2023 ANNUAL REPORT

to the Oregon Public Utility Commission and Energy Trust Board of Directors

ENERGY TRUST OF OREGON

April 15, 2024

EnergyTrust of Oregon

Financial highlights

- ✓ Revenues totaled **$214.6 million** for the year
- ✓ Expenditures totaled **$220.6 million** for the year
- ✓ Incentives delivered totaled **$121.6 million** for the year

Energy results

- ✓ Saved **53.1** average megawatts
- ✓ Saved **6.5 million** annual therms
- ✓ Generated **6.72** average megawatts
- ✓ Avoided **285,000** metric tons of carbon dioxide

Progress to organizational goals

- ✓ Save and generate energy, reduce customer costs: **Met goal**
- ✓ Leverage clean energy solutions: **Met goal**
- ✓ Prepare for change: **Met goal**

Contents

A glossary of program descriptions and key terms is available online at energytrust.org/reports

From the executive director

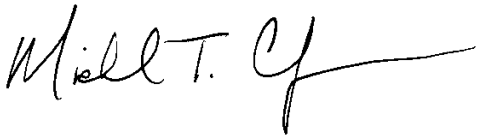
When Energy Trust was created more than 20 years ago, our mandate was clear: invest utility ratepayer funds to achieve cost-effective energy savings and reduce the cost of renewable energy projects. Since then, Oregon's energy landscape has evolved, its policies around climate change and decarbonization have advanced, and new funding opportunities that align with our work have emerged. At the same time, there is growing public awareness of systemic inequities and more stakeholders have begun working to highlight and address environmental justice and community needs related to energy. While our core work remains the same, Energy Trust is increasingly helping customers and community leaders navigate these changing dynamics and leverage our services to maximize the benefits of clean energy.

Our strong energy savings and generation results this year – we met or exceeded all of our efficiency and renewable generation goals and achieved our highest ever savings in Cascade Natural Gas and Avista service areas – reflect improvements we've made in recent years to better support customers amid economic and climate challenges. They also illustrate what we can accomplish together:

- **With our utility partners and the Oregon Public Utility Commission** to accelerate our energy savings and help the state meet its ambitious energy and building decarbonization goals. We're also working together to prioritize equity in this work, such as with the OPUC's equity performance measures introduced in 2023 (see page 20).
- **With community-based organizations** to engage customers we haven't reached in the past. These organizations are trusted leaders in their communities, and we rely on their expertise and connections, such as in delivering Community Partner Funding incentives to priority customers (see pages 10 and 13). We're also exploring how to support nonprofit community organizations looking at new ways to engage customers on energy-related topics, like through our Working Together Grants (see page 5).
- **With government agencies managing new funding offers** at the local, state and federal level, along with the on-the-ground organizations delivering these offers. For instance, we are working with many of the recipients of funding from the Portland Clean Energy Community Benefits Fund. This year, we worked with Portland city staff on a shared strategy for combining our funding to maximize benefits for eligible customers.
- **With our Trade Ally Network,** the backbone of the state's clean energy contractor infrastructure, along with trade and workforce development organizations. Together, we are supporting the next generation of clean energy workers who will turn all this potential into a reality. Our co-created mentorship and business development offers for diverse contractors was one area of investment in 2023 (see page 4).

Thank you to all who worked with us in 2023 to deliver these strong results and benefits for Oregon, including our customers, the OPUC, Portland General Electric, Pacific Power, NW Natural, Cascade Natural Gas, Avista, Northwest Energy Efficiency Alliance, Oregon Department of Energy, Oregon Housing and Community Services, trade ally contractors, cities, counties and community organizations.

Michael Colgrove



Executive Director

I Executive summary[1,2,3]

A. Progress to organizational goals

Energy Trust's 2023 organizational goals, established through the 2023 business plan, budget and action plan process with input from stakeholders and approved by the board of directors, reflect the organization's priorities for the year and guide staff decision-making regarding allocation of resources. For complete goal language, go to energytrust.org/budget.

GOAL 1

Customers will save and generate energy and reduce costs in 2023 and beyond as a result of Energy Trust's investments in their clean energy projects and upgrades.

HOW WE MEASURED PROGRESS: Met overall annual energy savings and generation goals; invested in trade ally diversity; created more low- and no-cost offers for customers with high energy burden; offered customers more information on fuel choice.

STATUS: Met goal

Energy Trust exceeded its electric savings, natural gas savings and renewable generation goals for the year. It also met or exceeded savings and generation goals in all utility service areas in Oregon. These results reflect improvements Energy Trust has made in recent years to better support customers amid lingering equipment and labor shortages and cost increases that started with the pandemic.

To expand access to our offers and benefits, Energy Trust is helping small businesses and minority- and women-owned contractor businesses be more successful in leveraging Energy Trust offers to serve customers. In 2023, Energy Trust led its second group of contractors in the Contractor Development Pathway, which provides educational resources, training and mentorship to Existing Building contractors. Staff launched a similar mentorship pathway for residential contractors in late 2023.

Staff designed two new no-cost program delivery pilots, building off a successful no-cost ductless heat pump pilot still underway. The new pilots will offer residential customers with low and moderate incomes no-cost heat pump water heaters and ducted heat pumps (see page 13).

To better support customers making fuel choice decisions, Energy Trust enhanced online content for residential customers on its do-it-yourself web section and incorporated more information in its annual Run Better marketing campaign to businesses.

Energy Trust enrolled 12 new community-based organizations in its Community Partner Funding program. Thirty qualifying partners delivered higher incentives to residential and multifamily customers with the goal of serving more customers of color, customers with low and moderate incomes and rural customers (see pages 10 and 13).

Approximately 285,000 metric tons of carbon dioxide have been avoided as a result of Energy Trust's energy savings and generation in 2023, the equivalent of removing 67,000 cars from Oregon roads for one year.

---

[1] The body of this report includes only activity funded by Oregon electric utility customers of Portland General Electric and Pacific Power and Oregon natural gas customers of NW Natural, Cascade Natural Gas and Avista through state law and regulatory agreements between the Oregon Public Utility Commission and each utility. For information on other activities, see Appendix 1.

[2] This report includes the best available data as of the date of submission.

[3] With agreement from utilities and OPUC staff, Energy Trust defines meeting annual goal as achieving 95% to 105% of goal.

As a result of Energy Trust's total 2023 investment of $225 million, customers will save $761 million over the lifetime of projects installed in 2023 based on anticipated energy savings and generation.[4]

GOAL 2

Utility partners, communities and policy implementers will achieve their objectives by leveraging Energy Trust's clean energy solutions that reduce greenhouse gas emissions, support grid management and deliver additional societal benefits.

HOW WE MEASURED PROGRESS: Launched service to Avista interruptible and gas transport customers; worked with utilities on distributed system planning efforts; developed tools to support community-based organizations active in clean energy.

STATUS: Met goal

Energy Trust worked with Avista to begin offering incentives to its interruptible and gas transport customers and help them achieve energy savings. These large commercial and industrial customers were previously ineligible for incentives; helping them save energy supports Avista's long-term decarbonization goals. Preparation work included engaging trade allies, outreach and call center staff and updating IT systems to track eligible transport customers.[5]

To support utilities' distributed system planning efforts, Energy Trust conducted targeted load management[6] feasibility studies for sites identified by Cascade Natural Gas and Avista. The studies showed the energy efficiency potential was not enough to address potential load constraints in those locations. However, this work helped to inform the potential for future opportunities to pair targeted efficiency with utility demand response to alleviate system constraints. Staff also began exploring targeted load management opportunities with PGE and Pacific Power.

Staff began developing a holistic, long-term strategy for increasing collaboration, capacity building and offer development with community-based organizations, built on important lessons learned to date, that will be finalized in 2024.

Energy Trust awarded the second and third rounds of its Working Together Grants, which offer nonprofits funding to pursue activities that help diverse customers and communities participate in Energy Trust programs. Twenty organizations across the state were awarded grants totaling $160,000 to support outreach, training, program development, grant writing and organizational capacity. Grantees in the first round reported their grant-funded activities reached about 4,000 customers with information about Energy Trust services and offers.

[4] See Table B in Appendix 1. This bill savings figure includes savings for NW Natural customers in Southwest Washington and factors in utility rate increases in 2024.
[5] Service to interruptible customers falls under Energy Trust's OPUC grant agreement and is reported in Section V. Savings from gas transport customers are funded outside the grant agreement and is reported in Appendix I. Outreach to some gas transport customers was paused at the request of Avista following an Oregon Court of Appeals ruling that invalidated the state's Climate Protection Program in late 2023.
[6] Targeted load management activities aim to change how and when customers use energy to reduce demand during peak hours and avoid disruptive and costly infrastructure upgrades.

GOAL 3

Customers and stakeholders will gain future benefits from Energy Trust's investments in preparing the organization for a more dynamic and complex energy industry.

HOW WE MEASURED PROGRESS: Operationalized the new communities and new initiatives sector; tracked and reported on racial diversity of job applicants and new hires; created an internal data strategy plan.

STATUS: Met goal

The communities and new initiatives sector was created in late 2022 to develop and manage customer offers that involve multiple programs and streamline support for communities and organizations seeking to implement comprehensive energy solutions. Throughout 2023, three employees were hired and six were moved from other Energy Trust teams to staff this sector, funded by a combination of ratepayer funds and external grants or contracts. Staff identified key collaborators and priority areas of work including workforce development, utility collaboration and pilot development; staff also took over management of existing projects that fall within the sector's parameters. (For more sector highlights, see page 15.)

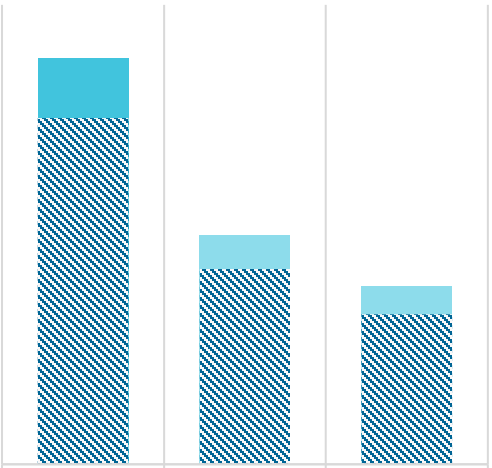
Energy Trust hired more people in 2023 than typical as the organization looked to build up capacity to meet growing demand for its programs. (The OPUC waived limits on staff cost increases for 2023, see page 19.) The human resources department was also restructured, and recruiting and on-boarding processes were redesigned to support hiring in a competitive marketing and better support new employees entering the organization.

Energy Trust sought to increase the racial diversity among job applicants and new hires. In 2023, 35% of applicants identified as Black, Indigenous and people of color, as did 18% of new hires.

Staff researched key elements for an organization-wide data strategy that governs existing datasets, new or enhanced approaches for using data, and future data needs, sources and processes. This project will continue in 2024 and is anticipated to lead to more efficient data management practices to better support analysis and reporting of key outcomes of Energy Trust work.

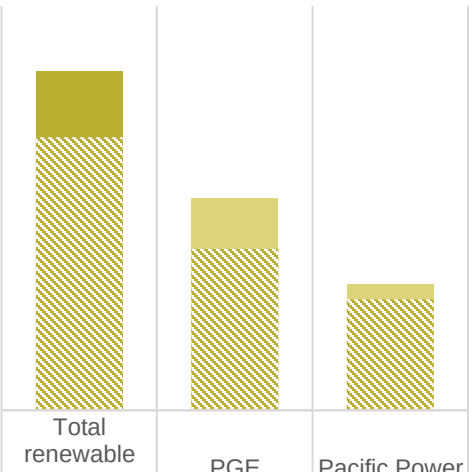
B. Results at a glance[7,8,9]

ELECTRIC SAVINGS



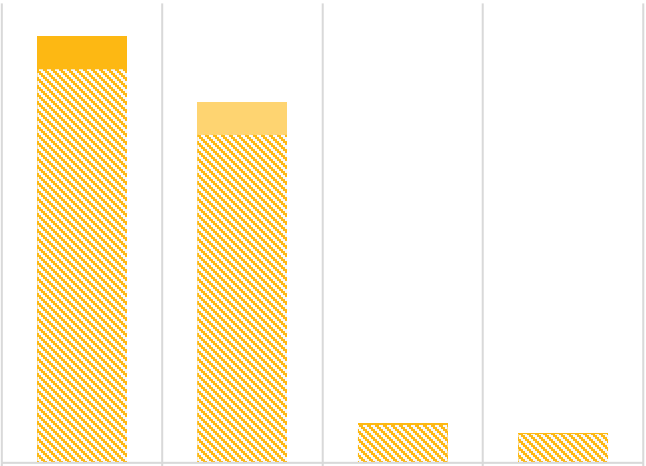
	Total electric savings	PGE	Pacific Power
Saved aMW	53.1	29.9	23.2
Goal aMW	45.2	25.5	19.6

GENERATION



	Total renewable electric generation	PGE	Pacific Power
Generated aMW	6.7	4.2	2.5
Goal aMW	5.4	3.2	2.2

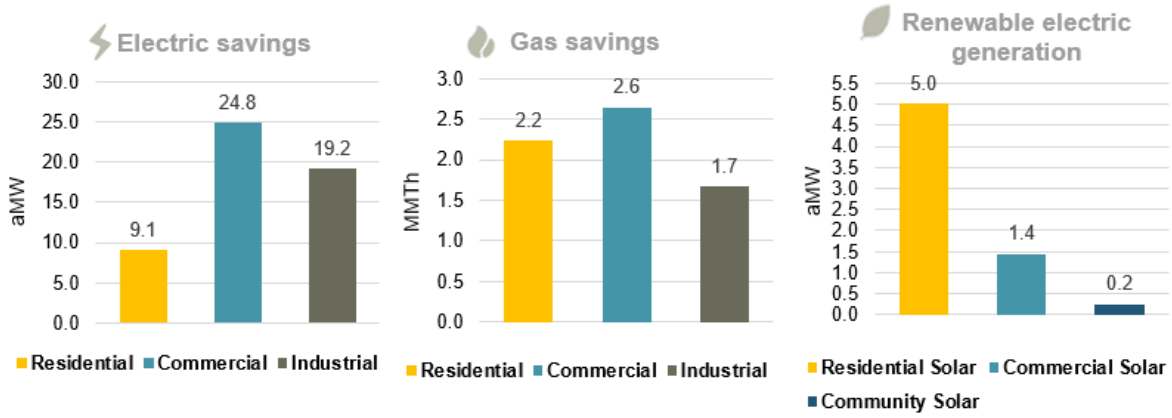
GAS SAVINGS



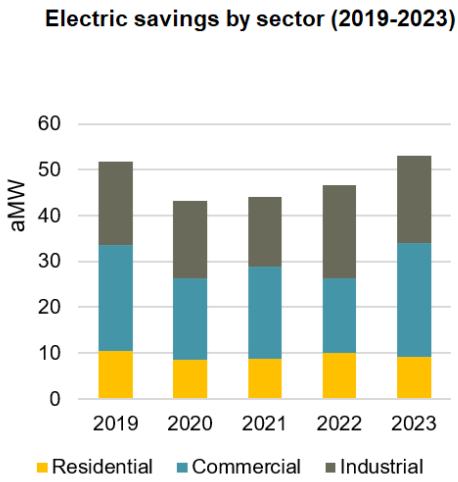
	Total gas savings	NW Natural	Cascade Natural Gas	Avista
Saved MMTh	6.5	5.5	0.6	0.45
Goal MMTh	6	5	0.58	0.44

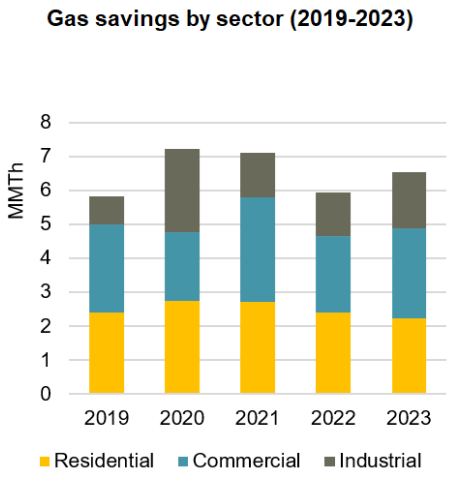
[7] This document reports gross savings.
[8] aMW indicates average megawatts, MMTh indicates million therms and MM is million.
[9] Historically, a significant portion of activity and savings occur in the fourth quarter of the year.

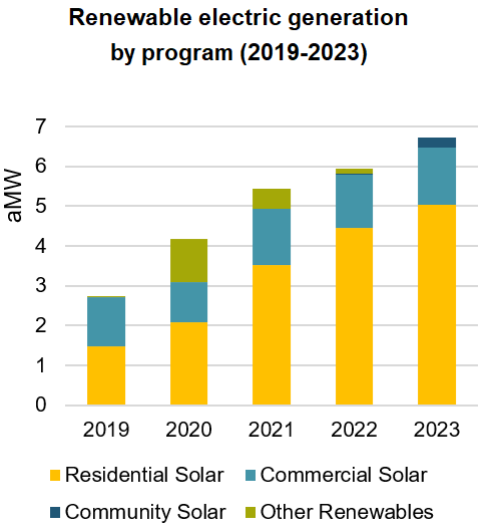
2023 savings and generation by sector



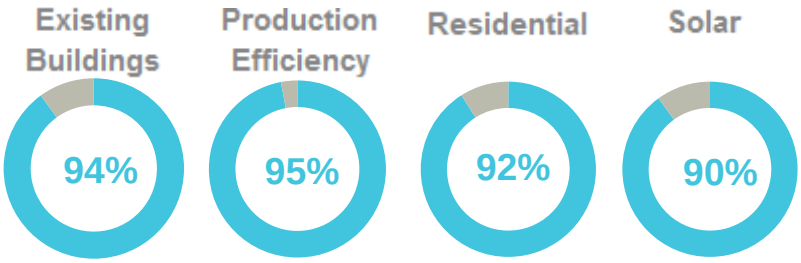
Savings and generation by sector over time



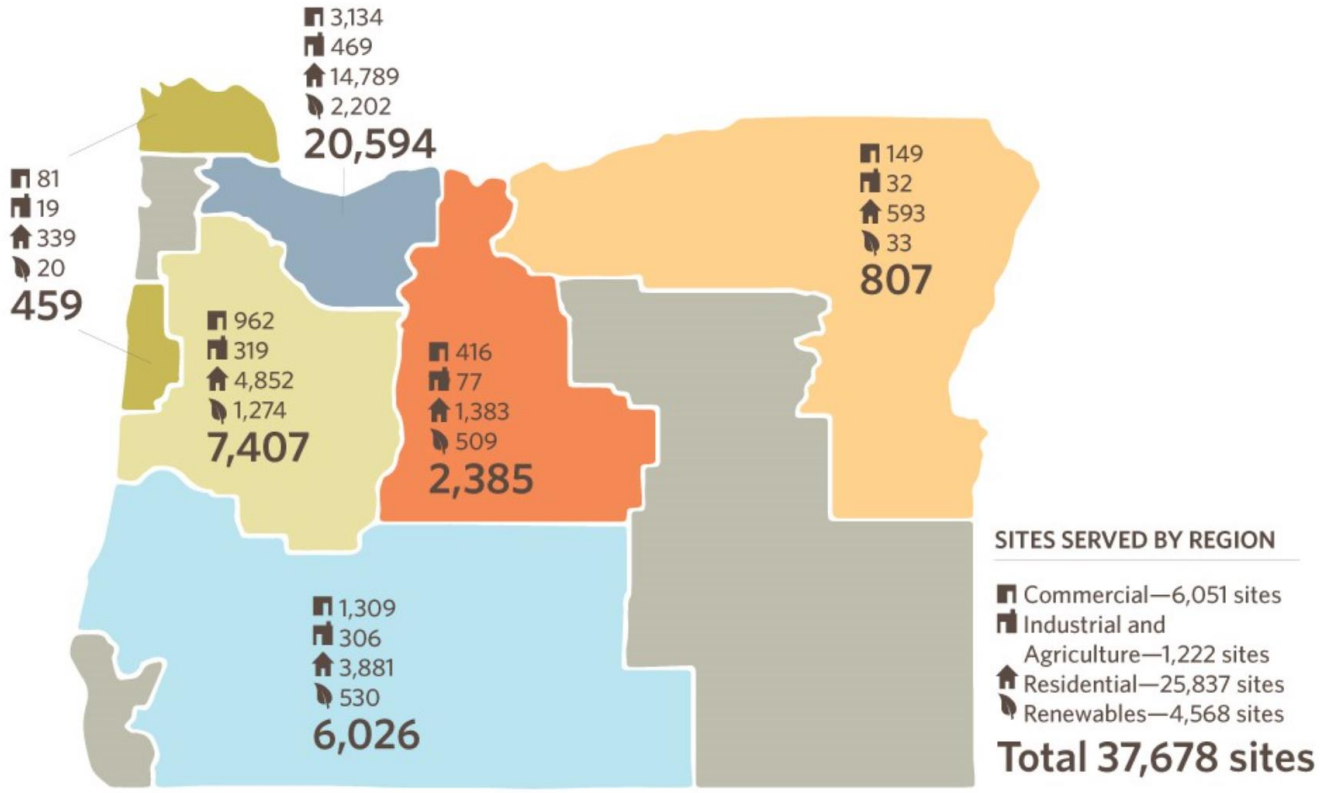




Customer satisfaction[10]



Sites served by region[11,12]



[10] Energy Trust surveyed 645 residential customers, 475 non-residential customers and 1,147 residential solar customers in Oregon who received an incentive or discount from Energy Trust in 2023. Existing Buildings results include multifamily participants. The most recent survey of New Buildings customers took place in 2022. See Appendix 3 for more information.
[11] This document reports on Energy Trust services to Oregon customers of Portland General Electric, Pacific Power, NW Natural, Cascade Natural Gas and Avista. Areas in gray are not served by these utilities.
[12] Actual participation numbers are higher since midstream offers don't have sites associated with them.

II Program and operations activity

The body of this report includes only activity funded by Oregon electric utility customers of Portland General Electric and Pacific Power and Oregon natural gas customers of NW Natural, Cascade Natural Gas and Avista under Energy Trust's grant agreement with the OPUC. Appendix 1 reports energy savings, generation, expenditures and revenues for all Energy Trust activity including those funded through the OPUC grant agreement and other grants and contracts.

A. Commercial sector highlights[13]

- The sector achieved 112% of its electric savings goal and 108% of its natural gas savings goal.
- Electric savings were driven by lighting, Strategic Energy Management (SEM) and prescriptive projects for Existing Buildings and New Buildings prescriptive projects, market solutions and projects at data centers.
- Gas savings were driven by SEM and prescriptive projects for Existing Buildings, boosted by increased outreach activities and gas bonuses launched in quarter three, and by New Buildings prescriptive projects, market solutions and whole building projects.
    - Gas savings are becoming harder to find in commercial new construction as developers and design teams for high-performance projects are increasingly choosing all electric systems.
- Some customers continued to face challenging market conditions including rising costs and supply and labor shortages, which made it difficult for them to complete projects; this was especially true for gas saving projects in rural areas. In response, Energy Trust increased outreach and incentives and promoted its no- and low-cost operations and maintenance offers including SEM.
    - Existing Buildings prescriptive project installation costs were up 45% since 2022 and 187% since 2021, while several large New Buildings projects were delayed beyond 2023 due to supply chain issues and rising interest rates.
- In 2023, Energy Trust expanded its Community Partner Funding offer for residential customers to include multifamily customers served through the commercial sector and enrolled eight organizations to deliver higher incentives to multifamily customers in the Portland area, Central Oregon and Southern Oregon. These partners delivered $1.8 million in incentives for no-cost multi-family home energy assessments, no-cost ductless heat pump installations and other projects. (Community Partner Funding for multifamily was offered on a limited basis starting in 2022 with about $236,000 in incentives delivered.)
- Energy Trust led its second cohort of Existing Building contractors through its Contractor Development Pathway, which offers trade allies technical and business support and mentorship. Participants included six Hispanic- or Latino-owned businesses, four woman-owned businesses and four rural or very rural businesses.

[13] The commercial sector is comprised of two programs: Existing Buildings and New Buildings. Existing Buildings, which includes multifamily customers, offers incentives for energy-efficient improvements in existing commercial buildings of all sizes. New Buildings supports design and construction of high-performance commercial buildings and major renovations of all sizes and building types. Lighting offers for commercial customers are delivered separately.

- Existing Buildings community engagement activities focused on small businesses reached more than 400 customers. Activities included two year-long focus group cohorts, two virtual networking events, and events to inform the redesign of program forms and strategies to promote access for Spanish speakers.
- New Buildings is helping connect utilities with customers to promote grid responsive features in new construction. It created an incentive for grid interactive early design work and began work with NEEA and PGE on a heat pump water heater pilot to monitor the demand response benefits of central and in-unit equipment. Designing with grid-interactivity in mind means customers can also more easily access utility demand response programs.
- New Buildings' whole building enrollment increased in 2023 compared with the previous year, and those projects are expected to become a larger savings driver in future years. A recent OPUC decision to use the Utility Cost Test to evaluate cost effectiveness of whole building projects due to challenges in completing measure-level savings analysis will support a new streamlined delivery approach to increase enrollment while lowering the cost of program participation.
- Savings from NEEA activities comprised approximately 8% of the sector's annual electric savings and 4% of its annual gas savings. Electric and gas savings continue to be driven by new construction code advancements that NEEA influenced. Savings were also driven by NEEA's assistance in developing improved efficiency standards for commercial unitary conditioners and promoting market adoption of efficient extended motor product pumps.

B. Industrial and agriculture sector highlights[14]

- The sector achieved 133% of its electric savings goal and 130% of its natural gas savings goal.
- Electric savings were driven by lighting and standard track projects, namely indoor dehumidifiers. In PGE service area, a megaproject at a technology facility and custom projects were a large driver of savings, while SEM drove savings in Pacific Power service area.
- Gas savings drivers varied by utility, with custom projects overperforming in Cascade Natural Gas and Avista service areas while standard projects and an SEM engagement drove savings in NW Natural service area. To help boost savings mid-year, staff increased incentives for greenhouse, steam trap and insulation projects; conducted energy scans with eligible gas users to identify projects that could be completed quickly; and worked with SEM customers to identify opportunities to achieve additional gas savings.
- Staff redesigned offers to attract more customers and ultimately increase savings, including increasing SEM incentives and adding savings tiers with higher incentives for first-year participants to improve the value proposition of the program, especially for small businesses. Staff also increased custom operations and maintenance incentives and eliminated requirements for customer project cost tracking and upfront technical studies to make it easier to participate.

[14] The industrial and agriculture sector provides energy-efficiency solutions for eligible industrial, agricultural and municipal water and wastewater recovery facility customers. It consists of one program, the Production Efficiency program, which provides services and incentives through three primary delivery tracks: standard, custom and energy performance management. Lighting offers for industrial customers are delivered separately.

- Starting in 2023, Production Efficiency switched from using five program delivery contractors to one program management contractor selected through a competitive process to streamline participation for customers and trade allies, reduce costs and provide staff more time to focus on new opportunities. The change required transferring customer, trade ally and vendor relationships, customer data and other change management activities. This was completed with no significant disruption to program participants or savings.
- Staff created an equity council with program management contractor and subcontractor representatives to better serve priority customers including rural and small businesses. The council is leading efforts to identify and address inequities in the program, provide training to staff and support accountability.
- Savings from NEEA activities comprised approximately 4% of the sector's annual electric savings. Savings were primarily driven by NEEA's continued influence on promoting more efficient electric motor standards. (There are no NEEA industrial gas market transformation initiatives.)

C. Business lighting highlights[15]

- Lighting savings were driven by midstream incentives, which are delivered at the point of sale through participating distributors and cover the most common lighting products in commercial and industrial sites. Midstream offers accounted for 62% of business lighting savings in 2023.
    - Customers' and distributors' interest in these offers grew in 2023 following Energy Trust changes made in 2022 that included increasing incentive amounts and adding more distributors to deliver these incentives, especially in rural areas.
- For downstream incentives, which are prescriptive and custom measures delivered through trade allies, there was a significant increase in cannabis grow light projects. Overall downstream savings were lower, continuing a trend in recent years. This is expected to continue in 2024 as midstream savings increase.
- Outreach efforts supported strong performance of the no-cost direct installation lighting offer for small businesses. The program completed nearly 800 projects, well above its target of 500. The program added outreach specialists in Central and Eastern Oregon to do more site assessments and added installers throughout Southern, Central and Eastern Oregon.

D. Residential sector highlights[16]

- The sector achieved 108% of its electric savings goal and 96% of its natural gas savings goal.
- Electric savings were driven by retail lighting, HVAC projects, home energy reports for Pacific Power customers and EPS new construction. There were higher-than-expected savings for smart thermostats, extended capacity heat pumps and heat pump conversions in manufactured homes, while ductless heat

[15] Lighting offers for commercial and industrial customers are delivered by one Program Delivery Contractor. Savings goals are incorporated into commercial and industrial sector goals.

[16] The residential sector provides energy-efficiency solutions for residential customers of single-family homes, manufactured homes and newly constructed homes. Incentives are available for smart thermostats, energy-efficient heating, water heating and air conditioning equipment, lighting, appliances, weatherization upgrades, whole-home improvements and new construction.

pumps and heat pump water heaters fell short of expectations due to rising prices and customer uncertainty around when new rebate offers would become available.

- Gas savings were driven by EPS new construction, market transformation, gas furnaces and insulation projects. Insulation projects increased 60% statewide compared to 2022 thanks to Energy Trust's incentive increases (rather than seasonal bonuses) and efforts to engage more contractors. Smart thermostats underperformed due to market saturation and changes in manufacturer promotions.
- Heading into the 2023-2024 heating season, Energy Trust increased incentives for standard and income-qualified HVAC offers to address rising installation costs, motivate customers and support trade allies in promoting efficient heating systems, which led to an increase in savings.
- Energy Trust enrolled four new organizations in Community Partner Funding to deliver higher incentives to residential customers and worked with those already enrolled to reach more customers. In all, 25 active partners distributed nearly $1.6 million in incentives in 2023, a 72% increase from 2022, to support more than 1,000 projects at 800 sites. This helps more customers access clean energy resources and supports targeted energy upgrades that meet priority customer needs.
- To expand delivery of no- and low-cost measures to underserved customers, the sector developed In Home Energy Services to serve areas of the state that don't have community-based organizations to support these offers. The goal is to ensure Energy Trust offers are available to customers across all service areas.
- Energy Trust launched two new no-cost pilots for installing ducted heat pumps and heat pump water heaters, modeled after a no-cost ductless heat pump pilot that launched in 2022 for residential and multifamily customers. The goal of the new pilots is to increase participation among underserved customers and reduce their energy burden by replacing electric resistance space and water heating. These pilots are being delivered through community partners and Energy Trust's In Home Energy Services.
- Energy Trust developed and launched a hybrid HVAC pilot to evaluate the benefits of heat pumps installed with gas furnaces in existing gas heated homes, focusing on customers with low and moderate incomes. Staff worked with all five utility partners and other stakeholders on the pilot's objectives, installation specifications, customer participation criteria and promotions. Customer outreach began in late 2023 and the pilot will run for two years.
- Energy Trust delivered region-specific offers to engage customers in rural areas and make it easier for them to participate. In Eastern Oregon, higher incentives for gas furnaces were available to all residents of Baker, Union and Malheur counties. This led to a 200% increase in gas furnace projects in those areas compared to 2022, while contractor participation in the region has grown significantly. A similar offer was expanded to Klamath, Lake and Coos counties in late 2023.
- EPS new construction, which helps builders design and build homes that exceed existing code, maintained a strong market presence amid the slowing construction market that had fewer construction starts. In 2023, 41% of all single-family new construction in Energy Trust's service area participating in the program, up from 36% from 2022.
- In response to a program impact evaluation, staff established an adjustment factor that will adjust EPS savings to align with the evaluation results and establish a new baseline according to the 2023 Oregon Residential Specialty Code. This change will launch in 2025.

- Savings from NEEA activities comprised approximately 34% of the sector's annual electric savings. Electric savings continue to be driven by new construction code advancements that NEEA influenced. Electric savings were also driven by NEEA's work in advancing efficiency standards for retail products (specifically TVs, clothes washers, clothes dryers and refrigerators) as well as promoting market adoption of heat pump water heaters. (There were no residential gas savings from NEEA activities in 2023.)

E. Renewable energy sector highlights[17]

- The sector achieved 124% of its energy generation goal. Results were driven by continued high interest among homeowners in rooftop solar.
- Energy Trust also provided support for battery storage, feasibility studies, quality assurance, consumer protection and irrigation modernization.
- Staff engaged with stakeholders throughout 2023 to better understand the residential solar market and consider how to continue shifting resources to offers focused on equity and resilience. Staff will evaluate market-rate incentives in 2024 in light of recent reduced market activity.
- Energy Trust exceeded a 25% spending requirement under HB 3141 for activities that benefit customers with low or moderate incomes (see page 25). Spending in 2023 included $4.5 million in incentives for Solar Within Reach customers and additional incentives for community solar projects that expand capacity for low-income subscribers.
- Energy Trust began offering incentives for battery storage for residential customers in mid-2023, providing up to $3,000 for market-rate customers (about 15-20% of the average battery cost) and up to $10,000 for income-qualified customers (about 50-60% of the average battery cost). When paired with solar, battery storage can offer critical back-up power during outages for essential equipment while also providing grid services such as demand response.
    - Based on stakeholder feedback, staff raised incentive amounts from what was originally proposed to motivate more customers. Staff is also working closely with trade allies to provide them more resources when communicating with customers since batteries add complexity to a solar system design and value proposition.
    - There was an immediate impact on residential applications. Before the battery incentive became available, there were 100 solar applications with batteries; after it became available, there were 153 solar applications with batteries. Forty solar projects received the storage incentive, and an additional 15 received incentives to add storage to existing solar systems.
    - A battery incentive offer for businesses, tribal, nonprofit and public buildings is expected to launch in the first half of 2024.
- For all of 2023, Energy Trust supported 233 solar installations with battery storage, which is 6% of all solar installations, and 2,727 installations with advanced inverters, which is 70% of all solar installations.

[17] The renewable energy sector offers standard and custom incentives for small-scale solar, biopower and hydropower projects and energy storage. Its activities promote equitable access to renewable energy, resilience and grid support.

- Energy Trust is responding to growing interest in energy resilience from municipalities. Staff organized an energy sustainability and resilience workshop for more than 50 people including water resource recovery engineers and managers to learn what resources are available to plan and implement renewable energy and battery energy storage projects.
- Energy Trust supported development of Wallowa County's first Community Energy Strategic Plan, which was adopted in late 2023. Energy Trust also supported the local nonprofit Wallowa Resources in developing the plan, which includes 34 recommended actions related to energy efficiency, renewable energy, transportation and environmental stewardship.

F. Communities and new initiatives sector highlights[18]

- Staff began managing measure development across all energy efficiency programs, in collaboration with planning and evaluation staff, and streamlined a process for program delivery pilots.
- Staff worked with renewables sector staff to outline a strategy to help communities pursue community energy resilience projects that incorporates efficiency, renewable energy and energy storage, building on the growing interest and availability of outside funding for such projects. This strategy will be presented to stakeholders including advisory councils in 2024.
- Management of existing cross-sector and community-based projects – including the Landlord Provided Cooling Space Initiative, Energy Trust's role in PGE's Smart Grid Test Bed Collaboration, targeted load management activities with utilities and OPUC equity metrics – was moved under this sector to provide more coordination across programs and sectors (see Appendix 1).

G. Internal operations highlights[19]

- Policy services, planning, customer service, communications and program staff responded to Oregon's ban on certain fluorescent lighting (HB 2531) that is being phased in starting January 2024. Energy Trust is supporting customers and contractors in the transition while retaining the program delivery infrastructure to address other lighting markets and equity concerns.
- Outreach staff led efforts to better serve tribal communities, including facilitating a working group of tribal members that advises on ways to increase participation in Energy Trust programs in tribal communities. Staff also participated in tribal housing needs assessment workshops for Cow Creek Band of Umpqua Tribe of Indians and the Klamath Tribes to identify ways to increase and improve housing options in those communities. Staff led coordination efforts with Confederated Tribes of Warm Springs to establish better outreach practices, leading to more than 20 sites identified for lighting updates, custom assessment of a water treatment facility and engagement with Indian Health Services on ways to support the design of a new facility.

[18] The communities and new initiatives sector was created in 2022 to develop and manage offers that involve multiple programs, including community-wide projects, distributed energy resources and flexible grid management projects. This sector streamlines support for communities and organizations seeking comprehensive energy solutions.
[19] Energy Trust's internal operations teams include innovation and development, communications, customer service, general marketing, Trade Ally Network management, outreach, policy services, IT, operations support, and planning and evaluation.

- Outreach staff facilitated connections among community-based organizations that work with Energy Trust. Staff hosted a meet-and-greet in Clackamas County and co-hosted an event in Woodburn with the Latino Business Alliance. More than 35 organizations attended these events and provided input into Energy Trust budget and planning processes, learned about the Community Partner Funding offer, networked and shared information about their own organizations. And in Southern Oregon, staff created a cohort of rural-based organizations to connect and learn from each other.

- Policy services staff supported cities and counties developing and implementing sustainability, climate change or clean energy plans and programs, including City of Portland's Portland Clean Energy Community Benefits Fund and Climate Investment Plan, the City of Salem's climate action plan, the City of Hillsboro's Environmental Stewardship Committee and greenhouse gas inventory, and the City of Tigard's climate action plan.

- Policy services staff provided briefings to more than a dozen legislators and legislative staff members during the 2023 Oregon legislative session on Energy Trust benefits to their districts, information how their constituents access Energy Trust services, and written and verbal comments to relevant committees. Staff also monitored half a dozen bills that passed and will affect energy efficiency and small-scale renewable energy in Oregon.

- Innovation and Development team reviewed more than 75 opportunities for funding outside Energy Trust's core ratepayer funding to determine if Energy Trust should pursue the opportunity. Many of these were federal opportunities created under the Inflation Reduction Act such as Solar for All (see Appendix 1).

- Innovation and Development team, with support from policy services staff, led coordination efforts with state and local agencies to establish best practices for braiding different funding sources to maximize benefits for customers, ensure accessibility and prepare the market to meet growing demand.

- Customer service staff supported virtual and in-person events for trade allies throughout the state on Energy Trust offers for commercial, residential and solar customers. These events, including the annual Trade Ally Forum events and a business lighting seminar, help encourage participation in the Trade Ally Network and ensure contractors have the latest incentive information to give customers.

- Customer service staff updated the full suite of options on Energy Trust's main toll-free phone line to offer information in Spanish in 2024. In 2023, the line received more than 13,000 calls.

- Customer service streamlined trade ally business development fund requirements and eligibility across programs and expanded the list of eligible expenses to help more trade allies access these resources and grow their businesses.

- Web, communications and marketing staff redesigned Energy Trust's About pages and email newsletters to be more user friendly; views of About pages roughly doubled following the redesign. The team also redesigned the residential section of Energy Trust's website to make it easier for users to see which incentives they qualify for, resulting in increased engagement with these pages. A similar commercial section redesign is slated to launch in mid-2024.

- Communications and marketing staff's public relations work resulted in more than 300 news stories in 2023 with a publicity value of more than $34 million, which helped Energy Trust build trust and awareness among eligible customers. Topics included wildfire rebuilding, affordable housing, no-cost lighting upgrades for small businesses, irrigation modernization and how Energy Trust incentives can be combined with benefits from the Inflation Reduction Act.

- IT staff made updates to the customer relationship management software to track emerging funding opportunities and improve site and data quality.
- Evaluations staff completed and published nine reports and hosted three webinars to present the findings of evaluations and research projects. Third-party evaluations of Energy Trust programs ensure programs achieve the results they are designed to achieve and verify the reported savings.
- Planning staff supported utility local distribution planning efforts including tracking the OPUC Distribution System Planning docket (UM 2005) and providing technical support to scope a potential TLM project with Cascade Natural Gas.

III Progress to 2023 OPUC performance measures

Each year, the Oregon Public Utility Commission (OPUC) establishes minimum performance measures for Energy Trust in a variety of categories. Minimum savings and generation figures for energy-efficiency programs and renewable energy programs are set at an aggregated level rather than at an individual program or sector level. This allows Energy Trust to pursue different program strategies in the residential, commercial and industrial sectors as market forces and technologies change. Electric and gas efficiency performance targets are set at 85% of Energy Trust goals as defined in annual budgets. The following OPUC minimum performance measures apply to Energy Trust 2023 results.

Category	Measure	Result
Electric efficiency	PGE: • Save at least 21.7 aMW • Levelized cost not to exceed 4.9 cents/kWh Pacific Power: • Save at least 16.7 aMW • Levelized cost not to exceed 4.0 cents/kWh	PGE: ✓ **Exceeded**, with 29.9 aMW saved ✓ **Within requirement**, levelized cost at 3.7 cents/kWh Pacific Power: ✓ **Exceeded**, with 23.2 aMW saved ✓ **Within requirement**, levelized cost at 3.6 cents/kWh
Natural gas efficiency	NW Natural: • Save at least 4.3 million annual therms • Levelized cost not to exceed 62 cents/therm Cascade Natural Gas: • Save at least 0.49 million annual therms • Levelized cost not to exceed 74 cents/therm Avista: • Save at least 0.36 million annual therms • Levelized cost not to exceed 64 cents/therm	NW Natural: ✓ **Exceeded**, with 5.5 million annual therms saved ✓ **Within requirement**, levelized cost at 50.4 cents/therm Cascade Natural Gas: ✓ **Exceeded**, with 0.60 million annual therms saved ✓ **Within requirement**, levelized cost at 50.8 cents/therm Avista: ✓ **Exceeded**, with 0.45 million annual therms saved ✓ **Within requirement**, levelized cost at 56.9 cents/therm
Renewable energy	For project and market development assistance, report annual results, including number of projects supported, milestones met and documentation of results from market and technology perspective. Obtain at least 4.3 aMW of installed generation of standard net-metered Solar program projects.	✓ **In compliance**, see Appendix 5. ✓ **Exceeded**, with 6.72 aMW of installed generation from standard solar projects.

	For solar projects funded outside of the Solar program's standard, net-metered incentive offer, report sources of funding for projects and the criteria for selection.	✓ **In compliance**, paid incentives for two small-scale community solar projects selected for funding as part of a 2021 solicitation for small-scale community solar projects. Energy Trust also paid incentives for a large community solar project that was selected as part of a 2022 competitive solicitation to expand low-income capacity of general market community solar projects beyond the required 10% capacity. All funding came from the public purpose charge solar budget.
	Invest at least $3.9 million, 25% of public purpose revenue for renewables, to provide activities, resources and technologies for low and moderate income customers.	✓ **In compliance,** invested $6.8 million or 35% of revenues to benefit customers with low and moderate incomes. For more information, see Table E in Section V.
Financial integrity	Receive an unmodified financial opinion from an independent auditor on annual financial statements.	✓ **In compliance**, with an unmodified financial audit opinion for 2023.
Administrative /program support costs	Keep administrative/program support costs below 8% of annual revenues (no more than $17,167,174).	• **Temporary waiver in place for 2023**. Administrative/program support costs were 7.6% of annual revenues ($16,402,309). The OPUC agreed to waive this performance measure in 2023 to allow for more spending to stabilize Energy Trust's workforce, add staff to provide flexibility and capability to expand services to meet increased demand for energy efficiency, enable program evolution to expand participation in priority customer segments, and support increased community engagement to inform strategies and delivery channels.
	Administrative/program support cost growth limited to 10% year-over-year increase (no more than $1,408,386).	• **Temporary waiver in place for 2023**. Administrative/program support cost increased 16.5% year-over-year ($2,318,450). See waiver explanation above.

Staffing expenditures	Staffing cost growth is limited to 9% year-over-year increase (no more than $1,523,368).	• **Temporary waiver in place for 2023**. Staffing cost increased 15.1% year-over-year ($2,558,413). See waiver explanation above.
Customer satisfaction	Demonstrate greater than 85% satisfaction rates for interaction with program representatives and overall satisfaction.	✓ **In compliance**, with a 94% satisfaction rate for interaction with program representatives and a 94% overall satisfaction rate. See Appendix 3.
Benefit/cost ratios	Report utility system and societal perspective annually. Report significant mid-year changes as warranted in quarterly reports.	✓ **In compliance**, with no mid-year changes, see table below.
NEEA and market transformation	Report annually: • Savings and costs • Savings strategies • Show Energy Trust direction to NEEA through committee membership • Summary of Energy Trust direction to NEEA • Summary of NEEA initiatives Energy Trust opts out of and why	✓ **In compliance**, see Section VI.
Diversity, equity and inclusion	Increased support to nonprofit organizations with a purpose to serve environmental justice communities or to support nonprofit-led initiatives serving environmental justice communities. (2023 target: $1 .8 million spent, a 15% increase from the $1.6 million spent in 2022; support can be for incentives, training and funding for projects.) Increased funding to support targeted outreach to environmental justice communities, including funding for community ambassadors, education, and workshops with the addition of 10 new outreach representatives. (2023 target: 10 additional combined FTEs or community ambassadors focused on this effort compared to 16.5 FTEs and 12 community ambassadors in 2022.)	✓ **In compliance**, Energy Trust spent $4.5 million in 2023 to support nonprofit organizations and nonprofit-led initiatives serving environmental justice communities. This includes Community Partner Funding incentives, Working Together Grant awards, contracts to support organizations' capacity building, contracts to support workforce development and various other contracts or sponsorships. ✓ **In compliance**, Energy Trust added 13.25 combined FTEs including staff and Program Management Contractors focused on this effort for a total of 29.75 FTEs supporting outreach to environmental justice communities. In addition, Energy Trust supported 13 ambassadors through its Solar Ambassador pilot serving communities of color (see page 33), 10 community-based

		liaisons for the Existing Buildings program and five positions through University of Oregon's Resource Assistance for Rural Environments program.
	Two new and expanded low-cost and no-cost offers to reduce energy burden created and launched. (2023 target: 10 total offers, a 25% increase from the 8 offers available in 2022.)	✓ **In compliance**, Energy Trust created two no-cost delivery pilots to install ducted heat pumps and heat pump water heaters. In 2023, Energy Trust continued to develop, deliver and expanded other offers including: no-cost online home energy assessments, no-cost in-home energy assessments, a no-cost ductless heat pump pilot, no- and low-cost updates for manufactured homes, low-cost smart thermostats, low-cost direct install ceiling insulation, Strategic Energy Management for affordable multifamily housing providers and no-cost cooling workshops for residents of affordable multifamily housing.
	Solar and solar-with-storage system projects supported for low and moderate income residents in areas with limited infrastructure or high energy burden by working with five community partners supporting program creation. (2023 target: at least five community-based organizations engaged in creating and evolving the solar + storage offer.)	✓ **In compliance**, Energy Trust staff engaged with the following community-based organizations: African American Alliance for Homeownership, Adelante Mujeres, Unite Oregon, Solar Oregon, Illinois Valley Community Development Organization and Unete Oregon. Their feedback helped staff set incentive amounts and highlighted outreach, trade ally engagement and other needs.

Benefit/cost ratios

- Report benefit/cost ratios for larger conservation acquisition programs for both utility system and total resource perspective

2023 Utility Cost and Total Resource Cost by program

Program	Combined Utility Cost Test benefit/cost ratio	Combined Total Resource Cost Test benefit/cost ratio
Residential	1.9	1.4
Existing Buildings, including multifamily	1.8	1.2
New Buildings[20]	4.3	N/A
Production Efficiency	2.8	2.0

[20] New Buildings operated under a cost-effectiveness exception granted by the OPUC due to the structure of the state building codes.

IV Revenues and expenditures tables[21]

This section reports on revenues and expenditures for Oregon activity funded by Oregon ratepayers for energy efficiency and renewable energy under Energy Trust's grant agreement with the Oregon Public Utility Commission. The total organization results appendix reports energy savings, generation, expenditures and revenues for all Energy Trust activity, including activity in NW Natural service area in Southwest Washington and activities funded by grants and contracts.

A. Revenues under OPUC grant agreement[22,23]

Source		Annual actual revenues		Annual budgeted revenues	Budget variance
PGE Efficiency	$	88,414,166	$	87,833,700	1%
PGE Renewables	$	11,818,372	$	9,100,000	30%
Pacific Power Efficiency	$	59,491,999	$	56,640,479	5%
Pacific Power Renewables	$	7,940,198	$	6,378,061	24%
NW Natural	$	33,463,189	$	28,242,501	18%
NW Natural Industrial DSM	$	7,231,588	$	7,231,588	0%
Cascade Natural Gas	$	3,726,872	$	3,267,473	14%
Avista	$	2,193,288	$	2,193,292	0%
Avista Interruptible	$	310,002	$	310,000	0%
Total	**$**	**214,589,674**	**$**	**201,197,094**	**7%**

B. Expenditures under OPUC grant agreement

Source		Annual actual expenditures		Annual budgeted expenditures	Budget variance
Portland General Electric	$	105,030,021	$	108,421,509	-3%
Pacific Power	$	74,831,755	$	68,538,041	9%
NW Natural	$	26,679,141	$	27,684,109	-4%
NW Natural Industrial DSM	$	6,556,851	$	7,069,120	-7%
Cascade Natural Gas	$	3,706,018	$	4,414,469	-16%
Avista	$	3,800,025	$	3,366,873	13%
Avista Interruptible	$	31,858	$	210,385	-85%
Total	**$**	**220,635,670**	**$**	**219,704,508**	**0%**

[21] Columns may not total due to rounding.
[22] Revenues include ratepayer revenues collected for energy-efficiency programs and ratepayer-funded public purpose charge revenues collected for renewable energy activities.
[23] Revenue was higher than expected due to colder than average weather during the heating season.

C. Expenditures under OPUC grant agreement by sector and program[24]

			Annual actual expenditures		Annual budgeted expenditures	Budget variance
Commercial	Existing Buildings	$	68,606,506	$	66,762,718	3%
	New Buildings	$	14,036,085	$	17,450,175	-20%
	NEEA Commercial	$	3,321,568	$	3,814,008	-13%
	Commercial total	**$**	**85,964,159**	**$**	**88,026,900**	**-2%**
Industrial	Production Efficiency	$	43,555,481	$	38,995,024	12%
	NEEA Industrial	$	3,247	$	-	N/A
	Industrial total	**$**	**43,558,727**	**$**	**38,995,024**	**12%**
Residential	Residential	$	58,398,671	$	56,163,431	4%
	NEEA Residential	$	3,773,132	$	3,825,147	-1%
	Residential total	**$**	**62,171,803**	**$**	**59,988,578**	**4%**
	Energy efficiency total	**$**	**191,694,690**	**$**	**187,010,502**	**3%**
Renewables	Solar	$	13,950,458	$	16,368,897	-15%
	Other Renewables	$	2,510,656	$	3,182,257	-21%
	Renewable generation total	**$**	**16,461,114**	**$**	**19,551,153**	**-16%**
	Administration	**$**	**12,479,867**	**$**	**13,142,852**	**-5%**
	Total	**$**	**220,635,670**	**$**	**219,704,508**	**0%**

D. Incentives paid

	PGE efficiency	Pacific Power efficiency	NW Natural efficiency	Cascade Natural Gas efficiency	Avista efficiency	PGE generation	Pacific Power generation	Total
Q1	$ 5,844,118	$ 4,446,548	$ 2,687,305	$ 252,507	$ 380,216	$1,503,213	$ 688,895	$ 15,802,802
Q2	$ 8,911,072	$ 7,239,220	$ 2,658,576	$ 318,060	$ 435,402	$1,746,643	$ 840,921	$ 22,149,894
Q3	$ 13,074,497	$ 8,980,806	$ 2,874,816	$ 309,618	$ 385,376	$1,649,523	$1,071,793	$ 28,346,430
Q4	$ 23,927,118	$17,064,580	$ 9,296,321	$ 907,285	$ 802,864	$2,036,205	$1,236,367	$ 55,270,740
Total	**$ 51,756,805**	**$37,731,153**	**$ 17,517,019**	**$ 1,787,470**	**$ 2,003,858**	**$6,935,584**	**$3,837,977**	**$ 121,569,866**

[24] Administration costs are different than administrative and program support costs as defined by the OPUC's performance measure, which also includes program costs in the following areas: program management, program delivery, program incentives, program payroll and related expenses, outsourced services, planning and evaluation services, customer service management and Trade Ally Network management.

E. Low- and moderate-income renewable energy expenditures[25]

		Annual renewable revenues		Annual LMI expenditures	Percent of revenues benefiting LMI customers
Portland General Electric	$	11,818,372	$	4,551,910	39%
Pacific Power	$	7,940,198	$	2,282,167	29%
Total	**$**	**19,758,570**	**$**	**6,834,077**	35%

[25] This table reports on a 25% minimum annual low and moderate income (LMI) renewable energy spending requirement for Energy Trust under HB 3141. Revenues include all renewable energy revenues, and expenditures are only those that benefit customers with low and moderate incomes.

V Savings and generation tables[26,27,28]

This section reports on savings and generation results for Oregon activity funded by Oregon ratepayers for energy efficiency and renewable energy under Energy Trust's grant agreement with the Oregon Public Utility Commission. The total organization results appendix reports energy savings, generation, expenditures and revenues for all Energy Trust activity, including activity in NW Natural service area in Southwest Washington and activities funded by grants and contracts.

A. Savings and generation by fuel

	Annual savings/generation	Annual goal	Percent Achieved	Levelized Cost
Electric savings	53.1 aMW	45.2 aMW	118%	3.7 ¢ per kWh
Natural gas savings	6,540,767 therms	6,049,345 therms	108%	50.8 ¢ per therm
Electric generation	6.72 aMW	5.42 aMW	124%	2.3 ¢ per kWh

B. Progress toward annual efficiency goals by utility[29,30,31]

	Annual savings	Levelized cost	Annual goal	Percent achieved YTD	Annual IRP target	Percent achieved YTD
Portland General Electric	29.9 aMW	3.7 ¢ per kWh	25.5 aMW	117%	27.8 aMW	108%
Pacific Power	23.2 aMW	3.6 ¢ per kWh	19.6 aMW	118%	21.2 aMW	109%
NW Natural	5,493,896 therms	50.4 ¢ per therm	5,025,171 therms	109%	5,424,114 therms	101%
Cascade Natural Gas	599,924 therms	50.8 ¢ per therm	581,032 therms	103%	688,176 therms	87%
Avista	446,946 therms	56.9 ¢ per therm	443,141 therms	101%	527,675 therms	85%

[26] Columns may not total due to rounding.
[27] Electric savings also include transmission and distribution savings.
[28] Energy Trust reports 100% of generation and capacity for renewable energy installations supported by Energy Trust's cash incentives. While some of these projects have additional sources of funding, Energy Trust enabled project completion.
[29] Integrated resource plans for Pacific Power and Avista are pending acknowledgement from the OPUC. The IRP target for Pacific Power of 21.2 aMW in Energy Trust's budget preceded Pacific Power's model selection.
[30] Excludes gas transport savings, see Appendix I.
[31] IRP targets for Cascade Natural Gas and Avista were set before Energy Trust's goal, which reflect concerns in late 2022 about market barriers and possible recession in 2023.

C. Electric savings by sector and program

		Annual savings aMW	Annual goal aMW	Percent achieved	Levelized cost per kWh
Commercial	Existing Buildings	15.2	12.2	124%	4.7 ¢
	New Buildings	7.7	7.9	97%	1.8 ¢
	NEEA Commercial	1.9	2.1	93%	3.1 ¢
	Commercial total	**24.8**	**22.3**	**112%**	**3.5 ¢**
Industrial	Production Efficiency	18.4	13.7	134%	2.9 ¢
	NEEA Industrial	0.8	0.8	100%	0.0 ¢
	Industrial total	**19.2**	**14.5**	**133%**	**2.9 ¢**
Residential	Residential	6.0	4.7	129%	7.4 ¢
	NEEA Residential	3.1	3.8	81%	1.3 ¢
	Residential total	**9.1**	**8.4**	**108%**	**5.5 ¢**
	Total electric savings	**53.1**	**45.2**	**118%**	**3.7 ¢**

D. Natural gas savings by sector and program[32]

		Annual savings therms	Annual goal therms	Percent achieved	Levelized cost per therm
Commercial	Existing Buildings	2,278,613	2,109,310	108%	66.4 ¢
	New Buildings	260,562	336,822	77%	37.9 ¢
	NEEA Commercial	102,598	1,748	5869%	71.1 ¢
	Commercial total	**2,641,773**	**2,447,880**	**108%**	**62.4 ¢**
Industrial	Production Efficiency	1,667,106	1,279,515	130%	28.6 ¢
	NEEA Industrial	-	-	-	-
	Industrial total	**1,667,106**	**1,279,515**	**130%**	**28.6 ¢**
Residential	Residential	2,231,888	2,321,949	96%	55.8 ¢
	NEEA Residential	-	-	-	-
	Residential total	**2,231,888**	**2,321,949**	**96%**	**57.6 ¢**
	Total natural gas savings	**6,540,767**	**6,049,345**	**108%**	**50.8 ¢**

E. Renewable energy generation by utility

	Annual generation aMW	Annual goal aMW	Percent achieved YTD
Portland General Electric	4.19	3.18	132%
Pacific Power	2.53	2.24	113%
Total	**6.72**	**5.42**	**124%**

[32] Energy Trust underestimated the NEEA commercial savings goal for 2023.

F. Renewable energy generation by program

	Q4 generation aMW	Total annual generation aMW	Annual goal aMW	Percent achieved YTD
Solar	1.83	6.72	5.36	125%
Other Renewables	-	-	0.07	-
Total generation	**1.83**	**6.72**	**5.42**	**124%**

G. Utility-invested efficiency expenditures[33]

Utility		Q4 expenditures		Total annual expenditures
Portland General Electric	$	248,817	$	803,458
Pacific Power	$	668,262	$	2,394,735
Total	**$**	**917,080**	**$**	**3,198,194**

[33] This reflects utility investments of a portion of efficiency tariff funds. Funds are collected by the utility and are in addition to funds received by Energy Trust. Reports detailing activities funded by these expenditures are submitted annually by the utilities to the OPUC.

VI Northwest Energy Efficiency Alliance activities and results

To deliver low-cost energy for customers, Energy Trust has been working with the Northwest Energy Efficiency Alliance (NEEA) since 2002 to increase the availability and adoption of energy-efficient electric products, equipment and practices. In 2015, natural gas equipment was added; 2020 was the first year Energy Trust reported gas savings.

By pooling resources at a regional level to work with manufacturers, distributors and retailers, NEEA accelerates the development, testing and distribution of new energy-saving equipment and approaches. NEEA identifies and refines new high-efficiency products, services and practices and helps bring them to market. Once products are ready and available, Energy Trust creates and implements programs to support broad market adoption in Oregon.

Utility customers benefit by seeing a greater choice of higher-efficiency products available through contractors and at stores, through improved pricing and quality for efficient products, and through improvements to building codes and equipment and product standards that will save energy.

NEEA savings noted here are forecasted. Updated savings results will be available in NEEA's 2023 annual report.

A. NEEA natural gas savings[34,35]

	Annual savings therms	Annual energy target therms	Percent achieved	Levelized cost per therm
Commercial	102,598	1,748	5869%	67.1 ¢
Industrial	-	-	-	-
Residential	-	-	-	-
Total	**102,598**	**1,748**	**5869%**	**173.2 ¢**

B. NEEA electric savings

	Annual savings aMW	Annual energy target aMW	Percent achieved	Levelized cost per kWh
Commercial	1.9	2.1	93%	2.9 ¢
Industrial	0.8	0.8	100%	0.0 ¢
Residential	3.1	3.8	81%	1.2 ¢
Total	**5.8**	**6.6**	**87%**	**1.5 ¢**

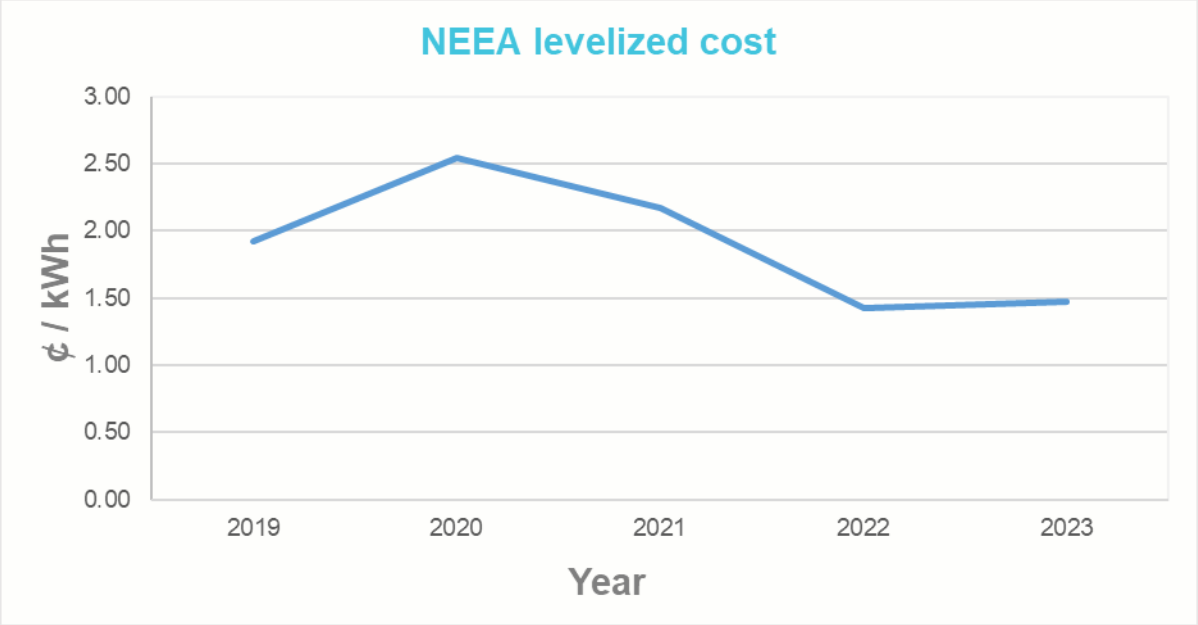
[34] Levelized costs in Table A do not include gas costs or administrative costs. Elsewhere in the report, levelized costs are calculated using administrative costs. Total levelized cost per therm includes spending on industrial and residential activities.
[35] Energy Trust underestimated the NEEA commercial savings goal for 2023.

C. NEEA expenditures

		Annual actual expenditures		Annual budgeted expenditures	Budget variance
Commercial	$	3,520,639	$	4,056,681	-13%
Industrial	$	3,441	$	-	N/A
Residential	$	3,999,266	$	4,068,529	-2%
Total	**$**	**7,523,346**	**$**	**8,125,210**	**-7%**

D. NEEA electric levelized cost

NEEA costs and savings are not realized in the same year. Savings in 2023 reflect costs from prior years, and costs from 2023 will lead to savings in subsequent years. For this reason, levelized costs are included for the past five years.



Levelized costs reflect NEEA's product development cycle. In the last cycle (2015-2019), electric savings were inexpensive due to large amounts of savings from early iterations of codes and standards along with NEEA's TV and lighting initiatives. In the coming years, NEEA forecasts higher electric savings and decreasing year-over-year levelized costs, however Energy Trust does not expect to see annual levelized costs at similar levels as the previous business cycle.

E. NEEA electric market transformation long-term goals and strategies

Below are NEEA's long-term goals and strategies as outlined in NEEA's 2020-2024 Business Plan. More information on NEEA's market transformation strategies, processes and performance metrics is available in NEEA's 2020-2024 Business Plan and recent annual or quarterly reports.[36]

Goal 1: Sustain a portfolio of initiatives and support functions that enable more cost-effective efficiency to occur sooner, in larger amounts and/or at lower cost than otherwise expected. Key strategies:

[36] Available online at neea.org.

- Routinely scan for, assess and report on the potential for newly identified efficiency products, services and practices and test the field performance of the most promising opportunities.
- Implement the prioritized portfolio of initiatives, routinely evaluate progress and adapt as necessary to achieve accelerated and sustained market adoption.
- Influence development and support successful implementation of building codes and equipment efficiency standards and test methods to materially improve efficiency outcomes.
- Selectively support dialogue and coordinate activities among stakeholders interested in accelerating energy efficiency through market transformation in the Northwest.
- Research, analyze and provide actionable insight to support identification and pursuit of efficiency opportunities and results reporting.

Goal 2: Continuously improve organizational culture and performance efficacy, ensure accountability and transparency and strive for innovation in service to the benefit of all stakeholders. Key strategies:

- Engage funders and other qualified advisors to identify, develop and sustain a portfolio of efficiency-enabling initiatives and activities that are consistent with the alliance's purpose.
- Establish board-determined policies to assure equitable allocation and appropriate prioritization of efforts.

F. Energy Trust membership on NEEA committees and direction to NEEA

Energy Trust provided guidance to NEEA in 2023 through Executive Director Michael Colgrove's service as chair of the NEEA board of directors. Additionally, Energy Trust staff participated in a variety of NEEA's advisory groups.

Committee	Energy Trust staff member
Executive Committee	Michael Colgrove, executive director
Natural Gas Committee	Michael Colgrove, executive director
Regional Portfolio Advisory Committee	Fred Gordon, director of planning and evaluation
Cost-Effectiveness and Evaluation Advisory Committee	Ben Cartwright, senior planning project manager Jake Kennedy, planning project manger
Regional Emerging Technology Advisory Committee	Kenji Spielman, planning & evaluation engineer
Natural Gas Advisory Committee	Jackie Goss, lead planning & evaluation engineer
Residential Building Stock Assessment Working Group	Dan Rubado, evaluation senior project manager
Products Coordinating Committee	Thad Roth, residential sector lead
Integrated Systems Coordinating Committee	Oliver Kesting, commercial sector lead
End Use Load Research Steering Committee	Michael Colgrove, executive director
End Use Load Research Working Group	Sarah Castor, evaluation & engineering manager
Commercial Building Stock Assessment Working Group	Jackie Goss, lead planning & evaluation engineer
Dual Fuel Measurement Working Group	Jake Kennedy, planning project manger

Energy Trust staff provided the following to NEEA through committee participation in 2023:

- Provided guidance to NEEA's new executive director in her first year, including advising on governance issues.
- Provided input on NEEA's Cycle 7 business and strategic plans.
- Provided the Commercial Building Stock Assessment Working Group with feedback on the usefulness of specific data collection in commercial buildings.
- Provided the Residential Building Stock Assessment Working Group with energy use data and feedback on the work products for the regional study on housing stock.
- Provided the Products Coordinating Committee with feedback on NEEA's retail products portfolio to help identify and promote products that would benefit customers with low and moderate incomes.
- Provided feedback on the Integrated Systems Coordinating Committee's annual workplan and associated priorities and helped identify coordination opportunities on pilots.
- Assisted the End Use Load Research Working Group with establishing a process for reviewing and selecting proposals for additional data analysis and provided feedback and sponsorship for a proposal to analyze data on heat pumps.

APPENDIX 1: Total organization results

This appendix provides information on Energy Trust's energy savings and renewable generation results as well as revenues and expenditures for programs beyond its core electric and gas efficiency and renewable energy programs under Energy Trust's grant agreement with the Oregon Public Utility Commission. Many of these programs help Energy Trust reach more customers and will result in energy savings and generation; programs that deliver reportable savings and generation results may be funded by multiple sources, including funding received under the OPUC grant agreement.

Highlights of this work for 2023 include:

- The Solar Ambassadors pilot explored ways to improve solar access for people of color through education by community members. Co-created with seven community-based organizations and funded by the National Renewable Energy Laboratory, the pilot recruited and trained 13 solar ambassadors from Portland area communities to provide educational outreach to Black and Indigenous communities and other communities of color in Portland. Each ambassador conducted at least three community engagements sessions during which they discussed the benefits of residential solar electric systems and how customers can access solar energy.
    - The pilot concluded in 2023, and staff is exploring ways to integrate ambassadors in future Energy Trust engagements.
    - Feedback from the ambassadors based on their engagements focused on the need for higher incentives and financing offers to better support customers.
- PGE's Smart Grid Test Bed Collaboration partners – including Energy Trust, Community Energy Project, National Renewable Energy Laboratory and NEEA – began offering incentives in late 2023 with specialized efficiency and solar + storage offers for residential, commercial and multifamily properties. The five-year project, previously known as SALMON and funded by a federal grant, will fund retrofits at 580 homes and businesses and add significant distributed energy resources in the North Portland neighborhoods of Overlook and Arbor Lodge.
    - The team collaborated on marketing, outreach and customer qualifications to make it as easy as possible for customers to receive multiple incentives that cover up to the entire cost of their projects.
    - Energy Trust is delivering incentives for this project along with its maximum cost-effective incentives for efficiency, solar + storage and flexible load equipment including heat pump water heaters, smart thermostats and batteries. This will make it easier for customers to receive multiple incentives through one enrollment process.
- Energy Trust is administering the Oregon Department of Energy's Landlord Provided Cooling Space Initiative. This provides funding to landlords to install cooling equipment in multifamily property common areas or common buildings in manufactured home parks anywhere in Oregon with a focus on serving environmental justice communities and promoting health and safety (not energy efficiency). Though the contract was initially meant to last two years, expiring in mid-2024, Energy Trust worked with ODOE to extend the program through December 2025. Given the low participation through mid-2023, this extension will offer more time to engage customers and deliver all possible incentives.

- Energy Trust continued to manage day-to-day operations of the Oregon Community Solar Program under a subcontract with Energy Solutions. In 2023, the Oregon Community Solar Program filled the general market capacity for community solar in PGE and Pacific Power service areas. Since its launch, the program has pre-certified 62 community solar projects with 113 kilowatts of capacity and has 19 projects with 29 megawatts currently operational.
- Staff continued to support Clean Energy States Alliance in its Solar with Justice study on ways to increase solar adoption in priority communities. In 2023, Energy Trust published a case study on its experience with relationship building in these communities. Staff also participated in national workshop to explore ways that state agencies and community-based organizations can better collaborate to increase solar adoption.
- Energy Trust and Bonneville Environmental Foundation joined the Oregon Department of Energy in applying for Solar for All, a new federal funding opportunity aimed at increasing the availability of solar, especially for low-income and disadvantaged communities. Under the proposal, Energy Trust would administer incentives and project development assistance to community solar projects and support community solar and rooftop solar for Oregon. Awards are expected to be announced by mid-2024.
- Other work reflected in the revenues and expenditures tables in this appendix include:
    - Activity in NW Natural's service area in Southwest Washington
    - A completed targeted load management pilot with NW Natural
    - Contracts to support PGE's Smart Battery Pilot, Smart Inverter Pilot and Flex Feeder measure development work
    - Preparation work for a forthcoming Solar Energy Resilience for Vulnerable Communities (SERV) grant project on solar microgrid resilience planning
- Energy Trust also receives revenues from investments and spends money on business development.

A. Total organization revenues[37,38,39,40,41]

Source		Annual actual revenues		Annual budgeted revenues	Budget variance
OPUC grant agreement	$	214,589,674	$	201,197,094	7%
Utility funded					
Avista Transport	$	250,000	$	250,000	0%
Cascade Natural Gas Transport	$	-	$	270,000	-100%
NW Natural for TLM	$	-	$	25,805	-100%
NW Natural for Washington	$	3,160,185	$	3,160,185	0%
Contract and grant funded					
Landlord Provided Cooling (ODOE grant)	$	326,378	$	968,338	-66%
Oregon Community Solar Program (contract)	$	472,414	$	382,282	24%
PGE Flex Feeder (contract)	$	111,403	$	239,899	-54%
PGE Smart Battery Pilot (contract)	$	118,712	$	412,538	-71%
PGE Smart Solar Study (contract)	$	30,852	$	150,703	-80%
SERV (FEMA grant)	$	-	$	-	N/A
Smart Grid Test Bed Collaboration (US DOE grant)	$	288,500	$	288,849	0%
Solar Ambassadors (NREL grant)	$	111,970	$	94,630	18%
Solar with Justice (US DOE grant)	$	9,336	$	6,366	47%
Investments	$	3,223,521	$	250,000	1189%
Business development	$	19,449	$	-	N/A
Total	**$**	**222,712,393**	**$**	**207,696,689**	**7%**

[37] A new FDIC-insured investment product with Energy Trust's primary bank delivered significantly more investment income than was budgeted.
[38] Business development revenue came from staff consulting work.
[39] Revenue for the Landlord Providing Cooling Space Initiative is tied to project counts, and activity was lower than expected in 2023. ODOE and Energy Trust have agreed to extend the project's deadline to give more time to engage customers and deliver incentives.
[40] Gas transport activities with Cascade Natural Gas were budgeted to happen in 2023 but did not proceed.
[41] NW Natural TLM revenue was paid in advance of the project rather than incrementally as budgeted. The project was completed in 2022, although some evaluation work continued in 2023.

B. Total organization expenditures[42]

Source		Annual actual expenditures		Annual budgeted expenditures	Budget variance
OPUC grant agreement	$	220,635,670	$	219,704,508	0%
Utility funded					
Avista Transport	$	75,450	$	144,841	-48%
Cascade Natural Gas Transport	$	-	$	171,014	-100%
NW Natural for TLM	$	28,682	$	25,807	11%
NW Natural for Washington	$	2,972,269	$	3,253,106	-9%
Contract and grant funded					
Landlord Provided Cooling (ODOE grant)	$	326,378	$	968,337	-66%
Oregon Community Solar Program (contract)	$	314,529	$	282,737	11%
PGE Flexible Feeder (contract)	$	59,566	$	180,811	-67%
PGE Smart Battery Pilot (contract)	$	110,512	$	408,129	-73%
PGE Smart Solar Study (contract)	$	24,915	$	133,029	-81%
SERV (FEMA grant)	$	3,550	$	-	N/A
Smart Grid Test Bed Collaboration (US DOE grant)	$	332,555	$	376,800	-12%
Solar Ambassadors (NREL grant)	$	244,578	$	122,234	100%
Solar with Justice (US DOE grant)	$	13,350	$	8,169	63%
Business development	$	235,456	$	252,125	-7%
Total	**Total $**	**225,377,459**	**$**	**226,031,647**	**0%**

[42] Gas transport activities with Cascade Natural Gas were budgeted to happen in 2023 but did not proceed.

C. Total organization expenditures by activity[43,44]

		Annual actual expenditures	Annual budgeted expenditures	Budget variance
	OPUC grant agreement	**$ 208,155,803**	**$ 206,561,656**	**1%**
Utility funded	Avista Transport	$ 75,450	$ 136,177	-45%
	Cascade Natural Gas Transport	$ -	$ 160,784	-100%
	NW Natural for TLM	$ 27,060	$ 24,263	12%
	NW Natural for Washington	$ 2,804,205	$ 3,058,503	-8%
	Total utility funded	**$ 2,906,715**	**$ 3,379,728**	**-14%**
Contract and grant funded	Landlord Provided Cooling (ODOE grant)	$ 307,923	$ 910,411	-66%
	Oregon Community Solar Program (contract)	$ 296,744	$ 265,824	12%
	PGE Flexible Feeder (contract)	$ 59,566	$ 169,994	-65%
	PGE Smart Battery Pilot (contract)	$ 104,264	$ 383,714	-73%
	PGE Smart Solar Study (contract)	$ 23,506	$ 125,071	-81%
	SERV (FEMA grant)	$ 3,350	$ -	N/A
	Smart Grid Test Bed Collaboration (US DOE grant)	$ 313,751	$ 354,259	-11%
	Solar Ambassadors (NREL grant)	$ 230,748	$ 114,922	101%
	Solar with Justice (US DOE grant)	$ 12,595	$ 7,680	64%
	Total contract and grant funded	**$ 1,352,446**	**$ 2,331,875**	**-42%**
	Business development	**$ 235,456**	**$ 252,125**	**-7%**
	Administration	**$ 12,727,038**	**$ 13,506,263**	**-6%**
	Total expenditures	**$ 225,377,459**	**$ 226,031,647**	**0%**

D. Total organization savings and generation by fuel[45]

	Annual savings/generation	Annual goal	Percent Achieved
Electric savings	53.1 aMW	45.2 aMW	118%
Natural gas savings	6,866,486 therms	6,349,265 therms	108%
Electric generation	6.72 aMW	5.42 aMW	124%

[43] Administration is different than administrative and program support costs as defined by the OPUC's performance measure, which also includes program costs in the following areas: program management, program delivery, program incentives, program payroll and related expenses, outsourced services, planning and evaluation services, customer service management and Trade Ally Network management.

[44] Avista transport incentives became available later in the year than budgeted. Transport activities with Cascade Natural Gas were budgeted to happen in 2023 but did not proceed.

[45] Savings include NW Natural savings in Southwest Washington.

E. Total organization progress toward annual efficiency goals by utility[46]

	Annual savings	Levelized cost	Annual goal	Percent achieved YTD	Annual IRP target	Percent achieved YTD
Portland General Electric	29.9 aMW	3.7 ¢ per kWh	25.5 aMW	117%	27.8 aMW	108%
Pacific Power	23.2 aMW	3.6 ¢ per kWh	19.6 aMW	118%	21.2 aMW	109%
NW Natural	5,493,896 therms	50.4 ¢ per therm	5,025,171 therms	109%	5,424,114 therms	101%
Cascade Natural Gas	599,924 therms	50.8 ¢ per therm	581,032 therms	103%	688,176 therms	87%
Avista	446,946 therms	56.9 ¢ per therm	443,141 therms	101%	527,675 therms	85%
Avista Transport	52,784 therms	20.2 ¢ per therm	7,268 therms	726%	N/A	N/A
NW Natural for Washington	272,936 therms	85.2 ¢ per therm	281,908 therms	97%	371,000 therms	74%

F. Total organization renewable energy generation by utility

	Annual generation aMW	Annual goal aMW	Percent achieved YTD
Portland General Electric	4.19	3.18	132%
Pacific Power	2.53	2.24	113%
Total	**6.72**	**5.42**	**124%**

[46] Savings for NW Natural in Oregon include DSM. Savings for Avista include interruptible and gas transport.

APPENDIX 2: Diversity, equity and inclusion

This appendix provides information on progress to meeting the goals identified in Energy Trust's Diversity, Equity and Inclusion Plan. The purpose of Energy Trust's DEI Plan is to ensure customers who have historically been underserved by Energy Trust's programs or who have not directly benefitted from clean energy solutions have meaningful and equitable access to Energy Trust services. This includes but is not limited to people of color, people with low incomes and people living in rural areas.

The plan has five goals and describes desired outcomes for each goal to describe the future state Energy Trust hopes to achieve. In 2023, staff identified metrics to track progress to meeting these goals and outcomes for 2023. Staff previously sought feedback from external stakeholders and community members on possible metrics and used their insights to arrive at the ones included in the plan.

The DEI Plan identifies multi-year goals, and the 2023 metrics tell only part of the story. They are not intended to demonstrate Energy Trust's comprehensive efforts to realize all the desired outcomes associated with each of the DEI Plan goals, although they provide insights into some portion of Energy Trust's DEI efforts. As Energy Trust's activities evolve based on community engagement, and as its capabilities and approaches to tracking data improve, metrics and reporting may evolve too to become more robust and tied to emerging areas of focus.

Goal 1: Increase representation and readiness

Outcomes:

- Diverse perspectives and ideas contribute to the creation of equitable solutions to support all communities in realizing the benefits of clean energy solutions.
- Energy Trust has significant resources for BIPOC, low-income and rural community organizations, individuals and businesses to engage with Energy Trust as a form of restorative justice to address the historical disparities in investment in these organizations by Energy Trust since our inception in 2002.
- Energy Trust staff engage diverse communities in a respectful, effective and culturally relevant and responsive manner.

Metric:

- Number of cultural awareness trainings and events attended by Energy Trust staff.

Status as of 2023:

- In a survey, staff members self-reported collectively attending more than a dozen voluntary cultural awareness trainings and events in 2023. These included:
    - an antiracism training hosted by Empress Rules Equity Consulting and Rose City Alliance on ways to identify and dismantle white supremacy
    - one-on-one mentoring with the leader of an environmental justice organization to learn about strategies for sharing power and building organizational capacity
    - Behavior, Energy & Climate Change conference sessions on promoting equity in utility programs and lessons for energy equity
    - a Native American Youth and Family Center event to learn about issues facing the Native American community and meet with advocates

    - a virtual training on promoting cultural humility in the workplace hosted by the Center for Nonprofit Management
    - an Ecotrust training on how green energy projects can disregard tribal land rights and community needs
    - a Jewish Family and Child Services meeting to learn about social work services provided to disadvantaged communities and aging populations
- Energy Trust outreach staff attended more than 200 events hosted by other organizations to connect with diverse groups; many events were focused on environmental justice communities. Events included those hosted by Asian and Pacific Islander Community Coalition of Oregon, Hacienda CDC, Venezuelan Voices in Oregon, Affiliated Tribes of the Northwest Indians, Eastern Oregon Women's Coalition, Community Energy Project, and community and cultural events such as Juneteenth celebrations, Medford Multicultural Fair, Good in the Hood, Portland Argentinian Festival and Wallowa Woodland and Watersheds.
- Energy Trust hosted a four-part training series for directors and senior managers on ways to promote inclusion in the workplace and a one-time training for all staff on how to recognize and respond to unconscious biases.
- Energy Trust's DEI Book Club hosted four discussions in 2023. Two were on the books "Caste: The Origins of Our Discontents" that compares American racism to caste systems around the world and "Braiding Sweetgrass" that describes how Indigenous knowledge works with scientific understanding of the natural world. Two other discussions were on the miniseries "The 1619 Project" on how slavery and its legacy are at the center of the American experience.

Goal 2: Shift and share leadership and power

Outcomes:

- Community members have influence in the design and implementation of Energy Trust programs to serve historically underserved communities.
- Communities and community-based organizations have significant ownership and agency in identifying and delivering responsible clean energy solutions co-created with Energy Trust.

Metric:

- Number of community members who participated in Energy Trust projects, initiatives or advisory groups to provide input and influence program design. A community member is defined as a person who is not Energy Trust, Program Management Contractor or Program Delivery Contractor staff. (Community members may be compensated for their participation.)

Status as of 2023:

- As part of the Solar Ambassadors pilot to recruit and train community members to promote solar energy, Energy Trust engaged nearly 100 households on the benefits of solar, cost considerations and the process of purchasing and installing it. In post engagement surveys, participants reported being interested in the environmental and financial benefits of solar but that upfront costs and lack of affordable financing made it inaccessible.

- The Existing Buildings program incorporated community feedback into the program design through a network of 10 community-based liaisons who engage with small business owners and represent their feedback to staff. In 2023, liaisons assisted the Existing Buildings program with updating program incentive forms, supported Contractor Development Pathway listening sessions, attended trade ally forums and events and reviewed marketing materials.
- Four community members served on Energy Trust's Tribal Working Group, which meets regularly with outreach staff and the OPUC tribal liaison to provide input on outreach strategies that will provide greater benefits to tribal customers and increase program participation. (A fifth member of the group is also an employee of an Energy Trust contractor.) In 2023, working group members provided input on Energy Trust's 2024 budget, established an annual goal setting process and created a group charter.
- Ten people served on the Diversity Advisory Council for all or part of 2023. The council provided feedback on a customer survey's results and methodology; an equity assessment by the Existing Buildings program; considerations going into Energy Trust's budgeting for 2024; and Energy Trust's workforce development activities. Two council members also participated in a hiring panel, grant applications reviews and reviews of proposals for evaluations contracts.

Goal 3: Increase community capacity and investment in BIPOC, low-income and rural communities

Outcomes:

- Energy Trust contracts with a broad diversity of businesses to support our work and represent a variety of perspectives and approaches.
- Our Trade Ally Network reflects a broad diversity of businesses to better serve all of Energy Trust's customers.
- Energy Trust supports career and business development initiatives that help BIPOC, rural and low-income community members access career development and business opportunities in energy efficiency and renewable energy.
- BIPOC, low-income and rural communities receive focused investments of Energy Trust's technical expertise and funding resources to ensure programs and services are deployed equitably to all customers.

Metric:

- Percentage of expenditures to subcontractors on contracts over $100,000 paid to businesses certified by the Certification Office for Business Inclusion and Diversity as a Minority Business Enterprise, Women Business Enterprise, Service-Disabled Veteran Business Enterprise or Emerging Small Business.

Status as of 2023:

- In 2023, 14% of expenditures on prime contracts of more than $100,000 went to subcontractors certified as Emerging Small Businesses; 16% went to subcontractors certified as Women Business Enterprises; 16% went to subcontractors certified as Minority Business Enterprise; and 0% went to subcontractors certified as Service-Disabled Veteran Business Enterprises.
    - For this period, Energy Trust used certifications from Oregon's Certification Office for Business Inclusion and Diversity (COBID).

- Under Energy Trust's supplier diversity policy effective in 2023, contracts to non-COBID firms for more than $100,000 were required to pay at least 20% of the value of the contract to a COBID-certified firm or firms (including subcontractors). For 2023, 26% of the value of contracts over $100,000 went to COBID-certified subcontractors.

Goal 4: Increase transparency and accountability

Outcomes:

- Communities and organizations understand how their input and involvement impacts our work.
- Energy Trust is a learning organization where accountability is based on learning from both successes and failures, which are acted on to improve future outcomes.

Metric:

- Energy Trust exceeds its 2023 Oregon Public Utility Commission performance measure on equity metrics.

Status as of 2023:

- Energy Trust exceeded three of the equity metrics and met the remaining one. Activities included above-target spending to support nonprofit organizations serving environmental justice communities and above-target outreach positions focused on reaching environmental justice communities. For more information, see Section III of Energy Trust's 2023 Annual Report to the OPUC.

Goal 5: Deepen engagement in BIPOC, low-income and rural communities

Outcomes:

- Energy Trust has developed the relationships and communication channels needed to continuously understand the evolving needs of communities that have been underserved by Energy Trust in the past.
- Communities have confidence in Energy Trust as an organization that will work collaboratively and in good faith to reach mutual goals, according to the communities' desires and needs.

Metric:

- Number of community engagement activities planned for 2023 and results from those completed engagements.

Status as of 2023:

Energy Trust conducted engagement activities across all sectors and in communities across Energy Trust's service area. These activities focused primarily on communities of color, rural communities and people with low incomes. Many engagements reached a broader range of environmental justice communities including tribes and coastal communities. Of 25 engagements that were tracked in 2023, almost half focused on homeowners and renters, more than a third were directed toward small businesses, and a quarter involved community-based organizations. Many engagements are long-term efforts or involve ongoing collaborations with community-based organizations, while some were on specific projects, events or pilots that have a distinct beginning and end.

Examples of 2023 engagements include:

- outreach to community-based organizations to promote lighting and non-lighting offers available for small businesses
- the Solar Ambassadors pilot that trained members from communities of color to lead educational engagements in their communities
- interviews with community-based organizations enrolled in Community Partner Funding to inform ongoing improvements to existing program offers and new program offers and outreach materials
- engagements with rural communities, Hispanic communities, tribal groups, women and people of color in the design and construction fields, and other community specific initiatives

From staff reflections on 2023 community engagement activities, some common themes were noted. These observations reinforce lessons from prior community engagements and lead to deeper, more nuanced understanding of community needs and priorities. For example:

- Many of the customers, contractors and organizations Energy Trust works with have needs and concerns that are not energy related, and those concerns are often a higher priority for them.
- Collaboration and networking are highly valued among those who participate in engagement events and activities. Sometimes, the connections between organizations and individuals are a significant added value to the participants.
- Culturally responsive approaches and materials are needed to meet and serve customers who have not had full access to Energy Trust programs in the past.
- Awareness, access and trust are critical to serving all eligible customers. In some cases, it is a lack of awareness of Energy Trust. In others, the absence of contractors, and in some cases lack of trust in available contractors, continues to be a barrier for some customers.

Outcomes of community engagements are unique to each activity, as are next steps. In many cases, lessons from community engagement inform continuous improvements to delivery of services. For example:

- Through engagements with Hispanic communities, staff became more aware of cultural nuances such as the importance of family, music and food that led to more effective engagement. These initiatives demonstrated the importance of continuous engagement and Spanish-language resources to build familiarity and trust in Energy Trust. As a result, this team will refine communication strategies, enhance digital outreach and develop more culturally sensitive content.
- Rural engagement activities highlighted unique needs in rural communities and that broad generalizations are problematic and do not address intersectionality of community identity. For example, Southern Oregon – made up of the Klamath Basin, Southern and South Coast regions – encompasses a wide range of people, climates, behaviors and cultural experiences. This understanding points to the importance of targeted outreach and understanding unique regional needs and challenges.

APPENDIX 3: Customer satisfaction results

This appendix provides results of Energy Trust's customer satisfaction surveys. Minimum satisfaction rates are set by the Oregon Public Utility Commission in Energy Trust's annual performance measures.

Energy Trust calculated customer satisfaction from short web and telephone surveys with randomly selected 2023 program participants within about two months of project completion. The survey asked residential and non-residential participants in Oregon about satisfaction with their overall experience with Energy Trust. Participants in the Existing Buildings (including existing multifamily), Production Efficiency and commercial solar programs were also asked about satisfaction with their interactions with program representatives. Surveys were conducted with 645 residential customers, 475 non-residential customers (including solar customers) and 1,147 residential solar customers in Oregon who received an incentive or discount from Energy Trust in 2023. The average proportion of program participants satisfied with their overall experience with Energy Trust was 94% and satisfaction with Energy Trust program representatives was 94%.

Energy Trust's customer feedback survey does not ask residential participants about satisfaction with program representatives. Residential participants interact with Energy Trust representatives to a varying degree and many do not interact with a program representative. In general, commercial and industrial participants have more interaction with Energy Trust representatives.

New Buildings projects often involve numerous market actors (architects, engineers, developers and owners) at different project stages, so it is difficult to reach a project representative who is able to respond to questions about satisfaction. Satisfaction with the New Buildings program is obtained from interviews with program participants as part of a separate evaluation survey. The most recent survey took place in Q3 2022. Ninety New Buildings project owners or representatives who participated in 2021 and 2022 were surveyed about their overall program satisfaction and satisfaction with interactions with program representatives. Of participants surveyed, 100% were satisfied with their overall program experience. Satisfaction with program representatives was 100%.

Table 1: 2023 overall satisfaction

Program	Satisfaction with overall experience
Existing Buildings (including multifamily)	94%
New Buildings[47]	100%
Production Efficiency	95%
Residential	92%
Solar (residential and commercial)	90%
Unweighted average	**94%**

[47] New Buildings satisfaction based on survey results of 2021 and 2022 program participants.

Table 2: 2023 satisfaction with program representatives

Program	Satisfaction with program representative
Existing Buildings (including multifamily)	94%
New Buildings[48]	100%
Production Efficiency	90%
Commercial solar	92%
Unweighted average	**94%**

[48] New Buildings satisfaction based on survey results of 2021 and 2022 program participants.

APPENDIX 4: Progress to 2020-2024 Strategic Plan

This appendix provides updates on Energy Trust's 2020-2024 Strategic Plan, which defines the organization's areas of focus and key strategies for the five-year period. These focus areas align with Energy Trust's purpose, which is to help customers and communities reduce costs and realize additional benefits by saving energy and using renewable resources. The board-approved strategic plan was developed through a public process that involved gathering input from the OPUC, utility partners, stakeholders, advisory councils and members of the public. This appendix provides updates on activities for each focus area and related progress indicators. The strategic plan and related information are available at energytrust.org/2020-2024-strategic-plan.

Key

On track	On track, managing	Off track

Focus area 1: Services to customer

We engage customers with relevant programs, information and services, including information and services specifically for underserved customers. We know we are making progress to this focus area when we achieve the following progress indicators:

Progress indicator	Status as of 2023
We achieve our annual savings and generation goals and continue to use multiyear planning processes to identify ambitious longer-term energy targets that incorporate emerging sources of savings.	

- Energy Trust exceeded its annual electric and natural gas savings goals and its annual energy generation goal for 2023. It also met or exceeded goals in all utility service areas and achieved its highest ever annual savings in Cascade Natural Gas and Avista service areas.
    - For 2020 through 2023, Energy Trust has met or exceeded its annual electric savings goal for two years, met or exceeded its annual gas savings goal for three years, and met or exceeded its annual electric generation goal all four years.
    - For 2020 through 2023, Energy Trust has achieved 99% of the years' combined electric savings goals and 103% of the combined gas savings goals.
- Energy Trust deployed several strategies mid-year to boost gas savings among commercial and industrial customers, including increasing incentives in response to rising costs and doing more outreach to help customers identify easy-to-complete projects.
- Energy Trust worked with Avista to begin offering incentives to its interruptible and gas transport customers. These large commercial and industrial customers were previously ineligible for incentives; helping them save energy supports Avista's long-term decarbonization goals. (Outreach to some gas transport customers was paused at the request of Avista following an Oregon Court of Appeals ruling that invalidated the state's Climate Protection Program in late 2023.)

- Staff proposed and the board approved a 2024 budget and 2024-2025 action plan that includes significant investments in the capabilities, staffing and market support needed to deliver more savings in future years and will also maximize the impact of new complementary funding expected to enter the market in 2025 and beyond, ensuring those funding sources result in measurable value to utility systems as soon as possible.

Progress indicator	Status as of 2023
We meet or exceed the goals we establish to increase the diversity of program participants.	

- Energy Trust reported on metrics for progress to goals in its Diversity, Equity and Inclusion (DEI) Plan, which was developed by staff and focuses on community engagement. Metrics include the number of cultural awareness trainings and events attended by staff; the number of community members participating in Energy Trust projects, initiatives or advisory groups; the percentage of contract expenditures paid to businesses owned by women, people of color and service-disabled veterans; and the number of community engagement activities and result of these activities. See Appendix 2 in Energy Trust's 2023 annual report for results.
- In addition to the internal DEI metrics, Energy Trust began reporting to the OPUC in 2023 on results of the new equity metrics as required in HB 3141 (2021) and included in the OPUC's annual performance measures for Energy Trust. The 2023 metrics focused on increasing support for nonprofit organizations that serve environmental justice communities; increasing funding for outreach to environmental justice communities; creating and expanding low- and no-cost offers; and supporting solar and solar + storage projects for customers with low and moderate incomes. Energy Trust met or exceeded all four metrics; see Section III of Energy Trust's 2023 annual report for results.

Focus area 2: Supporting utilities

We strengthen the value we deliver to customers by linking energy efficiency and renewable energy to the approaches utilities are using to meet changing customer energy needs. We know we are making progress to this focus area when we achieve the following progress indicators:

Progress indicator	Status as of 2023
We develop a framework to value, deliver, report and evaluate energy efficiency and renewable energy resource opportunities in targeted locations in collaboration with utilities.	

- Energy Trust conducted targeted load management (TLM) feasibility studies for sites identified by Cascade Natural Gas and Avista. The studies showed the energy efficiency potential was not great enough to address potential load constraints in those locations.
- Staff began exploring TLM opportunities with PGE and Pacific Power and how they could apply to the non-wires solution concepts in the utilities' distribution system plans.

Progress indicator	Status as of 2023
We implement and evaluate initiatives designed to drive customer adoption of energy efficiency and renewable energy projects in targeted areas.	

- Energy Trust is participating in PGE's Smart Grid Test Bed Collaboration, which began offering incentives in late 2023 to customers in the North Portland neighborhoods of Overlook and Arbor Lodge with specialized efficiency and solar + storage offers for residential, commercial and multifamily properties.

Focus area 3: Informing policymakers

We provide objective information and analyses to policymakers and implementers to support development and implementation of energy policies. We know we are making progress to this focus area when we achieve the following progress indicator:

Progress indicator	Status as of 2023
We establish a system for monitoring regulatory and policy initiatives. We contribute data analyses and technical expertise during policy development and participate in policy implementation when there is potential customer benefit related to energy efficiency and renewable energy.	

- Staff developed an internal policy monitoring system in 2020.
- In 2023, staff provided feedback to the Oregon Department of Energy (ODOE) on the design of new rebate programs for residential customers with low and moderate incomes authorized under the federal Inflation Reduction Act and on its application for Solar for All funding. Energy Trust feedback was focused on how to ensure customers can access these offers and reduce confusion in the marketplace.
- After Portland City Council's approval of a five-year Climate Investment Plan in 2023, staff worked with city staff to develop a shared strategy for combining funding from Energy Trust and the Portland Clean Energy Community Benefits Fund to maximize benefits for eligible customers. Staff also facilitated a work session with staff from City of Portland, ODOE, utilities and others on this topic.
- Staff supported cities and counties developing and implementing sustainability, climate change or clean energy plans and programs, including the City of Salem's climate action plan, the City of Hillsboro's Environmental Stewardship Committee and greenhouse gas inventory, the City of Tigard's climate action plan and Wallowa County's Community Energy Strategic Plan.
- Staff provided briefings to more than a dozen legislators and legislative staff members during the 2023 Oregon legislative session on Energy Trust benefits to their districts and provided written and verbal comments to relevant committees.

Focus area 4: Delivering multiple benefits

We maximize the effectiveness and reach of public purpose charge funding by leveraging additional funding to advance clean energy investments that deliver multiple benefits. We know we are making progress to this focus area when we achieve the following progress indicators:

Progress indicator	Status as of 2023
We acquire more energy savings and renewable generation than would otherwise be achieved with only public purpose charge funding.	

- Energy Trust's Innovation and Development team, which was created in late 2022 and staffed in 2023, reviewed more than 75 opportunities for funding outside Energy Trust's core ratepayer funding to determine if Energy Trust should pursue the opportunity. Many of these were federal opportunities created under the Inflation Reduction Act.

- The largest such opportunity is Solar for All. Energy Trust and Bonneville Environmental Foundation joined the Oregon Department of Energy in Oregon's application for federal funding aimed at increasing the availability of solar, especially for low-income and disadvantaged communities. Under the proposal, Energy Trust would administer incentives and project development assistance to community solar projects and support community solar and rooftop solar for Oregon. Awards are expected to be announced by mid-2024.

- Innovation and Development team led coordination efforts with state and local agencies to establish best practices for combining different funding sources to maximize benefits for customers, ensure accessibility and prepare the market to meet growing demand.

- Energy Trust continues to participate in or manage initiatives with non-ratepayer funding sources, including PGE's Smart Grid Test Bed and the Landlord Provided Cooling Spaces with Oregon Department of Energy. Staff is exploring new opportunities that utilities are funding through distribution systems planning.

Progress indicator	Status as of 2023
We coordinate with more organizations and communities where their additional resources help accomplish mutually supportive objectives.	

- In 2023, Energy Trust enrolled 12 new community-based organizations in Community Partner Funding that together delivered $3.4 million in incentives to their clients for clean energy projects. Qualifying partner organizations deliver higher incentives to residential and multifamily customers with the goal of serving more customers of color, customers with low and moderate incomes, rural customers and other priority groups.

    - Since 2020, Community Partner Funding has served 2,400 sites, delivered $5.45 million in incentives, saved 3,386,000 kilowatt hours of electricity and saved 6,700 therms of natural gas.

- In 2023, Energy Trust awarded the second and third rounds of its Working Together Grants, which offer nonprofits funding to pursue activities that help diverse customers and communities participate in Energy Trust clean energy programs. Twenty organizations across the state were awarded grants totaling $160,000 to support outreach, training, program development, grant writing and organizational capacity. Grantees in the first round reported grant-funded activities reached about 4,000 customers.

Progress indicator	Status as of 2023
We establish a concept agreement with the Oregon Public Utility Commission and at least one natural gas utility to assess a joint carbon reduction effort.	

- Community-specific collaboration with one natural gas utility did not move into implementation phase.

- Energy Trust developed and launched a hybrid HVAC pilot to evaluate the benefits of heat pumps installed with gas furnaces in existing gas heated homes. Staff worked with utility partners and other stakeholders on the pilot's objectives, installation specifications, customer participation criteria and promotions. Installations began in late 2022 and the pilot will run for two years.

- Staff worked with Avista to begin offering incentives to its interruptible and gas transport customers in 2023; outreach to some customers was paused following an Oregon Court of Appeals decision (See Focus Area 1).

Focus area 5: Adapting to change

We enhance our ability to quickly and effectively respond to changes, needs and new opportunities. We know we are making progress to this focus area when we achieve the following progress indicators:

Progress indicator	Status as of 2023
We achieve diversity, equity and inclusion goals for employee hiring and recruitment and for the board of directors.	

- Energy Trust sought to increase the racial diversity among job applicants and new hires, setting an internal goal of 35% of job applicants and new hires identifying as Black, Indigenous and people of color (BIPOC). In 2023, 35% of applicants identified as BIPOC, as did 18% of new hires.
- In 2023, Energy Trust added three board members including one enrolled member of the Klamath Tribes and one enrolled member of the Confederated Tribes of the Umatilla Indian Reservation. Board recruiting in recent years has prioritized racial and geographic diversity.

Progress indicator	Status as of 2023
Annual surveys indicate that staff is significantly aware of how annual goal setting, business planning and prioritization enables flexible resourcing of existing and new initiatives.	

- Energy Trust surveys staff every six months to assess progress toward enhancing organizational flexibility, adaptability and responsiveness to change and new opportunities. Survey results in 2023 indicate the majority of staff are aligned around common goals and priorities and think senior leaders "often" or "always" communicate Energy Trust's vision and strategic direction. Results also confirm long-term improvement in staff feeling empowered to explore new ideas, as well as improved capabilities at decision making and flexible resourcing of new initiatives.
- The formation of the communities and new initiatives sector enhances Energy Trust's ability to engage with communities and tailor integrated cross-program offerings to meet customer and community needs.
- Staff make significant process improvements to budgeting and action planning processes, including designated change periods and streamlining underlying data structures that enabled faster, more iterative budget development in 2023.
- Staff redesigned the orientation process for new employees to provide a consistent experience for larger cohorts to keep pace with accelerated hiring in 2023.

APPENDIX 5: Renewable resource development targets

This appendix provides information on Energy Trust's project development assistance for projects that would generate renewable electricity from hydropower, biopower, municipally owned community-scale wind and geothermal resources.

The primary purpose of project development assistance is to increase the number of distributed renewable energy generation projects in Oregon by lowering early-stage development barriers and financial risk. Through project development assistance, Energy Trust builds a pipeline of potential projects that have achieved critical pre-construction activities, including technical and financial assessments. Development assistance also prepares potential project owners to apply for Energy Trust installation incentives and other sources of financial support. The early-stage analyses delivered through development assistance, such as feasibility studies, build and reinforce Energy Trust's awareness of market factors and other considerations important for supporting distributed renewable energy resources while helping individual projects leverage other incentives, construction services and long-term financing.

Applications for project development assistance must be received and approved by Energy Trust prior to the start of the proposed development activity. Project development assistance incentive funds are provided as a reimbursement following completion of the activity and proof of full payment to all contractors. Incentive funding is provided at 50% of the project activity cost (75% in 2023 for municipal/public customers), up to a maximum of $200,000 per project. Project proponents maintain a significant financial stake in development activities, helping ensure that activities are necessary and fiscally prudent. Common examples of project development activities include feasibility and design studies, feedstock studies, irrigation district modernization technical investigations and assessments, and transmission and interconnection studies. In addition to this assistance, Energy Trust project development assistance funding supports regional energy planning and energy resilience investigations.

While project proponents using any eligible technology may apply for project development assistance incentives, staff focus most outreach efforts in two key areas:

- Electricity generation from the combustion of biogas, which is produced from the anaerobic digestion of organic material (i.e., wastewater sludge, fat/oils/grease, food processing material) at water resource recovery facilities.
- Hydroelectric projects made possible from the modernization (i.e., piping) of irrigation water delivery infrastructure (canals, ditches and laterals) by irrigation districts.

Barriers to project development

Energy Trust's project development assistance incentive offer is designed to address development barriers and challenges. In 2023, supply chain delays from the pandemic, low avoided power prices and persistent inflation presented market headwinds for hydropower and biopower projects. These barriers were present for some development assistance activities, slowing customer decision making and execution of feasibility studies.

The following summarizes barriers encountered in 2023:

- **Market conditions for distributed renewable energy generation in Oregon continue to be challenging but are showing signs of improvement.** Project proponents face challenging market

fundamentals, including persistent low avoided cost rates and high inflation causing increasing material, labor and consulting services costs. Utility interconnection for small-scale renewables continues to be time consuming and increasingly costly. This continues to reinforce project development assistance as an essential tool to attract investment in distributed energy resources. However, federal funding in the form of grants and tax credits from the federal Infrastructure Investment and Jobs Act and Inflation Reduction Act and Oregon's Community Renewable Energy Grant Program are penetrating the marketing and stimulating project development.

- **Early-stage development capital is scarce and considered high risk by investors.** Investing financial resources in renewable energy project development with above-market costs is often regarded as high risk. Investors are reluctant to commit funds into projects with unclear technical or financial viability, especially when a project is likely to have a lengthy return on investment. Without early-stage funding, a project cannot advance to the point where the risk is reduced. By providing early-stage funding, Energy Trust builds a pipeline and helps move projects forward, enabling them to attract additional financing and decide to proceed with construction. On the other hand, early-stage assessments may also help inform the market if a project is determined to not be technically or financially viable. Energy Trust helps project owners reach that point with less financial exposure.
- **Project proponents whose primary business is not energy often encounter difficulties navigating the stages of project development.** Energy Trust works with many project proponents (e.g., municipalities, private businesses, irrigation districts) that are not professional renewable electricity developers. Advancing a project through resource characterization, feasibility assessment, financing, permitting and interconnection can be lengthy and difficult. Project development assistance – both financial and technical – helps project proponents navigate these steps in less time and at a lower cost. Energy Trust also provides objective third-party expertise to help customers navigate a project through development stages.

Project development assistance activity in 2023 relative to the OPUC performance metric

This report details the specific uses of project development assistance in these areas in 2023. Since 2014, Energy Trust has focused on increasing the deployment of project development assistance incentives to build a pipeline of projects that can apply for installation incentive funds.

Focus areas	Projects supported	Total funds spent in 2023
Focus area 1: Biogas	1	$107,548
Focus area 2: Irrigation hydropower	6	$371,282
Outside focus areas	13	$463,179
Total	20	$942,009

The 2023 OPUC performance measures for Energy Trust include the following metrics related to project development assistance:

> *For project and market development assistance, Energy Trust will report annual results, including number of projects supported, milestones, and documentation or results from market and technology perspectives.*

In 2023, Energy Trust spent $901,263 in non-solar project development assistance incentives. About 41% of funds spent involved support for irrigation districts enrolled in irrigation modernization and about 12% involved support for organic material recovery and biogas use investigation.

Spending in 2023 was influenced by:

- High inflation causing increases in development costs and delays in project advancement.
- Irrigation districts are completing their System Improvement Plans and Watershed Plans; there are few remaining districts to enroll the program therefore decreased development assistance.
- Alternations in feasibility study scopes of work and protracted assessment completions.

In 2023, project development assistance supported the completion of Wallowa County's Community Energy Strategic Plan, which was adopted by the county commission in December 2023. In addition, development assistance was used to advance the conceptual design of a microgrid involving irrigation district in-conduit hydropower and critical facilities in Central Oregon.

Following is a description of project development activities in 2023 in detail.

Focus area: Electricity generation from biogas

Biogas projects supported: 1

Milestones met:

- Municipal water resource recovery
    - Predesign for anerobic digestion and cogeneration expansion

Oregon's businesses and municipalities are obligated to manage and safely dispose of significant volumes of organic material. As Oregon's population grows, the volume of organic material requiring processing and disposal increases as well. Organic material, produced by food processors, breweries, and municipal water resource recovery facilities, are costly to manage and transport and if not disposed of properly will pose human health risks. Traditional methods of safely managing these materials include land application and landfilling, and in the case of food waste, conveyance to livestock operations.

With recent technological advancements, these materials can serve as a valuable biogas feedstock. Biogas, about 60% methane by volume, is a well-recognized renewable energy resource that can be combusted to serve onsite thermal energy needs, used as a fuel for combined heat and power systems (cogeneration), or conditioned further and compressed for vehicle fuel or injected into existing natural gas pipelines as renewable natural gas.

In 2023, Energy Trust provided project development assistance to a municipality that is designing an expansion of their anaerobic digestion capacity to allow for processing of post commercial food waste into biogas. This would allow the facility to increase significantly their on-site generation of renewable thermal energy and renewable electricity, becoming a net-exporter of renewable energy beyond net-zero.

Focus area: Irrigation hydropower

Irrigation modernization projects supported: 6

Milestones met:

- Evaluation of existing water use and infrastructure

- Stakeholder engagement
- Evaluation of water savings and energy conservation potential
- Evaluation of environmental benefits and water quality impacts
- Evaluation of hydroelectric potential
- Evaluation of economic impacts
- Development of watershed and system optimization plans

Energy Trust supports several types of irrigation hydropower projects, which are categorized by customer type and process used. Staff see technically and financially viable hydropower opportunities among irrigation districts, other agricultural water suppliers such as ditch companies, and farms where irrigation water is delivered to an individual user. Energy Trust's irrigation modernization work provides a comprehensive structure for irrigation districts and other agricultural water suppliers to assess hydropower potential and identify additional water delivery system improvements and benefits.

Much of Oregon's agricultural water is delivered to farms by irrigation districts or other water providers using aging, open canal systems. The conveyances were typically constructed more than 120 years ago, which lose significant quantities of water to seepage and evaporation. They are ripe for modernization, which would derive lasting energy and water conservation benefits, and create additional opportunities for agricultural security, rural prosperity, drought resiliency and environmental improvements.

Hydropower projects using irrigation water have been a focus for Energy Trust since 2010. Despite challenging renewable energy market conditions, these types of projects remain viable due to the wide range of non-energy benefits that modernized irrigation systems can provide, substantial grants from state and federal agencies to offset the cost of piping and the concerted efforts by irrigation district managers and agricultural producers.

Modernizing an irrigation district is complex. A significant modernization milestone is the replacement of open canals with pipes, which saves water by eliminating seepage and evaporation. Irrigation canals use gravity to keep water flowing. Once the open system of canals and laterals are piped, the water in the pipe is pressurized by gravity, allowing irrigators to remove the pumps they formerly needed to lift and convey water to crops, thereby reducing energy use and maintenance costs. Pressurized water may also enable additional upgrades to more water-efficient on-farm irrigation systems. Surplus water pressure can be used to generate hydropower, with revenues from the sale of renewable electricity helping to finance project implementation.

The Irrigation Modernization Program provides irrigation districts and the farmers they serve a one-stop shop to navigate complex agricultural priorities, regulatory requirements, funding needs and environmental concerns. Within each district, the irrigation modernization initiative identifies short- and long-term irrigation goals, assesses opportunities and risks, identifies potential stakeholder partnerships, evaluates and communicates the associated energy, economic, ecological and social benefits of modernization, secures project financing and facilitates project implementation.

This nationally recognized effort reduces the cost and time required for project planning and implementation, addresses key regulatory and institutional barriers, leverages federal, state and private funding, and reduces costs for agency, environmental and agricultural program deployment. This initiative builds awareness that modern agricultural water management can help mitigate the impacts of long-term drought on agricultural production and regional watersheds and ecosystems. Irrigation modernization is replicable and scalable, designed to achieve significant energy, agricultural and ecosystem benefits in Oregon and other Western states.

In 2023, irrigation modernization assessments were underway at 12 Oregon irrigation districts. These assessments identify the renewable energy, energy efficiency, agricultural, water conservation, environmental and economic benefits associated with modernization. They also characterize various potential project implementation approaches. System Improvement Plans are complete for 22 irrigation districts in Oregon. Each irrigation district will choose the implementation approach that is right for their patrons and unique situation. After a district's board selects a preferred approach, then design, permitting and financing will begin, followed by contracting and construction.

Project development assistance outside of focus areas

Projects supported: 13

Milestones met:

- Municipal drinking water system in-conduit hydropower feasibility studies
- Fish hatchery hydropower design and permitting assessment
- Micro-hydropower FERC licensing and agency consultation
- Completion of the Wallowa County Community Energy Strategic Plan
- Renewable Energy Certificate registration costs

Energy Trust supported 13 projects outside the two focus areas in 2023. These projects represent a wide variety of distributed renewable energy generation opportunities, including design of municipal drinking water system in-conduit hydropower, fish-hatchery hydropower design, micro-hydropower licensing and permitting, and community energy strategic planning. In addition, Energy Trust provided development assistance for a microgrid feasibility study that investigated how a conceptual irrigation district in-conduit hydropower facility could be designed to provide backup power to nearby public-owned critical facilities when grid power is lost.

APPENDIX 6: NW Natural industrial demand-side management activities

Since 2009, Energy Trust has provided service to NW Natural's Schedule 31 and 32 non-transport customers, funded through a special rate adjustment mechanism rather than through the public purpose charge. Program costs and therm savings for these customers in 2023 are included in the body of this annual report as a portion of NW Natural savings and reported separately below.[49]

		Annual savings therms		Annual actual expenditures	Levelized cost per therm
Commericial	Existing Buildings	1,105,550	$	3,963,508	49.7 ¢
	New Buildings	15	$	17,038	10,821.8 ¢
	Commercial total	**1,105,564**	**$**	**3,980,546**	**49.9 ¢**
Industrial	Production Efficiency	1,163,399	$	2,576,305	26.3 ¢
	Industrial total	**1,163,399**	**$**	**2,576,305**	**26.3 ¢**
	Total	**2,268,964**	**$**	**6,556,851**	**36.8 ¢**

[49] New Buildings technical assistance was paid to customers who later changed rate schedules, and savings from those projects were not recorded as DSM savings.

APPENDIX 7: Purpose, goals and background

Vision statement

Clean, affordable energy for everyone.

Purpose statement

We help customers and communities reduce costs and realize additional benefits by saving energy and using renewable resources.

Background

Energy Trust is an independent 501c(3) nonprofit organization funded by and serving Oregon customers of Portland General Electric (PGE), Pacific Power, NW Natural, Cascade Natural Gas and Avista, and Washington customers of NW Natural. Since 2002, we have offered energy efficiency and renewable energy programs and services to customers and communities, including homeowners and renter, product manufacturers, small and large businesses and industries, nonprofit and public organizations, farmers and ranchers.

We invest utility customer funds to deliver benefits from cost-effective energy-efficiency improvements, reduce the above-market costs of small-scale renewable energy generation systems with an emphasis on benefiting customers with low incomes, and support projects that improve the reliability and resiliency of the electric grid. We serve customers in coordination with utilities, community and industry organizations and government agencies. Our work helps ensure a more affordable and sustainable energy future for utility customers and contributes to our local and state economy in positive ways.

We provide information, technical expertise and financial assistance to help people modify their energy usage habits, choose high-efficiency products, invest in energy-efficient construction and install renewable energy projects. Our programs and approaches, range of offers tailored to customers, and collaboration with public agencies and community-based organizations enable us to provide relevant clean energy solutions as customer and community needs evolve. With our assistance, participating customers derive a range of benefits including lower energy bills, greater comfort, improved productivity and lower carbon emissions.

It is our responsibility to ensure all customers can directly benefit from our services, including people with low and moderate incomes, communities of color and rural communities. Since 2019, Energy Trust has developed annual diversity, equity and inclusion plans and goals to improve and enhance offerings for customers we have historically underserved.

As a steward of utility customer dollars, we consistently maintain low administrative and program support costs to ensure the majority of public purpose charges and ratepayer funds flow back to customers in the form of incentives, services and education. We competitively bid our program management and delivery contracts, ensuring competitively priced and effective services are provided. For most programs, Energy Trust leverages specialized local trade and program ally businesses – many of which employ 20 or fewer staff – that already serve customers in the marketplace. We support and leverage a statewide network of trade ally contractors, allied professionals and participating retailers that are familiar with Energy Trust incentives. By connecting customers directly to this network, Energy Trust helps keep costs low, supports our region's energy services sector and sustains opportunities in the areas we serve.

We are led by an independent board of directors whose members volunteer their time and expertise. Our work is also shaped by advice from three advisory councils comprised of stakeholders and volunteers. We strive to be inclusive and transparent by holding open meetings and publishing online meeting agendas, notes, independent third-party program evaluations, draft and final budgets and action plans, reports and annual audited financial statements.

We comply with legal requirements and minimum performance measures set forth in our contract with the Oregon Public Utility Commission. Annual goals for electric and natural gas energy savings are developed in consultation with PGE, Pacific Power, NW Natural, Cascade Natural Gas and Avista and built from each utility's Integrated Resource Plan. This collaboration enables Energy Trust to focus on and be accountable for delivering cost-effective energy to meet the needs of every utility customer. In addition, annual renewable energy generation goals are developed using market knowledge obtained through renewable resource assessments.

APPENDIX 8: Board of directors, board development guidelines; advisory councils and meetings

Board of directors

PRESIDENT—**Henry Lorenzen**, Pendleton, has a resume that spans working as a partner at Corey, Byler, Rew, Lorenzen and Hojem law firm to running his family's 4,000-acre wheat farm. From 2002 to 2018, he served on the Northwest Power and Conservation Council, which develops a regional power plan and fish and wildlife program. He also served on the Oregon State Board of Higher Education, Oregon Fish and Wildlife Commission and Oregon Environmental Quality Commission. He is a certified professional electrical engineer. *Henry joined the board in October 2018 and became president in 2022.*

VICE PRESIDENT—**Roland Risser**, Washington County, has extensive knowledge of residential, commercial and industrial energy efficiency program design, development and implementation, including low-income energy efficiency programs. He worked at the U.S. Department of Energy as director of the Building Technologies Office and then as deputy assistant secretary of renewable power. His decades of experience include multiple leadership positions at Pacific Gas and Electric and service on national boards for the American Council for an Energy-Efficient Economy and the Consortium for Energy Efficiency. *Roland joined the board in October 2018 and became vice president in 2022.*

SECRETARY—**Eric Hayes**, Beaverton, is the state organizing coordinator for the International Brotherhood of Electrical Workers. He engages and organizes electrical workers to achieve better wages, pensions, insurance and training. Eric's roles include recording secretary, vice president and president of Local 48. Eric has also served as a trustee of the Edison Pension Trust, Harrison Health Trust and the Apprenticeship Trust. He was also president of the Electrical Minority Workers Caucus Portland Chapter, which promotes people of color and women in IBEW. *Eric joined the board in October 2018 and became secretary in 2022.*

TREASURER—**Susan Brodahl**, Portland, is a senior vice president in the Portland office of Heffernan Insurance Brokers as well as an owner of Heffernan Group, which has more than 400 employees and is ranked in the top tier of all privately held brokerages in the country. Susan believes in a creative approach to insurance using a risk funding model. *Susan joined the board in February 2014 and became treasurer in 2018.*

Melissa Cribbins, Coos Bay, is an attorney, former Coos County Commissioner and chief judge of the Coquille Indian Tribal Court. She previously worked for the City of Spokane and Eugene Water and Electric Board in the field of water quality. She is a member of the Oregon State Bar, the Washington State Bar and is active in many organizations in Coos County and statewide. *Melissa joined the board in February 2014 and served as president from 2020 to 2022.*

Thelma Fleming, Vancouver, is a vice president and risk compliance audit professional with U.S. Bank in Portland. She brings 30 years of experience in banking, risk management, regulatory and tax compliance to the board. Thelma volunteers with Financial Beginnings Oregon, which offers financial literacy seminars to all ages. *Thelma joined the board in June 2022.*

Ellsworth Lang, Chiloquin, is an enrolled member of the Klamath Tribes. He has dedicated his life to serving the greater Klamath Basin through a wide range of organizations and community partners. For 15 years, Ellsworth served the JELD-WEN Communities Resorts Division. He continues to put his passions to work in assisting the Klamath Tribes, serving on the Klamath Tribal Council, as a member of Chiloquin Community Builders, on the Discover Klamath Board of Directors, and as a member of the Klamath County Chamber of Commerce Board of Directors. *Ellsworth joined the board in May 2023.*

Jane S. Peters, Portland, is an environmental psychologist and small business owner. Her career in energy program evaluation focused on including the voices of all market actors in energy program research. She is known for her work conducting process evaluation and market research for utilities, energy agencies and nonprofits, and in 2013 the International Energy Program Evaluation Conference awarded her its Lifetime Achievement Award in Energy Program Evaluation. *Jane joined the board in May 2023.*

Anne Haworth Root, Medford, is co-owner and general manager of EdenVale Winery and Eden Valley Orchards, a destination winery, historic pear orchard and events center in southeast Medford. An award-winning entrepreneur, Anne developed the concept and helped found the 57 Oregon Wine and Farm Tour, an agritourism coalition of Southern Oregon wineries, historic farms and specialty food and cheese companies. *Anne joined the board in December 2011.*

Silvia Tanner, Portland, brings years of experience in the utility regulation field. She is a senior energy policy and legal analyst at Multnomah County's Office of Sustainability where she focuses on clean energy and energy justice. She leads Multnomah County's advocacy for rules, regulations and utility practices that support vulnerable populations and explores how seemingly neutral energy policies can contribute to unjust outcomes. She also spearheads the county's efforts to meet its community-wide renewable energy goals. *Silvia joined the board in February 2022.*

Peter Therkelsen, Ashland, is the deputy of the Building and Industrial Applications Department at the Lawrence Berkeley National Laboratory. His work focuses on industrial energy management business practices and policies. He studies barriers to the implementation of industrial energy efficiency measures, supports the implementation of energy management systems in the United States, and serves as a delegate of the United States at International Standards Organization meetings for energy management and savings. Peter studies and develops high efficiency, fuel flexible and low emission installed and portable heat and power systems. *Peter joined the board in February 2022.*

Bill Tovey, Pendleton, is an enrolled member of the Confederated Tribes of the Umatilla Indian Reservation and has worked for the tribe for more than 30 years, bringing a wealth of financial management experience to the board. He served as project lead on the development of the Tribe's Wildhorse Casino and Resort. He now works on meeting tribal housing needs, oversees the tribe's land acquisition program and is working on reservation broadband services and wind and solar projects. *Bill joined the board in May 2023.*

Ellen Zuckerman, Portland, has worked across the country on demand side management program design, implementation, marketing, performance and policies. She started her energy-efficiency career in support of New York State's low-income weatherization program. As an independent energy consultant, she advised Fortune 500 companies, state agencies, local governments and nonprofits. She manages Google's regulatory and legislative engagement on energy and climate issues in the Western U.S. and Latin America. *Ellen joined the board in November 2022.*

Ex-officio: Oregon Public Utility Commission

Letha Tawney, Portland, is one of three Oregon Public Utility Commissioners and was appointed by Gov. Kate Brown in June 2018. Prior to this, Letha worked for the World Resources Institute as an expert on clean energy development and large customer buying strategies. As the Polsky Chair for Renewable Energy, she led the institute's work on propelling innovation in business and regulatory models in the power sector. Now Letha represents Oregon on the Electricity and the Critical Infrastructure committees for the National Association of Regulatory Utility Commissioners. She also serves on the Energy Imbalance Market Board of State Regulators, engaging closely on Western electricity market development. *Letha joined the board as ex-officio in October 2019.*

Special board adviser: Oregon Department of Energy

Janine Benner, Eugene, is the director of the Oregon Department of Energy. She joined ODOE in 2017 as assistant director for planning and innovation and was later made director in February 2018. She provides leadership and policy direction to help the state shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations. Janine came to ODOE from the U.S. Department of Energy where she served as associate assistant secretary in the Office of Energy Efficiency and Renewable Energy, the largest government funder of clean energy research and development. Before that, she served as deputy assistant secretary in the department's Office of Congressional and Intergovernmental Affairs. Janine also spent 12 years working for U.S. Rep. Earl Blumenauer, first as an energy and environmental policy adviser and then as deputy chief of staff. *Janine joined the board as special board adviser in April 2017.*

Board development guidelines

Energy Trust's board of directors is a non-stakeholder, volunteer board. It oversees Energy Trust management, provides strategic and policy direction and approves the organization's budget and major expenditures. The board carries out its oversight role collectively and through several committees. The board's bylaws ensure Energy Trust board meetings and other processes are clear, open and accessible to the public.

The Oregon Public Utility Commission grant agreement with Energy Trust calls for the Energy Trust board to include the skills, broad representation and diversity necessary to achieve the nonprofit's purpose and vision. As board openings arise, the board consults community-based organizations, advisory councils, individuals and collaborating organizations to identify candidates with appropriate experience and knowledge of customers underserved by Energy Trust.

The 2023 board included voting members with background in business, private consulting, government, utilities, trades and nonprofits. Members come from all parts of Energy Trust's service area including Vancouver in Southwest Washington. The board's OPUC ex-officio member is OPUC Commissioner Letha Tawney. Janine Benner, director of the Oregon Department of Energy, has been a special board adviser since April 2017. The ex-officio and special board adviser are not voting members.

All voting board members complete and sign disclosure of economic interest forms each year. The OPUC ex-officio board member and the special adviser from the Oregon Department of Energy do not receive confidential information. Once a year, board and staff members participate in a planning session to review progress and discuss Energy Trust's strategic direction. Board members are supported to undertake ongoing development activities. In addition, board governance and fiduciary responsibility training is provided to new board members in orientation and to all board members in conjunction with the board's annual meetings.

Advisory councils and meetings

The board of directors conducts its work with the input from three advisory councils. The following lists of advisory council members reflect members who served during all or part of 2023. In addition to the council meetings detailed below, Energy Trust held a workshop on 2024 budget goals in October for all three councils that was open to the public. Meeting notes for all advisory council meetings are available at energytrust.org/about/public-meetings.

Conservation Advisory Council

Jeff Bissonnette, NW Energy Coalition
Andy Cameron, Oregon Department of Energy
Charity Fain, Community Energy Project
Kari Greer, Pacific Power
Tim Hendricks, Building Owners and Managers Association
Tina Jayaweera, Northwest Power and Conservation Council
Anna Kim, Oregon Public Utility Commission
Margaret Lewis, Bonneville Power Administration
Lisa McGarity, Avista
Kerry Meade, Northwest Energy Efficiency Council (now called Building Potential)
Noemi Ortiz, Cascade Natural Gas
Tyler Pepple, Alliance of Western Energy Consumers
Laney Ralph, NW Natural
Becky Walker, Northwest Energy Efficiency Alliance
Jake Wise, Portland General Electric

2023 meeting dates	Major discussion topics
February 15	New member introductions, council operating principles, 2023 equity metrics, federal funding opportunities
April 19	Council community agreements, workforce development activities, market insights to inform Energy Trust's 2024 budget
May 17	Draft community agreements, residential income eligibility changes, new homes program and billing analysis
June 28	New Building program update, non-energy benefits, hybrid HVAC pilot
July 26	Proposed revisions to fuel switching policy, 2024 budget planning
September 20	2023 legislative session outcomes, 2023-24 residential incentive changes, 2024 budget planning
November 15	Additional services to Avista and NW Natural customers, Innovation and Development team overview and priorities

Diversity Advisory Council

Susan Badger-Jones, special projects consultant
Christopher Banks, Urban League
Oswaldo Bernal, OBL Media, LLC
Rebecca Descombes, health policy contractor
Terrance Harris, Drexel University

Dolores Martinez, EUVALCREE
Rhea S. Rock, Sunlight Solar
Lauren Rosenstein, Oregon Department of Energy (ex-officio)
Ruchi Sadhir, Oregon Department of Energy (ex-officio)
Indika Sugathadasa, PDX HIVE
Ezell Watson, Oregon Public Utility Commission

2023 meeting dates	Major discussion topics
January 17	New staff introductions, board member trainings, 2023 council work plan
February 14	2023 equity metrics, Existing Buildings equity assessment, 2022 customer awareness and participation survey results
April 18	New member introductions and recruiting, 2023 council work plan, legislative update, market insights to inform Energy Trust's 2024 budget
May 16	Internal DEI goal setting, skills matrix to inform new member recruiting
July 12	2023 budget considerations including workforce development and delivery partnerships
September 19	2023 legislative session outcomes, 2023 budget considerations including work with community-based organization
November 9	Workforce development activities

Renewable Energy Advisory Council
Joe Abraham, Oregon Public Utility Commission
Alan Beane, GeoGrade Constructors LLC
Stasia Brownell, Portland General Electric
John Cornwell, Oregon Department of Energy
Angela Crowley-Koch, Oregon Solar + Storage Industries Association
Max Greene, Renewable NW
Ryan Harvey, Pacific Power
Raphaela Hsu-Flanders, Bonneville Environmental Foundation
Tess Jordan, Portland General Electric
Alexia Kelly, High Tide Foundation
Anna Kim, Oregon Public Utility Commission
Brikky King, Fairway Mortgage
Oriana Magnera, Verde
Les Perkins, Farmers Irrigation District
Josh Peterson, Solar Monitoring Lab, University of Oregon
Amy Schlusser, Oregon Department of Energy
April Snell, Oregon Water Resources Congress
Jaimes Valdez, Portland Clean Energy Community Benefits Fund
Jake Wise, Portland General Electric

2023 meeting dates	Major discussion topics
February 15	2023 equity metrics, preliminary 2022 results, council community agreements
April 19	Market insights to inform Energy Trust's 2024 budget, 2022 renewables activities and accomplishments
June 28	Proposed changes to solar program and offers
July 26	Solar Ambassador pilot overview, 2023 budget considerations, 2023 legislative session outcomes
September 20	Oregon Department of Energy program updates, 2023 budget considerations, residential solar financing
November 15	Oregon Department of Energy incentive and grant programs

APPENDIX 9: Impacts on utility capacity

This appendix provides an annual update on Energy Trust's impacts on utility capacity management. It describes ongoing and future approaches to work with utilities and other stakeholders to employ distributed energy resources to mitigate capacity constraints on a systemwide basis for utilities, alleviate local distribution system constraints and lower utility costs for the benefit of ratepayers. This appendix discusses the contributions energy efficiency and renewable resources contribute to manage capacity. It also provides an overview of progress toward further development of methods to quantify and value the impact that energy efficiency and renewable resources have on managing utility transmission, supply and distribution systems.

Energy Trust helps customers install energy efficiency and renewable generation measures that not only save energy and offset electric and gas loads, but also provide capacity benefits to the utility system and to ratepayers. Energy Trust will continue to improve its understanding of how energy efficiency savings and renewable generation provide these capacity benefits to utilities in context with utility integrated resource planning and the evolving policy landscape. Energy Trust is incorporating this evolving knowledge into avoided cost benefit calculations to estimate the value of impacts of energy efficiency activities on utilities' capacity benefits.

Capacity benefit estimates from energy efficiency and solar electric generation

For 2023, Energy Trust estimated capacity benefits from electric and gas energy-efficiency projects by calculating the percent of annual energy savings that occur during utility system's capacity constrained time periods as identified by utilities in their loss of load probability matrices and documented and approved by the OPUC for use in the calculation of Energy Trust avoided costs via OPUC docket UM 1893.[50] To estimate the portion of electric energy savings in those periods, Energy Trust relied on load profiles taken from the Northwest Power and Conservation Council's Power Plan.[51]

For natural gas, Energy Trust calculated both peak-day demand reductions and peak-hour demand reductions by relying on peak factors from two sources. Peak day factors were based on electric analogs taken from the Northwest Power and Conservation Council's Power Plan for several end-uses, and peak day factors for space heat end-use savings were developed by NW Natural. Peak hour factors were also based on electric analogs taken from the Northwest Power and Conservation Council's Power Plan for several end-uses, and peak hour factors for space heat end-use savings were developed by NW Natural.[52] These factors are used to calculate gas peak reductions by end-use at the measure level.

Energy Trust's and Northwest Energy Efficiency Alliance's (NEEA) efficiency programs resulted in the following capacity benefit estimates for 2023.

[50] For this analysis, Energy Trust used the final values approved by the OPUC in UM 1893 proceedings in late 2022: https://apps.puc.state.or.us/orders/2022ords/22-483.pdf

[51] https://nwcouncil.app.box.com/s/ph0by9u53vygowx42rms5oytojhdmg5x

[52] NW Natural peak factors can be found in Chapter 4 of NW Natural's 2018 IRP on pages 4.7 and 4.8: https://webfrontend-sc-pd.azureedge.net/-/media/nwnatural/pdfs/nwnatural_2018_irp.pdf?la=en&rev=f4f7b91117c94e498d04f5f13ce3b776&hash=73D349C4E84F57B9CE6B10C65F10B789

Table 1: 2023 electric system efficiency capacity benefit estimates (MW) at generator

Utility	Summer MW	Winter MW	Total aMW Saved
PGE	40.43	48.43	29.94
Pacific Power	37.44	34.87	23.17
Total	**77.86**	**83.30**	**53.11**

For gas measures, Energy Trust calculated peak-day and peak-hour natural gas savings, presented in the table below.

Table 2: 2023 Net natural gas system efficiency capacity benefit estimates (therms)

Utility	Peak-day therms	Peak-hour therms	Total therms Saved
NW Natural	74,620	5,588	5,493,896
Cascade Natural Gas	8,058	606	599,924
Avista	6,269	452	499,729
Total	**88,947**	**6,646**	**6,593,550**

Energy Trust estimated 2023 average capacity benefit contributions from residential and non-residential solar electric projects. Energy Trust estimated average generation from installed solar projects for multiple locations throughout Energy Trust service area during capacity constrained hours by using hourly generation profiles for representative project types based on variation resulting from shading, tilt, cardinal orientation and geographic location. Actual historic or real time peak contributions for each project varies based on time of day and weather. Table 3 shows the average solar generation over the peak period identified by each utility for each season. The figures below show the average daily solar generation profile shape by season and utility.

Table 3: 2023 electric system solar capacity benefit estimates (MW) at generator

Utility	System Count	Summer MW	Winter MW	Total aMW	Total nameplate MWdc
PGE	2,492	5.63	1.60	7.23	28.41
Pacific Power	1,433	3.56	0.35	3.91	15.02
Total	**3,925**	**9.19**	**1.95**	**11.14**	**43.43**

Figure 1: Average hourly August solar generation profile from all 2023 solar installations in Portland General Electric service area

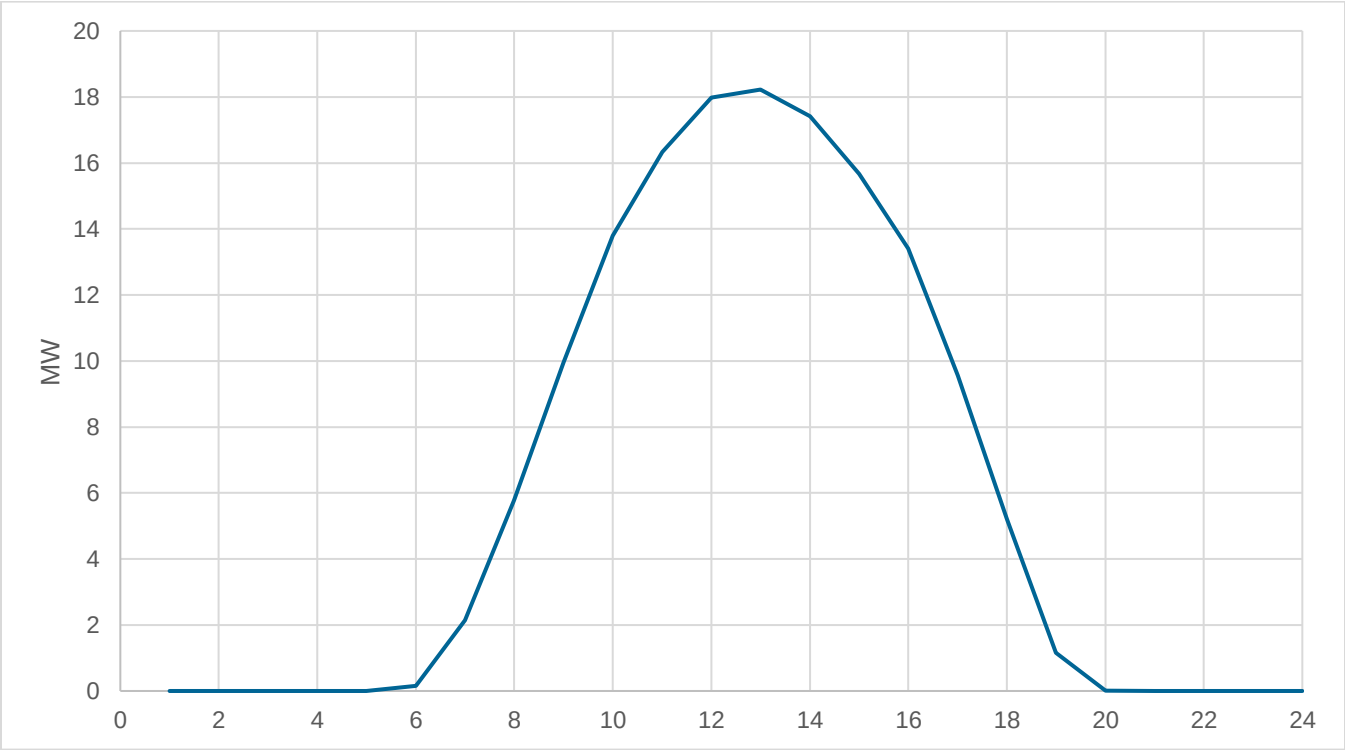


Figure 2: Average hourly January solar generation profile from all 2023 solar installations in Portland General Electric service area

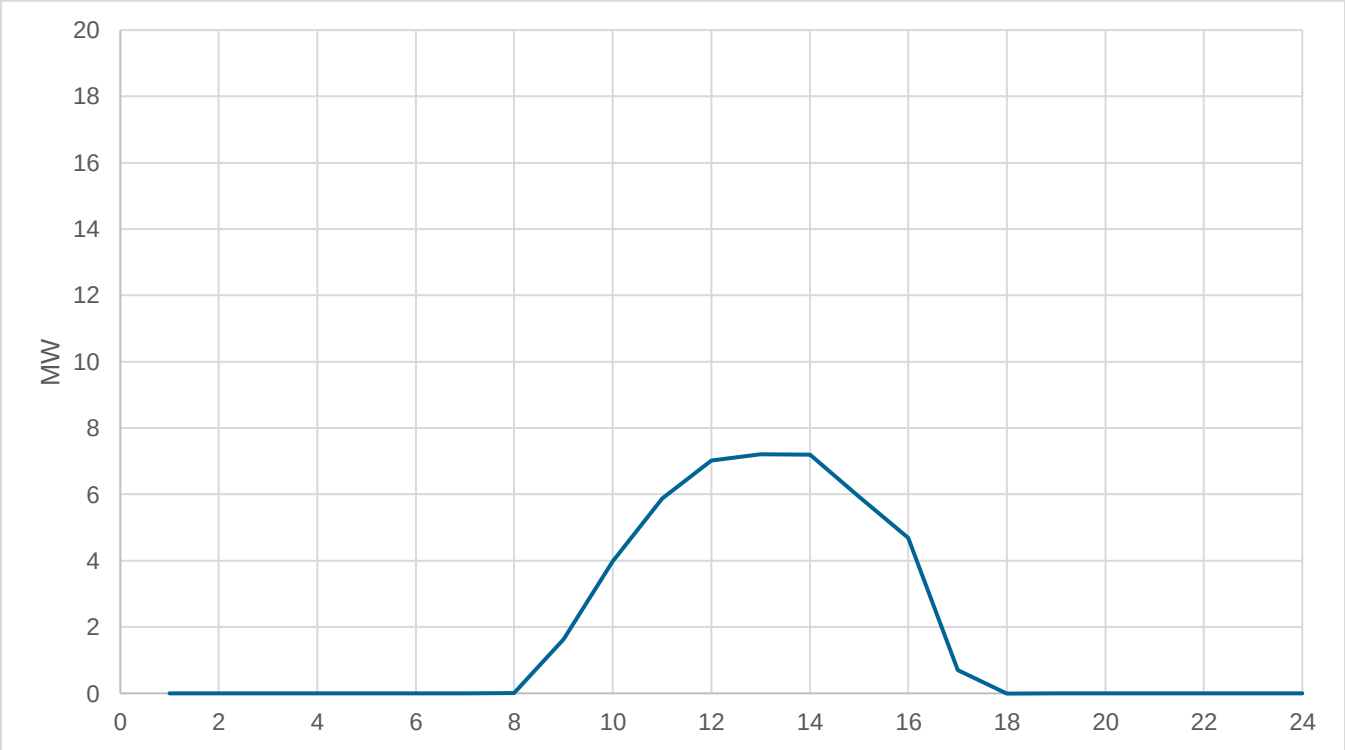


Figure 3: Average hourly August solar generation profile from all 2023 solar installations in Pacific Power service area

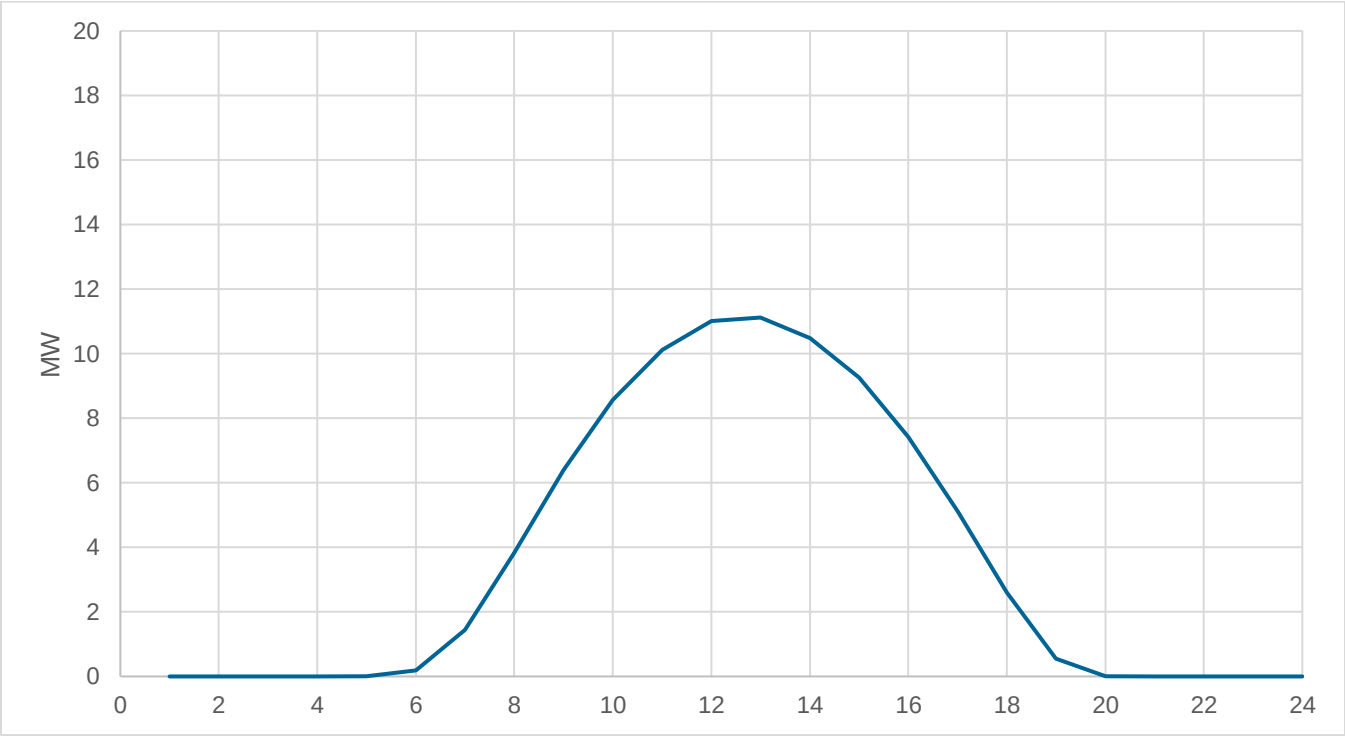
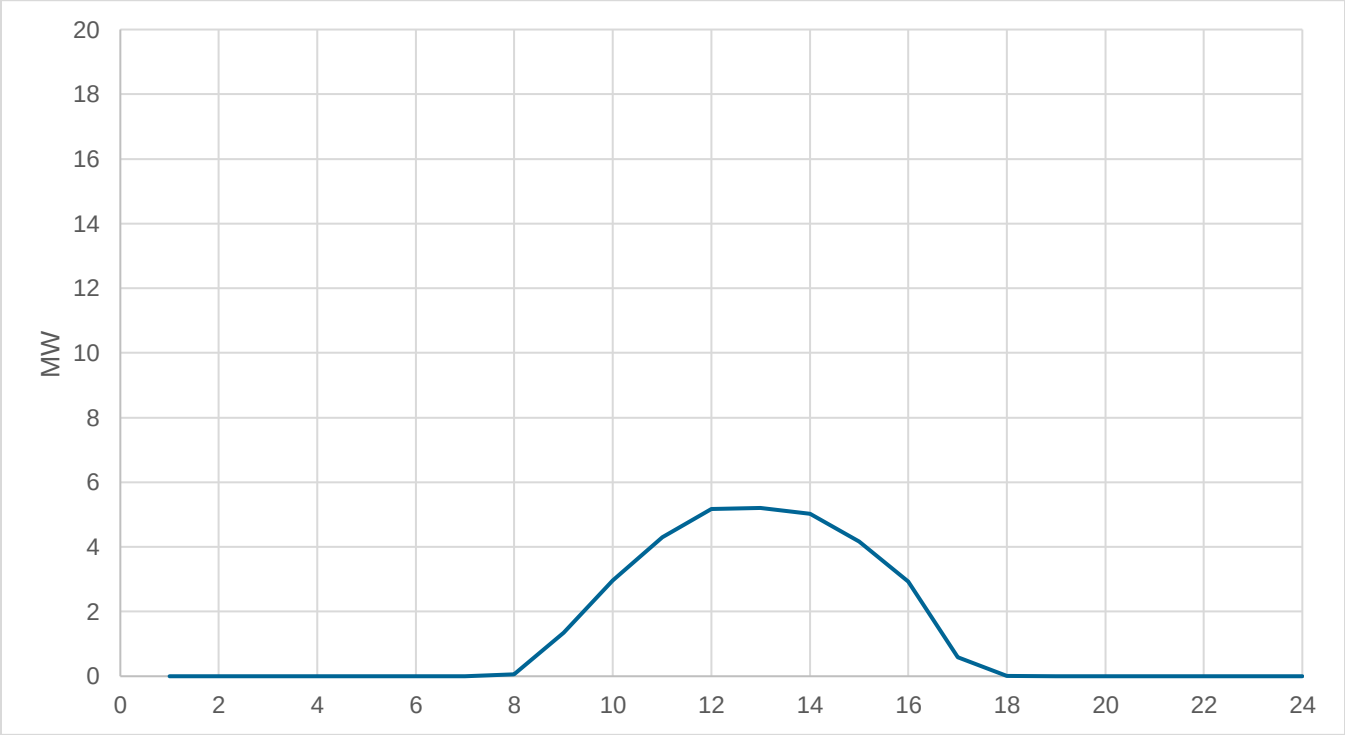


Figure 4: Average hourly January solar generation profile from all 2023 solar installations in Pacific Power service area



The above tables and figures exclude demand reduction estimates from renewable energy generation projects other than solar electric projects. Energy Trust has not incorporated these impacts into reporting because there

is a relatively small number of projects with high degrees of production variability. More work is required to estimate the demand contributions of these projects and Energy Trust will consider doing so in future reporting.

Data and tools needed to link utility grid objectives to specific Energy Trust actions

NEEA and regional stakeholders continued the End-Use Load Research project in 2023 to help gather metered data for load profile development. All meter installations in homes and commercial buildings were completed in April 2023 and meters will remain in place until the end of June 2025. The End-Use Load Research project is a key component of Energy Trust's strategy to adopt updated end use and whole home load shapes when they become available. The main objective of this study is to develop a robust characterization of energy consumption data for key heating and cooling measures to support planning and implementation to pursue clean energy goals and support utility information needs. This is the first large-scale study of the detailed electricity use of residential and commercial buildings in the Northwest in almost 30 years. The Home Energy Metering Study and the Commercial Energy Metering Study aim to generate data to update a number of end-use profiles. This study design was informed by a collaborative planning effort conducted by NEEA and its partners, including Energy Trust.

Energy Trust activities that help meet grid objectives in coordination with utilities

Energy-efficiency programs help electric and natural gas utilities address demand-related challenges. Energy Trust can provide further benefit to utility systems by increasing the saturation of energy-efficient, demand response-capable equipment (such as internet connected thermostats and heat pump water heaters with built in Wi-Fi), providing additional options for utilities when considering potential demand response programs. Utility demand response programs can use this equipment as a resource in reacting to capacity constraint events.

Through targeted load management pilot designs, Energy Trust is collaborating with utility partners to offer additional incentives for measures and services that contribute to helping utilities manage capacity constraints. Additionally, Energy Trust's well-established program marketing and outreach efforts, sales channels, contractor connections and customer relationships may prove valuable to utilities in marketing combined efficiency and demand management equipment and service packages. In 2020, the OPUC issued guidelines to investor-owned electric utilities to develop distribution system plans for their grid systems. Energy Trust has been tracking developments related to these distribution system plans as an outcome OPUC docket UM 2005. Going forward, Energy Trust expects to work collaboratively with utilities to provide data to meet utility needs in support of these plans and to structure related pilots that emerge from these plans. Pending utility identified grid needs, Energy Trust also expects to provide additional efficiency and renewable investments for localized areas to support utility distribution system needs.

Coordination with Pacific Power

Energy Trust meets with Pacific Power on a regular basis to review and assist in developing new offers that focus on demand response benefits, but also have an energy efficiency value. Early engagement in these offers helps align the programs teams to better serve the customers by minimizing customer confusion. Typical engagements begin with review of the project(s) to see where there are areas of overlap and opportunities to coordinate. Energy Trust has worked with Pacific Power to provide comments on all Pacific Power Demand Response Advice Letters prior to submission to the OPUC. Following approval, Energy Trust and Pacific Power convene outreach and implementation teams to develop a go-to-market strategy that serves the missions of each organization. To date Energy Trust and Pacific Power have collaborated on the Smart Battery, agricultural

and commercial SEM, Residential thermostats and Multifamily water heater offers and are well poised to continue coordination as these or any new offers expand into the market. In 2024, Energy Trust anticipates coordinating with Pacific Power in a similar way on the battery storage offer it will be developing. Energy Trust has worked to develop similar offers with PGE and therefore is able to apply the lessons learned from those projects to the work with Pacific Power.

Coordination with Portland General Electric

Coordination on Demand Response Promotions

PGE's 2022 demand response promotions carried into 2023. These promotions were focused on enrolling PGE customers in the thermostat demand response program through point-of-sale demand response incentives, coupled with energy-efficiency incentives, through PGE's online marketplace and through outreach to Energy Trust customers with gas furnaces and central air conditioning systems who purchase smart thermostats through Energy Trust's online offer.

Smart Grid Test Bed

Energy Trust acts as a representative on PGE's Demand Response Review Committee (DRRC), the advisory for the Smart Grid Test Bed. In this role, Energy Trust provides advice on the design, implementation and evaluation of projects as part of the Test Bed.

Smart Grid Test Bed Collaboration (formerly Smart Grid Advanced Load Management & Optimized Neighborhood)

In 2021, the U.S. Department of Energy awarded a Connected Communities grant to PGE for the Smart Grid Advanced Load Management & Optimized Neighborhood (SALMON) program to study the potential for promoting distributed energy resources and efficiency measures to transform one North Portland neighborhood into a virtual power plant. Expected outcomes are reducing utility bills, avoiding greenhouse gas emissions, and optimizing demand response applications to interact with the grid to manage loads. Energy Trust helped support the grant process in 2021 and is collaborating with PGE, Community Energy Project, NEEA and the National Renewable Energy Laboratory to implement this project through mid-2027. The Connected Communities grant implementation period began in 2022 with internal program initiation and development activities, market characterization studies, and the development of an evaluation plan.

Rebranded by PGE as the Smart Grid Test Bed Collaboration, offers were launched in the market in November 2023. These offers prioritize building envelope efficiency, grid interactive equipment capable of providing flexible load like smart thermostats and heat pump water heaters. They combine the maximum cost effectiveness for ratepayer funded incentives and a Flexible Feeder-funded adder on prioritized measure types.

In addition to increased incentives for energy efficiency measures, Energy Trust also collaborated with PGE as part of this project to encourage adoption of solar + storage systems within the targeted study area using a modified version of a Solarize campaign. In late 2023, Energy Trust was preparing to launch the Solarize 2.0 campaign starting in January 2024. To date, the Solarize campaign has surpassed program participation goals and installations will take place over the course of 2024.

Flex Feeder Contract

In support of demand response initiatives, Energy Trust is developing a minimum of four new energy-efficiency measures to support Energy Trust and PGE's exploring potential co-deployment of energy efficiency and flexible load offers.

Smart Solar Study (formerly Smart Inverter Demonstration Project)

As part of the Smart Grid Test Bed Phase II proposal, PGE submitted a budget and outline for a smart inverter demonstration project that included a role for Energy Trust as a design and implementation partner. Energy Trust contracted with PGE to receive funding for Energy Trust work associated with the project. The planning phase of the demonstration project took place in 2022; in 2023, Energy Trust developed a new measure and delivery process using existing incentive payment infrastructure that allowed the organization to deliver $250 incentives to customers enrolled in the Smart Solar Study demonstration project. Forty-four payments were issued, exceeding expectations for enrollments. Energy Trust worked with PGE to identify qualifying customers who live on feeders identified in collaboration with PGE distribution system planning staff. In 2024, Energy Trust expects to support a campaign to recruit more customers before the demonstration project concludes at the end of the 2024. The primary goal of this demonstration is to allow PGE to explore the value of distributed solar paired with a smart inverter as an operational grid resource. Lessons learned from this demonstration project will inform how PGE makes use of updated interconnection standards defined under UM 2111.

Smart Battery Pilot

In 2020, PGE launched a residential Smart Battery Pilot with the intent to provide incentives for 525 residential battery energy storage systems located "behind the meter" in customers' homes. The individual customer-owned systems combine to create a virtual power plant that can be used to provide valuable grid services. The five-year pilot has allowed PGE to study how to optimize the use of residential battery storage systems to benefit grid management, while ensuring customers also receive benefit from owning the battery. Energy Trust contracted with PGE to provide implementation support for the pilot and help connect customers and solar trade allies interested in participating in this program. As part of this pilot, Energy Trust is providing subject matter expertise, support for customer outreach, trade ally education, quality management, application review and upfront incentive processing. In 2023, Energy Trust provided expertise and support for PGE staff as it updated the battery pilot incentive structure to a "pay-for-performance" model with increased instant rebates available to projects within two targeted study areas – the Roseway-SoHi Feeder in South Hillsboro and the Smart Grid Test Bed Collaboration are in North Portland. Updates to Powerclerk allowed the new Smart Battery Pilot instant rebates and Flexible Feeder incentives to be passed through using existing program infrastructure. This enabled trade allies to have one enrollment process and receive one check that blends funding from three different sources – including Energy Trust solar and storage incentives - creating an easier experience for customers and contractors.

Two Solarize 2.0 campaigns were launched with the goal of increasing adoption of solar + storage in the targeted study areas identified by PGE. These campaigns were intended to prototype the use of Energy Trust program infrastructure and expertise to support utility grid flexibility and community clean energy or resilience goals in focused geographic areas. Both campaigns will be wrapping up the community engagement portion in early 2024 with installations occurring over the rest of the year.

Energy Trust Solar + Storage

In 2020, Energy Trust rolled out incentive offers to encourage builders to integrate distributed energy resources into residential new construction programs that deliver grid services (e.g., demand response, voltage regulation) in addition to the energy efficiency or renewable energy benefits they typically provide. The offers, which were meant to align with anticipated matching offers from PGE, provided incentives for net zero electric homes, grid interactive water heaters, smart thermostats, electric vehicle readiness and solar + storage readiness. In 2022, Energy Trust simplified the energy smart home requirements and discontinued the base energy smart home package and created stand-alone electric vehicle (EV) ready and solar + storage ready offers that builders could stack independently in addition to whole-home incentives. Uptake of the EV ready offer has steadily increased, from 49 incentives paid in 2022 to 196 in 2023. Throughout 2022 and 2023, Energy Trust undertook three efforts to inform an offer for builders to install solar + storage: facilitated demonstration projects; analyzed

resilience needs for a two-week outage; and lead a consumer research study to understand value of solar + storage to homeowners. In 2023, builders continued to increase adoption of the net zero and solar + storage ready offers.

In early 2024, Energy Trust finished assembling lessons learned from the research to-date and is actively developing an offer to provide new home builders an incentive for installing solar + storage at the time of construction with intent to launch in 2024. Energy Trust remains prepared to coordinate with PGE and/or Pacific Power when they get complimentary offers prepared for deployment.

Targeted load management feasibility assessments with utilities

Targeted load management (TLM) is a suite of energy-efficiency program, planning and customer services that Energy Trust can offer utilities as a demand-side management solution (e.g., energy efficiency and distributed generation) in specific geographic areas where utilities have a system constraint. In 2018, Energy Trust began exploring TLM pilots with Pacific Power and NW Natural. In more recent Integrated Resource Planning proceedings, OPUC staff directed Oregon's investor-owned utilities to collaborate with Energy Trust to explore demand-side options like TLM before making investments in transmission and distribution.

In 2023, Energy Trust conducted feasibility studies for potential TLM sites identified by Cascade Natural Gas and Avista to determine if TLM would be a good fit for utility system needs. The analysis results indicated that even accelerated energy efficiency would be insufficient on its own to meet load reduction needs identified for the specific geographic areas under consideration. These lessons provide opportunities for both Energy Trust and utility partners to explore how to collaborate on future TLM opportunities. Energy Trust also began exploring TLM opportunities with Pacific Power and PGE. Pacific Power has identified Prineville as the next potential location based on its last Distribution Systems Plan, and Energy Trust will conduct a TLM feasibility assessment in 2024.

In 2024, Energy Trust will continue to work with utility partners to identify opportunities for TLM to support utility grid planning needs, including the possibility of deploying TLM with other demand-side options to defer utility system investments in transmission and distribution. It will continue to work with utilities on ways to approach community engagement while exploring how to integrate the utility specific TLM model into a broader communities program design that would unite community-based strategies into a single holistic offer.

APPENDIX 10: Quarter four results

This appendix includes only activity funded by Oregon electric utility customers of Portland General Electric and Pacific Power under state law and by Oregon natural gas customers of NW Natural, Cascade Natural Gas and Avista through regulatory agreements between the OPUC and each natural gas utility.

A. Revenues under OPUC grant agreement[53]

Source		Q4 actual revenues		Q4 budgeted revenues	Budget variance
PGE Efficiency	$	19,804,787	$	20,270,101	-2%
PGE Renewables	$	2,729,616	$	2,135,715	28%
Pacific Power Efficiency	$	13,259,375	$	13,171,128	1%
Pacific Power Renewables	$	2,069,541	$	1,478,188	40%
NW Natural	$	4,876,253	$	4,865,153	0%
NW Natural Industrial DSM	$	3,231,588	$	3,231,588	0%
Cascade Natural Gas	$	784,262	$	828,921	-5%
Avista	$	548,322	$	548,326	0%
Avista Interruptible	$	84,546	$	84,546	0%
Total	**$**	**47,388,290**	**$**	**46,613,666**	**2%**

B. Expenditures under OPUC grant agreement

Source		Q4 actual expenditures		Q4 budgeted expenditures	Budget variance
Portland General Electric	$	37,199,154	$	36,553,558	2%
Pacific Power	$	27,276,746	$	23,108,725	18%
NW Natural	$	10,749,202	$	8,634,530	24%
NW Natural Industrial DSM	$	3,483,462	$	2,762,659	26%
Cascade Natural Gas	$	1,367,708	$	1,424,937	-4%
Avista	$	1,141,871	$	1,070,719	7%
Avista Interruptible	$	4,760	$	70,134	-93%
Total	**$**	**81,222,903**	**$**	**73,625,262**	**10%**

[53] Revenues include ratepayer revenue collected for energy-efficiency programs and ratepayer-funded public purpose charge revenues collected for renewable energy activities.

C. Expenditures under OPUC grant agreement by sector and program[54]

		Q4 actual expenditures	Q4 budgeted expenditures	Budget variance
Commercial	Existing Buildings	$ 28,570,521	$ 22,720,999	26%
	New Buildings	$ 5,197,010	$ 5,798,982	-10%
	NEEA Commercial	$ 893,446	$ 955,038	-6%
	Commercial total	**$ 34,660,976**	**$ 29,475,019**	**18%**
Industrial	Production Efficiency	$ 18,504,702	$ 16,334,762	13%
	NEEA Industrial	$ 1,523	$ -	N/A
	Industrial total	**$ 18,506,224**	**$ 16,334,762**	**13%**
Residential	Residential	$ 19,044,563	$ 17,304,027	10%
	NEEA Residential	$ 646,167	$ 958,018	-33%
	Residential total	**$ 19,690,730**	**$ 18,262,046**	**8%**
	Energy efficiency total	**$ 72,857,930**	**$ 64,071,827**	**14%**
Renewables	Solar	$ 4,144,763	$ 5,035,695	-18%
	Other Renewables	$ 749,337	$ 1,139,413	-34%
	Renewable generation total	**$ 4,894,100**	**$ 6,175,108**	**-21%**
	Administration	**$ 3,470,872**	**$ 3,378,327**	**3%**
	Total	**$ 81,222,903**	**$ 73,625,262**	**10%**

D. Incentives paid

	PGE efficiency	Pacific Power efficiency	NW Natural efficiency	Cascade Natural Gas efficiency	Avista efficiency	PGE generation	Pacific Power generation	Total
Q1	$ 5,844,118	$ 4,446,548	$ 2,687,305	$ 252,507	$ 380,216	$ 1,503,213	$ 688,895	$ 15,802,802
Q2	$ 8,911,072	$ 7,239,220	$ 2,658,576	$ 318,060	$ 435,402	$ 1,746,643	$ 840,921	$ 22,149,894
Q3	$ 13,074,497	$ 8,980,806	$ 2,874,816	$ 309,618	$ 385,376	$ 1,649,523	$ 1,071,793	$ 28,346,430
Q4	$ 23,927,118	$ 17,064,580	$ 9,296,321	$ 907,285	$ 802,864	$ 2,036,205	$ 1,236,367	$ 55,270,740
Total	**$ 51,756,805**	**$ 37,731,153**	**$ 17,517,019**	**$ 1,787,470**	**$ 2,003,858**	**$ 6,935,584**	**$ 3,837,977**	**$ 121,569,866**

E. Low- and moderate-income renewable energy expenditures[55]

	YTD renewable revenues	YTD LMI expenditures	Percent of revenues benefiting LMI customers
Portland General Electric	$ 11,818,372	$ 4,551,910	39%
Pacific Power	$ 7,940,198	$ 2,282,167	29%
Total	**$ 19,758,570**	**$ 6,834,077**	35%

[54] Administration is different than administrative and program support costs as defined by the OPUC's performance measure, which also includes program costs in the following areas: program management, program delivery, program incentives, program payroll and related expenses, outsourced services, planning and evaluation services, customer service management and Trade Ally Network management.

[55] This table reports on a 25% minimum renewable energy spending requirement for Energy Trust under HB 3141. Revenues include all renewable energy revenues, and expenditures are only those that benefit customers with low and moderate incomes.

F. Savings and generation by fuel[56,57,58,59]

	Q4 savings/generation	Total annual savings/generation	Annual goal	Percent achieved YTD
Electric savings	29.4 aMW	53.1 aMW	45.2 aMW	118%
Natural gas savings	4,048,274 therms	6,540,767 therms	6,049,345 therms	108%
Electric generation	1.83 aMW	6.72 aMW	5.42 aMW	124%

G. Progress toward annual efficiency goals by utility

	Q4 savings	Total annual savings	Annual goal	Percent achieved YTD	Annual IRP target	Percent achieved YTD
Portland General Electric	15.8 aMW	29.9 aMW	25.5 aMW	117%	27.8 aMW	108%
Pacific Power	13.6 aMW	23.2 aMW	19.6 aMW	118%	21.2 aMW	109%
NW Natural	3,459,513 therms	5,493,896 therms	5,025,171 therms	109%	5,424,114 therms	101%
Cascade Natural Gas	399,301 therms	599,924 therms	581,032 therms	103%	688,176 therms	87%
Avista	189,460 therms	446,946 therms	443,141 therms	101%	527,675 therms	85%

H. Electric savings by sector and program

		Q4 savings aMW	Total annual savings aMW	Annual goal aMW	Percent achieved YTD
Commercial	Existing Buildings	8.1	15.2	12.2	124%
	New Buildings	6.7	7.7	7.9	97%
	NEEA Commercial	1.1	1.9	2.1	93%
	Commercial total	**16.0**	**24.8**	**22.3**	**112%**
Industrial	Production Efficiency	9.0	18.4	13.7	134%
	NEEA Industrial	0.5	0.8	0.8	100%
	Industrial total	**9.5**	**19.2**	**14.5**	**133%**
Residential	Residential	2.2	6.0	4.7	129%
	NEEA Residential	1.7	3.1	3.8	81%
	Residential total	**3.9**	**9.1**	**8.4**	**108%**
	Total electric savings	**29.4**	**53.1**	**45.2**	**118%**

[56] Columns may not total due to rounding.
[57] Electric savings include transmission and distribution savings.
[58] The gas savings do not include results for NW Natural in Washington.
[59] Energy Trust reports 100% of generation and capacity for renewable energy installations supported by Energy Trust's cash incentives. While some of these projects have additional sources of funding, Energy Trust enabled project completion.

I. Natural gas savings by sector and program

		Q4 savings therms	Total annual savings therms	Annual goal therms	Percent achieved YTD
Commercial	Existing Buildings	1,747,723	2,278,613	2,109,310	108%
	New Buildings	206,233	260,562	336,822	77%
	NEEA Commercial	76,688	102,598	1,748	5869%
	Commercial total	**2,030,644**	**2,641,773**	**2,447,880**	**108%**
Industrial	Production Efficiency	1,319,921	1,667,106	1,279,515	130%
	NEEA Industrial	-	-	-	-
	Industrial total	**1,319,921**	**1,667,106**	**1,279,515**	**130%**
Residential	Residential	697,709	2,231,888	2,321,949	96%
	NEEA Residential	-	-	-	-
	Residential total	**697,709**	**2,231,888**	**2,321,949**	**96%**
	Total natural gas savings	**4,048,274**	**6,540,767**	**6,049,345**	**108%**

J. Renewable energy generation by utility

	Q4 generation aMW	Total annual generation aMW	Annual goal aMW	Percent achieved YTD
Portland General Electric	1.23	4.19	3.18	132%
Pacific Power	0.60	2.53	2.24	113%
Total	**1.83**	**6.72**	**5.42**	**124%**

K. Renewable energy generation by program

	Q4 generation aMW	Total annual generation aMW	Annual goal aMW	Percent achieved YTD
Solar	1.83	6.72	5.36	125%
Other Renewables	-	-	0.07	-
Total generation	**1.83**	**6.72**	**5.42**	**124%**

L. Utility-invested efficiency expenditures[60]

Utility	Q4 expenditures	Total annual expenditures
Portland General Electric	$ 248,817	$ 803,458
Pacific Power	$ 668,262	$ 2,394,735
Total	**$ 917,080**	**$ 3,198,194**

[60] This reflects utility investments of a portion of efficiency tariff funds. Funds are collected by the utility and are in addition to funds received by Energy Trust. Reports detailing activities funded by these expenditures are submitted annually by the utilities to the OPUC.