requirements in their notice of proposed rulemaking on the CPP. At this time, there is uncertainty regarding whether and how DEQ may address the process issues and any other issues.

<https://cdm17027.contentdm.oclc.org/digital/collection/p17027coll5/id/35371/rec/1>

⁹ [Enrolled House Bill 2021, oregonlegislature.gov](https://legislature.oregon.gov/EnrolledHouse/Bills/2021/02100-02199/02100-02199-0000-0000-0000-0000-0000-0000-0000-0000-0000-0000)

¹⁰ [Justice40 Initiative, energy.gov](https://www.justice.gov/justice40-initiative).

natural and societal interactions of carbon emissions. Instead of tackling each emissions sector separately, the more efficient and effective use of public resources has been to assess the interrelated nature of how each sector contributes toward the total carbon budget.

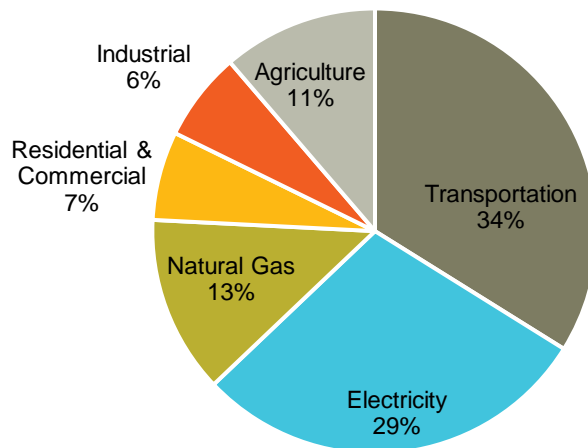
Many states and regions have done economy-wide technical studies to inform their decisions. The studies model the impacts of potential futures and portfolios of technological options or strategies to achieve emissions reduction targets. The studies, often called Pathway Studies or Deep Decarbonization Plans, provide insights that can help guide which strategies are pursued by decision makers. The 2022 Biennial Energy Report from Oregon Department of Energy (ODOE) included a review of 20 such studies to identify common strategies to decarbonization:¹¹Four pillars to decarbonization have emerged.

- Use energy efficiency to reduce the amount of clean energy resources necessary to meet societal needs
- Electrify or convert end uses from fossil fuels to electricity, focusing on transportation and space and water heating (although this can apply to industrial process in some cases).
- Transition the electric system to 100% clean energy
- For end uses that are hard to electrify, use low-carbon biofuels such as biomethane and hydrogen created through renewably driven electrolysis

The results of the studies show tremendous magnitudes of investments in clean energy are needed. ODOE reports a nearly 10-fold increase of renewable generation may be needed by 2050 in Oregon to achieve the target of 100% clean energy by 2050.¹² Another common theme of decarbonization studies is that achieving the last 10-20% of emissions reductions is the most challenging.¹³ Many studies resort to carbon capture and storage as the final action to getting to 100% clean energy systems to offset remaining fossil needs.

Oregon's Carbon Emissions

In Oregon, emissions span six major sectors as illustrated in Figure 2. The utility sector has been a focus of climate policy as both electric and gas utilities combined contribute to the majority of total emissions. In addition, the major strategy to decarbonize the transportation sector – transitioning to electric vehicles – relies on the electricity sector being emission free.



¹¹ [2022 Biennial Energy Report, Oregon Department of Energy](#) p.387

¹² *Ibid*, p.382

¹³ [Getting to 100%: Six strategies for the challenging last 10% - ScienceDirect](#)

Figure 2. Oregon CO₂e emissions by major sectors in 2021¹⁴

Over the past 30 years, Oregon's CO₂e emissions have increased. Figure 3 illustrates just how transformative the impact of recent legislation will be on the economy, with changes needed in every sector. Energy Trust's work in efficiency and small-scale renewable energy mainly influences the industrial, residential and commercial, and electricity sectors.

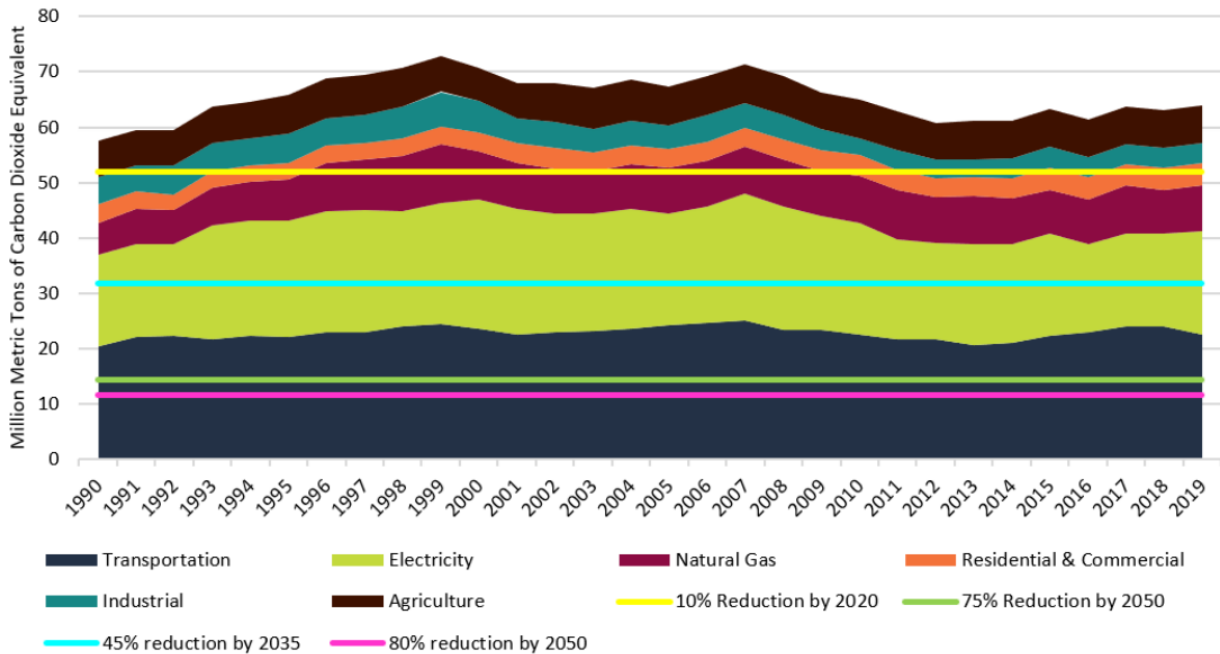


Figure 3. Oregon CO₂e emissions over time¹⁵

Decarbonizing Oregon Electric Utilities

Electric utilities in Oregon have been lowering the carbon intensity of their systems with renewable resources for years. The growth of renewables has largely been driven by policies focused on setting requirements for a specific resource type, such as the renewable portfolio standard (RPS) setting minimum percentages of sales to be met with renewable generation. As part of the Oregon Renewable Energy Act of 2007 (SB 838), the state established an RPS for electric utilities and retail electricity suppliers. This was updated by SB 1547 in 2016 to raise the target to 50% renewable energy by 2040.¹⁶ More recently, the economics of new wind and solar have influenced new resource build decisions and supported the earlier-than-anticipated retirement of fossil fuel resources.

HB 2021 in 2021 completely changed the long-term planning calculus for electric utilities. Now utilities need to plan to ensure their combination of resources will provide resource adequacy for the system to provide reliable service and also achieve carbon emission reduction targets.

Thus far, utilities across the country and in Oregon have incorporated the following resources as key components in their long-term plans:

- Both PGE and Pacific Power assume all cost-effective energy-efficiency measures will be implemented. Energy efficiency reduces the need for fossil fuel powered resources and lessens the compliance burden.

¹⁴ [Greenhouse Gas Emissions Data, Oregon.gov](#). CO₂e stands for carbon dioxide equivalent which is a measurement of the total greenhouse gases expressed in terms of equivalent measurement of carbon dioxide. CO₂ only measures carbon emissions. CO₂e accounts for other greenhouse gases.

¹⁵ [Oregon Energy Strategy Project Launch Webinar, Oregon Department of Energy](#)

¹⁶ [Renewable Portfolio Standard, Oregon Department of Energy](#)

- Utility-scale wind and solar resources are least-cost but typically sited away from population centers, requiring transmission infrastructure.
- Integrating more variable energy resources requires additional capability for quick ramping of the system. Utility-scale batteries that are either sited with generation or stand alone are needed to quickly mitigate variances between generation and demand.
- In other states, utilities are proposing installation of modular nuclear power.

Electric utilities are working to meet decarbonization targets while also planning for significant load growth from data centers, industry and growing demand as the transportation sector electrifies and building end uses transition to electricity.

Decarbonizing Oregon Gas Utilities

Through their Integrated Resource Plans (IRPs), Oregon's investor-owned gas utilities – NW Natural, Cascade Natural Gas and Avista – are working to identify how they will meet their climate targets while providing safe, reliable service in a least-cost and least-risk manner.¹⁷ Each utility recently filed its first IRP since the creation of Oregon's Climate Protection Program (CPP).

These IRPs include the following resources as key components of their long-term plans:

- All gas utility plans assume all cost-effective energy-efficiency measures will be implemented. Efficiency effectively reduces the need for gas resources and the lessens the compliance burden.
 - There is growing interest from utilities in advancing emerging technologies such as gas heat pump water heaters and exploring dual fuel heat pump options.
 - Expanding access to Energy Trust's efficiency programs to customers on transport gas rate schedules had been a growing focus for 2024 as significant energy savings and resulting CO₂ reduction potential exists in that sector. However with the recent ruling on the CPP from the Oregon Court of Appeals, the future of these program plans is uncertain.
- Significant federal investment in clean hydrogen development through hydrogen hubs¹⁸ and pilot projects has increased national interest in production of hydrogen as an alternative gas and Oregon utilities are considering its use in long-term plans. However, the feasibility, costs and risks to customers of distribution and use of renewably produced hydrogen are still being evaluated.¹⁹

Biomethane or renewable natural gas (RNG) has been a growing resource, particularly for NW Natural, which is seeking to meet 5% of sales with RNG in 2024.²⁰

- Utilities have included electrification scenarios with varying levels of decreasing customer usage. The impacts of hybrid heating for residential and commercial applications and other electrification actions are still being developed.
 - In other states including Massachusetts and Colorado, policies dictate strategic electrification be considered in utility planning.

Decarbonizing gas systems is a heavy lift. Compared to electric utilities, there are fewer options for system management and decarbonization. Oregon's gas utilities are rapidly working to advance their understanding of options and are coordinating with Energy Trust on options as applicable. Other strategies to reduce fossil gas use include the implementation of policies to remove the subsidization by customers for installations of gas line extensions for new customer

¹⁷ Oregon OPUC Docket Nos LC 79, 81, 83

¹⁸ [Biden-Harris Administration Announces \\$7 Billion For America's First Clean Hydrogen Hubs. Driving Clean Manufacturing and Delivering New Economic Opportunities Nationwide | Department of Energy](#)

¹⁹ [Hydrogen Blending into Natural Gas Pipeline Infrastructure: Review of the State of Technology \(nrel.gov\)](#)

²⁰ [lc79haq164731.pdf \(state.or.us\)](#), p 28

connections. Some states and communities have attempted to limit fossil gas in new construction or to modify energy codes such that electric heating is the least-cost fuel option.

Decarbonizing Communities and Private Business

While utilities are planning to achieve their mandates, local communities are voluntarily organizing to accelerate the transition to clean energy and achieve other community benefits associated with decarbonization sooner than state policy dictates. Some communities such as the City of Portland²¹ have been focused on achieving 100% clean energy for many years, prior to recent state policies.

Through community energy planning, local governments consider the environmental and economic benefits of how energy is consumed and generated in the community and the impacts to the overall quality of life of its residents. One recent example of local strategic energy planning is the Community Energy Strategic Plan for Wallowa County.²²

Google, Meta, Apple and other large private energy users have long been championing clean energy development to meet 100 percent of their energy load needs. Recent innovation in energy procurement has occurred through 24/7 Carbon Free Energy²³, matching clean generation to hourly energy need. Section 20 of HB 2021 includes the opportunity for Community Green Tariffs where local governments work with their utility to develop tariffs to meet their clean energy goals.

Net Effects of Decarbonizing the Energy System

Reducing emissions will yield the ultimate benefit of avoiding catastrophic environmental impacts and improving health and safety conditions. But it will come at a cost. In Oregon, year-on-year rate increases are anticipated as system investments grow. Oregon's electric utility rates will increase by more than 15% in 2024 and gas rates have also increased in recent years. Energy is an essential service, and any increase in utility costs has a disproportionate impact on household energy burdens.

In Oregon, there is an unprecedented need for investment in clean resources to achieve resource adequacy targets that ensure system reliability while reducing emissions. PGE forecasts a significant capacity need of 1,538 megawatts (MW) in summer and an energy need of 1,307 average megawatts (MWh), which is roughly 4,000 MW of new generation, by 2030.²⁴ PacifiCorp's 2023 IRP proposes adding more than 15,000 MW of renewable and non-emitting resources between 2025-2030 system wide.²⁵ Gas utilities forecast a continued growth in demand for peak winter heating, although annual energy need is expected to decline.

Along with this investment, there is also a growing need for more flexible resources and distribution system upgrades. According to electric utility IRPs, as more solar and wind resources are added to electric systems and dispatchable coal and gas plants are retired, utility-scale storage in the form of batteries and pumped hydro increase significantly. Distributed flexibility in the form of demand response and distributed solar generation with storage also can provide greater operational capabilities to ensure system reliability. Meanwhile, the impacts of climate change including extreme heat and cold events, floods and wind storms that will continue to stress the resilience of delivery of critical services. All utilities are planning to invest in their distribution systems, which is where the majority of outages are created.

What This Means for Energy Trust

Carbon free energy in the form of energy savings and clean energy generation has always been a benefit that Energy Trust efficiency and renewable energy programs provide for customers and the environment. Carbon shows up in energy-efficiency avoided costs, and Energy Trust has

²¹ [City of Portland Climate Action Plan](#)

²² [WC CESP Draft 101623 \(squarespace.com\)](#)

²³ [24-7 Hourly Matching GPP Webinar Series Google \(epa.gov\)](#)²⁴ [Integrated Resource Planning and Clean Energy Planning | PGE \(portlandgeneral.com\)](#)

²⁴ [Integrated Resource Planning and Clean Energy Planning | PGE \(portlandgeneral.com\)](#)

²⁵ [2023 Oregon Clean Energy Plan October.pdf \(pacifiCorp.com\)](#)

quantified and reported avoided carbon impacts of our programs for years. What's different now is that the current and future carbon savings resulting from our work are relied upon as a key contribution to achieving state climate goals. Energy savings and renewable energy generation are viewed as core resources needed to meet carbon reduction mandates.

Energy Trust can make decarbonization a goal by focusing program planning and design on the following:

- **Maximizing energy efficiency and distributed generation.** There is a clear need and interest from utilities, the OPUC and state policy advocates to maximize efficiency acquisition that is cost-effective and supports equity and climate justice needs. The more efficiency and distributed renewable generation that can be achieved now will lessen the burden of achieving that last 10-20% of carbon reduction needed to achieve net zero by 2050.
- **Helping customers navigate the rapid transition.** Adoption of carbon-saving distributed energy resources (DERs)²⁶ relies on customer ability and willingness to engage with the technology. This may be overwhelming or unobtainable for some but the risk of leaving customers behind could be addressed by filling gaps in information and funding.
- **Supporting flexible resources and system and community resilience.** Utilities are seeking more flexible resources on their systems to smooth peak demand and optimize system dispatch. Communities are impacted by growing risks of outages due to increased severity of storms and greater demands on our energy systems.

²⁶ Distributed energy resources include technologies to generate electricity or manage energy use at the place of consumption such as energy efficiency, energy storage, demand response and renewable energy.

Tab 4

Policy Context

Board Briefing Paper

Prepared by Hannah Cruz and Natalia Ojeda
January 2024

The Policy Context Briefing Paper provides local, state and federal energy policy status, drivers and dynamics that can inform the Energy Trust board of directors' development of the 2025-2030 Strategic Plan. The paper explores policy topics that influence the energy and utility industry, and topics that intersect directly with Energy Trust's core purpose and the ability of customers, contractors and partners to invest in and benefit from energy efficiency and renewable energy solutions.

Energy Trust is a non-lobbying organization. Pursuant to our grant agreement with the Oregon Public Utility Commission, staff and the organization do not take positions on proposed or pending laws, candidates for election or ballot measures. This paper includes reference to topics that may be viewed as politically subjective or descriptive of external opinions that do not necessarily reflect Energy Trust perspective.

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I Executive Summary

Over the last five years, Oregon’s state energy laws have broadened. They include

- setting ambitious greenhouse gas emissions¹ reduction targets for large electric investor-owned utilities,
- reaffirming the value of energy efficiency and renewable energy, and their potential to deliver equitable benefits and support a modernizing electric grid
- supporting communities and customers installing clean energy systems, and in planning and responding to natural disasters fueled by climate change, with state-funded programs and grants,
- addressing affordability concerns for utility ratepayers, and
- connecting energy to other priorities like improving health outcomes, mitigating droughts, advancing rural development, increasing housing development, managing wildfire risk and developing a robust workforce.

In addition, an executive order issued by Governor Brown in 2020 has led to actions by state agencies to reduce emissions, including ambitious emissions reductions goals for natural gas utilities², exploration of the future of natural gas by the Oregon Public Utility Commission, and a public process to address differential energy burdens and other inequities.

Most recently, unprecedented federal investments in climate and clean energy have spurred action at the state level. In an effort to capture federal funds to advance clean energy and emissions reductions, the Oregon Legislature created programs to enable agencies to apply for federal funds while creating tools to support Oregonians in navigating incentives and requiring the creation of a comprehensive statewide energy strategy.

To ensure that these investments have significant impact, environmental justice and equity concerns are reflected in recently passed laws and executive orders. Both the federal and state governments have included provisions that ensure that traditionally underrepresented and

¹ Greenhouse gas emissions and greenhouse gas emissions reductions are commonly referred to as emissions and emissions reductions throughout this document.

²A January 2024 Oregon Court of Appeals’ ruling invalidating the program rules is referenced on p. 7

burdened communities are included in the process and are prioritized to receive and benefit from the investments.

Similar policy explorations and decisions are present at local levels, where cities and counties are looking for ways to lower their emissions, reduce costs, promote resilience and provide benefits to environmental justice communities. The City of Portland is an example, with a long-term and community-led Portland Clean Energy Community Benefits Fund that focuses on climate justice action for priority populations³.

II Brief History

Oregon energy policy has been built over the years⁴ through a series of state laws, regulations and executive orders. The motivations of policy makers in setting energy policies have varied and reflected different priorities throughout the state's history. Priorities included encouraging rural electrification in the 1930s, establishing energy conservation programs in the 1970s, and implementing utility deregulation in the late 1990s. More than a dozen state agencies and commissions implement energy policies, with local and regional government policies layered within the statewide framework.

The abundance of hydropower resources in the region has been the greatest influence on the energy outlook in Oregon and the Pacific Northwest. Large-scale storage and hydroelectric dams in Canada and the U.S. have provided inexpensive, non-emitting electricity to the state and region, contributed to rural electrification, provided flood control and improved agriculture, but significantly harmed and continues to harm natural habitats, native fish and other species, and Tribal rights and lands. The creation in 1980 of the NW Power and Conservation Council⁵ by Congress ensured the collaborative, sustainable management of that network of dams (the Federal Columbia River Power System) and their impact on the environment. To date, hydropower dominates the suite of non-emitting resources in Oregon, representing 38.9% of the state's electricity generation resource mix.

The Northwest Power Act that created the council recognized energy efficiency as a resource, making energy efficiency an integral part of the region's resource mix. To date, efficiency is the second largest resource in Oregon.

Energy Trust of Oregon

For Energy Trust, the organization's originating funding and purpose were informed by a 1996 regional review of best practices to effectively manage and operate the Federal Columbia River Power System, including through sustained investments in conservation and renewable

³ PCEF priority populations include, but are not limited to, people with low incomes, people of color and people living with disabilities. Women, people of color, people with disabilities and people who are chronically underemployed are identified as priority populations for funding that addresses workforce and contractor development.

⁴ The Oregon Department of Energy's [Energy History Timeline](#) is a robust resource with more information on the state's energy history.

⁵ The mission of the council is to protect and mitigate the impact of hydroelectric dams on fish and wildlife in the Columbia River Basin while ensuring adequate, efficient, reliable and economic electric power supply from this resource.

energy.⁶ Ultimately, Energy Trust’s funding and purpose were established through a state electric utility deregulation law, SB 1149 (1999)⁷. From there, Oregon Public Utility Commission (OPUC) authority expanded the organization’s purview to the state’s three natural gas utilities, and additional state laws further adjusted the ratepayer funding administered by Energy Trust.⁸

Energy Trust programs have always operated alongside varying state laws and programs related to energy. These include building codes and appliance standards, iterations of state energy tax credits and grant programs, and mandated procurement of renewable energy by utilities. Policies in the early- to mid-2000s were aimed at lowering or offsetting annual utility load increases, reducing energy costs for consumers and businesses, building a market for the nascent renewable energy sector (particularly solar and wind) and spurring economic development in the state.

Energy Trust acquisition of cost-effective energy efficiency aligned with least-cost, least-risk energy planning (established at the OPUC in 1989) which prioritizes cost-effective energy efficiency as a resource to meet the energy needs of customers at a cost lower than supply-side resources. This energy resource is planned and accounted for through investor-owned electric and natural gas utility Integrated Resource Plans (IRPs).

III Era of Expanding Clean Energy Policies

The nation, Pacific Northwest and Oregon are in an era of expansion when it comes to clean energy programs, policies and funding. The following section highlights some of the more significant policies and actions that are influencing customers, utilities and partners as Energy Trust moves into its next strategic planning period. Many will remain in effect through 2030 and beyond.

a. Federal

Under the current administration, Congress has passed major bills providing historic levels of funding for clean energy. Further, President Biden has issued a number of executive orders directing federal agencies on accelerating energy efficiency, appliance and equipment standards, clean energy, environmental justice, grid resiliency and more. Some of the more influential for Oregon are:

⁶ [NW Power and Conservation Council *Comprehensive Review of the Northwest Energy System*](#)—among the recommendations in the review was to set a minimum standard at 3% of retail revenues for funding conservation, renewables and low-income energy services. The review left to state decision making the manner in which funds were to be collected.

⁷ Energy Trust original purpose and funding derives from the following language in SB 1149 (1999) “There is established an annual public purpose expenditure standard for electric companies to fund new cost-effective local energy conservation, new market transformation efforts, the above-market costs of new renewable energy resources...”

⁸ SB 838 (2007) extended the sunset of the public purpose charge to 2025, allowed electric utilities to fund all achievable, available cost-effective energy efficiency and lowered the size of renewable energy systems the organization can support to systems with 20 MW or less in operating capacity. HB 3141 (2021) further extended the sunset for the renewables portion of the public purpose charge to 2035, shifted electric efficiency funding into standard OPUC ratemaking processes and effectively removed the sunset, added equity components to all funding expenditures, and directed more robust coordination with utilities in jointly developing utility-specific budgets, action plans and agreements. Energy Trust is primarily funded by ratepayer funds for energy efficiency and small-scale renewables, and administers other, non-ratepayer funds.

- The bipartisan **Infrastructure Investment and Jobs Act (IIJA)**, also known as the **Bipartisan Infrastructure Law (BIL)** and enacted in 2021, authorizes \$1.2 trillion in investments in national energy, transportation, broadband and water delivery infrastructure;
- The **Inflation Reduction Act (IRA)**, enacted in 2022, marks the nation’s largest federal investment in clean energy – funding new and extended clean energy tax credits and creating new clean energy rebate programs that promote home electrification and prioritize serving people with lower incomes;
- The bipartisan **Creating Helpful Incentives to Produce Semiconductors Act (CHIPS Act)**, enacted in 2022, boosts domestic semiconductor research and manufacturing, and its passage spurred the Oregon legislature to pass the Oregon CHIPS Act (SB 4; 2023) to entice manufacturers to expand or locate in Oregon;
- The **Justice 40 Initiative (Justice 40)**, established through a President Biden executive order, directs that at least 40% of federal investments in clean energy, energy efficiency, workforce development and other areas benefit disadvantaged communities;
- The administration’s [agreement](#) to support the **Columbia Basin Restoration Initiative** extends a five-year legal stay as part of the 30-year running National Wildlife Federation v. National Marine Fisheries Service litigation over Columbia and Snake River hydro system operations and preservation of native salmon habitat and health. Among its impacts, the agreement commits the federal government to provide technical and financial support for the build-out of at least one to three gigawatts of Tribally sponsored renewable energy, including for Tribes in the state of Oregon. The agreement also includes a regional energy needs assessment of clean energy development necessary to meet the region’s climate, clean energy and salmon recovery; commitments include energy replacement should Congress authorize removal of the lower Snake River dams.

On the international stage, [the United States made a number of commitments in late 2023 during the United Nations Climate Change Conference \(COP 28\)](#), including committing to triple renewable energy and double energy efficiency levels by 2030, and announcing the [Environmental Protection Agency’s new methane regulations](#) to reduce methane emissions from oil and natural gas operations.

b. Oregon – Statewide

Drivers

In Oregon, contemporary energy policy builds on past policies aimed at ensuring safe, reliable and affordable energy; reducing energy consumption with energy efficiency; leveraging Oregon’s abundant renewable resources; maintaining the state’s significant hydropower base; lowering low-income utility bills; and spurring economic development. Since 2020, the goals and objectives of energy policies have evolved and increasingly reflect the following drivers:

- Addressing climate change and the environmental impacts to energy production, delivery and consumption⁹

⁹ While the state’s first climate change goals were established through [HB 3543 \(2007\)](#), policies aimed at significantly reducing emissions began to materialize in 2020 and beyond.

- Reducing emissions from the transportation sector (the largest contributor to the state's greenhouse gas emissions), from electricity and natural gas use, and from other energy consumption.¹⁰
- Supporting communities and utilities in mitigating, adapting and responding to impacts from climate change.
- **Affordability**
 - The cost to achieve the emissions reductions targets are expected to be significant.¹¹ State agencies like the OPUC are focused on ensuring the equitable distribution of costs and benefits with a priority on addressing affordability concerns now and in the future.
- **Planning for and acquiring additional benefits from clean energy actions**
 - In addition to decarbonization and equity, energy policy is increasingly intertwined with rural economic development, workforce development, healthcare, affordable housing, water conservation and other objectives.
- **Prioritizing people and community centered decision-making and benefits**
 - Policies like the 100% Clean Electricity Law (HB 2021; 2021), Energy Affordability Act (HB 2475; 2021) and others begin to address the lack of representation and input into state agency and utility decision making by environmental justice communities directly impacted by those decisions.
 - New programs are directing state, utility and local funding to serve members of low-income and environmental justice communities, and in some cases to be delivered by organizations that directly serve those communities.
- **Most recently, securing and leveraging federal funding opportunities**
 - The federal funding made available through the IIJA, IRA and CHIPS Act have spurred Oregon state, regional and local governments, nonprofits and utilities to prioritize leveraging federal funding and the accompanying Justice 40 principles.

These values are not exhaustive and highlight the main contributors to Oregon's trend of an era of clean energy policy expansion. The majority Democrat Party has largely led the pursuit of recently enacted energy policy, including on climate change and emissions reduction policies. The minority Republican Party has publicly stated its disagreement with broad climate change policies. Common ground has been achieved between the two political parties in energy policy areas like energy affordability, access to cooling technologies and spaces, energy system resiliency, local economic development and rural priorities, and research and development into emerging energy resources.

Greenhouse Gas Emissions Reduction Executive Order

After attempts during several legislative sessions to pass statewide carbon reduction legislation, Governor Brown issued [Executive Order 20-04](#) (EO 20-04) in 2020. EO 20-04 called for the state's greenhouse gas emissions reduction goals to be more stringent and directed 16 state agencies to use their existing authorities to integrate the emissions reduction goals into agency planning, budgeting and decision-making.

- Among other provisions, EO 20-04 directed the Environmental Quality Commission (EQC) and Department of Environmental Quality (DEQ) to implement a program that

¹⁰ [Oregon Climate Action Commission / Oregon Global Warming Commission](#)

¹¹ While decarbonization studies highlight that the costs of investing in decarbonization are offset by the long-term benefits and savings, the short-term investments have been estimated to be [around \\$330 billion - \\$740 billion by 2035 at the national scale](#), and [around \\$87 billion at the state level to achieve the 2035 emissions goals](#) - which translates into [rate increases today](#).

would cap and reduce emissions from liquid and gaseous fuels, including natural gas. The resulting **Climate Protection Program** (CPP; 2021) directed natural gas utilities (NW Natural, Cascade Natural Gas and Avista) to reduce emissions by 50% by 2035 and 90% by 2050.

- After passage of the program, three lawsuits were filed against the CPP. In December 2023, in one of the lawsuits (NW et. al. v. Environmental Quality Commission), the [Oregon Court of Appeals](#) invalidated the CPP rules due to a failure by EQC and DEQ to comply with specified disclosure requirements during their rulemaking. DEQ is working with the Oregon Department of Justice to consider its options.¹² The impacts of the Court of Appeals' ruling are still being revealed, and options EQC and DEQ may take going forward are currently unknown. The deadline for filing an appeal to the Court of Appeals' ruling is January 24, 2024.

Clean Energy, Decarbonization and Environmental Justice Laws

- Oregon is one of 23 states that has 100% clean energy goals. The **100% Clean Electricity Law** requires PGE and Pacific Power to reduce emissions associated with retail electricity sales by 100% by 2040 over the baseline, starting with 80% by 2030. Each utility must file Clean Energy Plans (CEPs) that demonstrate progress to the emissions targets and their associated benefits, including to environmental justice communities.
- For natural gas utilities, state law allows them to invest in increasing amounts of renewable natural gas ([SB 98](#); 2019) to reduce emissions from direct use of natural gas by procuring renewable natural gas (RNG) and investing in related infrastructure¹³.
- With the electric emissions reductions targets, renewable resources and their associated siting have become central to policy and regulatory strategies.
 - HB 2021 retained the state's 50% **Renewable Portfolio Standard** and established the **Community Renewable Energy Program** to fund projects that demonstrate community energy resilience.
- The state established programs to support a diversity of renewable energy system installations and in a way that provides additional benefits and reaches customers with lower incomes or those not historically served, including through a
 - **Community Solar Program**,
 - the **Oregon Solar + Storage Rebate** program, and
 - extension of the renewable energy public purpose charge by 10 years to 2036.
- Recent energy efficiency and building decarbonization laws build on a longstanding history in Oregon of prioritizing and promoting conservation and energy efficiency.
 - HB 3141 updated the funding of cost-effective energy efficiency to meet the changing needs of customers and the energy system.
 - The Climate Resilience Package established a goal for the state to install **500,000 heat pumps** by 2030, created programs at the Oregon Department of Energy (ODOE) to support **home efficiency retrofits and electrification using IRA funding**, established **commercial Building Performance Standards** and

¹² https://www.newsdata.com/clearing_up/courts_and_commissions/oregon-court-of-appeals-strikes-down-climate-protection-program/article_3e7449ba-a0ef-11ee-ae6a-67f082b19e41.html

¹³ SB 98 sets investment limits for large natural gas utilities in sourcing RNG and investing in related infrastructure to meet the following portfolio targets for retail customers: 5% by 2024, 10% by 2029, 15% by 2034, 20% by 2039, 25% by 2044 and 30% by 2050.

set goals for improved energy efficiency in each **building code** development cycle.

- Building electrification and transportation electrification policies are seen in the statewide goal to install 500,000 heat pumps by 2030 ([HB 3409](#); 2023) and other laws enabling and incentivizing electric vehicles, electric vehicle charging infrastructure and electric utility investment in transportation electrification.
- In tandem with the passage of HB 2021, and also informed by the learnings from the COVID-19 pandemic¹⁴, was the passage of the **Energy Affordability Act** ([HB 2475](#); 2021). This law allows the OPUC to consider differential energy burdens for low-income customers and other inequities when setting rates, and establish programs that reduce energy burdens.
- While EO 20-04 recognized the need to consider the intersection of equity, energy and climate, HB 2021, HB 2475, HB 3141 and HB 2842 prioritized such intersections by requiring **environmental justice** investments.
 - HB 2021 directed the OPUC and the electric utilities to not only meet clean energy targets but to do so in a way that includes the voices of environmental justice communities, minimizes burdens and maximizes benefits.¹⁵
 - HB 2475 expanded financial assistance, or intervenor¹⁶ funding, to organizations representing low-income customers and customers from environmental justice communities.
 - HB 3141 recognized this intersection by ensuring that at least 25% of renewable energy expenditures benefit low- and moderate-income customers, and embedding equity considerations into Energy Trust stewardship of all ratepayer funds.

Climate change adaptation and response policies

- The state is supporting communities in preparing for and responding to prolonged droughts, devastating wildfires, increasing heat events and other natural disasters, including funding an energy-efficient **wildfire rebuilding** program, investing in **irrigation modernization projects** for their substantial water conservation benefits, promoting **community energy resiliency planning** and supporting the creation of **resiliency hubs and networks** to serve community needs during a grid disruption or natural disaster.
- This interest extends to the utility sector in the form of policies and priority projects aimed at increasing the **reliability and resiliency of the energy system**, and added requirements for wildfire mitigation plans and public safety power shutoff processes.
- Laws addressing the **health+energy nexus**, which includes the Healthy Homes grant program to repair and rehabilitate low-income housing to improve health and safety, have expanded to also address indoor air quality during smoke events and access to

¹⁴A prominent outcome of the COVID-19 pandemic was the acknowledgment that certain customers face challenges to pay their utility bills and that these customers should be protected from disconnection, reconnection fees, and other barriers to access energy—an essential service.

¹⁵ HB 2021 directs PGE and Pacific Power to establish Community Benefits and Impacts Advisory Groups, which may advise the utility on the development of its Clean Energy Plans, distribution system plans, contracting practices, and practices to reduce energy burden and disconnections.

¹⁶ Intervenor funding is available in non-complaint contested cases, rulemakings and non-contested dockets at the OPUC that affect the applicable utility, and its low-income residential customers and environmental justice communities. Additionally, named, non-docketed commission-led processes addressing issues that affect the applicable utility and its low-income residential customers and environmental justice communities are eligible.

cooling¹⁷ – whether portable air conditioners or a new heat pump – during heat events, and more funding for warming and cooling shelters.

c. Oregon – Local

Numerous local and Tribal governments are working on their own energy, resilience and sustainability plans. These planning efforts respond to local context, infrastructure and priorities. Several communities have adopted and begun implementation of some form of climate and energy plan, while others are developing their plans, and some are facing implementation challenges from staff capacity, community buy-in and political support. A handful of cities and counties are exploring with the OPUC and their local utility the value of to-be-developed green energy tariffs¹⁸. The plans and programs become sources of stated community values and future policy change, and their implementation channels range from straightforward to legally complex.

The Portland Clean Energy Community Benefits Fund (PCEF) is a climate justice program that provides long-term funding for clean energy, green infrastructure, regenerative agriculture, transportation electrification and workforce development with special attention to priority populations. It was passed by 65% of Portland voters in 2018 and its [5-year Climate Investment Plan](#) was approved by the City Council in 2023 with a budget of more than \$700 million for community-led clean energy projects and climate solutions.

A handful of local governments have declared their intention to move away from natural gas. Multnomah County and the cities of Ashland, Eugene, and Milwaukie are among the local governments that have pushed for decarbonization and electrification of new buildings, including residential and commercial, or have set goals to become carbon neutral in the near future.

d. Corporate

In the private sector, there is a growing trend of private corporations increasing their clean energy investments, committing to net-zero energy operations and making 24x7 Carbon-Free Energy commitments¹⁹. These types of commitments drive demand for renewable energy projects in the state, domestically and internationally. Corporations with net-zero emission, carbon neutral and 24x7 Carbon-Free Energy commitments include those with data centers and other operations sited in Oregon, such as Google (The Dalles), Amazon (Morrow and Umatilla counties), Apple (Prineville) and Facebook (Prineville).

¹⁷ An Oregon Department of Energy's [Oregon Cooling Needs Study](#) found many of Oregon's most vulnerable residents do not have sufficient cooling equipment in their homes to stay cool during summer heat waves: "On average, across all housing types and Oregon regions, nearly 60 percent of households surveyed had an immediate or long-term need for better cooling equipment. Among all survey respondents, 84 percent reported interest in improving their cooling systems."

¹⁸ Allowed via HB 2021, green energy tariffs allow a local government and electric utility to enter into an agreement for the utility to source renewable resources or non-emitting energy resources for jurisdiction. The process is under development at the OPUC.

¹⁹ The 24/7 CFE is a set of principles and actions that drive systemic change to meet energy demand with carbon-free electricity sources, at all times and in all places. A group of energy buyers, energy suppliers, governments, system operators, solutions providers, investors and other organizations have joined [24/7 Carbon-free Energy \(CFE\)](#).

IV Implementation and Early Findings

Given the number of new state policies, implementation has become a focus for the last two years. The Oregon Department of Energy has received multiple new state programs to implement and is one of the lead state agencies applying for federal IIJA and IRA funding opportunities.

The OPUC has opened multiple new dockets and utilities have submitted plans (electric IRPs/CEPs and natural gas IRPs) for the first time that demonstrate their near- and long-term planning efforts to comply with HB 2021 and the Climate Protection Program.

There are uncertain and evolving pathways to meet utility emissions targets. In the utility filings, each utility takes individual approaches to modeling their compliance scenarios and resource investments yet each utility prioritizes acquisition of energy efficiency. Utilities' efforts to decarbonize their energy systems will face challenges of costs and affordability, growing electric loads, successful investment in emerging technologies, new renewable energy transmission²⁰ and efficient siting processes.

The OPUC dockets and utility planning efforts are intersectional in nature, with OPUC staff recommendations and commissioner rulings impacting both the issue at hand and causing more expansive questioning that in some cases is left open for ongoing consideration. Even so, the OPUC has pressed all utilities to maximize the procurement of cost-effective energy efficiency given the challenges in meeting state emissions targets.

In beginning to address affordability concerns, the utilities have launched interim income-qualified bill discounts and the OPUC has approved cost-effectiveness exceptions for Energy Trust to pilot no-cost offers. One challenge that may continue to be discussed in future OPUC-led discussions is how to use ratepayer funds and leverage other funds to weatherize, add solar and increase the efficiency of low-income homes when many need the full cost of projects to be covered and also investment in home repairs, like roof repair, removing asbestos, replacing knob and tube wiring, making structural repairs to prevent water intrusion prior to insulation and upgrading electrical systems.

In these proceedings, the value of small-scale and community-based renewable energy now and in the future is one of the topics under consideration, including how to evaluate them in proposed pathways to meeting emissions reduction goals.

Distributed energy resources and the role of distributed generation, distribution-system connected technologies, grid-interactive buildings, demand response and energy efficiency in peak load management and customer and utility resilience is another area of ongoing exploration.

The scale of the associated investments to meet these opportunities requires an expanded, skilled workforce. In some instances, state programs or laws include labor requirements, like HB 2021 which includes contractor labor standards for large-scale renewable energy projects. In other areas, the state is applying for funding to develop and deliver training to contractors,

²⁰ Oregon is among multiple West Coast states with emissions reductions laws and utilities will encounter competition for large-scale renewable generation resources and limited existing transmission infrastructure.

increase access to workforce development tools like testing and certification and partner with community organizations to implement an equitable state program.²¹

V Policy Maker Interest Areas

Federal

- Near-term – Federal agencies are immersed in issuing guidance, rules and funding opportunity announcements. Their ability to continue this work relies on Congress passing appropriations (spending) bills. Funding for clean energy and environmental justice are two of the issues House Republicans are in disagreement over with Senate-approved appropriations bills.²² The November 2023 “laddered” continuing resolutions (CRs) funded the government through January 19 and February 2. To avoid a government shutdown and buy both chambers more time to work through individual funding bills, the House and Senate are expected to pass a second laddered CR the week of January 16 to extend funding through March 1 and March 8.
- Longer-term – The political party(ies) in control of Congress and the White House after the 2024 general election will have high influence on the actions of federal agencies and funding.
 - The Democratic Party and President Joe Biden’s actions during his first term indicate continued support for climate policy, transitioning away from fossil fuels and clean energy financing, and additional efforts to secure funding for and improve processes for transmission and siting.
 - The Republican Party and its leading candidates indicate an interest in rolling back Biden-era climate science priorities, funding and commitments, utility regulation and environmental justice principles.²³ Under a Republican Administration and/or Congress, political pundits have opined that IJJA, a bipartisan bill, may fare better than IRA, which passed on a party-line vote. However, IRA funding for business and consumer tax credits may be politically popular for Republicans to retain, and a majority of IRA funds have flowed to Republican-led states.²⁴

Oregon

- Near-term
 - Governor Tina Kotek spent considerable effort in 2023, the first year of her first term, on a statewide listening tour of all Oregon counties. Governor Kotek, who won the governorship with 47% of the statewide votes (43% to Republican candidate Drazan and 8% to independent candidate Johnson) carried seven of

²¹ ODOE applied in late 2023 for \$2 million in non-competitive funding from the Training for Residential Energy Contractors to aid in workforce development. These funds will help prepare for the workforce that will be needed to support the influx of home energy upgrades that will be made possible through the Home Energy Rebates program. ODOE is considering applying for an additional competitive grant to grow the workforce and provide training for energy auditors.

²² <https://www.eenews.net/articles/5-things-to-watch-as-lawmakers-finalize-fiscal-2024-bills/>

²³ <https://thehill.com/policy/energy-environment/4291864-house-gop-approves-cutting-epa-budget-by-nearly-40-percent/>

²⁴ <https://www.financierworldwide.com/will-election-year-politics-imperil-the-us-inflation-reduction-act>

36 counties. The 2022 general election results, and commitment to the tour, underscore the rural and urban divides in Oregon, which also impact clean energy policy development and implementation.

- In her first month in office, Governor Kotek issued [Executive Order 23-04](#), establishing an annual housing production target of 36,000 homes over the next 10 years. A Housing Production Advisory Council is preparing recommendations on how the state can achieve this ambitious target.
- Governor Kotek is a supporter of clean energy policies, having been Speaker of the House for the passage of HB 2021, HB 2475 and HB 3141. As governor, she signed Oregon onto the [U.S. Climate Alliance](#), an alliance that is working to achieve the Paris Agreement's goal of keeping temperature increases below 1.5 degrees Celsius by reducing emissions, accelerating action, centering equity and tracking progress.
- The governor and legislative leaders are prioritizing housing development, behavioral health and K-12 education in the 2024 short legislative session.
- Democratic leaders have indicated their intention to keep contentious bills, presumably including large changes in energy policy, off the list as the legislature reconvenes after a tumultuous 2023 legislative session that saw Republican senators refusing to allow a quorum in the Senate and stalling legislative activity for more than six weeks near the end of session. In recent history, the minority Republicans have cited climate regulation and laws as one reason for their walkouts.²⁵
- Longer-term
 - Elections could see a continued diminution of the Democratic majority in the Senate and House (their supermajority hold was removed by Republican wins in the 2022 election). The role of Speaker of the House will be newly filled in 2025 after current Speaker Rayfield steps down to run for attorney general. Governor Kotek's first term is up in 2027.
 - As progress is made on her initial priorities, including housing and homelessness, Governor Kotek may turn deeper attention to other priorities, including clean energy.
 - Oregon may reassess its funding and programs related to clean energy after the 2024 general election, potentially filling consumer funding gaps if, for instance, the IRA rebate programs are rescinded, energy assistance budgets are reduced, or Justice 40 requirements are removed from federal funding.
 - The invalidation of the Climate Protection Program may lead to future legislation on natural gas emissions regulation or a renewed attempt at a statewide carbon bill to achieve statewide emissions targets.
 - This could include regulating the emissions of large energy users, and it could include revisiting the recent and controversial attempts in 2023 to both restrict and prohibit restricting the use of natural gas in buildings.

²⁵ Republican legislators walked out in 2019 in opposition to a proposed cap-and-trade bill ([HB 2020](#)) and again in 2020 in opposition to a bill with a similar intent ([SB 1530](#)). Other Republican walkouts were in 2021 and 2023 due to opposition on other topics.

- Energy policy will likely remain intertwined with other policy objectives like rural economic development, workforce development, healthcare, affordable housing and water conservation.
- Other topics that may be considered in future legislative sessions:
 - Updating the state’s greenhouse gas emissions goals to be in line with the best available science to limit average global temperature increases
 - Assessing and mitigating for the costs of the clean energy transition
 - Strengthening environmental justice funding and programs centered on historically marginalized communities
 - Responding to ongoing climate-induced natural disasters
 - Establishing more favorable renewable energy siting laws and microgrid legislation
 - Reconsidering the Resilient, Efficient Buildings Task Force [recommendations](#) that were not included in the 2023 Climate Resilience Package. One recommendation that did not show up in subsequent legislation in 2023 was on “modifying Energy Trust’s mission”, including to prioritize emissions reductions and equity.
 - Recommendations issued in the to-be-developed Oregon Energy Strategy, due to the legislature in late 2025, or issues of ODOE’s [Biennial Energy Reports](#), which include policy briefs outlining key issues and considerations.

VI Dynamics to Consider

As the board considers the 2025-2030 time period, increasing opportunities and competing priorities will play out further in the clean energy transition from a fossil fuel dominant utility industry and society.

Unprecedented federal funding is currently available to support government, utilities, private businesses and consumers in taking clean energy actions over the next decade and beyond. Similarly, Oregon is designing new state-funded programs to aid the transition. Local governments are motivated by their own unique values and challenges – climate and sustainability planning and investment, preparing and recovering from major disruptions or extreme weather due to the changing climate, managing operating budgets as cost of services increase – and looking for trusted partners like Energy Trust to support their efforts.

There are perspectives at the OPUC, with our partner utilities, at the state of Oregon and with our stakeholders and community partners related to the greater good that can result from deeply connecting energy efficiency and smaller scale renewables into this emerging picture.

Energy efficiency is seen as a priority to maintain during the transition with some policy stakeholders urging proactive planning for higher levels of energy efficiency as one way to manage forecasted price increases for customers. There is interest by some policy makers and policy advocates that Energy Trust not only continue its work but broaden its purview to prioritize emissions reductions and equitable, holistic benefits for all customers.

Policy makers see value in and utilities are relying upon both large-scale and small-scale renewable energy systems to achieve 2030 and 2040 state targets through stand-alone generation and when paired with energy storage systems. Distributed solar, micro-hydro and

biopower systems are in high demand from customers and communities for their on-site benefits.

Looking to 2025-2030, the board might consider the following dynamics when establishing the plan, and given the uncertain nature to many of them, might reconsider them within the plan period:

- Policy developments are occurring at local, state and federal levels.
 - At the state level, there is regulatory policy and enactment of laws with a focus on environmental justice, and a reorienting to respond to substantial federal funding opportunities.
 - At the local level, more communities are thinking about and enacting energy strategies that are tailored to local context, infrastructure and priorities.
 - The demands on implementing agencies, program administrators and community-based organizations are significant and growing. The integration of energy and utility policy with other industries and societal needs increases the complexity of this work.
 - There is opportunity and a growing need for improved coordination across energy program implementers. This includes program design, data sharing, outreach and marketing, contractor interactions and community partner capacity building.
- Energy Trust’s technical expertise and market infrastructure can support the state and local governments in developing an expanding set of new programs. Utility partners are seeking greater coordination as they manage to peak load and prioritize community engagement.
- Federal, state and local support and subsidies for clean energy are reliant on the health of government budgets and the priorities of elected leaders.
 - Some federal funding and federal agency actions responding to IRA and Justice 40 may change within the strategic planning period if the current minority Republican Party leads Congress and/or the presidency in 2025 or beyond.
 - The Governor and legislative leaders are currently prioritizing housing production, affordable housing development, homelessness and mental healthcare. Clean energy may return as a priority issue in future years of the Governor’s first term (term ends January 2027).
- There are divergent policy and industry viewpoints on the future of the natural gas system, natural gas efficiency programs, fuel neutrality principles set at the OPUC and end-use electrification forecasts and strategies. The newly invalidated DEQ Climate Protection Program adds uncertainty to how Oregon will meet²⁶ statewide emissions targets or how emissions from natural gas may be regulated in the future, including whether the legislature in 2025 or beyond may reconsider the state’s role in greenhouse gas emissions policy.
- The energy planning framework in Oregon is evolving. There is commitment to maintaining the integrity of the cost-effectiveness energy efficiency paradigm yet questions remain on how this methodology might be modernized to better reflect the socioeconomic or environmental benefits that support utility decarbonization goals.

²⁶ ODOE’s Transformational Integrated Greenhouse Gas Emissions Reduction Project Report found that “Of the programs and regulations adopted in Oregon, two account for most of the emission reductions: HB 2021 (2021) and the Climate Protection Program (CPP)” while highlighting that their adequate implementation will be key to the success in achieving these reductions.

- There is high demand for distributed renewables and grid-connected technologies that are incented by Energy Trust. However, there are questions on how and when distributed renewables and customer-sited battery storage should support larger grid management objectives.²⁷ Energy Trust has managed to a limited renewable energy public purpose charge budget since 2002 and will need to continue doing so until that portion of the organization’s funding sunsets in 2036.

VII What This Means for Energy Trust

The state has relied on Energy Trust for more than two decades to advance the work of affordable energy efficiency and clean, renewable energy for investor-owned utilities and their customers. These objectives continue to align with many stakeholder interests and fit in the state’s energy policy framework, a framework that will need to adjust for a highly dynamic clean energy transition where the solutions are not all known, available or agreed to.

- The Energy Trust strategic plan should consider how the organization can be adaptable to policy changes, whether they are new policies or policies in response to implementation challenges.
- Energy Trust will need to continue tracking on policy developments and being responsive to help policy makers and policy implementers. Energy Trust’s expertise can be leveraged to understand how implementation would support their objectives.
- It will be important to continue to meet savings and generation goals, delivering on expectations set in policies and utility plans, and helping others succeed in order to maintain continued support.
- Energy Trust will need to continue to demonstrate the multiple benefits to investment of ratepayer dollars and utilizing the organization’s Innovation and Development services to coordinate delivery of funds with external funding sources. Focusing on apolitical benefits such as affordability, resiliency, local economic development, and development of emerging resources provides a common ground of support for our work.
- It will remain necessary to leverage the strengths and resources of new and existing partners. Collectively, we can guide customers, contractors and communities to efficiency and renewable energy more efficiently and effectively.

²⁷ The net-energy metering policy is one example, where some utilities have changed (Idaho Power Company) or are considering revisions (PGE) to their net-energy energy metering programs.

APPENDIX Policy Acronyms and Descriptions

Commonly Referenced Acronyms and State Legislation

CBIAG – Community Benefits and Impacts Advisory Group, established through HB 2021
CCI – Community Climate Investments, established in the Climate Protection Program
CEP – Clean Energy Plan, established through HB 2021
CHIPS – Creating Helpful Incentives to Produce Semiconductors Act, also known as CHIPS and Science Act (2022)
COP28 – 2023 United Nations Climate Change Conference
CPP – Climate Protection Program
CR – Continuing Resolution
DEQ – Department of Environmental Quality
EO 17-20 – Governor Brown’s Executive Order 17-20 (2017)
EO 20-04 – Governor Brown’s Executive Order 20-04 (2020)
EQC – Environmental Quality Commission
GHG – Greenhouse gas(es)
HB 2021 – House Bill 2021 (2021), also known as the 100% Clean Electricity law
HB 2475 – House Bill 2475 (2021), also known as the Energy Affordability Act
HB 2842 – House Bill 2842 (2021), also known as the Healthy Homes Act
HB 3141 – House Bill 3141 (2021), also known as the Public Purpose Charge Modernization law
HB 3409 – House Bill 3409 (2023), one of two bills that are part of the Climate Resilience Package
HB 3543 – House Bill 3543 (2007), established Oregon’s initial greenhouse gas reduction goals
HB 3630 – House Bill 3630 (2023), one of two bills that are part of the Climate Resilience Package
IIJA – Infrastructure Investment and Jobs Act, also known as Bipartisan Infrastructure Law (BIL) (2021)
IOU – Investor-owned utility
IRA – Inflation Reduction Act (2022)
IRP – Integrated Resource Plan
J40 – Justice 40 Initiative established by President Biden executive order
NGFF – Natural Gas Fact Finding
NWPCC – Northwest Power and Conservation Council
OBCD – Oregon Building Codes Division
ODOE – Oregon Department of Energy
OPUC – Oregon Public Utility Commission
PCEF – Portland Clean Energy Community Benefits Fund, also known as Portland Clean Energy Fund
PGE – Portland General Electric
PPC – Public purpose charge
REBuild Task Force – Resilient, Efficient Buildings Task Force (2022)
RNG – Renewable natural gas
RPS – Renewable Portfolio Standard, initially set at 25% of retail sales by 2025 in SB 838 and changed to 50% of retail sales by 2040 in SB 1547
SB 1149 – Senate Bill 1149 (1999)
SB 1547 – Senate Bill 1547 (2016), also known as the Coal to Clean bill
SB 838 – Senate Bill 838 (2007)
Syngas – Synthetic natural gas

Policy Descriptions – Federal

[Infrastructure Investment and Jobs Act \(2021\)](#) – the IJJA, also known as the Bipartisan Infrastructure Law, authorizes \$1.2 trillion for broad investments in national energy, transportation, broadband and water delivery infrastructure. In the energy space, this includes investment in a national electric vehicle (EV) charging network, expanded transmission, development and deployment of new clean energy technologies²⁸, investment in utility system resiliency and increased funding for weatherization and other energy efficiency improvements. The law also supports western communities in making investments that address water shortages and prolonged droughts.

[Inflation Reduction Act \(2022\)](#) – the IRA is a multi-faceted federal funding package passed on a single-party line vote and among other investments, marks the nation’s largest federal investment in clean energy. The law funds new and extended clean energy tax credits and creates new clean energy rebate programs, including rebates that promote home electrification and prioritize serving people with lower incomes.

[Creating Helpful Incentives to Produce Semiconductors Act \(2022\)](#) – the bipartisan CHIPS and Science Act authorizes \$280 billion (and funds \$52 billion) to boost domestic semiconductor research and manufacturing. The CHIPS Act prompted the Oregon legislature to pass the Oregon CHIPS Act via SB 4 (2023), making available \$200 million in order to entice semiconductor manufacturers to expand or locate in Oregon. [In January 2024, Governor Kotek announced the first three recipients of Oregon CHIPS Act funding.](#)

[Justice 40 Initiative \(2021\)](#) – Issued in an executive order from President Biden, the Justice 40 Initiative directs 40 percent of the overall benefits of federal investments in clean energy, energy efficiency, training and workforce development and other areas to serve or otherwise benefit disadvantaged communities²⁹.

[COP 28](#) – Convened by the Conference of Parties, the United Nations Framework Convention on Climate Change Conference culminated with the drafting of the first Global Stocktake, which recognizes the science that indicates global greenhouse gas emissions need to be cut 43% by 2030, compared to 2019 levels, to limit global warming to 1.5°C and acknowledges that “Parties are not yet collectively on track towards achieving the purpose of the Paris Agreement and its long-term goals”.³⁰ COP28 resulted in a call for national pathways and approaches that contribute to tripling renewable energy capacity globally and doubling global average annual rate of energy efficiency improvements by 2030, accelerating efforts towards the phase-down of unabated coal power³¹, accelerating efforts towards net-zero emission energy systems (using zero- and low-carbon fuels), transitioning away from fossil fuels in energy systems in a just and

²⁸ In fall 2023, the U.S. Department of Energy [awarded up to \\$1 billion to the Pacific Northwest Hydrogen Hub](#), one of 6 to 10 hydrogen hubs that will ultimately be funded across the nation to establish a national clean hydrogen network.

²⁹ [The Climate and Economic Justice Screening Tool](#) identifies census tracts as being “disadvantaged” based on various categories of burden, including climate change, energy, health, housing, legacy pollution, transportation, water and wastewater and workforce development.

³⁰ Joint statement COP28. December 13,2023: [Outcome of the first global stocktake. Draft decision -/CMA.5. Proposal by the President \(unfccc.int\)](#)

³¹ Unabated fossil fuels usually refer to oil, natural gas and coal for which there are not efforts to remove CO2 and other GHG emissions: [Explained: what does 'unabated coal' mean? - E3G](#)

equitable manner³², accelerating zero- and low-emission technologies (including renewables, nuclear, abatement and removal technologies and low-carbon hydrogen), accelerating the reduction of non-CO2 emissions and emissions from road transport, and phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions.

Policy Descriptions – Oregon

Executive Order 20-04 Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions

After attempts at several legislative sessions to pass statewide carbon reduction legislation, Governor Brown issued [Executive Order 20-04](#) (EO 20-04) in 2020. This order stated the urgency to address climate change and its impact on public health, economic vitality, natural resources and the disproportionate effect on the wellbeing of many communities, with emphasis on traditionally underrepresented groups³³. EO 20-04 called for the state’s greenhouse gas emissions reductions goals to be more stringent³⁴ and directed 16 state agencies – through their existing authorities – to integrate the more stringent emissions reduction goals into agency planning, budgeting and decision-making.

The Executive Order directed:

- The OPUC to determine whether utility energy planning and customer programs reduce emissions, to encourage electric utilities to support transportation electrification infrastructure, to exercise its authority to reduce emissions.
- The OPUC, in collaboration with Oregon Housing and Community Services (OHCS), to establish a public process to address and mitigate differential energy burdens, including rate design and programs to mitigate it.
- The Environmental Quality Commission (EQC) and Department of Environmental Quality (DEQ) to update of Clean Fuel Standards
- The Building Codes Division to adopt building efficiency goals
- The Oregon Department of Energy to establish appliance and equipment efficiency standards,
- The Department of Administrative Services to develop a policy to procure zero-emissions vehicles
- The Department of Transportation and other state agencies to conduct an analysis of the state’s transportation electrification needs,

³² Some parties criticized the wording of “phasing down” rather than “phasing out” fossil fuels as it contrasted the urgency to take action to meet the GHG emissions reduction goals. [What were the key outcomes of COP28? | World Economic Forum \(weforum.org\)](#)

³³ EO 20-04 recognized disproportionately impacted communities to include Native American communities, communities of color, rural communities, coastal communities, lower-income households and other communities traditionally underrepresented in public processes.

³⁴ At the time, and currently today, the Oregon legislature established in 2007 state greenhouse gas emissions reduction goals of 75% below 1990 levels by 2050. EO 20-04 updated those goals to 45% below 1990 levels by 2035 and 80% by 2050. The [Oregon Global Warming Commission](#) (now called Oregon Climate Action Commission) recommended in 2023 the goals be changed again to achieve net-zero emissions by 2050 or earlier to align Oregon with the Intergovernmental Panel on Climate Change’s Global Warming of 1.5 degrees report. While the goals as listed in EO 20-04 were considered in the 2023 legislative session (SB 522, which was included in HB 3409 after removing the provision updating and matching the GHG emissions goals to those contained in EO 20-04), the goals were not ultimately updated into state law.

- The Oregon Global Warming Commission to submit a proposal for adoption of state carbon sequestration goals
- EQC and DEQ to implement a program that would cap and reduce emissions from liquid and gaseous fuels, including natural gas.
 - The resulting Climate Protection Program (CPP) was approved by the EQC in late 2021 as a set of administrative rules, and directed, among other things, natural gas utilities (NW Natural, Cascade Natural Gas and Avista) to reduce emissions by 50% by 2035 and 90% by 2050. The CPP offers Community Climate Investments administered by an independent nonprofit into projects that benefit environmental justice communities as an alternative pathway to compliance, along with reducing natural gas consumption or reducing the emissions-intensity of natural gas through alternative fuels.
 - After passage of the program, three lawsuits were filed against the CPP. In December 2023, in one of the lawsuits (NW et. al. v. Environmental Quality Commission), the [Oregon Court of Appeals invalidated](#) the CPP rules due to a failure by EQC and DEQ to comply with specified disclosure requirements during their rulemaking. The impacts of the Court of Appeals' ruling are still being revealed, and options EQC and DEQ may take going forward are currently unknown. January 24, 2024, is the deadline for filing an appeal to the Court of Appeals' ruling, and EQC is anticipated to meet that deadline.

Clean Energy, Decarbonization and Environmental Justice Laws

- Reducing Emissions in Retail Electricity
 - The Coal to Clean Act ([SB 1547](#); 2016) requires Portland General Electric (PGE) and Pacific Power to eliminate coal from the electricity supply serving Oregon by 2030.
 - The 100% Clean Electricity Law ([HB 2021](#); 2021) requires PGE and Pacific Power to reduce emissions associated with retail electricity sales to 80% below the baseline by 2030, 90% by 2035 and 100% by 2040 while also including and benefitting environmental justice communities. This law also ended eligibility for new or expanded fossil fuel generating facilities to receive Energy Facility Siting Council site certification.
 - This law is resulting in a change in the energy resource planning paradigm as utilities and OPUC oversight must ensure utility progress to emissions reductions and clean energy procurement while allowing for public participation and input.
- Renewable Natural Gas
 - Senate Bill 98 ([SB 98](#); 2019) allows gas utilities to invest in increasing amounts of renewable natural gas to reduce emissions from direct use of natural gas by procuring renewable natural gas (RNG) and investing in related infrastructure. SB 98 sets investment limits for large natural gas utilities in sourcing RNG and related infrastructure to meet the following portfolio targets for retail customers: 5% by 2024, 10% by 2029, 15% by 2034, 20% by 2039, 25% by 2044 and 30% by 2050. SB 98 defined RNG as products processed to meet pipeline quality standards or transportation fuel grade requirements, including biogas upgraded to blend or substitute geologic natural gas, hydrogen derived from renewable

energy sources, methane gas derived from biogas, hydrogen or other carbon oxides from renewable sources, and waste carbon dioxide.

- Renewable Energy Requirements and Funding
 - HB 2021 retained the states 50% Renewable Portfolio Standard³⁵; established the Community Renewable Energy Program for projects that promote equity, demonstrate community energy resilience and include energy efficiency and demand response; and revised the PGE and Pacific Power small-scale renewable energy requirement to 10% of aggregate capacity by 2030.
 - The state legislature created the Oregon Community Solar Program (SB 1547), and expanded support for customer-sited renewable energy systems that provide additional benefits and contain provisions to reach customers with lower incomes.
 - The Public Purpose Charge Modernization law (HB 3141; 2021) directs Energy Trust to dedicate at least 25% of its renewable energy public purpose charge funding to projects that benefit low- and moderate-income customers – and exempts this percentage from the above-market cost requirement.
 - The Oregon Solar + Storage Rebate Program (HB 2618; 2019) provides rebates to homeowners for solar systems and solar paired with battery storage systems. The program has a special carveout for low-income service providers, who are eligible for up to \$30,000 for standalone solar and an additional \$15,000 for solar + storage systems.
 - Siting legislation has also become a means to facilitate the expansion of large-scale renewable energy, particularly solar systems in Oregon.
 - HB 3179 (2023) doubled the square footage threshold of solar facilities to align with county level jurisdiction instead of requiring Energy Facility Siting Council approval.
- Energy Efficiency and Emissions Reductions In Buildings
 - Recent laws build on a longstanding history in Oregon of prioritizing and promoting conservation and energy efficiency as an energy resource, method to keep utility rates lower than otherwise and way to lower utility bills on-site.
 - The Public Purpose Charge Modernization law updated the funding of cost-effective energy efficiency by moving it from the public purpose charge and placing it under standard OPUC ratemaking processes. The law removed the funding sunset set in statute and recognized the value and added benefits of this resource.
 - The Climate Resilience Package (HB 3409 and HB 3630; 2023) established a goal for the state to install 500,000 heat pumps by 2030, created programs at the Oregon Department of Energy (ODOE) to support home efficiency retrofits and electrification using IRA funding, established [commercial Building Performance](#)

³⁵ For the last four decades, Renewable Portfolio Standards have been one of the drivers of clean energy development and adoption, supported by other incentives like the federal production and investment taxes. RPS have been “the primary policy tool states rely on to transform their energy system.” Oregon adopted an RPS in 2007 (SB 838), directing the largest utilities to provide 25% of retail sales from renewable sources by 2025. In 2016, the Coal to Clean Act (SB 1547) updated the RPS targets to reach 50% renewables in electric retail sales by 2040.

Standards and set goals for improved energy efficiency in each building code development cycle.

- This package was informed by the **recommendations** of the 2022 legislative Resilient, Efficient Buildings Task Force³⁶. One recommendation that did not show up in subsequent legislation was on “modifying Energy Trust’s mission”, including to prioritize emissions reductions and equity.
- Oregon building energy codes are updated on a regular basis by the Building Codes Division. Codes related to energy include the Oregon Energy Efficiency Specialty Code (OEESC, commercial code), the Oregon Residential Specialty Code (ORSC) and Oregon Reach Code (REACH code, an optional residential or commercial code to increase energy efficiency of buildings).
 - Two of Governor Brown’s executive orders direct the Building Codes Division to attain greater levels of efficiency and emissions reduction in building codes. Executive Order 17-20 (EO 17-20) mandated the acceleration of building efficiency in Oregon to support the reduction of GHG emissions and address climate change. EO 20-04 also contained directions to issue performance-based measures to further EO 17-20’s intent. EO 20-04 requires that the Building Codes Division, through its advisory boards, “to adopt building energy efficiency goals for 2030, for new residential and commercial construction, representing a 60 percent reduction in new building annual site consumption of energy from the adopted 2006 Oregon codes.”
 - HB 3409 (2023) directed the Building Codes Division to set goals for improved energy efficiency in each building code development cycle.
- Building electrification and transportation electrification policies are seen in the statewide goal to install 500,000 heat pumps by 2030 (HB 3409; 2023) and other laws enabling and incentivizing electric vehicles, electric vehicle charging infrastructure and electric utility investment in transportation electrification.
- **Affordability**
 - In tandem with the passage of HB 2021 was the passage of the Energy Affordability Act (HB 2475; 2021). This law allows the OPUC to consider differential energy burdens for low-income customers and other inequities when setting rates and reduce “energy burdens through bill reduction measures or programs that may include, but need not be limited to, demand response or weatherization”. The bill also expands the organizations that can qualify for financial assistance, or intervenor³⁷ funding, to enable their participation in regulatory proceedings. The organizations newly qualifying include those who represent low-income customers and customers from environmental justice communities

³⁶ The 2022 legislative session created the Resilient, Efficient Buildings (REBuild) Task Force (SB 1518; 2022) to identify and evaluate building codes and building decarbonization that enable the state to meet GHG reduction goals (set in statute in ORS 468A.205), while maximizing benefits (increasing energy efficiency, improving resilience to climate change, improving public health and air quality, reducing energy burden, among others).

³⁷ Intervenor funding is available in non-complaint contested cases, rulemakings, and non-contested dockets that affect the applicable utility, and its low-income residential customers and environmental justice communities. Additionally, named, non-docketed Commission led processes addressing issues that affect the applicable utility and its low-income residential customers and environmental justice communities will be eligible under the agreements.

- The effect of these provisions will be to increase the diversity of perspectives in OPUC decision-making processes, and address current and future energy burdens through rate design, tailored programs and other measures.
- Equity, Environmental Justice
 - While EO 20-04 recognized the need to consider the intersection of equity, energy and climate, HB 2021 prioritized such intersections in statute by giving a definition to environmental justice³⁸ and environmental justice communities³⁹ – listing the communities that classified under this label while directing the OPUC and the electric utilities to not only meet clean energy targets but to do it in a way that includes the voices of environmental justice communities, minimizes burdens and maximizes benefits. To aid the utilities in meeting their emissions goals in an equitable manner, the law directed them to each create Community Benefits and Impacts Advisory Groups. The membership must include representatives for environmental justice communities and low-income ratepayers.
 - The Public Purpose Charge Modernization law (HB 3141; 2021) also recognized this intersection by directing 25% of the funds collected through the PPC to low- and moderate-income projects and excluding this from above-market cost requirements. HB 3141 also embedded equity in the Energy Trust’s mission and vision by directing the OPUC to establish and continuously update equity metrics to assess, address and create accountability for environmental justice in the investment and expenditure of funds collected from electric and natural gas utilities. This translated into the development of mandatory equity metrics for Energy Trust.

Climate Change Adaptation and Response Policies

- Utility-system resiliency
 - HB 2021 defined energy resilience and declared that it is policy of the state that non-emitting electricity generation must, to the extent practicable, deliver additional benefits to communities, create and sustain living wage jobs, promote workforce equity and increase energy security and resiliency. For this reason, Clean Energy Plans must include risk-based examination of resiliency opportunities that includes costs, consequences, outcomes and benefits based on reasonable and prudent industry resiliency standards and guidelines established by the OPUC.
 - Energy resilience was included as one of the minimum considerations to be considered by ODOE when designing the state energy strategy (HB 3630; 2023).
- Supporting communities in preparing and responding to climate change
 - As many communities across the state have faced disasters and continue their efforts to recover from wildfires and extreme weather, HB 3409 (Climate Resilience Package) created a grant program at the Department of Human Services to support resilience hubs and networks to serve community needs,

³⁸ Defined as “equal protection from environmental and health hazards and meaningful public participation in decisions that affect the environment in which people live, work, learn, practice spirituality and play.”

³⁹ Defined as “communities of color, communities experiencing lower incomes, tribal communities, rural communities, coastal communities, communities with limited infrastructure and other communities traditionally underrepresented in public processes and adversely harmed by environmental and health hazards, including seniors, youth and persons with disabilities.”

facilitate gathering and communication as well as making resources available to prepare, respond and recover from a disruption or crisis in the community. These hubs were defined broadly to allow for day-to-day support, development of community ties and emergency response. The eligible entities for the grants were also defined broadly to offer flexibility at the local level.

- The 2020 Labor Day fires burned more than 5,000 structures and over 1 million acres. The legislature created and allocated \$10.8 million to a Wildfire Rebuilding program that supports rebuilding efforts for residential and commercial buildings destroyed by these fires and that are designed to be energy-efficient to allow for more comfortable and affordable buildings in the long term ([HB 5006](#); 2021). Complementing this effort are Energy Trust’s Rebuilding from Wildfires offers⁴⁰ and Oregon Building Codes Division’s Fire Hardening Grant Program⁴¹.
- Irrigation modernization projects updates aging and inefficiently irrigation systems, which are impacted by drought, climate change and wildfires. In 2023, the Oregon legislature allocated \$50 million to the Oregon Water Resources Department for irrigation district modernization projects. The grant program complements the Energy Trust’s Irrigation Modernization Program. Modernized irrigation systems allow for upgrades to efficient irrigation equipment, water savings due to reduced losses, hydropower generation which may help pay the costs of the upgrade project, has the potential to support local resilience if designed is included for this end and supports fish and wildlife habitat maintenance.
- Health+Energy Nexus
 - Right to Cooling Law ([SB 1536](#); 2022) was in response to the extreme heat events in summer 2021 (“heat dome”). The law expands access to cooling for Oregonians by ensuring tenants rights to portable cooling devices in the summer and creating programs that distribute air conditioners by Oregon Health Authority, funds heat pump grant programs at ODOE, and funds landlord-provided cooling rooms and emergency response centers for use during hot, cold and smoke events.
 - The Healthy Homes Act ([HB 2842](#); 2021) addressed the need to fund repairs and rehabilitation of low-income households and recognized the intersection of housing, health and energy needs by defining qualifying repairs and rehabilitation actions to include maximization of energy efficiency, extension of residence usable life, improving health and safety of occupants, abatement of radon, lead, mold and mildew, among other investments to improve the safety of homes and wellbeing of occupants.

Clean Energy, Decarbonization and Environmental Justice OPUC Rulemakings

In response to EO 20-04

- UM 2005 investigated the structure to plan for the electric distribution system defined as medium voltage sub-transmission lines, substations, feeders and other equipment that moves electricity from the transmission system to the point of consumption. The intention was to explore non-traditional methods to alleviate constraints on the

⁴⁰ Energy Trust. Rebuilding from Wildfires: [Rebuilding from Wildfires - Energy Trust of Oregon](#)

⁴¹ OBCD. Fire Hardening Grant Program: [Building Codes Division : Fire Hardening Grant Program : State of Oregon](#)

distribution system. The results of the investigation culminated in electric utilities submitting Distribution System Plans that outline the forecasted loads and load growth on their distribution systems and how the utilities might meet these needs with distributed energy resources such as efficiency, demand response, small-scale renewables, batteries and electric vehicles.

- UM 2178 investigated the potential impacts of the Climate Protection Program (CPP) implementation, modeling compliance pathways to represent innovation (green hydrogen and synthetic gas) and electrification. A main takeaway from this investigation is the uncertainty about risks, costs, commercial availability of resources to fulfill compliance pathways modeled.
 - The resulting OPUC [Natural Gas Fact Finding \(NGFF\) report](#) identified the critical role of Energy Trust in supporting customers with limited options as well as the role of efficiency in reducing the need for pipe extensions that would carry added costs of emissions under the CPP. The NGFF also flagged a potential impact of the CPP on the calculation of avoided costs for natural gas efficiency programs.
 - The report leaves open questions regarding feasibility and barriers of compliance (decarbonization, fuel switching) as well as how to address noncompliance (dollar amount per noncompliant metric ton) but it clarifies the central role of demand reduction and energy efficiency in planning for compliance with constrained compliance pathways (technological, risk-, cost- and equity-related constraints).

In response to HB 2021

- [UM 2225](#) is one of the key dockets in the implementation of HB 2021. This docket defined procedural and substantive issues relating to the development of Clean Energy Plans (CEPs), including the implementation of the community lens and other community impact considerations in utility planning processes. This docket required utilities to file CEPs with their IRPs and to be consistent with IRP Analysis and Action Plans as well as describing how both planning documents meet HB 2021; it defined the primary goal of IRP/CEP filings to be the selection of a portfolio that best balances costs, risk, uncertainties, pace of emissions reduction and community impacts and benefits while requiring accessibility of language; it also defined the issues that will be weighed when acknowledging a CEP. UM 2225 served to clarify that the emissions targets set out in HB 2021 are legally binding on utilities and that they are only subject to the exceptions outlined in that law.

In response to HB 2475

- [UM 2211](#) is the umbrella docket for differential rate issues and programs under HB 2475. UM 2211 is the docket where the OPUC, utilities and stakeholders have worked on the development of income-qualified bill discount programs. This docket also establishes the standards for intervenor funding agreements, listed organizations and proceedings (non-compliant contested cases, rulemakings, non-contested dockets affecting applicable utilities and their low-income residential customer and environmental justice communities as well as IRP dockets) eligible for this funding and approved the allocation among utilities (legislatively capped at \$500,000/year across all utilities).

Utility planning to meet emissions regulation

- With the advent of HB 2021 and CPP implementation discussions, five investor-owned utilities in the state have had to reframe their approach to resource planning to account

for emissions reductions and community impacts as integral parts of portfolio selection. Each utility has an assigned resource planning docket. All the utilities have filed an initial IRP or IRP/CEP with varying degrees of success in obtaining OPUC commission acknowledgment.

- PGE's IRP/CEP ([LC 80](#))
- Pacific Power's IRP/CEP ([LC 82](#))
- NW Natural's IRP ([LC 79](#))
- Cascade Natural Gas' IRP ([LC 83](#))
- Avista's IRP ([LC 81](#))

Energy Trust - Implementing HB 3141 while accelerating energy efficiency

- The Public Purpose Charge Modernization law ([HB 3141](#); 2021) reiterated the role of energy efficiency in reducing energy bills, protecting public health and safety, resulting in environmental benefits and reducing reliance in imported fuels. The law removed all ratepayer funding for energy efficiency into standard OPUC ratemaking processes, effectively removed the sunset on the electric efficiency investments and continued to direct utilities to pursue all cost-effective energy efficiency resources.
- HB 3141 added equity considerations – requiring that at least 25% of the renewable energy public purpose charge support activities, resources and technologies that serve low- and moderate-income customers, even if these technologies do not have an above-market cost. HB 3141 also increased annual electric utility funding for OHCS low-income programs.
- HB 3141 updated the governing principles of Energy Trust by directing the OPUC to establish equity metrics that enable accountability in the expenditure and investment of ratepayer funds collected for energy efficiency and renewable energy. As a result of this provision, [UM 1158](#) was launched by the OPUC to establish the equity metrics against which Energy Trust. The inaugural equity metrics:
 - 1) Increase support to nonprofit organizations that serve environmental justice communities (incentives, training, funding for energy efficiency updates, solar or solar + storage projects)
 - 2) Increase funding to support targeted outreach to environmental justice communities
 - 3) Create and launch new and expanded low-cost and no-cost offers to reduce energy burdens
 - 4) Ensure solar and solar + storage projects support low- and moderate-income residents' resiliency and reduce energy burden

Long Term Energy-Efficiency Forecasting Board Briefing Paper

Prepared by Spencer Moersfelder and Michael Colgrove
January 2024

Energy Trust is the administrator of Oregon energy-efficiency programs for PGE, Pacific Power, NW Natural, Cascade Natural Gas and Avista and Washington energy-efficiency programs for NW Natural. For these funding utility partners, Energy Trust forecasts potential future electricity and gas savings from efficiency, which can be used for budgeting, annual performance tracking, identifying long-term savings potential and informing utility Integrated Resource Plans (IRP). Efficiency forecasting through utility IRP processes is a major determinant of Energy Trust's goals and budgets.

This paper describes how Energy Trust develops the 20-year forecasts utilities use for their IRPs and how it relates to Energy Trust's budgets, goals and program planning. It also explores how this process might be impacted by the state's decarbonization goals and timelines and what that means for Energy Trust.

Purpose of the 20-Year Forecast

Energy Trust typically provides multiyear forecasts of potential energy-efficiency savings (both annual savings and savings during peak periods) and costs to utilities as part of the utility IRP process. Energy Trust currently provides some form of forecast for PGE, Pacific Power, NW Natural, NW Natural firm and interruptible, Cascade Natural Gas and Avista. These forecasts are part of the utilities' IRPs, which are planning tools the utilities use to assess the resources that will be necessary to provide reliable service to their customers based on forecasted demand and loads on their systems over a determined timeframe. The utility IRP model identifies the preferred supply (generation) or demand side resource (e.g., energy efficiency) to meet those loads. For additional information, the [Pacific Power website](#) provides an overview of Pacific Power's IRP process, which is generally applicable to other utilities.

For PGE, NW Natural, Cascade Natural Gas and Avista, Energy Trust has historically provided a 20-year potential savings forecast that quantifies the available, cost-effective energy-efficiency potential to inform and reduce a utility's load forecast over the IRP period so they can accurately plan their generation mix to meet their customers' projected loads.¹ Pacific Power's process is slightly different. Energy Trust provides Pacific Power with a forecast of achievable energy-efficiency potential and its model selects the resources that are most economically viable for their utility system.

Energy Trust typically works with utilities to provide updated efficiency forecasts about every two years, coincident with the utilities' obligation to provide a refreshed IRP to the Oregon Public Utility Commission (OPUC). Energy Trust's Planning team regularly renews the model using the most current information available, including the most recent market data, program data and measure level input data (e.g., savings, costs and efficiency saturations).

20-Year Forecasting Process

Energy Trust uses a Resource Assessment model in Analytica² that was developed by a consultant to produce 20-year energy efficiency forecasts for our funding utilities' IRPs. It combines large, complex datasets in a relatively simple user interface and simplifies the process to model energy efficiency potential for each utility.

The model is used to identify total cost-effective 20-year efficiency potential, but it does not project when and how the resource will be acquired. Instead, the timing of the acquisition of the 20-year resource is a step that is completed exogenous to the model and is based on iterations with program staff.

Resource Assessment Model Methodology

While there are a number of variables and inputs that must be managed within the model, the Resource Assessment model is essentially one large multiplication matrix where individual measure-level data and building stock data are the base inputs.

¹ Renewable energy is considered in electric IRPs. However, Energy Trust's work in this area is considered as part of a larger portfolio of available renewable resources and is generally not singled out. In general, renewable generation potential is much larger than the financial resources available to Energy Trust, and the major determinants of market deployment include government tax and incentive policy, policy regarding other benefits of projects such as water conservation, grid management developments, innovation in program delivery, and rapid changes in technology and product cost. This creates a very different environment for forecasting.

² <http://www.lumina.com/why-analytica/what-is-analytica1/>

There are several other inputs necessary for this model, both at the measure level and utility level, often referred to as Global inputs. Below is an overview of some of these inputs:

- Utility or Global inputs
 - Customer counts by customer type
 - Avoided costs, line losses and discount rates
 - Demographic statistics
 - Heating and hot water fuel splits
 - Energy use intensity for commercial
- Measure level assumptions
 - Savings, costs, operations and maintenance costs and savings, measure life, load profile, end use, baseline information, measure densities³, baseline vs. efficient saturations, technical applicability, achievability rates
- Emerging technologies
 - The model includes a suite of emerging technologies not currently offered by Energy Trust programs but that offer the potential for significant savings in the future if they become viable in the market
 - Emerging technologies are subject to a risk factor that functionally reduces forecast savings based on market risk, technical risk and data source risk

There are also several assumptions embedded in the model:

- Cost-effective energy savings potential may come from savings claimed by Energy Trust programs or codes and standards efforts resulting in savings that Energy Trust does not claim.
- Federal and state equipment standards, appliance standards, code changes and the forecasted impact of regional market transformation efforts are factored in, such as assumptions about transforming retail lighting markets via regional efforts and federal lighting manufacturing efficiency standards.
- The model assumes utilization of energy use intensities per square foot in the commercial sector from regional surveys such as NEEA's Commercial Building Stock Assessments. This data is used to translate utility load forecasts to estimates of building square footage, which is the typical unit for efficiency resource modeling in the commercial sector.
- Energy Trust models market transformation savings in the model through two channels: new construction and replace-on-burnout measures. These market transformation savings leverage forecasts of new construction starts and baseline equipment turnover that are subject to new codes and standards or efficient market transformation. NEEA and Energy Trust split market transformation savings in different proportions based on

³ Measure densities are defined as the number of units per the scaling basis of the sector. A scaling basis is how the measures are scaled from the measure level to a utilities service territory – it is the link between measure data and utility data. For example, in the residential sector, the scaling basis is almost always 'number of homes' so that measure level data can be scaled up based on the number of homes that a utility serves. However, most measure savings are given 'per unit' such as per light bulb and in order to properly scale the savings, the average number of light bulbs per home is a necessary measure level data point for the model. This average number of measure units per the scaling basis (homes in this case) is the 'density' of a measure. For example: Measure is an LED bulb, there are an average of 35 screw-in lighting sockets per Single Family home (the density), and a utility serves 500,000 Single family customers resulting in 17.5 million total screw in lighting sockets in that utility's service territory.

fuel or sector; savings claimed by NEEA are included in the efficiency forecast as a non-Energy Trust line item so that utilities can appropriately decrement their load forecasts, while savings Energy Trust will claim are included in the appropriate sector/end-use totals.

Model Outputs and Potential Savings Projections

Energy Trust’s Resource Assessment model combines these inputs and assumptions to assess savings opportunities at the measure level. The model then scales measure level savings to a utility’s service area using the utility and Global inputs. Different utilities require different modeling outputs from Energy Trust based on the way their own modeling uses Energy Trust inputs.

Not Technically Feasible	Technical Potential			
Not Technically Feasible	Market Barriers	Achievable Potential		
Not Technically Feasible	Market Barriers	Not Cost Effective	Cost Effective Potential	
Not Technically Feasible	Market Barriers	Not Cost Effective	Program Design, Market Penetration	Final Savings Projection

Figure 1: Types of energy savings potential to come out of Resource Assessment modeling (the relative size of these boxes is not intended to reflect actual proportions)

Savings outputs fall into several categories:

- **Not Technically Feasible:** This includes measures that are not a natural fit in some locations (e.g., a gas boiler in a commercial building in an area that is not served by gas).
- **Technical Potential:** This is the total savings potential associated with measures that can technically be installed, regardless of market barriers or cost.
- **Market Barriers:** This represents an amount of technical potential that cannot be acquired because of various conditions in the market. Energy Trust assumes that a certain portion of customers will never install efficiency measures regardless of how Energy Trust attempts to reach these customers.
- **Achievable Potential:** This is the portion of technical savings potential Energy Trust can acquire if the customer can be successfully reached and influenced. To quantify this, Energy Trust multiplies Technical Potential by measure level achievability factors consistent with what the Power Council used in the 2021 Northwest Power Plan.
- **Not Cost-Effective:** The savings within the Achievable Potential are subjected to a screening using the Total Resource Cost (TRC) test, which compares the cost of an efficiency measure to its financial benefits, including the avoided costs that are specific to the utility conducting the IRP and quantifiable non-energy benefits. Some of these savings are deemed Not Cost-Effective because they do not pass the TRC test.
- **Cost-Effective Potential:** This is the portion of Achievable Potential that has passed the TRC test. In cases where two cost-effective measures can be installed in the same setting, the model chooses the most cost-effective measure. In addition, in some cases

Energy Trust has been granted exceptions by the OPUC to offer measures that are not cost-effective; the model has an override feature to include these measures in the Cost-Effective Potential. PGE, NW Natural, Cascade Natural Gas and Avista historically receive from Energy Trust and then deduct these savings from their load forecasts for IRP modeling.

- Program Design, Market Penetration: This is a subset of the cost-effective potential that cannot be acquired under current program rules and because of lost opportunities. There are some cost-effective, measure level savings that cannot be acquired because of program level cost-effectiveness requirements that factor in the indirect costs associated with Energy Trust's administrative and staffing costs. Additionally, because of measure level Utility Cost Test (UCT) requirements, some savings cannot be acquired because the incentive caps based on the UCT are insufficient to motivate customers to adopt those measures. This category also includes lost opportunities that cannot be captured in the earlier years of the forecast (see Final Savings Projections below).
- Final Savings Projections, also referred to as Deployed Savings Projections: This consists of cost-effective savings that have been deployed using market penetration curves (also referred to as ramp rates) that reflect Energy Trust's best assumptions about what is achievable over time. The model factors in deployment rates calibrated to Northwest Power and Conservation Council's 20-year total deployments from its 2021 Power Plan. These deployments include the following assumptions:
 - The model assumes 100% acquisition of cost-effective retrofit savings potential within the 20-year period in service areas where Energy Trust has had a sustained active presence unless the representative measures are notoriously hard to reach (e.g., insulation). Retrofit potential is theoretically a fixed resource that can be acquired at any point in time.
 - Replace-on-burnout (failed equipment) and new construction measures, often referred to as lost opportunity measures, have a fixed number of efficiency opportunities each year. In earlier years in the forecast period, it is typically assumed Energy Trust will acquire less than 100% of this resource.⁴ However, it is assumed that over time, as Energy Trust influences increased awareness and availability of efficiency options, the penetration of efficient measures installed in these instances will increase. In service areas where Energy Trust has had an active and sustained presence, the model assumes that by the end of the 20-year period, annual acquisition rates will approach 100%, regardless of whether savings come through programs or codes and standards.

Creating the Acquisition Timing Curve for the Deployed Savings Projections

Energy Trust uses different methods for near-term and long-term forecasting, resulting in a forecast that combines insights from the Planning group, Programs and model outputs. Planning staff works with programs to generate a five-year forecast and juxtaposes this forecast with the 20-year cost-effective potential from the model to generate the final deployed forecast.

⁴ There have been instances where the savings from actual observed new construction starts in the market exceed the total forecasted cost-effective new construction resource output by the model. New construction forecasts in the resource assessment model are dependent on utility provided forecasts, which often do not line up exactly with eventual observed market conditions. This can result in higher deployed new construction savings than are perceived to be possible based on the model outputs. This circumstance represents inherent limits of the modeling process and illustrates the impact of input assumptions on modeling outputs.

The final deployed 20-year forecast consists of results for the following time periods:

- The first two years are based on the most recent budget exercise with some adjustments. This is the most comprehensive and detailed assessment of what savings can be acquired by individual programs through their go-to-market mechanisms and offers.
- Years three to five are based on projections of what programs expect based on market and program trends. These forecasts are compared to the overall cost-effective potential that results from the forecast model and are sometimes adjusted if they do not otherwise seem to fit logically into the larger 20-year pattern that emerges in the deployment.
- Longer-term forecasts are projected using curves that start at the end of the five-year projection and lead to acquiring the largest feasible share of the resource at the end of 20 years. Adjustments are made to reflect quirks in the model or data that appear to produce implausible results.

Pacific Power's IRP modeling process has historically worked differently than the other utilities. Energy Trust provides Pacific Power with measure level savings potential data and the respective levelized costs that make up the achievable potential for each year of the IRP forecast period. Pacific Power's IRP model economically competes the potential energy-efficiency demand side measures with supply side resources, such as generation, transmission, and distribution, and selects efficiency resources for each year that are cost competitive with supply side resources. Energy Trust works with Pacific Power to calibrate the levelized cost of the efficiency resource such that Pacific Power's model will select energy-efficiency resources and levels consistent with what Energy Trust programs anticipate they can achieve in one to two years.

For illustrative purposes, the total deployed cost-effective energy efficiency potential embodied in the electric and gas utilities' most recent IRPs is shown in Figures 2 and 3 below.

To meet utility IRP schedules, this forecasting work often happens out of sync with Energy Trust's annual budget cycle. The forecast for the first five years reflects our best attempt to anticipate what can be achieved without always having a refreshed review of the early years that emerges from the budget process.

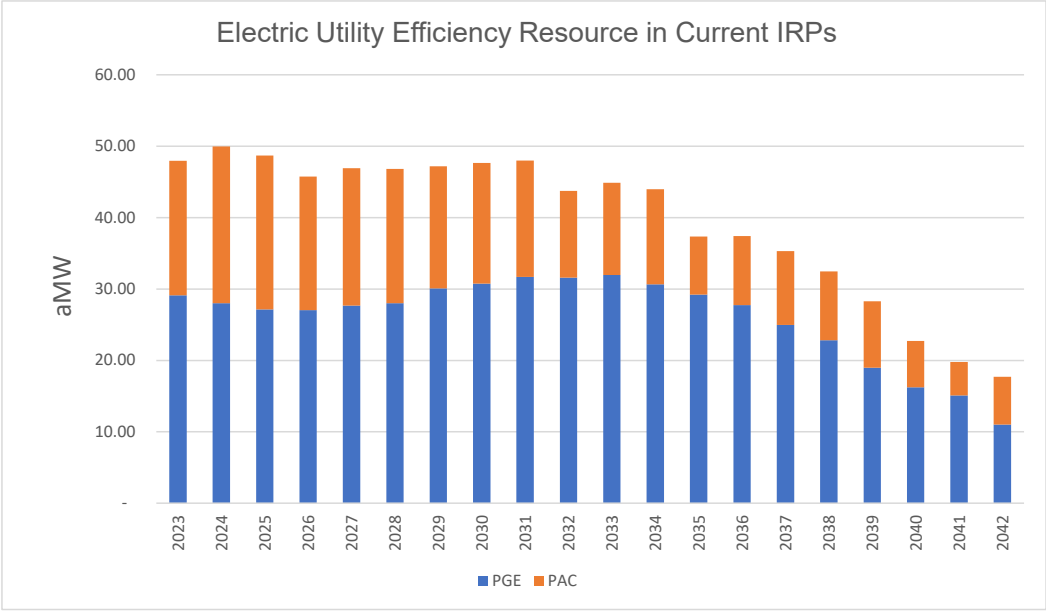


Figure 2: Combined electric utility efficiency resource in current IRPs

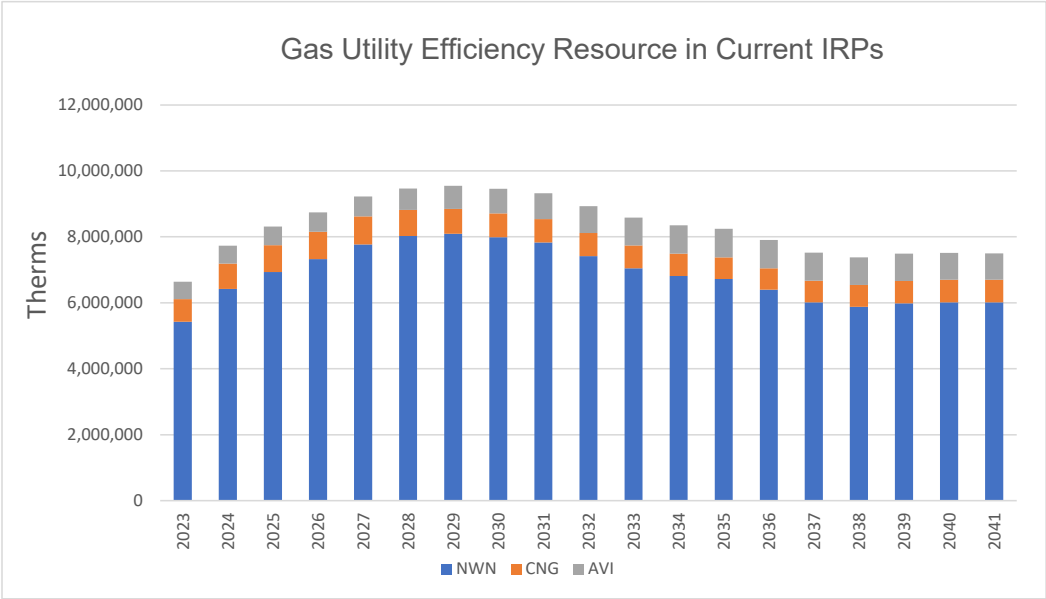


Figure 3: Combined gas utility efficiency resource in current IRPs

A Process of Continuous Improvement

Resource Assessment modeling is a work in progress. The model itself is a living instrument subject to constant improvements to all measure level and utility level inputs and assumptions, such as savings, costs and market data. It is a significant effort for Energy Trust staff to keep the model’s measure assumptions current. This is an iterative and expanding process as the number of measures Energy Trust offers continues to grow and as more emerging technologies come to market.

Even with ongoing improvements to the modeling process, there are challenges that contribute to forecast uncertainty. Despite best attempts to make forecasts accurate, actual results are

subject to a multitude of unpredictable factors. Energy Trust will continue to strive to enhance the accuracy of forecasts by looking for creative approaches to overcome these unpredictable challenges:

- Difficult-to-predict emerging policies, economic conditions and weather
- Uncertain utility load and building forecasts
- Difficult-to-predict pace of market uptake for some measures
- Unforeseeable emerging technologies and solutions
- Industrial facilities that tend to have highly customized efficiency projects that are difficult to generalize in our Resource Assessment model

What This Means for Energy Trust

Energy Trust expects to use the energy-efficiency modeling process in 2024 to determine the total amount of efficiency potential available for utility IRPs and for setting 2030 savings targets in conjunction with the major milestones established in House Bill 2021⁵ and the state's Climate Protection Program.⁶ The model will forecast how much energy efficiency is available, but it won't forecast when the efficiency resource will be achieved. Energy Trust, the utilities and OPUC staff will need to work together to take the potential that is output from the modeling process and identify when Energy Trust will acquire the available energy efficiency potential in pursuit of the state's decarbonization goals and at what cost. This may result in a forecast that shows accelerated acquisition of the resource that is available.

Figure 4 below illustrates this concept by taking the current electric forecast represented in Figure 3 above and redistributing savings to represent an accelerated rate of acquisition. Energy Trust can accelerate savings acquisition by pursuing more retrofit savings sooner. Similarly, Energy Trust can accelerate savings acquisition by increasing efforts to increase market penetration for lost opportunity measures earlier. The model includes incremental measure cost data for cost-effectiveness screening and this information can be used as a reference point to estimate incentives and program delivery costs associated with acquiring related savings.

⁵ HB 2021 requires electric utilities to reduce their carbon emissions by 80% by 2030, 90% by 2035 and 100% by 2040. <https://olis.oregonlegislature.gov/liz/2021R1/Measures/Overview/HB2021#:~:text=Catchline%2FSummary%3A,baseline%20emissions%20levels%20by%202040>

⁶ The Department of Environmental Quality's *Climate Protection Program* requires covered entities, including gas utilities, to reduce the carbon content of their product by 50% by 2035 and 90% by 2050. <https://www.oregon.gov/deq/ghgp/cpp/Pages/default.aspx>

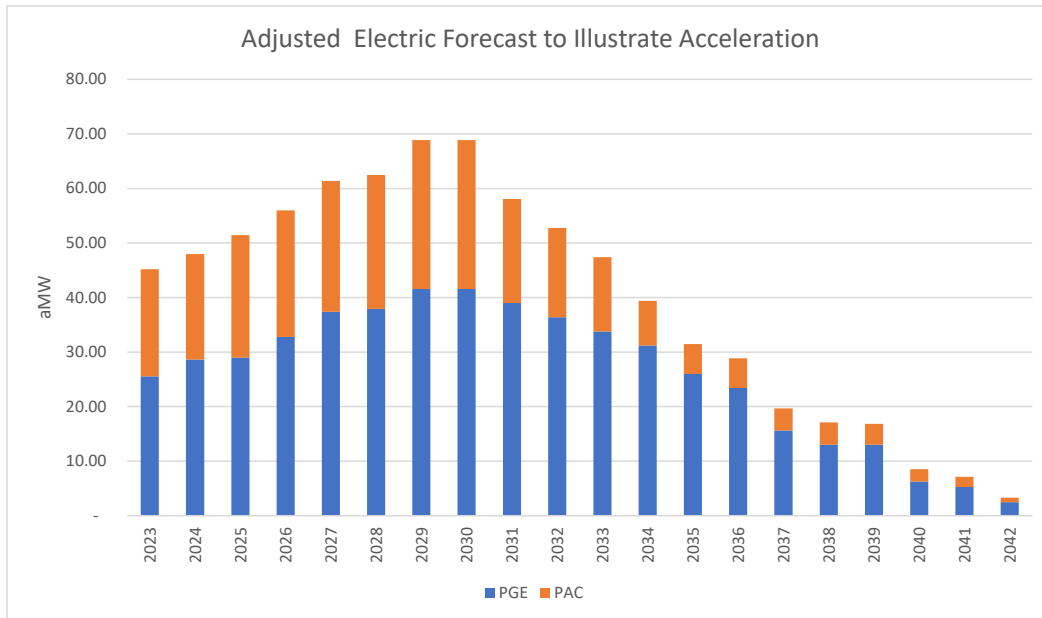


Figure 4: Combined electric utility efficiency resource in current IRPs adjusted to illustrate acceleration

The work to set a savings trajectory toward 2030 may need to be done outside of regular IRP cycles. If this happens, it will certainly inform the development of each IRP, Clean Energy Plan (for the electric utilities) or Climate Protection Program compliance plan (for the gas utilities). This framework with its focus on specific milestones will have repercussions for Energy Trust’s historical processes, namely our strategic planning, multiyear planning, and financial planning and budgeting processes.

Strategic Planning

Energy Trust’s Strategic Plan defines the direction and significant strategies the organization will adopt to realize its future role of value. The next Strategic Plan will cover 2025 to 2030 to align with the utilities’ first decarbonization milestone. In past strategic plans, the board has included explicit efficiency goals while the most recent plan relied on the annual budgeting process to identify those goals. With the complexities involved in determining energy efficiency’s contribution to 2030 decarbonization goals, the board might consider reflecting the *process* of establishing that contribution in the next Strategic Plan, rather than including a specific goal. The timing of finalizing that contribution level is unlikely to align with the development of the Strategic Plan and will require significant engagement with utilities and the OPUC in 2024 and 2025. Even when an initial estimate of this contribution level is established, it will likely be regularly revisited and updated to reflect evolving market realities.

In order to maximize acquisition of the cost-effective potential identified in Energy Trust’s models through 2030, Energy Trust will need to address non-traditional market barriers to ensure that potential is delivered by the market. Currently, there is insufficient capacity through the delivery infrastructure, primarily consisting of trade allies and a handful of community-based organizations, to acquire significant increases in cost-effective potential by 2030. Significant investments through Energy Trust and a number of other organizations – such as Oregon Department of Energy, Portland Clean Energy Community Benefits Fund, the Community Climate Investment (CCI) Entity and others – will be needed to increase the available workforce

and expand delivery infrastructure. While there will be significant funding⁷ available to increase demand among customers for energy efficiency, if there is not a similar increase in the market's ability to supply energy efficiency, the result will simply be longer waitlists, frustrated customers and a significant amount of unspent incentives.

Multiyear Planning

The purpose of adopting a multiyear framework is to enable Energy Trust to focus on cumulative, longer-term savings goals identified for 2030 and develop and implement strategies and tactics that span timeframes beyond a 12-month cycle. This approach removes the focus on achieving annual savings goals that can restrict the organization's ability to address market barriers related to the supply of energy efficiency, which are likely to require several years of investment to remedy.

A multiyear planning horizon also allows the implementation of programs that better align with customer capital improvement projects, which can be particularly beneficial to large commercial, industrial and agricultural customers. An ability to support projects that span multiple years may enable Energy Trust to motivate customers to do larger projects that achieve deeper savings. If customers know incentives will be available for these longer-term projects, they may be more willing to commit to them.

Financial Planning and Budgeting

Establishing longer-term savings goals through 2030 will also necessitate changes to Energy Trust's annual budgeting processes. In order to identify revenue needs, the organization will need to introduce financial planning into the multiyear planning process. Financial planning will involve the long-term modeling of expenditures through a top-down approach. Energy Trust's more detailed budgets, which are also likely to shift away from an annual timeframe to timeframes that better align with heating and cooling seasons or even to the adoption of a rolling budget, will be guided by the higher-level financial plan.

The advantages of a longer-term financial plan and the subsequent budgets that emerge from it include greater flexibility to manage programs. As noted above, being able to commit incentives to multiyear projects could result in greater engagement and increased savings by customers. The ability to immediately shift funding from one sector to another while not jeopardizing the longer-term sector goals would allow programs to support demand where it emerges and minimize lost opportunities. Similarly, being able to shift funding from later years to earlier years would allow programs to meet demand if it emerges sooner than expected or increase investments to scale infrastructure development where there are demonstrated achievements.

These advantages extend beyond flexible program management to potentially create a more stable and predictable revenue stream from ratepayers. Establishing a long-term financial plan that projects total expenditures through 2030 could translate into a single tariff adjustment at the beginning of the multiyear plan and essentially eliminate the annual cycle of increasing or decreasing tariffs to match more granular annual revenue needs. Such an approach would

⁷ The Federal Inflation Reduction Act allocates more than \$250 million over the next 10 years through various Oregon state agencies (<https://www.oregon.gov/energy/energy-oregon/Documents/2021-Federal-Funding-One-Pager.pdf>). The Climate Protection Program is anticipated to raise more than \$150 million per year from Community Climate Investment credits (<https://www.seedingjustice.org/occi-fund/>). The Portland Clean Energy Fund is projected to invest \$750 million over 5 years in a variety of priority areas including energy efficiency (<https://www.portland.gov/bps/cleanenergy/climate-investment/climate-investment-plan>).

require a willingness to build more extensive reserves in earlier years, but such reserves would be the source of flexibility described above.

While longer-term planning introduces greater uncertainty in the later years, a more stable revenue stream would help manage unforeseen opportunities and challenges as they arise. A longer-term plan, just like a strategic plan, would identify key assumptions driving its goals and include a monitoring process of those assumptions to determine if they are being realized or not. A longer-term plan would also include established interim milestone goals that would function as indicators of progress to the ultimate 2030 goals and provide early warnings if any efforts are failing to produce desired outcomes. Only in situations where the assumptions are grossly unrealized or where strategies and tactics are failing to produce results would Energy Trust need to revisit revenue projections with its utility partners.