



## 2018 Annual Report for Cascade Natural Gas

### INTRODUCTION

The Northwest Energy Efficiency Alliance (NEEA or "the alliance") is a nonprofit organization working in collaboration with Cascade Natural Gas, other natural gas utilities and energy efficiency organizations to accelerate the innovation and adoption of efficient natural gas products throughout the region. With funding and engagement from Cascade Natural Gas and these other entities, the alliance intervenes in the market to create lasting change by removing barriers and leveraging opportunities to accelerate the adoption of cost-effective energy efficiency.

NEEA's vision is energy efficiency as a cornerstone of a vibrant and sustainable Northwest. Two interdependent strategic goals guide alliance efforts to achieve this vision:

- **Strategic Goal 1:** Fill the energy efficiency pipeline with new products, services and practices
- **Strategic Goal 2:** Create market conditions that will accelerate and sustain the market adoption of emerging energy efficiency products, services, and practices.

This report summarizes the alliance's 2018 market transformation activities and outcomes on behalf of Cascade Natural Gas. In December 2018, after a two-year collaborative outreach process, NEEA's Board voted unanimously to approve the 2020-2024 Strategic and Business Plans. These plans allow the alliance to sustain a portfolio of initiatives and support functions to transform the market for energy efficiency in the Northwest. For additional information about NEEA's programs or to read NEEA's 2020-2024 Strategic and Business Plans, visit: [neea.org/plans](http://neea.org/plans).

### NATURAL GAS MARKET TRANSFORMATION

By pooling resources through NEEA and working in collaboration with the region, Cascade Natural Gas is accelerating the development and market adoption of efficient natural gas products, services and practices in the Northwest. The goal of this effort is to deliver more energy efficiency options to Cascade Natural Gas customers and increase the efficiency of natural gas use in the region. In 2018, NEEA's Natural Gas program focused on increasing manufacturer diversification to support a portfolio of products, expanding partnerships to influence market development, and finding and leveraging synergies between gas and electric programs.

#### FILLING THE ENERGY EFFICIENCY PIPELINE

**Scanning** – NEEA staff scan the market to identify promising new energy-efficient natural gas products, services and practices. In 2018, NEEA staff reviewed eight natural gas projects or products, including: combination systems for space and water heating, a gas absorption heat pump for heating and domestic hot water, gas heat pumps and a commercial tankless water heating system. Additional

information about each of these products is available through the Regional Emerging Technology Advisory Committee database, which is housed on Conduit:

<https://conduitnw.org/Pages/Community.aspx?rid=29>

## **NATURAL GAS MARKET TRANSFORMATION PROGRAMS**

**Efficient Gas Water Heaters** – In 2018, alliance efforts focused on understanding market barriers to efficient gas water heating and supporting product development, leveraging lessons learned from NEEA’s electric heat pump water heater program. In partnership with the Gas Technology Institute, the program conducted an evaluation of opportunities to reduce cost through removing installation barriers for gas heat pump water heaters, including condensate drainage requirements and ducting complexities. Outcomes from this assessment will be shared with manufacturers to inform future product development efforts. NEEA program staff collaborated with NEEA’s electric heat pump water heater team to conduct a [market characterization study](#) of the Northwest water heater market. The study, which describes both supply and demand-side market dynamics as well as current market trends, will inform future program strategy, business case development and marketing efforts. Throughout 2018, the program continued collaboration with manufacturers, technology developers, utilities and other energy efficiency partners to accelerate product development. It is expected that commercialization by a major manufacturer will culminate with a market launch within NEEA’s 2020-2024 Business Cycle.

**Combination Water and Space Heating Systems** – In 2018, program efforts were focused on accelerating the commercialization of gas combi units. The alliance conducted a study to identify ways to reduce the weight, cost and complexity of a gas combination unit under evaluation by a major HVAC manufacturer. Findings of the study, which include overall weight reductions of 13 percent and cost reductions of up to 15 percent, were incorporated into a DOE-funded commercialization project. As of December 2018, the DOE-funded project has produced four next-generation prototype units and field installations are underway. Also in 2018, NEEA finalized and delivered a [Gas Heat Pump Product Characterization](#) report to key market partners. The report provides quantitative and qualitative research that new market entrants can use for identifying product capacities and features, yielding the highest probability of market success. Finally, in late 2018 the program began a project with manufacturer Rheem and technology developer SaltX, to accelerate development of a natural gas combination space and water heating unit using salt to store and amplify heat. A proof-of-concept prototype demonstrating energy performance is expected to be complete in early 2019.

**Super-Efficient Gas Clothes Dryers** – Gas dryers have a very low market share in the Northwest – between 5 and 10 percent of the market – making extra-regional partnerships essential for program success. In 2018, the program focused on building partnerships to influence market development of a high-performance ENERGY STAR or Most Efficient gas dryer. Program staff developed a “Strategic Partnership Opportunity” tool to highlight Northwest and national gas dryer market share opportunity to manufacturers to demonstrate the business case for developing efficient gas dryers. The program also held informational webinars with seven utilities across the nation to gain utility support for an improved federal test procedure and for products that save energy and deliver a satisfactory customer experience. Thus far, two utilities have signed on to the NEEA specification.

**Condensing Rooftop Units** – In 2018, the program installed and commissioned condensing rooftop units (C-RTUs) on four commercial buildings in the Northwest, including one in Cascade Natural Gas

service territory. Pilot results will provide energy savings and product performance data for utility programs and inform future market channel development work. The program team also completed market research on C-RTU installation practices. Results of the research will be included in the final field trial report and used to inform manufacturer product development and installation guidance information for market actors. The program team was a driving member of a technical subcommittee committed to revising the Canadian Standards Association Group test procedure for commercial gas-fired package furnaces that will allow consumers and manufacturers to differentiate products based on efficiency. This international subcommittee is comprised of industry partners (including manufacturers), North American utilities and governmental organizations.

**Hearth Products** – In 2018, the program conducted industry outreach to gauge interest in the development of a low capacity hearth. This outreach was met with much hesitation and lackluster response by both industry organizations and manufacturers, resulting in ramped down efforts by NEEA staff.

## **DATA, RESEARCH AND ANALYSIS**

The alliance pools regional resources to conduct research and evaluation and provide data and analytical services for the benefit of Cascade Natural Gas customers.

### **EVALUATION AND MARKET RESEARCH**

**Market Research and Evaluation** – The alliance conducts robust market research to inform market transformation program design and provide critical data and analysis. In 2018, NEEA staff published 13 market research and evaluation reports, all of which are publicly available at [neea.org/resources-reports](http://neea.org/resources-reports).

**Regional Building Stock Assessments** – In 2018, the alliance published final reports and data collected as part of the Residential Building Stock Assessment (RBSA) and worked with regional stakeholders to develop a new population frame and began fielding the Commercial Building Stock Assessment (CBSA). The RBSA and CBSA are comprehensive inventories of the factors that influence energy use (both electric and natural gas) in existing Northwest buildings. Results inform utility energy efficiency programs as well as regional power planning efforts. The primary focus of 2019 is recruitment and fieldwork. CBSA data will be available by Dec. 31, 2019 with associated reports published in the first quarter of 2020.

## **REGIONAL COLLABORATION AND COORDINATION**

### **REGIONAL COLLABORATION**

**EFFICIENCY EXCHANGE** – In May 2018, the alliance co-hosted the annual Efficiency Exchange conference in collaboration with Bonneville Power Administration and the Northwest Power and Conservation Council. The regional conference, which provides a forum for energy efficiency professionals to share knowledge, explore emerging innovations and discuss the direction of utility efficiency programs, drew more than 450 attendees.

**CONDUITNW.ORG** – Developed in partnership with the Bonneville Power Administration, the Conduit online community facilitates information-sharing, coordination and collaboration among energy

efficiency stakeholders in the Northwest. More than 3,300 energy efficiency professionals across the Northwest.

### **REGIONAL COORDINATION**

Alliance Natural Gas market transformation programs are coordinated through the Natural Gas Advisory Committee, whose membership includes representatives from Cascade Natural Gas staff. Cascade Natural Gas is also represented on NEEA's Board of Directors. NEEA staff are grateful for the time and energy Cascade Natural Gas staff dedicate to participating in these forums and on NEEA's Board of Directors, including:

**Board of Directors:** Monica Cowlshaw, Manager – Energy Efficiency and Community Service

### **ADDITIONAL INFORMATION**

For additional information, NEEA's [2018 Quarterly Performance Reports](#), [newsletters](#) and the [2017 Annual Report](#) are available online at [nea.org](http://nea.org).

NEEA staff encourage stakeholder participation and appreciate input at all NEEA board meetings, Advisory Committee meetings and energy efficiency events around the region. The next NEEA Board of Directors meeting is June 4, 2019 in Portland, OR. Meeting details will be posted on [nea.org](http://nea.org) in advance.

Please direct questions or comments about this report to: Stephanie Lane, NEEA Marketing and Communications Coordinator, at [slane@nea.org](mailto:slane@nea.org)