

2019 Q4

Market Research and Evaluation Quarterly Newsletter

IMPORTANT UPDATES:



What's New!

It's fall in Portland! (Some mornings it seems we skipped fall and headed straight to winter. Brrr!) The leaves are changing, and so is NEEA's Market Research and Evaluation (MRE) Team.

In August, we said goodbye to our Principal Evaluation Lead, Dulane Moran. We wish her the very best in her new endeavors. That same month we welcomed Lauren Bates, our new Sr. Project Manager who will be leading research and evaluation for the Commercial Window Attachments (CWA) project and our HVAC projects.

Lauren brings with her nearly 15 years of evaluation experience in the education field and a Masters' degree in developmental psychology.

And this first week of October, we welcomed Meghan Bean! Meghan is now the MRE Sr. Project Manager for most of NEEA's consumer products initiatives, including Retail Product Portfolio (RPP). Meghan was most recently with Multnomah County, and before that, Research Into Action (now Opinion Dynamics) where she gained extensive experience evaluating energy efficiency programs. Meghan has a PhD in social psychology – and a new baby girl!

We're excited about our new team members and the intriguing research projects we have planned for the next quarter and beyond. Read on to see what we're up to and let us know if you have questions. We would love to hear from you!

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At a Glance

MARKET RESEARCH & EVALUATION PROJECTS



Residential

Commercial

Codes & Standards

Natural Gas

Industrial Stock Assessments

	PLANNING*	FIELDING*	REPORTING*
 Ductless Heat Pumps	✓		✓
Manufactured Homes			✓
Next Step Homes			✓
 Residential Lighting Data Collection and Analysis	✓		
Building Commissioning		✓	
Commercial Code Enhancement			✓
Commercial Window Attachments		✓	
Extended Motor Products			✓
HVAC Product Group	✓		
Luminaire Level Lighting Controls	✓	✓	
Reduced Wattage Lamp Replacement	✓		
 Very High Efficiency Dedicated Outdoor Air System	✓		
Beverage Vending Machines & Ceiling Fans			✓
Oregon Commercial Code Evaluation			✓
Oregon Residential New Construction Code Study	✓		
Washington Commercial Code Evaluation		✓	✓
Washington Residential New Construction Code Study		✓	
 HVAC Product Group	✓		
Water Heating			✓
 Green Motor Rewinds		✓	
 Commercial Building Stock Assessment		✓	

PLANNING: MRE projects from inception through proposal selection

***FIELDING:** MRE projects from kick-off through the completion of field work

***REPORTING:** MRE projects in the analysis/synthesis stage through report posting



Residential

PLANNING

Ductless Heat Pumps (DHPs)

The DHP program's 8th Market Progress Evaluation Report (MPER) concluded that the DHP program has made significant progress in reducing market barriers for the single family, zonal focus market. As a result, NEEA staff is planning a transition to long-term monitoring and tracking (LTMT) by the end of 2020. However, some gaps remain in NEEA's knowledge of the market for cold climate DHPs (ccDHPs), such as whether or not *non-oriented installers in Heating Zone 3 recommend and install ccDHPs at similar rates as oriented installers. Similarly, there are uncertainties around drivers of DHP costs. To address these gaps, NEEA staff is planning studies in the fourth quarter of 2019 and in early 2020. In 2019: a survey of DHP installers in Heating Zone 3 to be conducted during ccDHP training sessions and an in-depth statistical analysis of existing cost data for the region as a whole, looking at factors related to lower cost installations.

Findings from the 2019 studies will be released in Q4 2019.

*Oriented installers have completed the Northwest Ductless Heat Pump training while non-oriented installers have not.

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Residential Lighting Data Collection and Analysis

Apex Analytics and DNV GL will conduct another round of residential lighting data collection and analysis involving conducting in-store shelf surveys and analyzing those data along with 2019 Nielsen lamp sales data. The analysis estimates lamp sales mix, per lamp price (after incentives), wattage, efficacy (lumens per watt), and lifetime rated operating hours across:

- Lamp technologies (incandescent, halogen, CFL, LED),
- Applications (general purpose, decorative and mini-base, globe, reflector, three-way, Smart Lamps), and
- Store types (grocery, drug, dollar, discount, mass merchandise, do-it-yourself, membership club, small hardware, and online).

The in-store shelf survey will begin in early January 2020. NEEA will publish results in Q3 2020.

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Residential

REPORTING

Ductless Heat Pumps (DHPs)

NEEA staff shared out results of the DHP program's 8th Market Progress Evaluation Report (MPER) on September 26th during a webinar to advisory committee members, work group members, and other interested stakeholders. Some of the key findings from the report were:

- Sales increased an average of 16% across NEEA's three target markets in 2018 despite rising installation costs due to labor.
- 80% of target market sales in 2018 received utility incentives.
- Installers report that 90% of DHP installations in Heating Zone 3 were for cold climate DHPs over the past 12 months.
- 96% of HVAC companies install DHPs.

The MPER concluded that the DHP program has made significant progress in reducing market barriers for the single family, zonal focused market. As a result, NEEA staff is planning a transition to long-term monitoring and tracking (LTMT) by the end of 2020. However, some gaps remain in NEEA's knowledge of the market, and due to rising costs, cost effectiveness will continue to impact some local programs' viability. See the Planning section for residential programs on page 3 for details about upcoming research.

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Manufactured Homes

NEEA staff contracted with Energy 350 to conduct a third-party assessment of our Manufactured Homes program. Our primary objectives included reviewing the program's market transformation theory and logic model, determining the current state of the market, and assessing the effectiveness of key program activities undertaken prior to Scale-up. Energy 350 concluded the logic model was sound and well-suited to the opportunity presented in the sector; changes in market conditions warranted shifts in program focus; and the program changes that were implemented were well-designed for the current state of the market. The contractor provided recommendations for next steps that included targeted marketing of key retailers; improved coordination between retailers, utilities and the Program; and suggestions for improving product demand.

A report will be posted in early Q4 2019.

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Residential

REPORTING

Next Step Homes (NSH)

NEEA staff has hired Evergreen Economics to conduct an independent preliminary assessment of the Next Step Homes (NSH) program. The purpose of this third party review is to review the program logic and assess NSH program activities and approaches in order to determine their viability, reasonableness, and reactions by stakeholders and market actors.

A final report will be available in mid Q4 2019.

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Commercial

PLANNING

HVAC Product Group

NEEA's HVAC Product Group—the newly-formed umbrella for all residential, commercial, gas, and electric HVAC products in NEEA's portfolio—began planning a Market Actor Profile study in August. Slated to begin in the first quarter of 2020, the study's objectives are:

- To understand the motivations, information sources, and decision-making processes of workers involved in HVAC installations
- To understand the business side of HVAC installation companies

The study will provide new insights into an important slice of the supply side of the HVAC market. The final design of the study will be determined by a competitive bidding process. NEEA staff anticipates the research will be qualitative, utilizing methods such as focus groups, interviews, and observations.

A report is expected by the end of Q2 2020.

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Luminaire Level Lighting Controls (LLLC)

NEEA staff recently kicked off the a market assessment of the LLLC program with NMR Group. The study has the following goals:

- Further characterize selected LLLC market barriers and potential threats to inform program activities and strategies.
- Estimate LLLC luminaire market share, identify and rank top manufacturers and market channels to guide sales data collection, and identify the key markets suppliers are targeting and why (e.g. offices, schools, etc.)

A report is anticipated by Q2 2020.

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Commercial

PLANNING

Reduced Wattage Lamp Replacement (RWLR)

The Reduced Wattage Lamp Replacement (RWLR) program transitioned into long-term monitoring and tracking (LTMT) in May 2019. NEEA staff has issued a limited request for proposals (RFP) and will secure a contractor in October to conduct this first LTMT study. The effort will include analyzing reduced wattage lamp sales data NEEA staff continues to collect from its distributor platform, as well as interviewing non-participating distributors to track market diffusion and savings beyond the distributor platform. We expect recruiting for interviews to begin in early November, fielding in mid-November, and wrap up in January 2020.

A report will be published by the end of Q2 2020.

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Very High Efficiency Dedicated Outdoor Air Source (VHE DOAS)

The VHE DOAS team will soon select a vendor for a rapid turnaround market research project to be fielded during the 4th quarter of 2019 and early 2020. NEEA staff envisions a qualitative study that includes focus groups and interviews with professionals at architecture and engineering firms throughout the region. The study builds from the Commercial High-Performance HVAC Market Characterization completed by Opinion Dynamics in June, which targeted mostly building owners and managers, as well as HVAC installers. The new study, a second Commercial High-Performance HVAC Market Characterization, will focus on architects and mechanical engineers, who are key influencers of the HVAC market and often specify commercial HVAC installations. The project has two primary objectives:

- To understand how to influence HVAC projects towards VHE DOAS by learning more nuances of how DOAS projects are specified
- To learn how architects and engineers think about VHE DOAS

Reporting is expected in Q1/2 2020.

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Commercial

FIELDING

Building Commissioning

In November 2019, Cadmus will send out the commissioning data collection form to a sample of commissioning agents working in the region. This ongoing study monitors market activity and provides NEEA with data to calculate savings from new and existing commercial building commissioning. Data collection will conclude in January 2020.

NEEA staff will publish the report in Q3 2020.

Commercial Window Attachments (CWA)

The Commercial Window Attachment (CWA) program kicked off a second Market Characterization study in August. The research team will complete a secondary literature review as well as interview market actors such as installers and distributors to map out the supply chain(s) for two window attachment products: Secondary Glazing Systems (SGS) and Low-Emissivity Storm Windows (low-e windows). Interviews will also provide insights to inform a future market test of window attachments in 2020 or 2021. Researchers will also visit up to five sites with existing window attachment installations in order to create case studies.

NEEA staff anticipates reporting for this study will take place in January 2020.

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Commercial

FIELDING

Luminaire Level Lighting Controls (LLLC)

Energy Solutions will field manufacturer interviews for the fourth running year of the LLLC Incremental Price Study that monitors the long-term Market Progress Indicator of price parity for LLLC and standard luminaires and supports analysis of cost-effectiveness. Recruiting for interviews will begin in early October and will begin fielding by mid-October; they are expected to wrap up by mid-December 2019.

A memorandum of results will be available by the end of 2019.

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Commercial

REPORTING

Commercial Code Enhancement (CCE)

NEEA staff contracted with NMR Group to conduct market research to support program efforts. The objective of the research was to learn how to effectively communicate with key market actors to increase the likelihood that targeted and vetted code proposals generated by the Commercial Code Enhancement program will be adopted and, once adopted, effectively implemented into real-world building practices. The primary focus of the research was directed at designers. The research incorporated both qualitative and quantitative methods. The research provided communication guidelines to the program team, including breaking the strategy into two phases - pre-code and post-code adoption, identifying and linking target groups to the adoption phase, and creating communication objectives for each group in each phase.

[Link to report.](#)

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Extended Motor Products (XMP)

To support the XMP initiative, Cadmus conducted research on the market for pumps, including smart pumps. The research included profiling the pump market, identifying the roles of supply chain market actors, and assessing market barriers to smart pump adoption. Specifically, Cadmus reviewed secondary materials, interviewed market actors (manufacturers, manufacturers' sales representatives, specifying engineers, and representatives of the Hydraulic Institute), and surveyed pump purchasers (end-user facility and operations managers and installation contractors).

The report is currently being composed and is expected to be posted by the end of October 2019.

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Codes and Standards

PLANNING

Oregon Residential New Construction Code Study

For this residential new construction code study, NEEA staff will select two groups of contractors to do this work. One group, Pacific Northwest National Laboratory (PNNL), has been selected. PNNL will be responsible for designing the sample, creating the data collection instrument, conducting data analysis, and reporting. The second group has not yet been selected and is the target of a request for proposals (RFP). This group will be responsible for providing field support - recruiting sites to participate in the study, visiting recruited sites and collecting field data, ensuring data quality, and securely transporting data to PNNL. It is anticipated that scheduling and visiting sites will begin in mid-October 2019 and be completed by end of February 2020.

The final report is due end of Q1 2020.

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Codes and Standards

FIELDING

Washington Commercial Code Evaluation

NEEA staff has contracted with Cadmus to examine the commercial new construction market in Washington state. Staff is looking to determine how well the current code is being implemented, what pathways are used by builders to comply, and whether new technologies or practices are available to incorporate into new code. Currently, the study is in the recruiting and site visit scheduling stage. Cadmus will visit 100 buildings spread geographically throughout the state. The outreach to building managers and site visits are underway and will be completed by Q2 2020.

Analysis will follow with the final report expected by Q4 2020.

Washington Residential New Construction Code Study

The purpose of this study is to give NEEA staff information to better to understand how the Washington 2015 residential new construction code has affected new home construction. The information will be used to support NEEA staff's on-going code development efforts and assist efforts to update its savings model assumptions and estimation accuracy. CLEAResult will conduct document review in code jurisdiction offices throughout the state to determine which code option pathways builders are selecting. This work will be completed by mid-October 2019. Sites will be visited to determine how well code is being complied with. Visits will be completed by January 2020.

The final report will be posted by the end of Q1 2020.

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Codes and Standards

REPORTING

Beverage Vending Machines & Ceiling Fans

TRC ENGINEERS has recently completed evaluations of two federal standards: Beverage Vending Machines and Ceiling Fans. Participants in the standards processes were surveyed and dockets were reviewed to determine the impact energy stakeholders, including NEEA, had on the final form of the adopted standards and how that impact translates into savings.

Reports will be published on both standards by Q4 2019.

[Link to Beverage Vending Machines Standard Evaluation](#)

Oregon Commercial Code Evaluation

NEEA staff contracted with Ecotope, Inc. to conduct the Oregon Commercial Code Evaluation. The study was designed to provide a broad understanding of how well commercial new buildings are being built in terms of energy performance capabilities. Ecotope looked at new commercial construction in terms of assessing what building characteristics are present, the degree to which major system code requirements were being met, and how these all come together to affect potential energy performance. The report documents a shift in mechanical system structure and installed lighting. Overall, compliance in new commercial construction in Oregon is reported to be good. The report concludes that energy use intensity trended downward for all building types. The report provides suggestions for future code development focus, including to leverage the trend toward zonal mechanical systems and LED lighting systems.

Findings will be delivered in a final report, available by the end of Q4 2019.

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Natural Gas

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HVAC Product Group

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A report is expected by Q2 2020.

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REPORTING

Water Heater

NEEA staff contracted with ILLUME Advising to conduct a two part Tankless Water Heater market research project. Phase 2 began in Q3 2019. The purpose of this research effort is to better understand successes and challenges of tankless water heater installations in an effort to help inform effective future interventions for the uptake and installation of emerging water heater technologies, particularly around Gas Heat Pump Water Heaters (GHPWH).

While Phase 1 included a thorough review of available secondary literature on the topic and in-depth interviews with utility program managers, Phase 2 includes a series of in-depth interviews and ride alongs with water heater installers and distributors in the field; as well as in-depth or focus group sessions with recent purchasers of tankless water heaters.

Findings from both phases will be incorporated into a final report, available by the end of Q4 2019.

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Industrial

FIELDING

Green Motor Rewinds

In December 2019, Cadmus will send out the motor rewind data collection form to the region's Motor Service Centers for NEEA staff's ongoing monitoring of market activity and savings from Green Motor Rewinds.

Data collection will conclude in early January 2020, and NEEA staff will publish a report by the end of Q2 2020.

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Stock Assessments

COMMERCIAL BUILDING STOCK ASSESSMENT (CBSA)

Updates:

The Commercial Building Stock Assessment (CBSA) is now being fielded. On behalf of the region, NEEA staff has hired an energy consulting and research firm (Cadmus) and its subcontractors (McKinstry, Energy 350, and DNV GL) to conduct this research study. Around the region, these firms are currently in the process of recruiting businesses and conducting site assessments. More information on business participation can be found here: <https://neea.org/get-involved/cbsa-information-for-participants>

The CBSA is a comprehensive research study of energy efficiency in Northwest commercial buildings. It will provide the region with useful information for businesses (to compare their energy use with the average energy use of similar Northwest facilities), utilities (for use in program planning), researchers (for use in energy use characterization), and be a key input into regional power planning.

Site recruitment continues to be a challenge. NEEA staff will continue engaging with regional utilities to access support at each organization to ensure we maximize our recruitment success and work together to meet study objectives on time and on budget.

This is a complex project with multiple streams of information and deliverables. NEEA staff will be hosting quarterly webinars to inform stakeholders of project progress and any emerging issues. The Q3 webinar was held October 09, 2019. To be added to the distribution list for future webinars, please contact cbsa@neea.org.

Currently, we anticipate completing the recruiting and site visits in Q4 2019, with data and reports anticipated in Q1 2020.

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TOGETHER *We Are Transforming the Northwest*

