

Quarter Three 2017 Report to the Oregon Public Utility Commission & Energy Trust Board of Directors



ENERGY TRUST OF OREGON
NOVEMBER 15, 2017

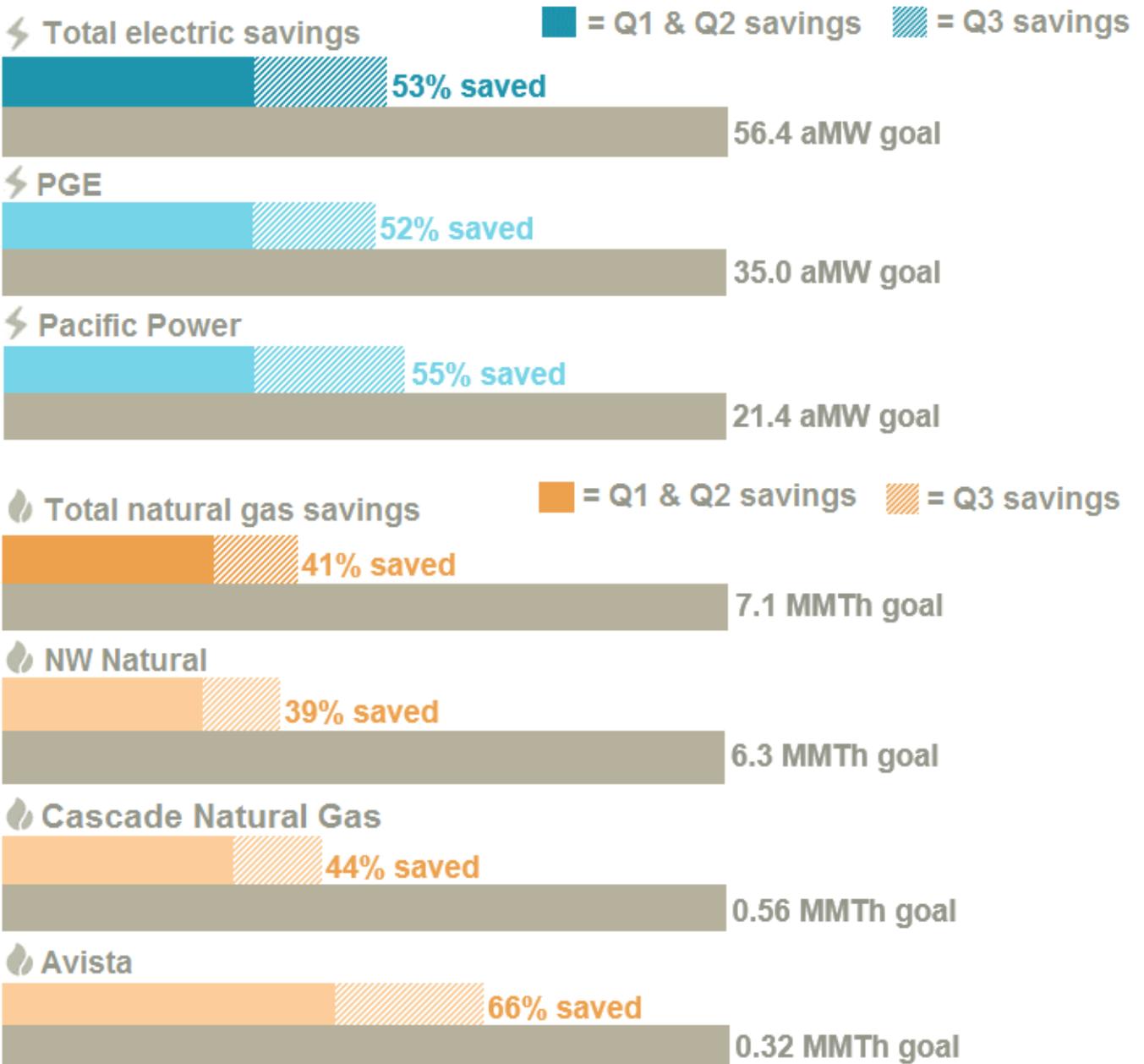
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A glossary of program descriptions and key terms is available online at www.energytrust.org/reports

I Results at a glance^{1,2}

Savings



¹ This document reports net savings. Net savings are adjusted gross savings based on results of current and past evaluations.

² Note that aMW indicates average megawatts, MMTh indicates million annual therms and M is million.

Generation

■ =Q1 & Q2 generation ▨ =Q3 generation

Total renewable generation



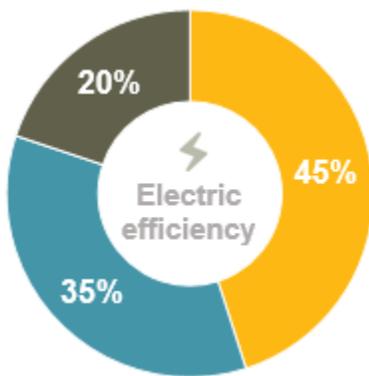
PGE



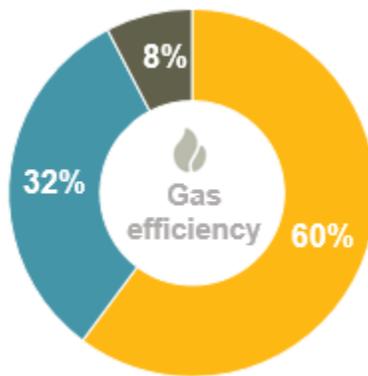
Pacific Power



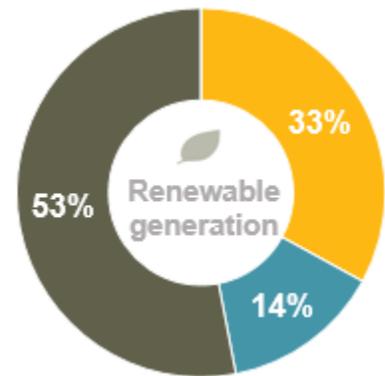
Percent of savings and generation by sector year-to-date



■ = Residential
■ = Commercial
■ = Industrial



■ = Residential
■ = Commercial
■ = Industrial



■ = Residential solar
■ = Commercial solar
■ = Custom solar
■ = Other renewables

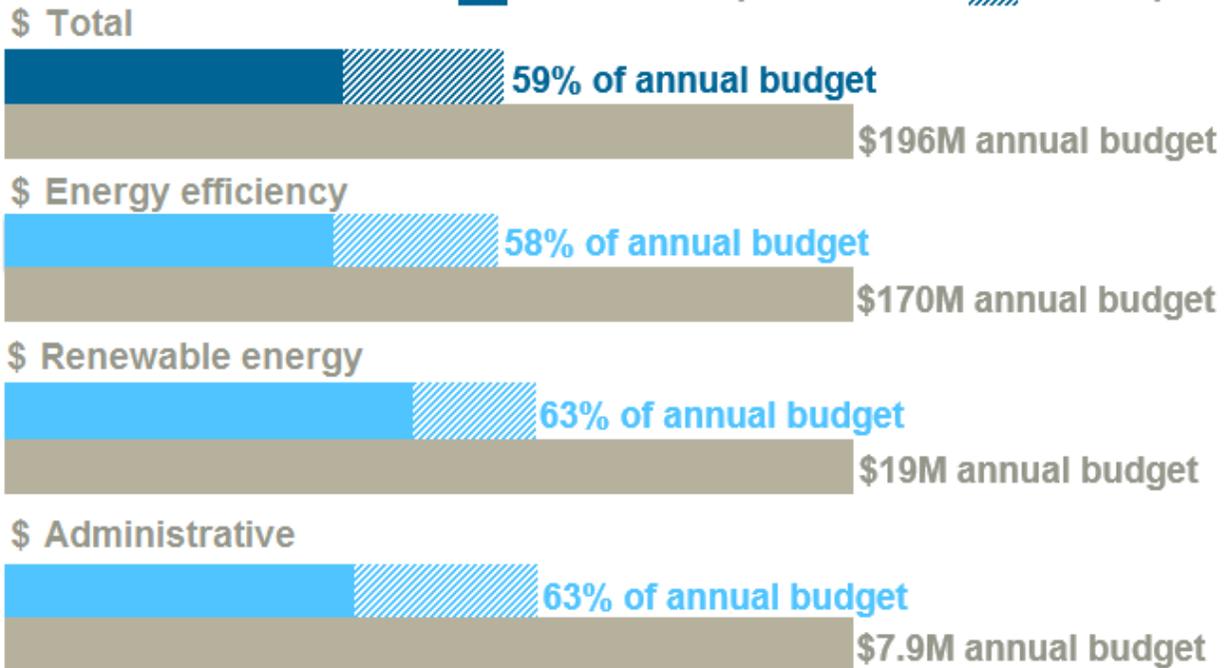
Customer satisfaction³



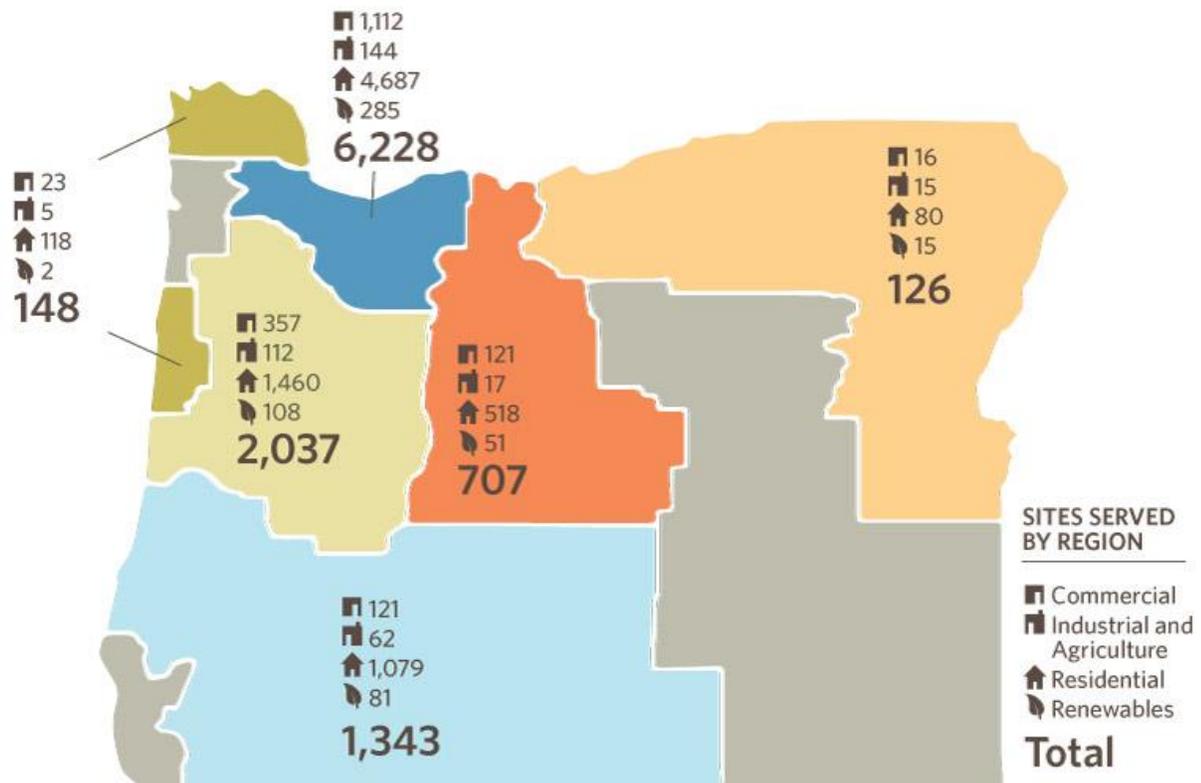
³ From June through August 2017, Energy Trust delivered a short telephone survey to 653 randomly selected participants in five Oregon programs who completed projects between April and June 2017 and received an incentive or discount from Energy Trust. Results indicate satisfaction with overall program experience. New Buildings participants are surveyed annually, with the most recent survey in Q4 2016.

Expenditures

 = Q1 & Q2 expenditures  = Q3 expenditures



Sites served by region



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.

II Executive summary

A. Progress to energy efficiency and renewable energy goals^{4,5}

- **Energy Trust is on track to exceed goals in most utility territories**, supported by strong new construction markets, continued demand for LEDs, high demand for solar incentives and the continuing benefits of a strong economy.
- **The organization may fall short of goals in NW Natural and Cascade Natural Gas territories** largely due to the delay of several Existing Buildings and Production Efficiency projects to 2018, as well as a mid-year decision in agreement with NW Natural to acquire near-term savings at a slower pace. This decision was made to smooth year-to-year budgets for some NW Natural customers on certain rate schedules. To help reduce the gap for Cascade Natural Gas, staff work to will identify new Existing Buildings projects that can enroll and complete in a short timeline and implement a year-end bonus for foodservice equipment.
- **Electric efficiency improvements completed in Q3 saved 10.4 average megawatts** of electricity, about 18 percent of the 2017 goal of 56.4 aMW. Q3 2017 electric savings were approximately 8 percent less than savings in Q3 2016. Energy Trust's 2017 electric savings goal is 2 percent higher than the 2016 electric savings goal.
- **Gas efficiency improvements completed during Q3 saved approximately 810,899 annual therms** of natural gas⁶, about 11 percent of the 2017 goal of 7.1 million annual therms. Q3 2017 gas savings were approximately 40 percent less than the savings in Q3 2016 due to factors listed above. Energy Trust's 2017 gas savings goal is 24 percent higher than the 2016 gas savings goal and was not adjusted downward to reflect the mid-year acquisition pace adjustment for NW Natural referenced above.
- **Renewable energy systems installed during Q3 will generate 0.43 aMW of electricity**, 15 percent of the 2017 goal of 2.86 aMW.
- **Savings and generation achieved in Q3 represent about 50,000 tons of carbon dioxide** kept out of the atmosphere, the equivalent of removing 8,800 cars from Oregon roads.

10.4
AVERAGE
MEGAWATTS
SAVED

0.8
MILLION ANNUAL
THERMS SAVED

0.43
AMW GENERATED

50,000
TONS OF CARBON
DIOXIDE AVOIDED

B. Market and program trends

- **As Oregon's new construction market thrives, Energy Trust influenced builders and developers to incorporate electric efficiency and natural gas efficiency improvements** into fast-paced new construction projects. Through Q3, Energy Trust **enrolled more than 550 New Buildings projects**



**ENROLLED 550
NEW BUILDINGS
PROJECTS**

⁴ This document reports net savings, which are adjusted gross savings based on results of current and past evaluations.

⁵ This report includes the best available energy savings data as of the date of submission. Energy savings reported here for periods prior to January 1, 2017, may be different than previously reported as a result of applying updated evaluation factors to Energy Trust savings and generation in Oregon through the annual true up process. The full True Up 2016 Report is available online at www.energytrust.org/reports.

⁶ The gas savings do not include results for NW Natural in Washington. These results are available at www.energytrust.org/reports.

and **supported construction of 1,630 energy-efficient new homes**. New construction increased for multifamily buildings, schools, hospitals and government buildings.

- **Energy Trust continued to support rapid market adoption of LEDs across residential, commercial and industrial sectors.** **Residential customers purchased nearly 60 percent more LEDs** in Q3 than in Q3 2016, and LEDs represented a larger portion of residential lighting purchases. As retail LED prices continued to decline, Energy Trust stepped down incentive levels accordingly. LEDs represented the majority of Existing Buildings electric savings and are expected to make up 30 percent of Production Efficiency electric savings by year-end. Lighting upgrades at cannabis facilities accounted for approximately 25 percent of industrial lighting savings.
- **The residential sector continued a transition from customer-facing incentives to midstream incentives for energy-efficient water heaters**, expected to complete in Q4 2017. Midstream incentives are provided to retailers and distributors to encourage stocking of efficient water heaters at stores, reduce costs for customers at point-of-sale and eliminate the need for customers to fill out incentive forms. Customers installed an average of 166 efficient water heaters per month since Energy Trust launched the midstream incentives—up from an average of 22 water heaters per month prior to the midstream incentives. The sector is also transitioning gas hearths with electronic ignition to midstream incentives.
- **Energy Trust engaged schools to include energy efficiency in facility upgrades and construction to be funded, in part, through state bonds.** Overall, Energy Trust **supported 70 Existing Buildings projects at K-12 schools** through Q3. The number of schools enrolled in New Buildings has doubled, compared to this time last year.
- **More residential customers installed solar** through the end of Q3 than this time last year, with **more than 1,216 applications received** and another 550 customers requesting solar trade ally contractor bids through Energy Trust's online bid request form. Applications are expected to increase in the remainder of 2017 as customers anticipate the year-end expiration of Oregon's Residential Energy Tax Credit.
- **Other Renewables dedicated \$810,000 for installation of two hydropower projects** in Central Oregon expected to reach commercial operation in 2019, including a 0.09-aMW irrigation district facility near Sisters and 0.12-aMW municipal hydropower facility near Madras.

1,630
ENERGY-EFFICIENT
NEW HOMES BUILT



RETAIL LED SALES
INCREASED 60
PERCENT



SUPPORTED 70
EXISTING
BUILDINGS
PROJECTS AT
SCHOOLS



1,216 RESIDENTIAL
SOLAR
APPLICATIONS
RECEIVED

C. Notable activities

- **The board approved the Energy Trust staff recommendation to award residential program management and delivery contracts**, following a competitive solicitation in Q2. Energy Trust selected CLEAResult as Program Management Contractor, Ecova as Program Delivery Contractor for retail promotions and TRC as Program Delivery Contractor for EPS™ whole-home new construction. Each contract runs from 2018 through 2019, with three optional one-year extensions. The contracts represent consolidation of Energy Trust's three residential programs—Existing Homes, New Homes and Products—

into a single program in 2018, which will increase Energy Trust's flexibility to reach more residential customers, respond to new opportunities and lower costs.

- **Energy Trust collaborated with utilities on targeted demand-side management efforts.** In Q3, Energy Trust and Pacific Power launched a pilot project to reduce peak demand in North Santiam Canyon through targeted energy-efficiency and renewable energy offerings, which included community events, marketing and trade ally outreach. Staff also began designing another targeted demand-side management project with NW Natural.
- **Having helped develop a maturing home energy scoring market in Oregon, Energy Trust prepared to discontinue its EPS for Existing Homes,** which is now supported by other organizations such as the U.S. Department of Energy and the Oregon Department of Energy. In place of Energy Trust's EPS for Existing Homes, other organizations will offer home energy scoring alternatives throughout Oregon. The introduction of the U.S. DOE's Home Energy Score in Oregon will coincide with the discontinuation of EPS for Existing Homes to ensure that home scoring services are available to homeowners through licensed and trained Home Energy Assessors. In addition, the City of Portland will launch a new Home Energy Score program on January 1, 2018.
- **Staff began developing a diversity, equity and inclusion initiative operations plan** to define objectives, goals and a framework for accountability. Energy Trust also engaged diversity, equity and inclusion leaders and community organizations in reviewing an early draft of the operations plan and to gain a deeper understanding of how best to reach and serve all Oregonians. In addition, staff developed a diversity, equity and inclusion lens tool to be applied to major organizational projects.
- **Staff continued both an organizational review project and a budget review project.** Findings from the organizational review project will be presented to the board at the annual board strategic planning workshop in May 2018. Staff will draft a budget review implementation plan in 2018 to determine how any changes can be implemented in 2019 for the 2020 budget. The budget review project timeline was extended to allow more time for stakeholder engagement and due to staffing constraints.
- **Energy Trust was recognized as one of the best Oregon nonprofits to work for** by Oregon Business magazine. The ranking of sixth out of 33 large nonprofits was determined by employee surveys scoring Energy Trust on overall satisfaction, mission and goals, career development and learning, benefits and compensation, equity, and management and communications. This ranking is an indicator of employee engagement, which helps Energy Trust recruit and retain qualified employees and minimize employee turnover.
- **Staff participated in preliminary interviews and responded to information requests from the Oregon Secretary of State Audit Division as part of a performance audit.** The Secretary of State conducts periodic performance audits to evaluate how state agencies and programs are achieving their desired results. The audit is expected to complete in Q1 2018.

III Program and operations activity

A. Commercial sector highlights

- **The commercial sector performed in line with expectations for electric utility territories and Avista**, with a robust pipeline of projects expected to complete by year-end, especially for Existing Buildings.
- **The sector expects to fall short of goals in NW Natural and Cascade Natural Gas territories** due to delay of several large Existing Buildings projects to 2018, as well as a mid-year decision in agreement with NW Natural to acquire savings at a slower pace in the near-term. This decision was made to smooth year-to-year budgets for some NW Natural customers on certain rate schedules. To help reduce the gap for Cascade Natural Gas, Existing Buildings will work to identify new projects that can enroll and complete on a short timeline and implement a year-end bonus for foodservice equipment.
- **Savings from NEEA activities comprised approximately 7 percent and 8 percent of the sector's results** in PGE and Pacific Power territories, respectively. Savings in 2017 are expected from building code and equipment standards improvements, working with distributors and manufacturers to encourage stocking of efficient commercial lighting, and from technical trainings to improve the energy-efficient operation and maintenance of commercial buildings.

7%

OF COMMERCIAL
SECTOR SAVINGS
IN PGE TERRITORY
FROM NEEA
ACTIVITIES

8%

OF COMMERCIAL
SECTOR SAVINGS
IN PACIFIC POWER
TERRITORY FROM
NEEA ACTIVITIES

Existing Buildings

The Existing Buildings program offers energy-efficient improvements for existing commercial buildings of all sizes. Incentives are available for custom projects, capital upgrades, operations and maintenance improvements, standard upgrades and lighting upgrades. Existing Buildings also offers commercial Strategic Energy Management, with incentives, tools, training and technical assistance to help customers reduce energy use through behavioral and operations improvements.

- **Energy-efficient lighting upgrades accounted for the majority of electric savings, primarily from LEDs.** Gas savings were led by boilers, foodservice equipment and insulation improvements.
- **Completion of a large project in NW Natural territory was delayed** to 2018. To boost gas savings, staff will launch a year-end bonus for gas upgrades, identify new projects that can complete by the end of 2017 and increase email and direct mail marketing.
- **Through Q3, Energy Trust provided incentives and studies for 70 projects at K-12 schools.** Many of these projects are supported by state bonds and will complete in 2018. Roughly 95 schools projects around the state are expected to complete in 2017.
- **Energy Trust began recruiting and training trade ally contractors for a multi-year Pay for Performance pilot** in Q3, which began with planning efforts in 2016. Customers will submit applications in Q4, with project



LIGHTING
COMPRISED THE
MAJORITY OF
EXISTING
BUILDINGS
ELECTRIC
SAVINGS

selection in 2018. The Pay for Performance offering for commercial customers provides incentives for capital and operations and maintenance improvements over a multiyear period to help achieve additional energy savings for comprehensive projects.

- **Energy Trust launched a new incentive for rooftop HVAC units with advanced controls** that will save electricity and natural gas starting in Q4.
- **To manage expected ongoing high demand for grocery upgrades,** Existing Buildings reduced incentives on some offerings in Q3. Staff considered reducing incentives for lighting, but maintained existing incentives because the cost of savings was lower than expected.
- **Commercial Strategic Energy Management participants saved less energy than expected** after staff identified capital projects that had been included in SEM savings estimates. Extreme weather in summer and winter surfaced opportunities to help customers implement stronger efficiency protocols, such as reverting back to standard operating procedures after extreme weather events.
- **Three new minority- and women-owned trade ally businesses joined the Trade Ally Network** in Q3, following outreach with the Business Diversity Institute, National Association of Minority Contractors in Oregon, Metropolitan Contractors Improvement Partnership, Oregon Association of Minority Entrepreneurs, Hispanic Metropolitan Chamber and Oregon Tradeswomen. Staff are actively recruiting an additional 12 minority- and women-owned trade ally businesses.
- **Outreach to minority- and women-owned small business customers** included attendance at the Asian American Hotel and Motel Owners Association Northwest Trade Show and a presentation for Mercy Corps Small Business Development Program. As a result, six tradeshow attendees invested in energy-efficiency upgrades at their businesses.



Existing Multifamily

The Existing Multifamily program serves existing multifamily buildings with two or more dwelling units, including market-rate housing, affordable housing, homeowners associations, individual unit owners, and assisted living and campus living facilities. The program offers standard incentives for water heaters, HVAC equipment, weatherization, appliances and foodservice equipment; free in-unit installation of LEDs, showerheads and faucet aerators and distribution of advanced power strips; custom incentives for capital improvements; incentives for lighting upgrades in common areas; and incentives paid to distributors to reduce costs of efficient lighting and equipment for customers.

- **Free in-unit installation of LEDs, showerheads and faucet aerators**, as well as prescriptive upgrades and common-area lighting, comprised the largest sources of energy savings across all market segments.
- **More condominium owners saved energy with Energy Trust incentives and support**, especially by installing ductless heat pumps and smart thermostats. Many customers installing ductless heat pumps were motivated



INSTALLATION OF
LEDS,
SHOWERHEADS
AND AERATORS
DROVE
MULTIFAMILY
SAVINGS

to take advantage of the state energy tax credit prior to its expiration at the end of 2017.

- **More customers upgraded to energy-efficient common-area lighting** than in prior quarters; however, savings per project declined as smaller buildings represented a greater portion of participants.
- **Energy Trust analyzed program and market data to identify customers for targeted outreach**, including targeted marketing and direct customer support for direct installation and lighting efforts in Q3.
- **Energy Trust delivered its first Energy Efficiency Workshop in Southern Oregon for assisted living property managers and owners**, resulting in several customer leads. Workshops planned for Q4 and 2018 will provide customized market insights to additional market segments and regions.

New Buildings

The New Buildings program supports design and construction of high-performance commercial buildings and major renovations of all sizes and building types. Staff engage with building owners, developers and design professionals to provide standard prescriptive incentives, market solutions incentive packages and custom incentives. Tailored market solutions incentive packages help businesses make quick decisions and achieve deeper energy savings when constructing small restaurant, grocery, multifamily, office, school or retail buildings less than 70,000 square feet.

- **With 552 projects enrolled through Q3**, New Buildings expects to enroll 700 projects by year-end.
- **Energy Trust saw strong enrollment from K-12 schools, hospitals, government buildings and multifamily buildings. More than twice the number of schools enrolled** in 2017 than through Q3 2016, resulting from state bonds passed in recent years, and 10 schools are conducting solar feasibility studies. This trend is expected to continue through 2018.
- **In Q3, warehouses, multifamily buildings and lodging contributed to electric savings.** Gas savings were primarily from colleges, schools and restaurants.
- **Of the 55 projects currently enrolled in Path to Net Zero, four are expected to complete in 2017.** The majority of projects enrolled are from schools and multifamily buildings. The Path to Net Zero offering provides increased design, technical assistance, construction, measurement and reporting incentives to new commercial construction projects that aim to exceed energy code by 40 percent through a combination of energy-efficiency and renewable energy features.
- **Clatsop Community College completed its Path to Net Zero Patriot Hall major renovation project**, a multi-purpose gymnasium, educational and community space for Astoria residents that will save \$25,000 per year in energy costs.
- **New Buildings paid incentives for two Solar Ready projects** and received three new Solar Ready project applications in Q3. Solar Ready incentives and technical assistance help designers and builders construct



**ENROLLED 552
NEW BUILDINGS
PROJECTS**

55

**PROJECTS
ENROLLED IN
PATH TO NET
ZERO**



**PAID INCENTIVES
FOR TWO SOLAR
READY
PROJECTS**

buildings so that solar panels can be easily added when funding is available. The program also received three new applications for Solar Ready construction from projects that had completed feasibility studies, with expected completion in 2018 and 2019.

- **New Buildings introduced a special projects grant for commercial building industry professionals** to fund research and development of technical tools, guides or offerings that reduce market barriers to high-performance construction practices.
- **After large-scale data center activity declined in the state, the program is tracking on potential project developments in rural communities** in the next several years, specifically on timber mill sites with existing high-voltage infrastructure. Staff conducted initial outreach to a local economic development agency in Southern Oregon.



INTRODUCED
SPECIAL
PROJECTS GRANT
FOR BUILDING
INDUSTRY
PROFESSIONALS

B. Industry and agriculture sector highlights

- **The industry and agriculture sector expects to exceed goals for PGE and NW Natural territories, approach goals for Pacific Power and Cascade Natural Gas territories, and fall short of goal in Avista territory.** The shortfalls in Pacific Power and Cascade Natural Gas territories are due to large projects delayed from 2017 to 2018, which contribute to a robust pipeline of projects expected to complete in 2018. In Avista territory, there are very few eligible industrial customers.
- **Savings from NEEA activities comprised approximately 1 percent of the sector's results** in both PGE and Pacific Power territories. Savings in 2017 are expected to come from NEEA's reduced wattage lamp replacement initiative as well as from a previously funded initiative to improve awareness of and establish standards for efficient motors.

1%

OF INDUSTRY AND
AGRICULTURE
SECTOR
ELECTRIC
SAVINGS FROM
NEEA ACTIVITIES

Production Efficiency

The Production Efficiency program offers technical assistance and incentives to industrial and agricultural businesses, including incentives for custom projects, standard lighting and equipment upgrades delivered by trade allies, and an industrial Strategic Energy Management offering to help customers achieve persistent energy savings through behavioral and operations and maintenance improvements.

- **Lighting savings are expected to make up 30 percent of the program's electric savings by year-end.** Lighting upgrades at cannabis facilities account for approximately 25 percent of lighting savings.
- **Phase 1 of a megaproject will support strong savings in PGE territory by year-end.** Originally planned to save 2.3 aMW in 2018, the project is now expected to complete in Q4 2017 and save 3.4 aMW.
- **Custom projects continue to contribute a large portion of electric and gas savings.** However, as Energy Trust works with more small industrial facilities, the average custom project size is decreasing.

30%

OF PRODUCTION
EFFICIENCY
SAVINGS
EXPECTED FROM
LIGHTING
UPGRADES

- **Production Efficiency launched new incentives** for steam trap systems and electric battery chargers used in forklifts and pallet jacks.
- **Launch of a Willamette Valley first-year industrial SEM cohort was postponed** to Q4, and staff recruited seven new sites to participate in this cohort.
- **The inaugural Roseburg industrial SEM cohort completed** in Q3, and all participants enrolled in continuous SEM. Continuous SEM provides coaching services, technical training, energy performance tracking support and performance-based incentives to drive continuous improvement in energy performance.
- **The first joint industrial and commercial SEM cohort will launch in Eastern Oregon** in 2018, with three industrial sites and five commercial sites enrolled in Q3.
- **The program received qualitative market research to understand how cannabis producers consider energy efficiency** in their facilities. The report will inform program design, outreach and marketing, and will be posted on Energy Trust's website in Q4.



C. Residential sector highlights

- **The residential sector expects to meet or exceed savings goals** for four utilities in 2017, and to approach savings goal in Avista territory. Electric savings were driven by continued growth in retail LED sales, while gas savings were driven by new home construction and HVAC measures.
- **The residential sector continued a transition from customer-facing incentives to midstream incentives for energy-efficient water heaters**, expected to complete in Q4 2017. **Residential customers installed an average of 166 efficient water heaters per month** since Energy Trust launched the midstream incentives—up from an average of 22 water heaters per month prior to the midstream incentives. In Q3, Energy Trust began providing midstream retailer incentives at 24 The Home Depot stores to encourage stocking of efficient water heaters at stores and reduce costs for customers, in addition to Lowe's and Grover's Plumbing and Electric Supply. Staff also met with three major water heater manufacturers to ensure Energy Trust's midstream water heating incentive is structured in a way that works for their businesses.
- **The sector also expanded midstream incentives for gas hearths with electronic ignition to new retailers**, including Smokey's Stoves in Medford and Gensco locations in the Portland Metro area, Eugene, Bend and Medford. Midstream incentives are provided to distributors and retailers to encourage stocking of energy-efficient equipment and reduce costs for customers.
- **Savings from NEEA activities comprised approximately 17 percent of the sector's results** in both PGE and Pacific Power territories. Savings in 2017 are primarily expected from previously funded efforts to improve battery charger standards, as well as from residential building code improvements.

166
EFFICIENT WATER
HEATERS
INSTALLED PER
MONTH

17%
OF RESIDENTIAL
SECTOR ELECTRIC
SAVINGS FROM
NEEA ACTIVITIES

Ductless heat pump, heat pump water heater and super-efficient dryer initiatives are also expected to deliver savings in 2017.

Existing Homes

The Existing Homes program serves single-family homeowners, renters and owners of existing manufactured homes with energy-saving recommendations, referrals to qualified trade ally contractors, cash incentives for heating and water heating equipment, smart thermostats, insulation, windows, and LEDs, showerheads and faucet aerators delivered through kits. Enhanced Savings Within Reach incentives are available for moderate-income residents.

- **Heat pumps and ductless heat pumps drove the majority of electric savings** this past quarter, while gas savings were largely made up of gas hearths, furnaces and windows projects.
- **Energy Trust launched a new Nest Seasonal Savings incentive** following a pilot indicating customers used 20 percent less energy during the winter heating season. The pilot confirmed that Nest thermostats reduced energy use by making small, gradual temperature adjustments based on occupant habits and preferences. The pilot evaluated the performance of 2,800 existing Nest thermostats connected to heat pumps or air conditioners.
- **By year-end, additional gas savings are expected from the Nest Seasonal Savings incentive and PGE's Bring Your Own Thermostat pilot.** PGE's Bring Your Own Thermostat pilot is similar to Nest Seasonal Savings, but works with other brands of smart thermostats.
- **The program launched a new Energy Saver Kit ordering process** that enables customers to select a kit with lighting, water-saving devices or both, ensuring customers only receive products they intend to install—making the offering more cost-effective and increasing energy savings per kit. The new order form includes questions to help determine the value of potential new products and help the program target recipients for future marketing activities.
- **Existing Homes met with the City of Pendleton's Housing and Neighborhood Improvement Committee** to discuss how to leverage Energy Trust's Savings Within Reach enhanced incentives and on-bill loan repayment offering to rehabilitate 15-25 homes owned by low- and moderate-income families with a \$400,000 Community Development Block Grant.
- **In Q3, 68 customers signed up for financing for qualifying energy-efficiency upgrades repaid through savings on utility bills**, four times the number that signed up in Q3 2016. Financing with on-bill repayment reduces upfront cost as a barrier to installing energy-efficient upgrades.
- **Energy Trust extended a ductless heat pump bonus** launched in Q2 for select Central Oregon contractors, which was supported by the Bend Environmental Center. Contractors requested more time to serve eligible and interested customers.



LAUNCHED A
NEST SEASONAL
SAVINGS
INCENTIVE

68

CUSTOMERS
SIGNED UP FOR
FINANCING
REPAID
THROUGH
SAVINGS ON
UTILITY BILLS

New Homes

The New Homes program works with trade ally builders, subcontractors and verifiers to construct energy-efficient homes that exceed code through construction of EPS-rated homes and prescriptive incentives for individual equipment.

- **New Homes engaged builders to complete 703 energy-efficient homes in Q3**, for a total of **1,630 homes so far this year**. The number of homes and savings per home were on par with expectations.
- **The program updated incentives to incorporate changes to the state energy code** effective January 1, 2018. Improvements in code levels increase the baseline against which Energy Trust's incentives are measured, lowering the amount of savings that can be claimed per home constructed.
- **A Hillsboro developer committed to building all of its southern Hillsboro homes to exceed energy code by 20 percent** or more. This follows a series of discussions with City of Hillsboro staff about the city's sustainability goals for new home development and construction.
- **The program discussed new construction projects with the Confederated Tribes of the Umatilla Indian Reservation**, including development of single-family homes and redevelopment of high-efficiency modular homes at a trailer park.
- **Staff recruited new trade ally builders serving rural and moderate-income customers**, including a new builder in Southern Oregon planning to develop 138 energy-efficient affordable housing units in Cave Junction. The developer plans to build each unit at least 30 percent above code. Additionally, New Homes researched and identified a potential new statewide builder that focuses on affordable new construction.

1,630
NEW ENERGY-
EFFICIENT HOMES
BUILT

Products

The Products program offers incentives for qualified front-loading clothes washers, smart thermostats, heat pump water heaters and qualified gas water heaters. The program also offers instant discounts at time of purchase through select retailers for qualified front-loading clothes washers, LED bulbs and fixtures, showerheads, advanced power strips, heat pump water heaters and gas water heaters. In addition, the program encourages the sale of energy-efficient new manufactured homes by offering retailers sales performance incentives. Lastly, the program delivers energy-saving products to customers through water bureaus and districts, food pantries and utility community offices.

- **More affordable LED lighting drove market adoption, with retail LED sales 60 percent higher** than in Q3 2016. Energy Trust continued to reduce incentives per LED bulb as prices decreased.
- **Showerhead and shower wand sales were bolstered by retailer promotions**, including a shower wand promotion at all Costco locations in Energy Trust service territory, which accounted for one-half of showerheads and shower wands purchased in Q3. Showerhead sales have both increased and become more consistent as participating retailers stock more energy-efficient products.



**RETAIL LED SALES
INCREASED 60
PERCENT**

- **Energy Trust launched a two-year Manufactured Home Replacement pilot** to retire old, inefficient manufactured homes and replace them with energy-efficient new models. Energy Trust expects to coordinate with Community and Shelter Assistance Corporation of Oregon, NeighborWorks Umpqua and St. Vincent de Paul on identification of homes for replacement, pilot evaluation, funding and structure.



LAUNCHED A
MANUFACTURED
HOME
REPLACEMENT
PILOT

D. Renewable energy sector highlights

- **The renewable energy sector expects to exceed its generation goals overall and for Pacific Power territory**, and to approach its generation goal for PGE territory.

Solar

The Solar program aims to create a vigorous and sustainable market for solar energy by offering cash incentives that lower above-market costs for small residential and commercial solar projects, educating consumers, creating and enforcing quality standards and ensuring a robust network of qualified trade ally contractors. Staff review incentive levels regularly and gradually reduce them to manage budget, respond to decreases in solar costs and support as many systems as possible. The Solar program supports installation of standard solar systems on residential and commercial properties, and also large custom projects when funding is available.

- **The program supported continued strong demand for solar incentives, with 1,216 applications** received through Q3—slightly more than at this time last year.
- **Energy Trust expects applications to increase in the remainder of 2017** as customers anticipate the year-end expiration of Oregon’s Residential Energy Tax Credit. Energy Trust sought and received input from the Renewable Energy Advisory Council on 2018 budget strategies in response to this policy change.
- **Energy Trust connected 550 customers with solar trade allies through its online bid request form**—a 21 percent increase over Q2—meeting customer demand for online self-service tools and reducing customer acquisition costs for trade allies. High customer interest is an early indicator of increased demand for incentives in Q4 due to the year-end expiration of Oregon’s Residential Energy Tax Credit.
- **The program provided trade allies with an additional 200 customer leads** through Beaverton and Milwaukie Solarize programs. Energy Trust provided industry expertise and assistance during initial planning discussions.
- **Staff recruited 10 facilities serving low-to-moderate income communities to participate in research** on the costs and benefits of solar plus battery storage funded by the National Renewable Energy Lab and Clean Energy States Alliance. Sites include affordable multifamily housing, a medical facility, City of Portland Basic Earthquake Emergency



RECEIVED 1,216
SOLAR INCENTIVE
APPLICATIONS



CONNECTED 550
CUSTOMERS WITH
SOLAR TRADE
ALLIES

Communication Nodes sites, a low-income services provider and a food bank.

- **With leadership from Energy Trust staff, the Solar Energy Industries Association released its inaugural Solar Workforce Diversity Study** to benchmark diversity in the national solar workforce. Staff also presented on diversity in the national solar workforce at Solar Power International.
- **Staff provided expertise to the City of Portland's PREPHub pilot** through a new stakeholder group with representatives from city bureaus, Portland State University and PGE. PREPHub provides neighborhood infrastructure that supports disaster resilience and can also provide services during normal grid operation.



SUPPORTED
SOLAR
WORKFORCE
DIVERSITY STUDY

Other Renewables

The Other Renewables program provides project development assistance and installation incentives that lower above-market costs for projects that generate renewable energy from hydropower, biopower, wind and geothermal resources. Project development assistance supports early-stage development and helps build a pipeline of future renewable energy installation projects. Qualified projects may access project development assistance incentives multiple times, up to the limits of funding caps, enabling applicants to move through consecutive development activities. In 2017, staff are focused on projects that provide a wide range of benefits, including biogas projects generating energy from anaerobic digestion of organic waste and hydropower projects at irrigation districts.

- **Energy Trust dedicated \$810,000 in installation incentives for two Central Oregon hydropower projects** expected to reach commercial operation in 2019. The 0.09-aMW irrigation district facility near Sisters and 0.12-aMW municipal hydropower facility near Madras applied for incentives in Q2 through a competitive solicitation process. A third application remains under review.
- **Energy Trust discontinued incentives for small wind projects** and restricted incentives for community wind projects to municipal developments. The change was reviewed and supported by the OPUC and Energy Trust's Renewable Energy Advisory Council. Small wind projects face market and technology challenges that make them unviable at this time. There is no market for community wind projects in Oregon outside of a few being explored by municipal entities for resiliency purposes.
- **Three new irrigation districts signed up for the Energy Trust and Farmers Conservation Alliance irrigation modernization initiative**, bringing the total number of participating districts to 18. The initiative helps irrigation districts and the farmers they serve upgrade to modern infrastructure that can generate hydropower while reducing energy use and water waste.
- **With Energy Trust incentives, a large Oregon brewery continued to test multiple biopower technologies** for treating brewery waste and generating energy on-site. The technologies can also be applied to smaller breweries. Energy Trust will share results nationally through the Clean Energy States Alliance.

2

HYDROPOWER
PROJECTS
SELECTED TO
RECEIVE
INSTALLATION
INCENTIVES

3

NEW IRRIGATION
DISTRICTS
SIGNED UP TO
RECEIVE
ASSESSMENTS

- **Staff hosted a discussion at the Oregon Association of Clean Water Agencies conference** on energy efficiency and renewable energy opportunities at water resource reclamation facilities. Staff also presented on the benefits of irrigation modernization at the Oregon State Board of Examiners for Engineering and Land Surveying annual conference.

E. Internal operations highlights

Communications

- **Received 152,000 website visits in Q3 2017**, a 30 percent decrease from Q3 2016. The residential sector postponed an email marketing campaign for Energy Saver Kits that typically drives web traffic in Q3. Web traffic is expected to increase in the remainder of 2017 in response to planned digital and email promotion of Energy Saver Kits.
- **Garnered 165 news stories about Energy Trust** programs and services with a media value of \$129,900—the cost of purchasing the equivalent advertising space and air time—as a result of media outreach and responses to reporter inquiries.
- **Distributed seven press releases in Q3 2017**, including announcements about Energy Trust’s 2016 annual results and cumulative benefits and a new incentive for smart thermostats.

152,000

WEBSITE VISITS

165

NEWS STORIES
ABOUT ENERGY TRUST

Customer service

- **Received 4,200 calls in Q3 2017**, a 13 percent decline from Q2 2017 and a 10 percent decline from Q3 2016. Call volume was impacted by the delay of a residential email marketing campaign for Energy Saver Kits that typically drives customers calls in Q3.
- **Responded to 380 email inquiries in Q3 2017**, a decline from 440 received in Q2 2017 and a slight increase from 360 received in Q3 2016.
- **Received two complaints in Q3 2017 that could not be easily resolved** by a call center representative. This compares to five complaints in Q3 2016.

4,200

CUSTOMER CALLS

Trade and program allies

- **To diversify and expand the Trade Ally Network**, met with City of Portland and Metropolitan Contractors Improvement Partnership, and attended Minority Enterprise Development Week conference.
- **Solicited trade ally feedback to improve Energy Trust’s Trade Ally Portal**, a website where contractors can enroll to become a trade ally and access project data and resources.

General outreach

- **Expanded awareness about Energy Trust services through presentations and events** with the Affiliated Tribes of Northwest Indians, Forth, Hood River Energy Committee, League of Oregon Cities, Enhabit,



EXPANDED
AWARENESS
THROUGH MEETINGS
AND EVENTS FROM
COOS BAY TO
WALLOWA COUNTY

Confederated Tribes of Warm Springs, Manufactured Housing Communities of Oregon, Umpqua Valley Home Builders Association, Pendleton Housing Conference, Wallowa Resources Advisory Board and Klamath Falls Rural Business and Innovation Summit.

- **Provided information about Energy Trust programs through meetings** with Malheur Equity Committee, Columbia Basin Latino Alliance, a Southern Oregon county commissioner and members of the Eastern Oregon Regional Solutions Team.
- **Led tours for Pacific Northwest Economic Region Annual Summit** of energy-efficient buildings in Portland and the Willamette Valley.
- **Planned and executed a dedication of the Corvallis Airport 100-kW solar system** attended by Pacific Power and elected officials and resulting in local media coverage.
- **Attended events celebrating solar system installations** at the Mazamas headquarters and the City of Hood River Public Works Department. Attended receptions for Blue Mountain Community College's Precision Irrigation Training Facility and the net-zero Nez Perce Long House in Wallowa County.
- **Presented training and information about Energy Trust for the 2017-18 AmeriCorps Resource Assistance for Rural Environments** orientation.
- **Attended and supported Pacific Power Wattsmart** events in Coos Bay, Pendleton and Mill City.

IT

- **Processed 13,600 customer projects** in Energy Trust systems, including 9,000 submitted through web applications.
- **Upgraded Customer Relationship Management system** with the latest patch from Microsoft, increasing reliability of the system.
- **Migrated Energy Trust emails to a cloud-based email server** (Microsoft Exchange Online), ensuring reliable remote email access.

13,600
CUSTOMER
PROJECTS
PROCESSED

Planning and evaluation

- **Created 67 new energy-efficiency measures** and revised 20 measures.
- **Completed and posted two evaluations** on the Energy Trust website, including Multifamily Process Evaluation and Current Methods in Free Ridership and Spillover Policy and Estimation.
- **Provided a 20-year energy efficiency forecast for Cascade Natural Gas** to incorporate into its Integrated Resource Plan.
- **Kicked off the process to develop a forecast and provide support for NW Natural's 2018 IRP.**
- **Calculated 2018 Savings Realization Adjustment Factors**, which include realization rates and free ridership. These are factors in calculating how much savings can be claimed and reported for energy-efficiency upgrades.
- **Submitted requests to the OPUC for cost-effectiveness exceptions for measures** that do not pass the Total Resource Cost benefit/cost ratio test, but staff identified as qualifying for at least one of the exceptions criteria allowed by the OPUC.

67
NEW ENERGY-
EFFICIENCY
MEASURES
CREATED

IV Revenues and expenditures tables^{7,8}

A. Revenues and expenditures summary

- Overall revenues totaled \$44.4 million for Q3 2017, 2 percent over what was budgeted.
- Q3 expenditures totaled \$37.3 million, of which \$18 million or 48 percent was for incentives. Typically, actual expenditures vary from budgeted expenditures by a few percentage points.
- Q3 electric efficiency expenditures were 9 percent below budget.
- Q3 gas efficiency expenditures were 18 percent below budget.
- Q3 renewable energy expenditures were 38 percent below budget.

B. Revenues

Revenues include public purpose revenue plus incremental electric revenue from SB 838. Incremental revenues are those authorized under SB 838 to support capturing additional cost-effective electric efficiency savings above the amount supported by funding through SB 1149.

| Source | Q3 actual revenues | Q3 budgeted revenues |
|---------------------------|----------------------|----------------------|
| Portland General Electric | \$ 9,073,480 | \$ 8,900,044 |
| PGE Incremental | \$ 15,725,939 | \$ 14,917,542 |
| Pacific Power | \$ 7,024,639 | \$ 6,490,346 |
| Pacific Power Incremental | \$ 8,594,623 | \$ 9,579,867 |
| NW Natural | \$ 1,674,802 | \$ 1,433,038 |
| NW Natural Industrial DSM | \$ 2,000,000 | \$ 2,000,000 |
| Cascade Natural Gas | \$ 184,033 | \$ 283,470 |
| Avista | \$ 91,438 | \$ 101,352 |
| Total | \$ 44,368,954 | \$ 43,705,660 |

C. Expenditures by utility

| Source | Q3 actual expenditures | Q3 budgeted expenditures |
|---------------------------|------------------------|--------------------------|
| Portland General Electric | \$ 20,313,460 | \$ 22,335,922 |
| Pacific Power | \$ 12,156,020 | \$ 14,967,883 |
| NW Natural | \$ 3,536,577 | \$ 4,006,617 |
| NW Natural Industrial DSM | \$ 613,070 | \$ 1,216,193 |
| Cascade Natural Gas | \$ 404,954 | \$ 469,389 |
| Avista | \$ 272,192 | \$ 196,074 |
| Total | \$ 37,296,275 | \$ 43,192,078 |

⁷ Columns may not total due to rounding.

⁸ The gas savings do not include results for NW Natural in Washington. These results are available at www.energytrust.org/reports.

D. Expenditures by sector and program

| | | Q3 actual expenditures | Q3 budgeted expenditures |
|-----------------------------------|------------------------------------|------------------------|--------------------------|
| Commercial | Existing Buildings and Multifamily | \$ 10,981,610 | \$ 12,242,219 |
| | New Buildings | \$ 2,712,707 | \$ 5,048,106 |
| | NEEA Commercial | \$ 410,986 | \$ 734,749 |
| Commercial total | | \$ 14,105,302 | \$ 18,025,075 |
| Industrial | Production Efficiency | \$ 6,581,529 | \$ 6,062,494 |
| | NEEA Industrial | \$ 48,018 | \$ 49,628 |
| Industrial total | | \$ 6,629,547 | \$ 6,112,122 |
| Residential | Existing Homes | \$ 3,978,556 | \$ 4,358,809 |
| | New Homes and Products | \$ 6,778,084 | \$ 7,025,485 |
| | NEEA Residential | \$ 1,320,788 | \$ 1,268,127 |
| Residential total | | \$ 12,077,428 | \$ 12,652,421 |
| Energy efficiency total | | \$ 32,812,277 | \$ 36,789,618 |
| Renewables | Solar | \$ 2,096,671 | \$ 3,205,237 |
| | Other Renewables | \$ 794,028 | \$ 1,234,717 |
| | Cancelled project* | \$ (135,000) | \$ - |
| Renewable generation total | | \$ 2,755,699 | \$ 4,439,954 |
| Administration | Administration | \$ 1,728,298 | \$ 1,962,505 |
| Total expenditures | | \$ 37,296,275 | \$ 43,192,078 |

* In Q3 2017, Energy Trust cancelled a renewable energy project claimed in a prior year (2009). Funds were returned to Energy Trust and generation was discounted.

E. Incentives paid

| Quarter | PGE efficiency | Pacific Power efficiency | NW Natural efficiency | Cascade Natural Gas efficiency | Avista efficiency | PGE generation | Pacific Power generation | Total |
|--------------|---------------------|--------------------------|-----------------------|--------------------------------|-------------------|--------------------|--------------------------|---------------------|
| Q1 | \$4,552,627 | \$3,086,395 | \$1,139,036 | \$167,746 | \$39,665 | \$1,967,134 | \$1,103,469 | \$12,056,072 |
| Q2 | \$13,194,287 | \$6,836,569 | \$2,788,465 | \$173,489 | \$147,525 | \$2,354,040 | \$2,095,317 | \$27,589,691 |
| Q3 | \$8,954,386 | \$4,868,491 | \$1,884,334 | \$184,843 | \$130,015 | \$874,279 | \$1,080,360 | \$17,976,708 |
| Total | \$26,701,300 | \$14,791,455 | \$5,811,834 | \$526,078 | \$317,206 | \$5,195,453 | \$4,279,145 | \$57,622,471 |

V Savings and generation tables^{9,10,11,12,13}

A. Savings and generation by fuel

| | Q3 savings/generation | YTD savings/generation | Annual goal | Percent achieved YTD |
|---------------------|-----------------------|------------------------|------------------|----------------------|
| Electric savings | 10.4 aMW | 29.9 aMW | 56.4 aMW | 53% |
| Natural gas savings | 810,899 therms | 2,887,456 therms | 7,130,306 therms | 41% |
| Electric generation | 0.43 aMW | 2.73 aMW | 2.86 aMW | 96% |

B. Progress toward annual efficiency goals by utility

| | Q3 savings | YTD savings | Annual goal | Percent achieved YTD | Annual IRP target | Percent achieved YTD |
|---------------------------|----------------|--------------------|--------------------|----------------------|--------------------|----------------------|
| Portland General Electric | 6.0 aMW | 18.0 aMW | 35.0 aMW | 52% | 32.7 aMW* | 55% |
| Pacific Power | 4.4 aMW | 11.9 aMW | 21.4 aMW | 55% | 19.1 aMW* | 62% |
| NW Natural | 676,725 therms | 2.4 million therms | 6.2 million therms | 39% | 4.7 million therms | 51% |
| Cascade Natural Gas | 69,220 therms | 247,302 therms | 563,862 therms | 44% | 563,862 therms* | 44% |
| Avista | 64,954 therms | 211,642 therms | 318,332 therms | 66% | 318,332 therms** | 66% |

Integrated Resource Plan targets are shown in net savings.

* Integrated Resource Plans for PGE, Pacific Power and Cascade Natural Gas are pending acknowledgement by the OPUC.

** Energy Trust and Avista have not yet determined an IRP target for 2017. Energy Trust's program goal is used in lieu of a 2017 IRP target.

⁹ Columns may not total due to rounding.

¹⁰ This document reports net savings. Net savings are adjusted gross savings based on results of current and past evaluations.

¹¹ Electric savings also include transmission and distribution savings.

¹² The gas savings do not include results for NW Natural in Washington. These results are available at www.energytrust.org/reports.

¹³ Energy Trust reports 100 percent 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.

C. Electric savings by sector and program

| | | Q3 savings aMW | YTD savings aMW | Annual goal aMW | Percent achieved YTD |
|-------------|------------------------------------|-------------------|--------------------|--------------------|-------------------------|
| Commercial | Existing Buildings and Multifamily | 2.5 | 7.2 | 14.7 | 49% |
| | New Buildings | 0.5 | 2.5 | 6.3 | 40% |
| | NEEA Commercial | 0.4 | 0.8 | 1.5 | 52% |
| | Commercial total | 3.4 | 10.5 | 22.5 | 47% |
| Industrial | Production Efficiency | 2.3 | 5.9 | 13.6 | 44% |
| | NEEA Industrial | 0.022 | 0.037 | 0.077 | 48% |
| | Industrial total | 2.4 | 6.0 | 13.7 | 44% |
| Residential | Existing Homes | 0.5 | 1.7 | 3.9 | 43% |
| | New Homes and Products | 3.1 | 9.5 | 10.9 | 87% |
| | NEEA Residential | 1.1 | 2.3 | 5.4 | 42% |
| | Residential total | 4.7 | 13.5 | 20.2 | 67% |
| | Total electric savings | 10.4 | 29.9 | 56.4 | 53% |

D. Natural gas savings by sector and program

| | | Q3 savings thm | YTD savings thm | Annual goal thm | Percent achieved YTD |
|-------------|------------------------------------|-------------------|--------------------|--------------------|-------------------------|
| Commercial | Existing Buildings and Multifamily | 162,609 | 515,061 | 2,200,792 | 23% |
| | New Buildings | 45,103 | 414,556 | 946,372 | 44% |
| | Commercial total | 207,712 | 929,617 | 3,147,164 | 30% |
| Industrial | Production Efficiency | 25,538 | 220,072 | 1,071,174 | 21% |
| | Industrial total | 25,538 | 220,072 | 1,071,174 | 21% |
| Residential | Existing Homes | 139,563 | 500,435 | 1,112,252 | 45% |
| | New Homes and Products | 438,085 | 1,237,333 | 1,799,715 | 69% |
| | Residential total | 577,648 | 1,737,767 | 2,911,967 | 60% |
| | Total natural gas savings | 810,899 | 2,887,456 | 7,130,306 | 41% |

Energy Trust allocated budget to NEEA for gas market transformation activities. While there were no associated savings in 2017, savings are expected in subsequent years.

E. Renewable energy generation by utility

| | Q3 generation aMW | YTD generation aMW | Annual goal aMW | Percent achieved YTD |
|---------------------------|----------------------|-----------------------|--------------------|-------------------------|
| Portland General Electric | 0.20 | 0.65 | 1.23 | 53% |
| Pacific Power | 0.23 | 2.08 | 1.63 | 128% |
| Total | 0.43 | 2.73 | 2.86 | 96% |

F. Renewable energy generation by program

| | Q3 generation aMW | YTD generation aMW | Annual goal aMW | Percent achieved YTD |
|--------------------------|----------------------|-----------------------|--------------------|-------------------------|
| Solar program | 0.50 | 2.80 | 2.86 | 98% |
| Other Renewables program | 0.00 | 0.00118 | 0.00120 | 99% |
| Cancelled project* | -0.06 | -0.06 | N/A | N/A |
| Total generation | 0.43 | 2.73 | 2.86 | 96% |

* In Q3 2017, Energy Trust cancelled a renewable energy project claimed in a prior year (2009). Funds were returned to Energy Trust and generation was discounted.

G. Incremental utility SB 838 expenditures¹⁴

| Utility | | Q3 SB 838 Expenditures | | YTD SB 838 Expenditures |
|---------------------------|-----------|------------------------|-----------|-------------------------|
| Portland General Electric | \$ | 212,251 | \$ | 605,005 |
| Pacific Power | \$ | 284,120 | \$ | 599,282 |
| Total | \$ | 496,371 | \$ | 1,204,287 |

¹⁴ Reflects expenditures by Pacific Power and PGE in support of utility activities described in SB 838. Reports detailing these activities are submitted annually to the OPUC.