NEEA Quarterly Performance Report for Energy Trust of Oregon

Fourth Quarter 2013

OVERVIEW

The Northwest Energy Efficiency Alliance (NEEA) is a non-profit organization working in collaboration with Energy Trust of Oregon, the Bonneville Power Administration, and more than 100 public and private Northwest utilities to accelerate energy efficiency to meet the future energy needs of the Northwest. NEEA is a voluntarily funded organization with a five-year budget commitment from its funders.

With these mobilized partnerships, NEEA is able to scan the market to identify emerging energy-efficient technologies, services and practices to create the market conditions to accelerate and sustain their market adoption on behalf of 13 million energy consumers. As a regional collaborative, NEEA mitigates risk to individual utilities and public benefits administrators by identifying economies of scale, aggregating resources and sharing and synthesizing knowledge.

Energy Trust of Oregon (Energy Trust) is one of NEEA's key funders and expects to invest slightly more than $37 million to support NEEA from 2010-2014. This report summarizes NEEA's 2013 fourth quarter value delivery to Energy Trust based on its operations plan. For additional information about NEEA's unique value to the region, history, structure and recent initiatives, please visit www.neea.org.

FILLING THE ENERGY EFFICIENCY 'PIPELINE' WITH ENERGY TRUST

NEEA's top focus, as prioritized by its stakeholders, is to scan the market for emerging energy-efficient technologies, services and practices. In partnership with its funders, NEEA has now identified and is investigating more than 18 different opportunities that may have broad benefits for Energy Trust and the region. These projects currently represent a 20-year savings potential to the region of more than 1700 average megawatts (aMW) through increased efficiencies in the residential, commercial and industrial/agriculture sectors, with savings locked in through codes and standards efforts.

Fourth Quarter Emerging Technologies Highlights

Unsolicited Proposals – Continued to investigate two unsolicited proposals related to 1) assessment of advanced commercial building energy and, 2) an energy reporting taxonomy for discussing energy savings devices. Through continued research and testing, NEEA will determine if these opportunities have the potential for significant energy savings for the region. NEEA reviews all unsolicited proposals of new technology and services and conducts rigorous testing to determine viability in the Northwest market. Once assessed, NEEA provides stringent specifications for upstream manufacturers and market actors and works with its funding partners to help generate demand of these technologies.

Solid-State Street Lights with Controls – Discontinued NEEA's Solid-State Street Lights with Controls initiative due to uncertainty around a regional role to transform the market. In Q3 and Q4, NEEA requested advice through its commercial advisory committee (CAC) and regional portfolio advisory committee (RPAC) to determine if the initiative was appropriate for NEEA's portfolio. At the meetings, which included advisors from Energy Trust, participants raised questions about the initiative's energy savings opportunities and overlapping local energy efficiency program efforts in this area. NEEA is responding by discontinuing regional efforts in this market. Advisory members did acknowledge that the learnings to date and market characterization from NEEA would be

valuable to individual utilities and public benefits administrators that are already implementing Solid-State Street Lighting programs.

Luminaire-Level Lighting Controls (LLLC) – Completed and published a proof-of-concept test for the Enlighted brand lighting controls, the first identified product that meets LLLC criteria. The study revealed that LLLC technology with dimming ballast can deliver significant savings (30-60%) to commercial facilities at a relatively low cost. The study also identified the opportunity for improved LLLC specifications. NEEA's continued assessment of this emerging technology establishes product reliability and functionality, mitigating risk prior to a broad market release. NEEA also accelerated research on the rapidly evolving controls market in Q4, including the determination of a naturally-occurring baseline, a characterization of the market and the identification of non-energy benefits. This foundational research will inform effective intervention strategies for future use by Energy Trust and across the region.

Heat Pump Water Heaters (HPWHs) – Conducted and published results from a laboratory test to assess the cold climate performance of manufacturer Sanden's CO2 integrated HPWH to verify Northern Climate installation feasibility. While not currently available in the US, the testing shows that, with some adaptation, this technology innovation holds great promise for energy savings in the Northwest's cooler climates (down to 5 degrees F).

UPDATE ON 2015-2019 STRATEGIC AND BUSINESS PLANNING

In 2013, NEEA and its regional partners developed the building blocks for activities for the next five years based on a generally agreed to Strategic Plan and Business Plan. The Strategic Plan includes two draft goals (pending Board approval). Those two draft goals are:

1. Fill the Energy Efficiency Pipeline with new Products, Services and Practices
2. Create Market Conditions that will accelerate and sustain the market adoption of emerging energy efficiency products, services, and practices.

NEEA and its Board are continuing discussions regarding NEEA's role in the evolving energy efficiency landscape and its potential pursuit of several strategic markets. Before the Board adopts the Strategic and Business Plans, NEEA will provide a final opportunity for the public to comment via ConduitNW.org and directly to NEEA staff. This feedback will be shared with the Board of Directors for consideration.

NEEA's draft Business Plan identifies opportunities around a new Market Strategy component, with the goal of targeting key markets identified as large savings potential for regional focus. These markets align closely with the 20-year savings potential identified in the Sixth Power Plan. Through early coordination on these regional strategies, NEEA's efforts may deliver increased value to the region by improved regional coordination. The final five-year budget for 2015-2019 is pending Board approval.

ACCELERATING MARKET ADOPTION WITH ENERGY TRUST

NEEA intervenes in markets to remove barriers to the market adoption of energy-efficient products, services and practices. In partnership with Energy Trust and its other funders, NEEA designs and executes strategic market interventions to create lasting change and deliver long-term savings to the region.

NEEA currently has 19 market transformation initiatives in the residential, commercial, industrial and agricultural sectors. NEEA is also heavily involved in raising the bar for state energy codes and federal appliance standards.

Fourth Quarter Residential Sector Highlights

Northwest ENERGY STAR Homes (NWESH) – The NWESH program is accelerating market capacity for new residential construction and preparing the market for advanced energy codes by providing technical training and support for market actors serving Energy Trust territory.

- Increased the market's capacity for transformation by partnering with Energy Trust to provide training opportunities for approximately 130 builders, contractors and verifiers in Energy Trust territory in 2013. In-person and webinar trainings included: Axis Database training, Energy Efficiency for Real Estate Professionals, Green Homes Trends and Appraisal Methodologies, Northwest ENERGY STAR Homes 101 and more. Training strengthens market actor's ability to build, sell, appraise and verify energy-efficient new construction homes.
- Continued collaboration with Energy Trust New Homes and Architectural Energy Corporation on behalf of the region to develop a Northwest version of their REM/Rate new home modeling software. The software, which analyzes residential energy use, will provide greater flexibility to Northwest builders to become Northwest ENERGY STAR Homes (NWESH) compliant and support NEEA's transition of the NWESH program to the market.

As a result of these and other market transformation activities, 323 homes have been certified as Northwest ENERGY STAR Homes in Energy Trust territory since the beginning of 2013.

NEEA is leveraging the NWESH program to solidify market partners and regional infrastructure to transition into a pilot stage for a new, advanced home specification. The new specification is designed to provide a pathway for advanced new construction practices and technologies and accelerate new code adoption. The program is supporting New Tradition Homes, a builder in Energy Trust territory, by delivering metering equipment and verifying installation. Test projects across Energy Trust territory and the region aim to generate consumer and builder awareness for advanced building practices and new technologies while promoting builders who go above and beyond ENERGY STAR.

Heat Pump Water Heaters (HPWH) – In 2013, NEEA transitioned this project to market development, an achievement marked by four years of regional coordination to bolster manufacturer and supply chain investments, and remove barriers to product awareness. The transition to market development includes objectives around completing Savings Validation and Unit Energy Savings with the Regional Technical Forum, working upstream with manufacturers to execute promotions and supporting utilities to increase consumer awareness. Additional highlights include:

- Led efforts to update the Northern Climate Specification for HPWHs, enabling manufacturers to evolve their products and ensure the technology meets the needs of homeowners in cooler, northern climates, thereby increasing performance, efficiency and energy savings.
- Built market capacity and raised awareness about HPWHs in Energy Trust territory by delivering 21 Smart Water Heat orientations to contractors and performing 262 retail and wholesale support visits to educate sales associates. To motivate supply chain and overcome cost barriers, the Smart Water Heat regional program offers Tier-2 consumer rebates, which 152 Energy Trust consumers took advantage of in 2013.

Ductless Heat Pumps (DHP) – NEEA is creating the market conditions to help accelerate the market adoption of DHPs in Energy Trust territory by working upstream to strengthen relationships with manufacturers and retailers and by removing barriers to adoption through increased consumer awareness and availability.

- Improved access to information and user-experience for consumers researching DHPs by revamping the GoingDuctless website with input from utility partners. Upgrades include enhanced contractor finder capabilities to better promote contractors across a diverse utility territory, and more easily show all project-oriented contractors. By improving the ease with which consumers can research product information, contractors and resources, NEEA and the region are promoting the uptake of DHP technology across the Northwest.
- Leveraged NEEA's relationships with regional DHP installers, distributors and national manufacturers to execute a lead generation program in the Corvallis/Albany area with Energy Trust, Consumers Power Inc., The Resource Innovation Group and The Heat Pump Store (THPS). The program developed and facilitated the delivery of approximately 11,000 direct mail pieces, 400 flyers and 650 door hangers to address lack of consumer awareness of the product, generate demand and provide quality leads. As a result of these activities, THPS reports a total of 84 leads and 51 installations from June 12 to November 1; a 61% conversion rate (20 installs are in Energy Trust territory).

As a result of these and other efforts, 1,035 DHP installations were achieved in Energy Trust territory in 2013.

Fourth Quarter Commercial/Industrial Highlights

Commercial Real Estate – Continued partnership with Energy Trust, the City of Portland, Clark Public Utilities, Building Owners and Managers Association (BOMA) and Portland Development Commission to implement the 2013 “Kilowatt Crackdown” competition. Office efficiency competitions serve to increase market knowledge of the value of energy management in the commercial real estate industry and help building managers and operators build their capacity to identify and implement best practices. The “Kilowatt Crackdown” leverages the competition framework to “prime” the market for continued participation in local programs. In Q4, the program engaged commercial building managers and operators from 77 building teams, representing 15.5 million square feet of commercial office space, to successfully complete monthly benchmarking, implement recommendations, follow through on committed action plans, and provided coaching visits and ENERGY STAR® certifications to stimulate adoption of energy efficiency best practices.

Healthcare – In 2013, NEEA formed a Healthcare Utility Working Group, with representatives from Energy Trust and other Northwest utilities, to advise NEEA on the Healthcare initiative exit and transition activities. In the fourth quarter of 2013, NEEA continued to coordinate with the working group on the disposition (repurposing and repackaging) of the BetterBricks Healthcare SEM tools and materials.

Building Operator Certification (BOC) – Through the Building Operator Certification Expansion initiative NEEA provides skill enhancement training in Energy Trust territory to improve building energy performance through operation and maintenance best practices for HVAC, lighting, and controls systems. In 2013, to address barriers to education and training NEEA registered 80 operators in BOC courses serving Energy Trust territory. NEEA also conducted four BOC technical webinars serving 381 operators with continuing education in energy efficiency and two free information webcasts serving 25 Energy Trust customers. The BOC Expansion initiative is designed to foster a more robust market through increased education, training and technical

expertise in Energy Trust territory to ensure accurate installation of energy-efficient technologies.

Existing Building Renewal (EBR) – In the fourth quarter of 2013, the Existing Building Renewal program delivered the final proposal and owner presentation for a deep energy retrofit demonstration project in Energy Trust territory. Final owner approval of the proposed retrofit is pending, but if approved the demonstration project will establish approaches and tools to support implementation of deep energy retrofit projects in commercial buildings 20,000 square feet or greater. The EBR program is developing tools to overcome market barriers associated with implementing deep energy retrofits, such as cost and financing, perceived lack of economic value and market capability. By providing building owners and investors with a comprehensive business case for deep energy retrofits NEEA and its partners are creating a pathway to comprehensive deep energy retrofits in Energy Trust territory and around the Northwest.

Commercial Lighting – To build awareness among trade allies and market actors, NEEA continued to host an e-learning platform for commercial lighting trade allies, and continued support for the Northwest Trade Ally website. These activities provide commercial lighting market actors with the tools and knowledge necessary to further integrate efficient lighting solutions into their own business models, and increase adoption and use of Energy Trust lighting programs.

Industrial Refrigeration Operator Certification – In November of 2013, NEEA debuted the Certified Refrigeration Energy Specialist (CRES) program and exam at the Refrigerating Engineers & Technicians Association (RETA) National Conference in Bellevue, Washington. To support operators and technicians prepare for the CRES exam NEEA held three two-day review courses, to facilitate access to education. The certification also requires operators to build knowledge and skills through hands-on training by performing and documenting no-cost and low-cost activities for energy-efficient operation. Eight participants serving Energy Trust territory took NEEA's Review Course and sat for the exam with four participants passing. Activity documentation to date estimates CRES program applicants are achieving 2-10 percent energy savings.

Small/Medium Industrial (SMI) (Discontinuing) – In 2013, stakeholders provided input that informed NEEA's decision to discontinue the Small/Medium Industrial initiative, as it was determined that NEEA's role in SMI Strategic Energy Management (SEM) would be more beneficial were it focused on building regional SEM capability and infrastructure. NEEA is leveraging its SMI experiences in this new role by integrating knowledge gained into industrial SEM strategy, leading the Northwest Industrial SEM Collaborative, measuring market adoption, creating market awareness and knowledge, and developing tools and technologies for use by the region. Demonstration projects aimed at developing and testing approaches to build market capacity for SEM in the Northwest's small- and medium-sized industrial facilities concluded in Q4.

Food Processing – In the fourth quarter, four food processing facilities in Energy Trust territory continued to implement self-sustaining energy management systems, thereby increasing adoption of energy efficiency and persistence of savings in the region. NEEA is working to transition out of this market in 2014 and is completing the direct facility engagement and preparing for the final hand-off to local programs.

Fourth Quarter Codes and Standards Highlights

On behalf of the region, NEEA works at state and national levels to influence the adoption of increasingly stringent building energy codes and federal appliance and equipment standards. Working with its partners, NEEA gives the Northwest a voice in codes and standards processes and is often the only efficiency organization directly representing utilities in these forums. NEEA also conducts and shares critical research in support of codes and standards work.

Codes Highlights

NEEA continued collaboration with Energy Trust and the Oregon Homebuilders Association (OHBA) to craft a joint proposal for the 2014 residential energy code. A joint vision will increase predictability over the next 10-15 years as to how the residential market will move over this period and help NEEA and Energy Trust ensure future energy savings.

Standards Highlights

Participated in a broad range of national standards rulemakings in 2013 to advance more stringent federal appliance and equipment standards in support of the region's energy efficiency goals. Rulemakings include: updating the Residential Water Heater Test Procedure; a Proposed Rule for Large Electric Motor Efficiency Standards; a Proposed Rule for Residential Furnace Fans; a Final Rule for certain Alternative Energy Determination Methods (AEDMs) for rating and certifying commercial air conditioning, heating, water heating and refrigeration systems; and a Framework document to begin the rulemaking process for General Service Lamps. The energy savings from several of these rulemakings will be substantial for the region, with the potential for savings in 2014.

DELIVERING ON REGIONAL ADVANTAGE WITH ENERGY TRUST

NEEA is the only alliance of public and private electric utilities with national and global upstream market partners that represents the entire four-state region in the Northwest. NEEA uses its unique role as a regional organization to leverage resources across the Northwest to accelerate energy efficiency. In 2013, NEEA continued conducting market research, and facilitating regional collaboration and information sharing on behalf of the region.

Fourth Quarter Highlights

- Continued to partner with Energy Trust and utilities across the Northwest to influence manufacturers to produce, and retailers to stock and sell the most-efficient televisions available. By pooling resources, coordinating market interventions and negotiating as a region, NEEA and its partners have had a measurable and lasting impact on the television market and achieved greater energy savings for Energy Trust consumers. As of Q4, NEEA conducted 967 store visits in Energy Trust territory to raise awareness of most-efficient televisions among retail sales associates. As a result of these activities, 30 percent of televisions on display at participating retailers in Energy Trust territory currently qualify as most-efficient.
- Coordinated HPWH promotion with General Electric (GE) to sell HPWHs through all distribution channels (retailers, distributors, and contractors). GE leveraged NEEA's Smart Water Heat platform, developed in collaboration with the region, to work with local utilities and ensure a consistent promotional platform across the Northwest. The successful promotion, the first with a manufacturer, resulted in a 350 percent increase in HPWH sales for GE over the same period in 2012.
- Began the Industrial Facility Site Assessment (IFSA), the first study of its kind on the Northwest industrial sector. The IFSA will provide valuable information on industrial building energy-use characteristics to support power planning for Energy Trust. NEEA enlisted feedback from Energy Trust and other stakeholders to shape process and engagement and is targeting report release in 2014. In Q4, NEEA also continued its work on the Commercial Building Stock Assessment (CBSA). The CBSA, scheduled for release mid-2014, will provide a robust database of commercial building energy use characteristics and support regional power planning, inform conservation targets and help identify conservation program opportunities for Energy Trust and utilities in the Northwest.

- Published nine independent market research and evaluation reports in Q4 to validate and evaluate NEEA's market transformation work (http://neea.org/resource-center):
    - Northwest Heat Pump Water Heater Market Test Assessment
    - Understanding the Importance of Energy Efficiency in the Home Purchase Process
    - 80 PLUS Market Progress Evaluation Report #5
    - Variable Rate Rooftop Unit Test
    - Emerging Technology Dryer Testing
    - Laboratory Assessment of Sanden GES-15QTA Heat Pump Water Heater
    - Heat Pump Water Heater Field Study Report
    - Energy Baseline Methodologies for Industrial Facilities
    - Inventory of Commercial Energy Management and Information Systems for M&V Applications

For additional information, NEEA's 2013 Quarterly Performance Reports and the 2012 Annual Report are available online.

Please contact Lindsey Clark, Communications Coordinator at lclark@neea.org, with any questions or comments.