Cost Effectiveness and Evaluation Advisory Committee Meeting

DATE: February 28, 2023
TIME: 9:00AM – 12:00PM
LOCATION: Microsoft Teams meeting
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AGENDA:

TIME	TOPIC	PRESENTER(S)	Electric/ Gas/Both	Link or Page #
9:00am (15 min)	**Welcome/Agenda Review** 1. Agenda check 2. Announcements	Jonathan Belais, NEEA Staff		
9:15 (30 min)	**Market Transformation Framework** NEEA staff will provide a brief overview of the market transformation approach used by NEEA. Objective: Provide context for more detailed conversations regarding cost-effectiveness and evaluation.	Jonathan Belais, NEEA Staff	Both	
9:45 (30 min)	**Market Transformation Savings** Overview of Market Transformation savings categories and NEEA's approach to savings calculation and reporting. Objective: Provide background context for committee members to understand the values they will see in funder savings reports as well as NEEA's corporate-level savings reporting.	Ryan Brown, NEEA Staff	Both	3
10:15 (10 min)	**BREAK**			

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TIME	TOPIC	PRESENTER(S)	Electric/ Gas/Both	Link or Page #
10:25 (30 min)	**Market Transformation Costs and Benefits** Overview of NEEA's operational guidelines and approach to Market Transformation benefit-cost calculation at the program and the portfolio level. Objective: Committee feels informed on NEEA's approach and has opportunity to ask questions.	Ryan Brown, NEEA Staff	Both	6
10:55 (25 min)	**MRE Update** Amy Webb will provide a brief overview and answer any questions regarding the upcoming market research and evaluation activities outlined in the quarterly newsletter. Objective: Committee awareness of market research and evaluation activities	Amy Webb, NEEA Staff	Both	Link
11:20 (15 min)	**Wrap up**			

Memorandum – *Agenda item (Tier 1)*

February 28, 2023

TO: Cost-effectiveness and Evaluation Advisory Committee (CEAC)

FROM: Ryan Brown, Manager, Planning and Analytics

SUBJECT: Market Transformation Savings Overview

Each year NEEA staff present an overview of NEEA's savings categories and calculations as part of our annual reporting cadence. This topic is open to any interested stakeholder and intended to provide a basic foundation in NEEA's approach for anyone who may be reviewing or seeing market transformation savings reported by NEEA.

The remainder of this memo contains a description of NEEA's savings calculation methodology.

Please feel free to follow up with Ryan Brown (rbrown@neea.org) and Christina Steinhoff (csteinhoff@neea.org) with any questions.

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NEEA Savings Calculation

NEEA reports energy savings to funders using two different baseline methodologies— a NEEA baseline perspective and a Power Plan baseline perspective. The primary purpose of the NEEA baseline approach is to track the progress of Market Transformation efforts throughout the region. Meanwhile, the Power Plan approach fulfills a need to report savings against the regional Northwest Power and Conservation Plan's targets. In both cases, NEEA reports its savings in average megawatts[1] and nets out savings already claimed through local programs.

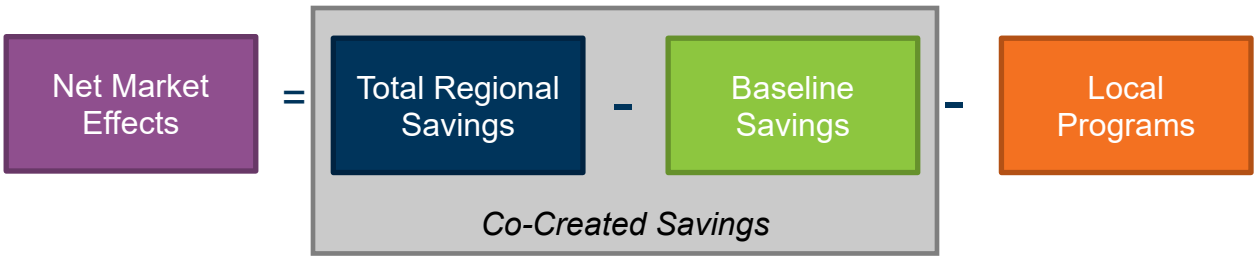
NEEA Baseline Approach

The NEEA baseline approach groups savings from market transformation into the following categories:

1) **Total Regional Savings:** Savings associated with all market changes.
2) **Baseline Savings:** Savings from naturally occurring market change without utility, NEEA, Bonneville Power Administration, and Energy Trust of Oregon funded intervention.
3) **Local Programs*:** Savings claimed through local utility, Bonneville Power Administration, and Energy Trust of Oregon activities.
4) **Net Market Effects:** Savings associated with market change that are not counted as Baseline or Local Programs. (Total Regional Savings less Baseline less Local Programs)
5) **Co-Created Savings:** Total Regional Savings less Baseline

Figure 1 illustrates the relationship among the savings categories.

Figure 1: Savings Categories for NEEA Baseline Approach



*The definition of Local Programs is:

$$Local\ Programs^{Net} = Local\ Programs\ Units - LocalPrograms\ Units * \frac{BaselineUnits}{Total\ Regional\ Units}$$

Local Programs is based on the sum of units the Funders report in NEEA's annual local incentives survey. As illustrated in the equation above, a fraction of Local Programs Units is counted toward Baseline in order to capture free ridership of incentives. NEEA assumes the free ridership share is equal to the share of Baseline with respect to the Total Regional Units. When NEEA reports Local Programs Savings, it is net of the Local Programs Units counted toward Baseline so that Baseline Units are not double counted.

[1] An aMW is 8,760 (the number of hours in a year) megawatt hours. This is the continuous output of a resource with one megawatt of capacity during a year.

Power Plan Baseline Approach

The Power Plan baseline approach uses the Northwest Power and Conservation Council's frozen efficiency baseline to calculate energy savings, which are grouped into the following categories:

1) **Total Regional Savings**: Savings associated with all market changes above the Power Plan baseline.
2) **Local Programs**: Savings claimed through local utility, Bonneville Power Administration, and Energy Trust of Oregon activities.
3) **Remaining Savings**: Savings above the Power Plan baseline not counted as Local Programs. (Total Regional Savings less Local Programs)

To calculate Local Programs, NEEA surveys regional stakeholders. The survey provides the amount of incentives local utilities, Bonneville and the Energy Trust of Oregon claim for the year. NEEA converts this information into savings against the Power Plan baseline and subtracts the value from the Total Regional Savings estimates (Figure 2). The resulting Remaining Savings is what NEEA reports to its funders. Figure 2 illustrates the relationship among the savings categories.

Figure 2: Savings Categories for Power Plan Baseline Approach

Memorandum – *Agenda item (Tier 1)*

February 28, 2023

TO: Cost-effectiveness and Evaluation Advisory Committee (CEAC)

FROM: Ryan Brown, NEEA, Manager, Planning and Analytics

SUBJECT: Market Transformation Benefit Cost Overview

At the February 28th CEAC meeting NEEA staff will provide an overview of NEEA's approach to calculating benefit cost ratios for a market transformation program as well as the portfolio. We will describe the principles of the approach, the tools used and go over an example from NEEA's active portfolio of programs. This topic is part of our annual cadence for reporting out to stakeholders.

Interested parties can access copies of NEEA's operational guidelines for cost effectiveness on the Portal on NEEA.org. After logging in to the portal these documents can be found in the "Savings Reports" section under "References." These documents can also be provided directly to stakeholders upon request.

Please feel free to follow up with Ryan Brown (rbrown@neea.org) or Christina Steinhoff (csteinhoff@neea.org) with any questions.

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2022 Q4 Market Research & Evaluation Quarterly Newsletter

WHAT'S NEW:

Holiday greetings everyone!

NEEA's Market Research and Evaluation (MRE) team is pleased to share these updates from the last quarter. Enclosed are important details related to current research and evaluation studies, as well as those that will commence in the first quarter of 2023. There will be a host of studies in the field between now and the end of the first quarter. Several evaluations for the Luminaire Level Lighting Controls program as well as the Extended Motor Products program will be wrapping up in the first part of the year. These studies will bring increased understanding of the market opportunity for these efficient products, as well as NEEA's progress toward its Market Transformation goals. In addition, there are a number of code compliance evaluations that will be in full swing in the next few months. It's been an eventful year, and the team is looking forward to what the year ahead brings.

Wishing you a wonderful holiday season and a joyful start to the new year!

~ **Amy Webb**, Sr. Manager, Market Research & Evaluation ~

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Questions about this report may be addressed to:

Amy Webb

Sr. Manager, Market Research & Evaluation

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PUBLISH DATE: December 15, 2022

At a Glance

MARKET RESEARCH & EVALUATION PROJECTS

		PLANNING*	FIELDING*	REPORTING*
Integrated Systems	Natural Gas Portfolio and Strategy: *Dual Fuel and Gas Heat Pump Market Research*		✓	
	High-Performance Windows: *Naturally Occurring Baseline Review*		✓	
	Luminaire Level Lighting Controls: *Key Assumptions Review*		✓	
	Luminaire Level Lighting Controls: *Market Progress Evaluation Report (MPER) #2*		✓	
	Luminaire Level Lighting Controls: *Incremental Cost Study*		✓	
	Variable Speed Heat Pumps*: Baseline and Key Assumptions Review*		✓	
Products	Efficient Fans: *Fan Manufacturer Regional Market Share Research*			✓
	Extended Motor Products: *Commercial and Industrial Nonparticipant Market Share Research*			✓
	Extended Motor Products: *Pump and Circulator Variable-Load Baseline and Constant-Load to Variable-Load Savings Estimate Review*			✓
	Motor-Driven Products: *Commercial Adjustable Speed Drive Penetration Market Research*		✓	
	Retail Products Portfolio: *Market Progress Evaluation Report (MPER) #2*		✓	
	Heat Pump Water Heaters: *Installer Focus Groups*		✓	
	Heat Pump Water Heaters: *Market Progress Evaluation Report #7*		✓	
	Heat Pump Water Heaters: *Benefit/Cost Model Review*		✓	

DUAL FUEL (Electric & Natural Gas) PROJECTS:

NATURAL GAS PROJECTS:

***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

At a Glance

MARKET RESEARCH & EVALUATION PROJECTS AND ENERGY USE STUDIES

		PLANNING*	FIELDING*	REPORTING*
Codes, Standards, New Construction				
	Commercial Codes: *Washington Commercial Code Evaluation*			✓
	Commercial Codes: *Montana Commercial New Construction Code Evaluation*		✓	
	Commercial and Residential Codes: *Commercial and Residential Codes Market Progress Evaluation Report #2*		✓	
	Residential Codes: *Idaho and Montana Residential Code Evaluations*		✓	
	Residential Codes: *Washington Residential Code Evaluation*		✓	
	Standards: *Uninterruptible Power Supplies and Commercial Boilers Standards Evaluation*			✓
	Standards: *Commercial Kitchen Equipment and High CRI Lamp Oregon and Washington State Standards Evaluation*		✓	
Long-term Monitoring & Tracking				
	Ductless Heat Pump Long Term Monitoring and Tracking, Year 2			✓

DUAL FUEL (Electric & Natural Gas) PROJECTS:

NATURAL GAS PROJECTS:

***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

Dual Fuel and Gas Heat Pump Market Research

Natural Gas Portfolio and Strategy | **FIELDING**

NEEA is planning a market research study for its Natural Gas efforts to gather actionable information about four emerging HVAC technologies. The objective of this study is to gather buyer and HVAC contractor perceptions and (when possible) feedback about each of the technologies. Findings from the study will complement ongoing NEEA product research to assess product performance and readiness for Northwest markets. The study will help NEEA determine which, if any, of these technologies to further investigate for market transformation or other types of energy efficiency programs in the Northwest.

The study intends to answer three main research questions for each of the technologies:

1. What are the value propositions for buyers and HVAC contractors?
2. What are the possible target markets?
3. What are the barriers to adoption?

The four technologies are residential dual fuel heat pumps, residential gas heat pumps, commercial gas heat pumps for space and/or water heating, and commercial dual fuel rooftop units.

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Naturally Occurring Baseline Review | High-Performance Windows | FIELDING

The residential High-Performance Windows program will launch a third-party review of the program's naturally occurring baseline market share forecast in Q2 2023. The research objectives for this study are to: 1) review NEEA's overall approach for estimating the naturally occurring baseline of high-performance windows, 2) review NEEA's approach to estimating the market average U-value of windows sold in the Northwest prior to the program's intervention, and 3) review and recommend improvements to NEEA's approach to incorporating market drivers of high-performance windows into its naturally occurring baseline. Fielded research will begin in Q2 2023 and NEEA anticipates a final report in early Q3 2023.

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Key Assumptions Review | Luminaire Level Lighting Controls (LLLC) | FIELDING

NEEA's LLLC program has launched a third-party review of several key assumptions underlying its benefit-cost model. The research objectives for this study are to: 1) review NEEA's approach for estimating hours of use and control savings fraction for LLLCs, 2) explore how NEEA can quantify energy savings that fully represent the adoption of LLLCs given that fixture wattage may decrease over time, and 3) review and recommend improvements to NEEA's approach to estimating the number of LLLC fixtures being sold in the Northwest. Fielded research is underway, and NEEA anticipates a final report in early Q1 2023.

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Market Progress Evaluation Report #2

Luminaire Level Lighting Controls (LLLC) | **FIELDING**

NEEA's LLLC program seeks to accelerate the adoption of LLLCs in commercial buildings for new construction, renovation and retrofit projects. The Cadmus Group is leading the second Market Progress Evaluation Report (MPER) and will address the following questions in this study:

1. How do the program documents clarify and align to convey the program's strategy and planned activities to overcome market barriers and drive market changes that will increase LLLC adoption?
2. To what extent has the program progressed towards achieving its short and mid-term outcomes as tracked through its market progress indicators?
3. How might NEEA program activities be affecting the broader networked lighting control (NLC) market?
4. What leads decision-makers to purchase LLLCs (versus non-LLLC NLCs)? What features (including non-energy benefits) do they value leading up to purchase and after the product is installed?

A final report is anticipated in Q3 2023.

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Incremental Cost Study

Luminaire Level Lighting Controls (LLLC) | **FIELDING**

NEEA contracted with Energy Solutions to conduct the biennial incremental cost study for the LLLC program.

The research objectives for this study are to: 1) document the brands and models available in LLLC fixtures, 2) estimate the incremental price between standard LED, non-LLLC networked lighting controls and LLLC fixtures, 3) estimate and compare the cost of components and energy efficiency capabilities across all three levels of LLLC fixtures (smart, clever and hybrid), and 4) explore current market intelligence for exterior LLLC fixtures to better understand current sales and installations, why decision-makers have chosen to install them and recommend ways to assess incremental costs for these fixtures over time.

A final report is anticipated in Q1 2023.

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Baseline and Key Assumptions Review

Variable Speed Heat Pumps (VSHP) | **FIELDING**

NEEA's VSHP team continues to refine its program in response to research findings and market intelligence. NEEA market analysts are developing the central-ducted VSHP naturally occurring baseline market share and other key assumptions for the program. Once this work is complete, Cadmus Group will complete an independent review of the naturally occurring baseline and assumptions. NEEA anticipates the review will be completed and a report posted to neea.org by the end of Q1 2023.

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Fan Manufacturer Regional Market Share Research

Efficient Fans | **REPORTING**

As part of the Efficient Fans program, NEEA contracted with DNV Energy Insights USA Inc. to conduct a market research study assessing the general market size (in sales volume) of regional non-embedded fan systems and the relative share of the market held by manufacturers active in the four-state region. By mid-Q3, DNV will complete sample preparation, including identification of regionally active manufacturers of non-embedded commercial and industrial fan systems. These are defined as stand-alone motor-driven fan systems that are not packaged by the manufacturer as part of any equipment with additional operating functions such as HVAC, Make-up Air or Outdoor-Air units, and may include a fan, motor, and drive including controls. Data collection in the form of telephone/virtual interviews with a targeted subset of regionally active fan system manufacturers is currently underway, with data analysis and draft report preparation projected for November 2022. A final report from this study is expected in Q1 2023.

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Commercial and Industrial Nonparticipant Market Share Research

Extended Motor Products (XMP) | **REPORTING**

As part of the XMP program, NEEA contracted with ADM Associates, in collaboration with Johnson Consulting Group, to conduct a market research study to validate the program's estimates of the regional pump and circulator market share held by manufacturers' representatives participating in NEEA's XMP program activities. ADM Associates began identification of regionally active pump and circulator manufacturers' representatives in mid-Q2 and completed data collection activities (surveys with identified regional manufacturers' representatives) in early Q3, with data analysis and report preparation completed in late Q3. The final report from this study is available on neea.org.

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Pump & Circulator Variable-Load Baseline and Constant-Load Savings Estimate Review

Extended Motor Products (XMP) | **REPORTING**

As part of the XMP program, NEEA contracted with Apex Analytics to complete a third-party review of (a) its Naturally Occurring Baseline for the market penetration of variable-load (VL) Commercial and Industrial (C&I) pumps and circulators 200 horsepower (hp) and below, and (b) its current approach to the estimation of savings resulting from the conversion of constant-load (CL) pumps to more efficient VL configurations through aftermarket drive application.

Research questions for the review include:

1. Is NEEA's approach to estimating the market penetration of VL C&I pumps and circulators in the Northwest prior to the program's intervention reasonable? Is there a better way to establish the starting point for NEEA's VL naturally occuring baseline?
2. Is NEEA's approach to incorporating market drivers for VL C&I pumps and circulators into its naturally occuring baseline appropriate? Are there other market drivers that NEEA should factor in?
3. Is NEEA's overall baseline approach appropriate given NEEA's interventions in the market to date?
4. Is NEEA's approach to calculating energy savings resulting from in-the-field CL&VL C&I pump and circulator conversions reasonable? What modifications, if any, should be made to this calculation approach?
5. What relevant data sources exist to support the validation and refinement of NEEA's calculation of CL&VL C&I pump and circulator conversions?

To answer these questions, Apex Analytics facilitated a working session with NEEA's market analyst team to 1) review NEEA's approaches for developing the baseline and savings assumptions, 2) review written documentation of NEEA's interventions, assumptions, and steps for developing the baseline, and 3) assess the validity of the estimate alongside those prepared by the Regional Technical Forum to validate and, if needed, refine the savings estimation approach.

NEEA anticipates a final reporting memorandum to be published in Q1 2023.

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Commercial Adjustable Speed Drive Market Penetration Research

Motor-Driven Products | **FIELDING**

As part of NEEA's assessment of intervention opportunities in the market for commercial adjustable-speed drive (ASDs, hereinafter referred to simply as "drives"), NEEA contracted with Johnson Consulting Group, LLC, to conduct a market research study. The study seeks to understand the market penetration for drives in the alliance's four-state region, particularly as pertaining to drives paired with commercial pumps and fans. This research will also provide insight into the decision-making processes and factors underlying market actors' choice to pair drives with commercial pumps and fans. A kickoff meeting was held in October 2022, with sample development and data collection activities (including researcher-facilitated surveys and/or interviews) scheduled to run through January 2023. NEEA anticipates a final report from this study in Q1 2023.

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Market Progress Evaluation Report #2

Retail Product Portfolio (RPP) | **FIELDING**

NEEA's RPP program provides mid-stream incentives to retailers for sales of qualifying efficient products, such as refrigerators and clothes washers, to influence retail assortment and product promotion, obtain access to sales data, and ultimately influence the ENERGY STAR® specification or federal standard. NEEA engaged with TRC to conduct the second market progress evaluation report (MPER) for RPP to meet the following research objectives:

1. Review NEEA's updated RPP logic model and make recommendations for improvement
2. Document activities and outputs and assess progress on applicable market progress indicators (MPIs) for each product in NEEA's RPP portfolio
3. Evaluate NEEA's methodology for extrapolating short-term savings to the full market

RPP MPER #2 kicked off in July 2022. A final report is expected in Q2 2023.

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Installer Focus Groups

Heat Pump Water Heaters (HPWH) | **FIELDING**

NEEA contracted with ILLUME Advising in Q4 to conduct qualitative research to better understand any challenges installers and plumbers in the region might face around recommending and installing heat pump water heaters (HPWH) in existing single-family homes. A 2020 survey of installers of HPWHs in the Northwest identified several factors and specific structural barriers that can complicate a HWPH retrofit, such as, but not limited to wiring constraints, small installation spaces, physical location of the unit, and proximity to condensate drain. This research provided insight as to how installers in the region might overcome these types of challenges and was specifically focused on installers that had experience with installing HPWHs. In this upcoming research, NEEA will include both active HPWH installers and those with little or no prior experience in HPWH installation across the Northwest. The key objectives of the upcoming research are to:

- Identify the underlying reasons why installers and plumbers might be resistant to offering and installing HPWHs to customers seeking a new water heater
- Understand the opinions and thoughts about where and why installers are not recommending and/or installing HPWHs
- Gauge general level of resistance to code and standard changes among installers
- Understand how installers might react to the passage of the proposed federal standard
- Learn about what behaviors they use to meet those standards and why

NEEA expects to recruit for and conduct between six to eight virtual focus groups across the region with installers and plumbers that have limited experience with HPWH installation in early 2023, resulting in a final report in Q2 2023. Findings will inform future training efforts and help the program improve its messaging campaigns targeted at installers across the region.

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Market Progress Evaluation Report #7

Heat Pump Water Heaters (HPWH) | **FIELDING**

NEEA will kick off the seventh market progress evaluation in Q1 2023. The key objectives of this effort are to:

1. Ensure the logic model accurately reflects how the current market transformation theory for the program is being implemented and assess the MPIs for usefulness
2. Estimate 2022 penetration of HPWHs in the region with sales broken out by key attributes
3. Evaluate the program's performance over the course of 2022 in achieving outcomes by measuring against a subset of MPIs tied to the program's highest priority barriers
4. Assess the effectiveness and impact of the "Boring but Efficient" downstream marketing campaign conducted in 2022

NEEA anticipates a final report by early Q3 2023.

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Benefit/Cost Model Review

Heat Pump Water Heaters (HPWH) | **FIELDING**

NEEA contracted with Larson Energy Research to conduct a review of its 2022 Benefit Cost Model. The work will commence in early 2023 resulting in a final report by early Q2 2023. The key activities include:

- A review of extrapolation methodologies used to estimate manufacturer shipments
- An assessment of NEEA estimates for HPWH market share in single-family new construction
- A review and validation of the modeling assumption underlying the removal of Tier 1 and Tier 2 measures for future years

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Washington Commercial Code Evaluation | Commercial Codes | REPORTING

The Washington Commercial Code Evaluation is focused on understanding how commercial new construction across Washington was affected by the 2015 commercial code. The study will provide NEEA and its stakeholders with information that will assist with code development and implementation efforts (education and training) by assessing which building systems are present, what compliance paths are being selected, and which code requirements are and are not typically being met.

As the first strand of field data collection, Cadmus completed site visits in July 2021, representing a total of 76 participating sites against a revised target of 85 planned site visits. (The study initially targeted 104 sites; however, the target was adjusted downward due to recruiting difficulties and delays associated with COVID-19.) In Q3 2022, Cadmus began engaging regional utilities to collect billing data covering the ten to eleven months following July 2021 for buildings that opted into billing data analysis through this study. Analysis of billing data by New Buildings Institute, a subcontractor on this study, commenced in early Q4 2022.

Cadmus prepared an interim provisional report, which is currently available on neea.org. This interim report does not include energy performance assessments, as billing data collection and analysis are scheduled to continue through Q4 2022. A final report, including an addendum covering the results of billing data analysis, is anticipated in Q1 2023.

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Montana Commercial New Construction Code Evaluation | Commercial Codes | FIELDING

The Montana Commercial New Construction Code Evaluation study is focused on 1) assessing the path(s) by which and degree to which code compliance is achieved with the 2018 International Energy Conservation Code (IECC) in newly constructed buildings, and 2) measuring the energy performance of a subset of these buildings as compared with the average energy performance of buildings constructed under previous code. The results of the study will provide direction to the development and implementation efforts of the NEEA Codes team and will provide other regional code stakeholders guidance in targeting their energy efficiency work in the commercial new construction sector. NEEA contracted with Michaels Energy to conduct this study. The study design and methodology selected for this project focuses on permit data as the primary source of construction and compliance information, with virtual or in-person site visits planned for a subsample of participating buildings in order to validate the accuracy of permit data. The project kicked off in mid-Q2 2022, with planning and sample development continuing through late Q3 2022. Data collection, including interviews with site contacts, desk review of permit data, and in-person/virtual site visits are scheduled to commence in Q4 2022 and conclude in late Q1 2023. Collection of billing data is planned to continue through late Q2 2023, with analysis and report preparation to follow. A final report is anticipated in Q4 2023.

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Market Progress Evaluation Report #2

Commercial and Residential Codes | **FIELDING**

NEEA engaged with ADM Associates to conduct a market progress evaluation report (MPER) for its Commercial and Residential Codes efforts. ADM will evaluate the logic and clarity of the updated Codes logic model, make recommendations for improvement and assess outcomes associated with Codes training and education activities. The project kicked off in October 2022 and a report from the first suite of study activities is expected in Q1 2023.

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Idaho and Montana Residential Code Evaluations

Residential Codes | **FIELDING**

NEEA is conducting this evaluation to review assumptions underlying its estimation of energy savings resulting from NEEA and its partners' involvement in the Idaho and Montana state code processes. This research will involve assessing compliance with each state's current residential building code (2018 IECC with amendments) and address market research questions of interest to NEEA's Codes & Standards team. Specific research questions are under development at this time. This work will kick off in late Q4 2022. Montana's residential energy code evaluation is expected to deliver a final report in Q2 2023 while the final report for the Idaho evaluation is expected in Q3 2023.

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Washington Residential Code Evaluation | Residential Codes | FIELDING

NEEA engaged with TRC to review assumptions underlying its estimation of energy savings resulting from NEEA and its partners' involvement in the Washington State Residential Energy Code (WSEC-2018) process. To understand the characteristics of homes built under WSEC-2018, TRC will conduct virtual audits with owners of single-family homes built under the code and assess data from the Residential Energy Services Network (RESNET) database for homes built under WSEC-2018. They will also collect permits for all homes included in the virtual audit and RESNET samples. TRC will conduct analyses to:

1. Estimate residential new construction compliance for single-family homes built under WSEC-2018
2. Assess NEEA's approach for estimating compliance for 2–4-unit multifamily buildings
3. Determine the compliance pathways builders are taking to meet WSEC-2018 code requirements in single-family residential buildings
4. Determine fuel selection for space and water heating in single-family residential buildings built under WSEC-2018
5. Assess how well permits represent completed homes built under WSEC-2018
6. Assess the efficacy and potential replicability of the study methodology over time and across states in the Northwest (Idaho, Montana, Oregon and Washington)

This project kicked off in June 2022, and data collection is underway. A final report is anticipated in late Q1 2023.

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Uninterruptible Power Supplies and Commercial Boilers Standards Evaluation

Standards | REPORTING

NEEA's Codes and Standards team engaged in efforts to increase the stringency of two Department of Energy (DOE) standards: uninterruptible power supplies and commercial boilers. NEEA contracted with Michaels Energy to conduct a qualitative assessment of NEEA's influence on the standards processes and provide a quantitative estimate of the share of savings resulting from the standards that are the result of NEEA and other efficiency organizations' efforts. In November 2021 through March 2022, Michaels Energy reviewed NEEA records and publicly available documents and conducted interviews with key stakeholders from NEEA, DOE and other organizations.

Both reports are now available on neea.org:

- Uninterruptible Power Supply Evaluation
- Commercial Boilers Standard Evaluation

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Commercial Kitchen Equipment and High CRI Lamp Oregon and Washington State Standards Evaluation

Standards | FIELDING

NEEA's Codes and Standards team engaged in efforts to support the development of state standards in Oregon and Washington for commercial kitchen equipment (fryers and steam cookers) and high color rendering index (CRI) lamps. NEEA contracted with Michaels Energy to conduct a qualitative assessment of NEEA's influence on the standards processes in Oregon and Washington and provide a quantitative estimate of the share of savings resulting from the standards that are the result of NEEA and other efficiency organizations' efforts. The project kicked off in August 2022, and a final report is anticipated in Q1 2023.

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Ductless Heat Pump Long-term Monitoring and Tracking, Year 2 | REPORTING

This will be the second Long-term Monitoring and Tracking (LTMT) study for ductless heat pumps (DHP). NEEA is conducting the study annually to monitor signs of diffusion of DHPs in NEEA's three target markets. Each year, the study will track four diffusion indicators:

1. The number of DHPs installed in single-family homes to displace/replace electric zonal heat or electric forced-air furnaces is increasing
2. The installed cost for a single-head system remains constant or decreases
3. The share of regional HVAC companies/installers offering DHPs remains constant or is increasing
4. The number of counties in the Northwest with HVAC companies that install DHPs remains constant or is increasing

Evaluation contractor Johnson Consulting Group will conduct three surveys of HVAC contractors for the study, as well as utilize secondary data from NEEA. Data collection began in October 2022 with a final report anticipated in Q1 2023.

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