Cost-effectiveness and Evaluation Advisory Committee Meeting

DATE: April 23, 2026

TIME: 10:00am – 3:15pm

LOCATION: **Microsoft Teams**
[Join the meeting now]
Meeting ID: 279 022 263 697 77
Passcode: GM7BJ2fb

AGENDA

TIME	TOPIC	PRESENTER(S)	Link or Page
10:00AM (15 min)	**Welcome/Agenda Review** 1. Agenda check 2. Introductions Announcements	Jonathan Belais, NEEA Staff	
10:15 (40 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	
10:55AM (10 min)	**Market Story: Luminaire Level Lighting Control** NEEA Staff will share a brief update on market progress made during 2025. **Objective:** Contextualize broader annual reporting with programmatic examples	Kathryn Bae and Zdanna King	
11:05AM (30 min)	**Market Transformation Value** Overview of Market Transformation savings categories and NEEA's approach to value calculations and reporting. **Objective**: Provide background context for committee members to	Elizabeth Daykin, NEEA Staff	
11:35AM (20 min)	**Market Story: Retail Product Portfolio** NEEA Staff will share a brief update on market progress made during 2025. **Objective:** Contextualize broader annual reporting with programmatic examples	Ryan Brown and Zdanna King, NEEA Staff	
11:55AM (60 min)	LUNCH		
12:55PM (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.	Evan Hattenberg, NEEA Staff	
1:25PM (10 min)	**MRE Update** NEEA staff will provide a brief overview and answer any questions regarding the upcoming market	Meghan Bean, NEEA Staff	Link

	research and evaluation activities outlined in the quarterly newsletter. **Objective**: Committee awareness of market research and evaluation activities		
1:35PM (30 min)	**Key Inputs and Assumption Updates** NEEA staff will review recent updates, highlighting updates and answer committee questions. **Objective:** Provide opportunity for committee to review and advise on methods and assumptions that impact savings reporting	Elizabeth Daykin, Ryan Brown, Will Gehkre, NEEA Staff	3
2:05PM (25 min)	**2025 Market Progress and Portfolio Overview** NEEA staff will provide overviews of the 2025 Business Plan Cycle savings estimates for natural gas and electric portfolios. In addition, staff will share portfolio benefit-cost assessment, avoided carbon emissions and peak capacity savings. **Objective:** Inform and address committee questions regarding NEEA's savings portfolio and other value metrics.	Nathan Martinez, NEEA Staff	20
2:30PM (10 min)	**Market Story: Reduced Wattage Lamp Replacement** NEEA Staff will share a brief update on market progress made during 2025. **Objective:** Contextualize broader annual reporting with programmatic examples	Kathryn Bae, NEEA Staff	40
2:40PM (10 min)	**Market Story: Extended Motor Products (Pumps)** NEEA Staff will share a brief update on market progress made during 2025. **Objective:** Contextualize broader annual reporting with programmatic examples	Evan Hatteberg and Chris Cardiel, NEEA Staff	
2:50PM (15 min)	**Market Story: Heat Pump Water Heaters** NEEA Staff will share a brief update on market progress made during 2025. **Objective:** Contextualize broader annual reporting with programmatic examples	Tim Runyan and Anu Teja, NEEA Staff	
3:05PM (10 min)	WRAP UP		

Memorandum

April 16, 2026

TO: Cost Effectiveness and Evaluation Advisory Committee

FROM: Elizabeth Daykin, Senior Manager, Planning and Analysis, NEEA

SUBJECT: Key Inputs and Assumptions Annual Reporting Update

This is a standing agenda item that is brought to the Cost Effectiveness and Evaluation Advisory Committee (CEAC) every quarter, introducing new and updated assumptions and data sources used for market transformation savings and cost effectiveness calculations. As the Q2 2026 CEAC meeting aligns with NEEA's annual stakeholder reporting process we are also providing a comprehensive reference for key assumptions NEEA uses in its calculations. This Key Inputs and Assumptions Annual Report is available via the funder portal under the Key Assumptions Reports section.

Background on this standing agenda item:

The Cost Effectiveness and Evaluation Advisory Committee (CEAC) primary functions[1] include:

1. Review and advise regarding NEEA cost-effectiveness and savings information to inform annual reporting, and
2. Review and advise regarding market transformation cost and savings measurement and estimation methods.

NEEA staff provide various touchpoints for committee members throughout the year to support the committee in their execution of these charter objectives.

NEEA maintains a system of documentation and communication that includes three primary means for committee members to access documentation: methodology documents posted to a funder portal[2], data provided in funder reports, and meeting materials and presentation content at each quarterly CEAC meeting (Figure 1).

[1] In addition to the two responsibilities listed above there are 3 more in the charter:

3. Review evaluation findings that affect cost and savings information to inform annual reporting.
4. Work with your organization to provide NEEA staff with relevant incentive data for regional tracking and reporting purposes.
5. Review and advise regarding new market research and evaluation methodologies.

[2] Link to the funder portal: https://neea.sharepoint.com/sites/FunderPortal

Northwest Energy Efficiency Alliance
700 NE Multnomah Street, Suite 1300, Portland, OR 97232
503.688.5400 | Fax 503.688.5447
neea.org | info@neea.org

Figure 1: System of Documentation for Key Inputs and Assumptions

CEAC Meeting Materials *Provided in the meeting invite*	**Key Assumptions Update** *Updated Quarterly*
	Updates to key inputs and assumptions (baselines, savings rates, units estimate, etc.) along with contact information for follow-up questions
	Annual Summary *Updated in April*
	Memo summarizing portfolio savings & cost effectiveness results as well as program updates
Funder Portal *NEEA SharePoint*	**Energy Savings Report** *Updated Q1/Q2, upon request*
	Annual Savings Report Memo summarizing annual savings results and market updates **Customized Workbook** Workbook with annual savings values, variance summaries, methodology descriptions, measure-level units and other key assumptions specific to the individual funder requests.
	Guidelines and Data Sources *Updated in April*
	Estimation Approaches & Data Sources List of approaches and data sources NEEA uses to estimate savings & cost effectiveness **NEEA Guidelines** Overview on energy savings & cost effectiveness calculations
	Methodologies *Updated in April*
	Methodology Documentation Report on energy consumption calculations, data sources and technical assumptions

Updates for committee review this quarter:

For the Q2 CEAC meeting NEEA is presenting the following updates for the committee's consideration.

- Residential New Construction: Building Energy Codes
  - NEEA updated savings rates for 2021 and 2023 Oregon Residential Specialty Code based on updated modeling for single family and multifamily homes.
- XMP Pumps
  - NEEA has added agricultural pump distributors to the program and is now reporting agricultural sector savings for the XMP Pumps program.
- Heat Pump Water Heaters
  - NEEA updated regional unit sales estimates using newly available retailer sales data. NEEA has also updated new construction installations based on the most recent code compliance studies.
- Commercial Building Energy Codes
  - NEEA updated various assumptions and inputs that impact estimated savings from commercial building code.
- High Performance HVAC
  - NEEA updated various assumptions and inputs related to code influence in Washington.
- Retail Products Portfolio
  - NEEA has updated the model to reflect delayed implementation of the federal standard for clothes dryers. NEEA also had a third-party review of the data processing and energy use calculations for televisions that affirmed current methods and may update the forecast of market share for televisions with low standby mode power.
- Indirect Gas Savings
  - NEEA is reporting gas savings that indirectly result from the electric portfolio.

In addition to the updates in this memo, there are separate, detailed memos regarding key assumption updates for the Retail Products Portfolio and Commercial Building Energy Codes for Washington.

Please come to the meeting prepared to ask clarifying questions about any key assumption updates and advise NEEA on any recommended improvements you would like to share.

Residential New Construction: Building Energy Codes

NEEA aggregates and leverages the power of the region to identify and vet emerging technologies and create the market conditions necessary for the technologies to take hold. This work supports builder decisions and practices to become more energy efficient, making homes more affordable to operate. The alliance helps the region instill these voluntary interventions by informing codes that represent Northwest business needs.

Key Assumptions Update

NEEA updated savings for the 2021 and 2023 Oregon Residential Specialty Code (ORSC) based on modeling conducted by Ecotope for single family and multifamily buildings. The savings rate analysis incorporated updated market assumptions informed by the Oregon Residential Code Compliance Study. For the 2021 ORSC, high efficiency HVAC equipment was assumed to be the primary additional measure option selected. Differences in energy use between the 2021 and 2023 codes were primarily attributed to the inclusion of ducts located within the building envelope and the adoption of smart thermostats under the 2023 ORSC.

Savings from the 2023 ORSC are primarily driven by code driving the installation of ductwork within the heated envelope, which reduces thermal losses and duct leakage. Builders complying with the 2021 ORSC are required to select an additional efficiency measure. Prior analyses assumed builders would select reduced glazing area as the additional efficiency measure. Results from NEEA's 2025 Residential Code Compliance Study indicate that builders are predominantly selecting high-efficiency HVAC systems. NEEA updated the 2021 ORSC modeling assumptions and associated savings rates to reflect this observed practice.

For the 2023 ORSC, the updated savings rates are 294 kWh per home and 42 therms per natural gas home. For the 2021 ORSC, the savings rates are 567 kWh per home and 3 therms per natural gas home.

For more information contact Will Gehrke, Senior Market Analyst, at wgehrke@neea.org.

XMP Pumps

The XMP Pumps program engages with manufacturers, distributors, and trade associations to increase adoption of energy efficient motor-driven products through improving product differentiation and increasing market awareness. As awareness increases and the identification of efficient products becomes more apparent, market adoption will increase. Ultimately, NEEA will utilize its experience as well as data it collects to support businesses and homeowners in choosing products that perform well and save energy.

Key Assumptions Update

In 2025, NEEA secured two additional distributor partners for the XMP Pumps program including an agricultural pumps distributor. Beginning with 2025 annual reporting, NEEA will be reporting agricultural pumps savings, consistent with the Efficient Pumps Regional Technical Forum (RTF) measures, and NEEA's pump drive savings methodology. For more information on how pump drive savings are calculated refer to NEEA's Extended Motor Products Baseline and Constant-Load to Variable-Load Savings Key Assumption Review.

For more information contact Evan Hatteberg, Senior Technical Market Analyst, at ehatteberg@neea.org.

Heat Pump Water Heaters

The Heat Pump Water Heater program works upstream with water heater manufacturers to influence product development and build capability in the supply chain on heat pump technology and quality installation. NEEA's ongoing engagement is crucial for addressing market barriers and preparing the region to adopt and benefit from the recently adopted federal standard. NEEA is supporting the Northwest market by working to strengthen the workforce and engage both regionally and nationally to identify solutions to increase adoption of these water heaters across the region, with particular focus on areas with slower adoption rates.

Key Assumptions Update

The Heat Pump Water Heater program secured a data agreement with NEEA's ENERGY STAR Retail Products Portfolio partners to provide retail Heat Pump Water Heater sales data starting from 2024. The additional data allowed NEEA to update its regional unit sales estimates, increasing 2024 savings.

NEEA also updated its approach to allocating new construction installations by state based on results from the most recent code compliance studies. NEEA estimates the savings for heat pump water heaters installed in new and existing construction separately to account for variations in building energy codes by state. To ensure savings were appropriately allocated based on the influence on savings from state codes, the new measures allocate new construction units by state using state-level estimated new construction installation shares from the code compliance studies. This resulted in a larger share of the shipments allocated to Washington new construction homes than previously estimated, leading to more new construction savings and fewer savings in the replacement market.

For more information contact Tim Runyan, Senior Market Analyst, at *trunyan@neea.org.*

Commercial Building Energy Codes

NEEA aggregates and leverages the power of the region to identify and vet emerging technologies and create the market conditions necessary for the technologies to take hold. This work supports builder decisions and practices to become more energy efficient, making homes more affordable to operate. The alliance helps the region instill these voluntary interventions by informing codes that represent Northwest business needs.

Key Assumptions Update

Oregon

2025 Oregon Energy Efficiency Specialty Code (OEESC) became effective in July 2025. NEEA contracted with Pacific Northwest National Laboratory (PNNL) to conduct a detailed energy savings analysis of OEESC 2025 relative to ASHRAE Standard 90.1-2019. Energy modeling results indicate that energy savings vary meaningfully by building type. Electric energy savings range from 2.95% to 18.55%, while natural gas savings range from 5.25% to 35.38% under OESSC 2025, reflecting differences in building characteristics and end-use impacts across commercial building types. NEEA updated savings rates to reflect the PNNL analysis. The final report is expected in Q4 2026.

Washington

See the separate 2026 Q2 memo for a discussion of updates to key assumptions for Washington commercial code.

For more information contact Will Gehrke, Senior Market Analyst, at wgehrke@neea.org.

High Performance HVAC

The High Performance HVAC program works with HVAC manufacturers, reps, and system designers to support the adoption of Very High Efficiency Dedicated Outdoor Air Systems which significantly reduce energy use while improving indoor air quality and comfort. The program focuses on systems that decouple ventilation from heating and cooling, pair high-efficiency heat or energy recovery ventilation with high-performance electric heat pumps, emphasizing right-sizing and integrated system design. By addressing key market barriers through education, technical resources, and coordination with market actors, the program aims to accelerate adoption of best-in-class HVAC solutions and influence long-term market practices beyond individual project installations.

Key Assumptions Update

For this reporting cycle, NEEA updated the High Performance HVAC program assumptions to incorporate results from an analysis conducted by A2 Efficiency (analysis can be found in the funder portal under the HVAC section). This work extends NEEA's prior Analysis of Expanded Efficiency Parameters for Very High Efficiency DOAS to reflect updates to the DOAS energy/heat recovery ventilation criteria in the commercial Washington State Energy Code (WSEC) 2021 compared to the WSEC 2018 code. NEEA updated code-level and above-code savings rates for projects built under WSEC 2021 code, while the savings rates for all other projects, derived in the prior study, remain the same. Compliant projects built under WSEC 2021 experience a slight increase in code-level savings (above a federal minimum efficiency heat pump RTU) and a slight decrease in above-code savings compared to projects compliant with NEEA system criteria built under WSEC 2018 (Figure 2).

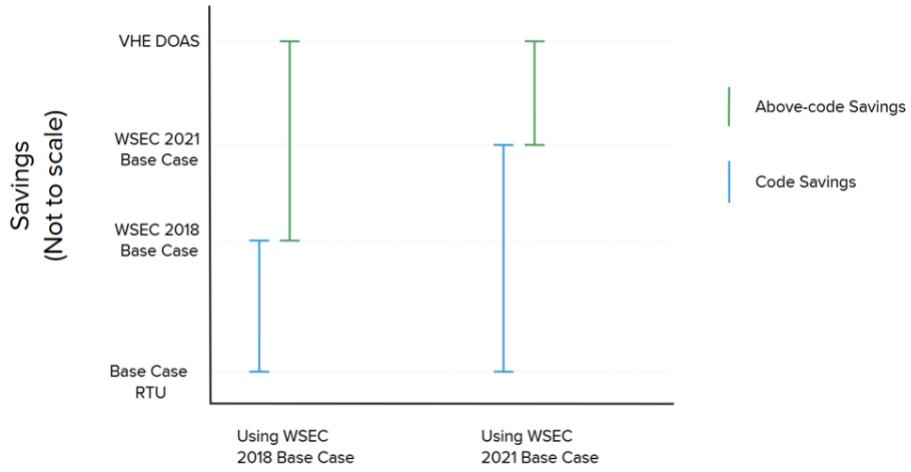

Figure 2: Visualization showing how savings can shift when going from using WSEC 2018 as a base case to using WSEC 2021 as a base case.

In 2025, 39% of newly observed WSEC-regulated installations were built under WSEC 2021, with the remaining built under WSEC 2018. However, NEEA's cost-benefit analysis for VHE DOAS was updated by replacing WSEC 2018-based savings rates and incremental costs with WSEC 2021 values in anticipation of a complete transition of projects over the next 2-3 years. Aligning the cost-benefit analysis with the updated code baseline reflects current market and regulatory conditions in Washington and improves comparability across programs and reporting frameworks. The change results in minimal impact on measure-level and program-level benefit-cost ratios (BCRs). The

overall program BCR went from 1.463 to 1.605, so the program remains cost-effective under current code conditions.

For more information contact Wylie Hampson, Market Analyst II, at whampson@neea.org.

Indirect Gas Savings

NEEA's relationships with market actors, influence in national collaboratives and voluntary standards, and market-facing materials can help reduce energy use from all fuel sources. As NEEA continues to deepen its understanding of the overlap between its electric and gas portfolios, staff have identified situations where Market Transformation efforts funded through the electric portfolio have produced measurable gas savings. NEEA categorizes these savings as indirect, reportable savings because these gas benefits are not the primary goal of the program strategy. Annual savings reports now include savings indirectly occurring from alliance investments outside of the gas portfolio.

Key Assumptions Update

For this reporting cycle, the areas where NEEA has currently identified measurable indirect gas savings include:

- **Manufactured Homes.** NEEA developed above-code specifications that improve building envelopes and deliver both electric and gas savings. NEEA tracks these savings and continues to support federal efforts to incorporate the specifications into U.S. Department of Energy standards.
- **Extended Motor Products (XMP)-Pumps.** NEEA influenced the development of an energy rating label to increase awareness and understanding of smart pump technology. High-efficiency pumps can reduce both gas and electric water heating energy use. NEEA tracks these savings through its XMP-Pumps program.

More information about these programs is available upon request.

Memorandum

April 16, 2026

TO: Cost Effectiveness and Evaluation Advisory Committee

FROM: Ryan Brown, Market Transformation Manager, NEEA

SUBJECT: Key Inputs and Assumptions Updates for Retail Products Portfolio

Introduction - Program Background

The program works with extra-regional program administrators and national retailers to utilize midstream incentives that signal energy efficient options in the supply chain while gaining access to full-category sales data. The incentives encourage manufacturers and retailers to build, purchase, stock, and promote high-efficiency products. Products include white goods, air cleaners, televisions and other home electronics. The data retailers provide allows NEEA to identify the most promising affordable energy efficiency opportunities and gain insights that improve energy test procedures, helping consumers distinguish between products. Currently, the program is comprised of a portfolio of ENERGY STAR products including Televisions, Refrigerators, Freezers, Clothes Washers, Clothes Dryers, and Room Air Conditioners.

This memo describes key assumption updates for two products within the Retail Products Portfolio: clothes dryers and televisions.

Key Assumptions Update: Clothes Dryers

In Q1 2026 NEEA contracted Cadmus to review several key assumptions related to NEEA's modeling of the naturally occurring baseline (NOB) for energy-efficient Clothes Dryers. Although the final report will be published in the second quarter of 2026, NEEA incorporated recommendations from the preliminary work to inform updates to the model for this annual report 2025 update. All the research objectives, draft conclusions, and draft recommendations from Cadmus as well as NEEA's associated model updates are outlined in Appendix A.

NEEA updated the model in response Cadmus' recommendation to revise the expected year of a federal standard for clothes dryers equivalent to the ENERGY STAR v1.1 efficiency level in the NOB from 2029 to one full standard rulemaking cycle (6 years) post implementation of a final rule adopting federal standards. This model update increases reportable savings above the NOB starting in 2029 with an impact to the current business cycle of approximately 1.5 aMW of additional reportable savings.

Key Assumptions Update: Televisions

In Q1 2026 NEEA contracted with TRC to review several key assumptions that impact NEEA's modeling for ENERGY STAR v9 Televisions as well as a review of NEEA's data processing methods. This report will be published in the second quarter of 2026.

Data Processing

In 2025, NEEA developed an in-house data pipeline for televisions that matches models in purchased sales data from Circana with records in the California Energy Commission Appliance database1 to enhance it with important energy use attributes. NEEA provided TRC the following research objectives to garner external review of the data pipeline:

- Review NEEA documentation of its television model number suppression approach for categorizing energy efficient televisions represented in sales data and make recommendations, if indicated, for how to refine this approach.
- Assess NEEA's current use of raw lab test data in its calculations, including NEEA's consideration of applying a 15% margin to the on-mode power values. This margin was recommended by Pacific Crest Labs (PCL) and was derived from variation around television model performance during the initial phase of recently developed on-mode tests, particularly where inconsistencies were identified between the calculated and reported on-mode power values.

In both cases, TRC supported NEEA's approach and provided recommendations for improvement that NEEA's Data Strategy team is considering while further developing the data pipeline for televisions. There are no significant implications for reportable savings resulting from the conclusions or recommendations related to data processing.

Savings and Market Estimates

NEEA also requested that TRC review aspects of the energy savings calculations and market estimates to support our reporting. The following is a summary of the findings and the implications of NEEA adopting TRC's recommendations:

1. **Assumption reviewed:** Any television that meets the current voluntary agreement limit of 2 watts of standby power would also meet the ENERGY STAR criteria of 1 watt of standby power.
    a. **Recommendation:** TRC recommended that NEEA refine the assumption to reflect there are a limited number of units that use between 1 and 2 watts of standby power on the market in 2025.
    b. **Implication:** Due to the very small market share these units between 1 and 2 watts of standby power represent, this is currently assumed to be a negligible impact to forecasted savings. NEEA will continue to track this segment of the market and adjust models and forecasts as necessary to capture activity in this standby power range.
2. **Assumptions reviewed:** UEC calculation and average wattage estimation methodology.
    a. **Recommendation:** TRC recommended that NEEA continue with these assumptions in the near term and noted some potential improvements for a longer-term tracking of the market.

[1] MAEDBS Quick Search

b. **Implication:** No change to NEEA's current estimates.

3. **Assumptions reviewed:** Measure life and average hours of use.
    a. **Recommendation:** TRC recommended that NEEA continue to use existing estimates and data sources.
    b. **Implication:** No change to NEEA's current estimates or methods.

Appendix A: Clothes Dryer Research Objectives

Table 1. Clothes Dryer Research Objectives

Research Objective	Conclusion	Recommendation	NEEA response and Implication
Review NEEA's NOB for ENERGY STAR clothes dryers and make recommendations, as needed, to revise the NOB to account for potential delays in revised federal standard implementation and enforcement.	NEEA's NOB for ENERGY STAR clothes dryers does not currently reflect NEEA's likely influence on the federal standard and market uncertainty around its implementation.	Revise the NOB take-off point for ENERGY STAR clothes dryer market adoption from 2029 to 3 years post implementation of a final rule adopting federal standards for clothes dryers equivalent to the ENERGY STAR v1.1 efficiency level.	**Response:** NEEA has updated the model to reflect this delayed implementation of the federal standard. **Implication:** This change increases reportable savings above the NOB starting in 2029. The impact to current business cycle savings is approximately 1.5 aMW of additional reportable savings.
Assess if revisions are needed for NEEA's heat pump clothes dryer NOB to better reflect the market for combination units, given that this NOB was developed using data for stand-alone dryer units.	While combination units may show faster increases in market share in the near future compared with stand-alone dryer models, they remain below 1% market penetration and are unlikely to dramatically impact the rate of growth in the current NOB.	Consider creating a separate NOB for heat pump combination units. This would support NEEA's efforts to target the combination unit market specifically and develop a Market Transformation strategy that is different than the approach taken with stand-alone dryers	**Response:** NEEA will not pursue a different NOB for combination units at this time. If a distinct strategy for combination units is developed by NEEA's program we would reconsider developing a separate baseline. **Implication:** No change.
Explore what NEEA's NOB approach may gain from developing separate baselines for compact and standard clothes dryer drum sizes and make recommendations for revisions, if appropriate.	Compact dryers have a low market share.	Compact dryers do not represent a large enough market share to require a separate NOB. NEEA should continue to track market share and compact dryer product development trends to adjust market growth rates as needed.	**Response:** NEEA will not pursue a separate NOB for compact dryers. **Implication:** No change.

Updates made by NEEA are subject to change upon receipt of the final draft of the report.

Memorandum

April 16, 2026

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

FROM: William Gehrke, Sr. Market Analyst, NEEA

SUBJECT: Savings Rate and Assumptions Updates for WSEC 2021 Commercial

Introduction

This memo summarizes the methodology used to estimate savings rates for commercial new construction resulting from the Washington State Energy Code (WSEC) 2021. NEEA contracted with the Pacific Northwest National Laboratory (PNNL) to model energy use for representative commercial building types and to quantify code-to-code changes in energy consumption under both the electric primary compliance path and the fossil fuel compliance path included in WSEC 2021. NEEA uses these modeled results to calculate per-square-foot savings rates and estimate aggregate commercial energy code savings. At this time, limited information is available on which compliance paths are being selected in practice, particularly given the additional efficiency credits and measures required under the fossil fuel compliance path. For savings reporting purposes, NEEA applies a placeholder assumption that commercial buildings constructed in compliance with WSEC 2021 follow the electric primary compliance path, pending additional research to better characterize compliance choices and support future updates to savings estimates. This assumption will only be applied to Washington Commercial Code.

On November 28, 2023, the Washington State Building Code Council (SBCC) adopted changes for WAC 51-11C Washington State Energy Code – Commercial provisions. This update concluded a multiyear code development process and resulted in the adoption of WSEC 2021, which replaced the prior WSEC 2018 Commercial Code.

Building Prototypes and Climate Zones

NEEA contracted with PNNL to conduct modeling of commercial building energy use under WSEC 2021. PNNL employs a standardized suite of representative commercial building prototypes to estimate energy usage for new commercial construction. These prototypes include Small, Medium, and Large Office; Stand-Alone Retail; Strip Mall, Primary and Secondary School, Outpatient Healthcare; Hospital; Small and Large Hotel; Warehouse; Full-Service Restaurant; and Mid and High Rise Multifamily Residential buildings.

These prototype building types represent 75% of commercial building floor area constructed annually in the United States. Use of prototypes is necessary because energy code impacts vary

significantly by building type; for example, office buildings typically have a higher energy use intensity and different end-use profiles than warehouses.

Washington spans four climate zones; however, the SBCC applies two IECC climate zones for commercial code development.[1] Climate Zone 4C (Mixed Marine) represents Western Washington, while Climate Zone 5B (Cold Dry) represents Eastern Washington. For each of these climate zones, PNNL modeled energy performance for each commercial prototype building. Code impacts were evaluated by comparing modeled energy use under WSEC 2018 to modeled energy use under WSEC 2021 for each prototype and climate zone. Savings were estimated as the difference in modeled annual energy use intensity per square foot between WSEC 2018 and WSEC 2021 commercial buildings. Both natural gas and electric differences in annual energy use intensity were evaluated.

WSEC 2021 Compliance Pathways

WSEC 2021 provides several compliance pathways for new commercial construction.

The first pathway is the prescriptive compliance path. Under this option, space heating for HVAC systems may not be provided using electric resistance heating or fossil fuel combustion appliances. In addition, service water heating must be provided by an electric air-source heat pump water heating system. Supplemental service water heating equipment using electric resistance or fossil fuel combustion is permitted, provided that the combined output capacity of all supplemental equipment does not exceed the total summed capacity of the primary water heating equipment. Buildings pursuing the prescriptive path must also comply with the additional energy efficiency and load management requirements specified in Table C406.1, which vary by commercial building prototype. Each measure in Table C406.1 is assigned a specific credit value, and each building type is required to achieve a minimum number of credits to demonstrate compliance.

The second pathway is the fossil fuel compliance path, as defined in Section C401.3. This pathway allows the use of electric resistance heating and fossil fuel combustion for both HVAC space heating and service water heating. However, buildings complying under this path are subject to additional electrification readiness requirements. Specifically, each new fossil fuel–fired space heating or service water heating appliance must be provided with a spare electrical branch circuit conduit, and sufficient space must be reserved in the main electrical room to accommodate an electrical service sized to support future conversion to heat pump appliances throughout the building. Buildings using the fossil fuel compliance path must also comply with the requirements of Table C406.1, but are required to achieve a higher number of credits than buildings using the prescriptive compliance path.

While the fossil fuel compliance path does not impose an outright prohibition on fossil fuel–based heating systems, the additional electrification readiness and energy efficiency credit requirements create a higher incremental cost relative to new commercial buildings not using the fossil fuel complaince path. As a result, this pathway may present an economic barrier to the construction of new commercial buildings with fossil fuel heating systems.

[1] ECC Climate Zone 5C (Cool Marine) includes Clallam, San Juan, and Island Counties, and Climate Zone 6B (Cold Dry) includes Ferry, Stevens, and Pend Oreille Counties. For purposes of commercial energy code development and modeling, the Washington State Building Code Council maps Climate Zone 5C to Climate Zone 4C and Climate Zone 6B to Climate Zone 5B.

For modeling purposes, PNNL developed two sets of prototype buildings that comply with WSEC 2021: a primary all-electric prototype consistent with the prescriptive compliance path, and a natural gas prototype consistent with the fossil fuel compliance path.

Market Assumption

There is currently limited market data available to determine the share of new commercial construction in Washington utilizing each compliance pathway under WSEC 2021. NEEA plans to conduct additional research to better characterize the market mix of electric and fossil fuel–based new commercial construction in the state. For purposes of estimating energy savings, and due to the incremental costs associated with the fossil fuel compliance path, NEEA assumes 100 percent electric construction as a placeholder until evidence of code-compliant fossil fuel construction in Washington becomes available. This assumption is a placeholder and is expected to be revisited as market data becomes available.

If you have any questions, please contact William Gehrke, Senior Market Analyst (wgehrke@neea.org).

Memorandum

April 16, 2026

TO: Cost Effectiveness and Evaluation Advisory Committee

FROM: Elizabeth Daykin, Senior Manager, Planning and Analysis, NEEA

SUBJECT: Electric Annual Report 2025 Value Metrics and Cost Effectiveness

Background

NEEA is an alliance of utilities and energy efficiency organizations that pools resources and shares risks to transform markets toward energy efficiency that benefits consumers in the Northwest. NEEA's role is to establish technology and market conditions that advance energy efficiency in markets in a sustainable way.

Energy savings are enabled by the alliance's Market Transformation efforts in removing market barriers, influencing energy codes and appliance standards, and investment in tools, training, resources, data, research, and evaluation to support greater efficiency. These Market Transformation efforts seek to effect long-lasting changes in markets, which then result in energy savings.

NEEA focuses on energy efficiency across multiple fuel types, including natural gas and electricity. While this memorandum provides an update for the electric portion of NEEA's portfolio, there is a separate companion memo to this that outlines the updates for the natural gas portion of NEEA's portfolio. For more information about NEEA's savings and cost effectiveness operational guidelines as well as other reference documentation please visit the Funder Portal on NEEA's SharePoint site (https://neea.sharepoint.com/sites/FunderPortal).

NEEA Energy Savings Approach

NEEA creates lasting change in the region, so that markets increasingly support and sustain higher levels of efficiency over time. NEEA manages a portfolio that spans early development of technologies and Market Transformation opportunities, through program and market development, and finally to the long-term, sustained state of efficiency well beyond NEEA's direct market investment in these markets.

NEEA tracks and reports energy savings to measure the resulting benefits of change in the market toward energy efficiency. Each program in NEEA's portfolio is managed using a lifecycle management framework (Appendix B). The programs listed below that are bolded are included in our regional reporting of savings above market transformation baseline **("Co-Created Savings")** for 2025. In all cases, NEEA tracks and reports incremental first year savings on an annual basis to

monitor both adoption levels and associated energy savings. NEEA tracks savings above both the Market Transformation baseline and the Power Plan baseline, for various regulatory reporting purposes.

Table 1: Programs in NEEA's Electric portfolio

Scanning / Concept Development	Program Development	Market Development	Codes & Standards; Market Diffusion
Additional Emerging Market and Technology Opportunities	Extended Motor Products / Fans High Performance Windows	Heat Pump Water Heaters Luminaire Level Lighting Controls Retail Products Portfolio Extended Motor Products / Pumps High Performance HVAC Advanced Heat Pumps	New Construction: Residential & Commercial Codes Products: Residential & Non-Residential Standards Reduced Wattage Lamp Replacement (sunset) Ductless Heat Pumps Efficient Homes Strategic Energy Management Manufactured Homes

2025 Savings Results

Each year, NEEA estimates and reports annual energy savings from its portfolio. This process helps to support the ongoing long-term viability and value estimation of Market Transformation efforts and serves as a foundation for funder needs and their local regulatory reporting activities.

As with every annual reporting update, NEEA receives and analyzes full year market data as well as new evaluation reports that inform updates to market trends, adoption estimates and unit energy savings estimates or other key assumptions as needed. After incorporating these updates, co-created savings across all investments in NEEA's electric portfolio of programs added 41.2 aMW of savings in 2025.

See Appendix A for more details about updates and market progress by program.

Net Market Effect savings are also tabulated as part of NEEA's annual reporting. Each year, NEEA staff coordinate with funding partners to tally the efficient units that are being tracked and reported locally. NEEA does this only to avoid double-counting savings, rather than to attribute results directly to NEEA. NEEA staff aggregated a total of 11.3 aMW from local programs in the monitored markets this year, resulting in Net Market Effect savings of 29.85 aMW for 2025.

Additional Metrics

In addition to tracking and reporting the annual co-created savings for NEEA's regional portfolio, NEEA estimates the regional value of a set of additional metrics.

Benefit Cost Ratio

One such metric is the benefit cost ratio of NEEA's electric portfolio. NEEA's requirement is to have a portfolio benefit-cost ratio greater than 1. A total of five Market Transformation programs constitute the portfolio benefit-cost assessment: Retail Products Portfolio, Heat Pump Water Heaters, Luminaire Level Lighting Controls, Extended Motor Products (XMP)- Pumps, and High-Performance HVAC (see table 1 above[1]). Leveraging data from the Northwest Power and Conservation Council's (NWPCC) ProCost tool for the 2021 Power Plan, NEEA has assessed the long-term total benefit-cost ratio for the market transformation portfolio at 2.00, meaning that for every dollar invested in the program it generates an estimated $2 in benefits.

Peak Capacity and Avoided Carbon Emissions

NEEA also uses data from the NWPCC to enable the regional reporting for both peak capacity value and avoided carbon emissions resulting from energy efficiency investments. For 2025, the peak capacity value is a regional value assessed on all programs contributing co-created savings (see table 1), for a total benefit to the region of 82 MW of winter peak and 62 MW of summer peak savings (Table 4).

For the estimation of avoided carbon emissions, NEEA includes the benefit from all of the co-created savings of the electric portfolio. The 2025 co-created savings value of 41.2 aMW translates to approximately 184,000 tons of avoided carbon emissions in 2025, at a monetized value of $13.6 million[2]. Peak capacity and avoided carbon emissions benefits are shown in Table 4 for 2025 and during this business cycle (2025-2029).

Table 4: 2025-2029 Additional Co-Created Value Metrics

	Avoided Carbon Emissions (tons)	Winter Peak Savings (MW)	Summer Peak Savings (MW)
2025	184,000	82	62
2025-2029 Total	819,000	378	292

[1] The Advanced Heat Pumps Program advanced into market development in 2023 with a benefit-cost ratio of 79. This is currently not included in the calculation for the portfolio as NEEA works to refine program analysis. Inclusion of this program given current assumptions would increase the portfolio cost effectiveness value above 2.0. NEEA staff will bring the portfolio number including the Advanced Heat Pumps Program back to the Committee when available.

[2] Avoided emissions are monetized using the social cost of carbon with 2.5% discount rate. For 2025 this represents $73.39/ton.

Appendix A: 2025 Portfolio Highlights

NEEA collaborates with stakeholders across the Northwest and nationally to advance the adoption of energy efficient technologies. Work includes:

- Data collection, research, evaluation, and analysis
- Product development and testing
- Market implementation

These efforts help bring higher efficiency products and services to market, ultimately benefiting consumers and businesses, and generating energy savings. Below are key highlights for 2025.

Data Collection, Research, Evaluation, and Analysis

Building Stock Assessments

NEEA has five regional studies that hit milestones in 2025. The data collection phase of the 2025 Commercial Building Stock Assessment finished, and the study began developing data and reporting deliverables that will be posted on neea.org in 2026. The Home Energy Metering Study and Commercial Energy Metering Study both finished metering and deinstalled most meters. The study will now focus on analyzing the data and sharing key insights. The Motor-System Stock Assessment selected and onboarded two firms and began study-design and planning work. Lastly, NEEA formed the 2027 Residential Building Stock Assessment working group and with their input developed a request for proposals document that was released at the beginning of 2026.

Market Data, Research and Evaluation

NEEA's Market Research and Evaluation team managed nearly 40 third-party research and evaluation studies to support alliance Market Transformation programs, building codes, and new product standards work, as well as NEEA's special project work in end use load flexibility and whole building/building performance standards. The team led work on eight program market progress evaluations in 2025, including for two Commercial HVAC programs, the Extended Motor Products – Pumps, Luminaire Level Lighting Controls, Heat Pump Water Heaters, Retail Product Portfolio, and Advanced Heat Pump programs, as well as for NEEA's building energy codes work. These mixed-method, longitudinal evaluations are instrumental to understanding the market opportunity for these measures and for tracking NEEA's progress toward achieving market transformation. In addition, the team managed work on four projects that measured compliance with updated building energy codes in Montana, Idaho, and Oregon. These projects, along with the codes' market progress evaluation and a review of NEEA's approach for developing counterfactual baselines for state energy codes, provide the market with valuable information on the market's response to code changes, informs strategy, and supports evaluation of NEEA and its partners' influence on building energy codes.

Data Processing

NEEA brought retail data processing in-house, providing greater visibility, flexibility, and more detail in the resulting market insights. The dataset includes retail sales from four large retailers and covers both qualifying and non-qualifying ENERGY STAR products, including clothes washers, clothes dryers, heat pump water heaters, and refrigerators.

To support the reporting efforts for our emerging work in televisions, NEEA completed development of a data pipeline to estimate market share of ENERGY STAR v9 televisions and

manage the expanding list of qualified products (QPL). NEEA also commissioned a third-party review of the savings calculation method and other key assumptions for televisions. This review helped refine the work in some key areas and provided third-party validation of the methods NEEA developed.

Product Development and Testing

Emerging Technology

NEEA's emerging technology team routinely scans for, assesses, and reports on the potential for newly identified efficient products, services, and practices. Once opportunities are identified, NEEA works with manufacturers to encourage creating products that meet regional needs and are confirmed to save energy. As a regional organization, NEEA focuses on opportunities that have broad benefits across the four Northwest states, including places that have unique barriers and opportunities for efficiency, such as rural markets and colder climates. By working together and aggregating investment, NEEA's funders and stakeholders share both the cost and the risks associated with bringing new energy efficient technology to markets.

In 2025, the emerging technology program conducted research across a wide range of product groups including:

- **Consumer Products**
  - ENERGY STAR drew heavily from NEEA's Advanced Water Heating Specification to create the final test method for Central Heat Pump Water Heater Systems.
  - NEEA identified improvements to refrigerator test methods that will better account for energy saving features included in the newest generation refrigerators. NEEA will use this information to influence future test procedures.
  - Field research into current laundry usage patterns began in 2025 with a planned publication date in Q2 of 2026. This research also includes an analysis of test methods that may simplify and reduce the cost of maintaining a qualified products list for efficient dryers. Findings from field research will allow the Regional Technical Forum to update dryer measures with more current assumptions, expected in Q3 of 2026.
  - NEEA explored the energy efficiency potential of heat pump commercial tumble dryers via lab investigations to assess performance, cost-effectiveness evaluations for hotel expenditures, and estimates of regional and national energy savings.[3] Study findings revealed key insights into commercial tumble dryer efficiency and identified opportunities for further research tailored to the hotel industry's needs as well as the broader market. Additionally, findings will support manufacturers in refining commercial dryer product designs to better serve the U.S. market. Finally, NEEA plans to continue its collaboration with the commercial tumble dryer manufacturers to support design adjustments that can enhance the performance of current models.
  - NEEA is piloting a Northwest online marketplace. The site provides a one-stop shop for efficient products that could be customized for NEEA funders. The platform

[3] Kannah Consulting. 2025. Commercial Heat Pump Tumble Dryers - Efficiency Testing, Operations Considerations, and Energy Savings.

includes EcoFinancing along with an Energy Score to help shoppers quickly identify efficient options when they need to replace their appliances quickly.

- **HVAC**
  - NEEA started a field study of 13 homes to investigate the flexibility and affordability benefits of dual-fuel residential HVAC systems in various climate and energy market conditions.
  - NEEA is nearing completion of a field and energy modeling study to test the benefits of integrating lighting and HVAC controls which will expand the product and benefits of NEEA's current Luminaire Level Lighting Controls program. The crosscutting control system technology could provide a new avenue for energy savings in small-to-medium commercial buildings where control systems are not typical.
- **Motor Systems**
  - NEEA investigated opportunities for increased pump efficiencies with American National Standards Institute (ANSI) pumps. NEEA is working to develop a Pump Efficiency Index for ANSI pumps which, while not exclusively used for clean water, generally pump fluids with very similar properties to clean water. NEEA should have findings from its research in 2026.

Test Procedures and Energy Conservation Standards

In 2025, NEEA staff served as an important voice in representing utility, industry, and market-wide impacts from Department of Energy (DOE) proposed rollbacks to certain Federal efficiency standards. The DOE has not yet issued final rules on these proposed rollbacks, which may be due, in part, to the breadth and depth of comments submitted by NEEA and other stakeholders representing a diverse group of manufacturers, industry trade associations, energy-efficiency advocacy groups, consumer advocates, and state and local government representatives. Because the DOE's standards program is not as active at the Federal level, NEEA has also been active in supporting state agencies in the Pacific Northwest to ensure that effective and efficient products continue to be available for consumers, as well as focusing on the development and improvement of test procedures for several products, including clothes dryers, televisions, and refrigerators. These new test procedures will ensure that the latest technology is adequately represented and yield metrics that can effectively differentiate better-performing equipment in the market. NEEA updated four codes and standards strategies for several NEEA Market Transformation programs and is in the process of completing and implementing strategies for five additional programs or special projects.

Market Implementation

HVAC Programs

NEEA continued work to identify and drive adoption of product features, capabilities, and ratings that will elevate the efficient performance of all residential two-stage and variable-speed heat pumps installed in the Northwest. The new Advanced Heat Pumps, which has a Total Regional Savings potential of 35 aMW for the Northwest, focuses on residential heat pumps with the following improvements: low-load efficiency, cold-climate capability, minimized supplemental heat, connected commissioning, and automatic load flexibility. Along with national partners, NEEA leads the Advanced Heat Pump Coalition to pursue technical advancements in residential heat pumps and support utility heat pump programs. This coalition consists of more than 140 participating utilities and other efficiency organizations including 13 northwest utilities. In addition, NEEA and partners co-facilitated a symposium of manufacturers, distributors and utility representatives,

collaborating to promote ways for the region to address reducing the use of supplemental electric resistance heat with heat pump systems, developing installer training and consumer messaging.

In 2025, the program focused on:

- Introducing four new heat pump product improvement recommendations to more than a dozen manufacturers to boost product adoption in the region.
- Completing a multi-year research effort with results suggesting low-load efficient variable speed heat pumps could deliver 2-7% energy savings with little-to-no increase in system cost, supporting improved cost effectiveness of heat pumps in the region.[4]
- Submitting a heat pump measure proposal to the Regional Technical Forum, focused on minimizing the use of supplemental electric resistance heat with residential heat pump installs.
- Developing a connected commissioning certification with a future aim of establishing a national registry that hosts a qualified product list (QPL) of connected commissioning capable products to help HVAC technicians and utilities identify these products.

Water Heating

NEEA worked with the Advanced Water Heater Initiative[5] to identify barriers and opportunities to help consumers adopt and benefit from the new federal standard mandating a shift for most electric storage water heaters to heat pump technology by 2029. NEEA also expanded the number of qualified regional installers and supported technological advancements through collaboration with manufacturers. The program now has nine key installers in Washington. NEEA provides these installers with in-depth training, support to offset financial risk from callbacks, and funds to stock HPWHs for emergencies. NEEA is forecasting that heat pump water heaters can bring the Northwest more than 400 aMW of Total Regional Savings.

Consumer Products

Through its Retail Products Portfolio program (RPP), NEEA works with retailers and extra-regional program administrators to utilize midstream incentives that signal energy-efficient options in the supply chain and in turn provide full-category sales data. NEEA's involvement influences practices across the supply chain, encouraging commitment from manufacturers and retailers to build, purchase, stock, and promote high-efficiency products. Products include white goods, air cleaners, televisions, and other home electronics. The data retailers provide allows NEEA to identify the most promising affordable energy conservation opportunities and gain insights that improve energy test procedures, helping consumers distinguish between products. NEEA is forecasting that the ENERGY STAR products NEEA is working on could bring the Northwest more than 150 aMW of Total Regional Savings.

NEEA worked actively in three product categories in 2025, focusing on ensuring accurate test procedures and developing new strategic pathways to bring more consumer choice to the market.

[4] Harley Energy Consulting, LLC; Cadeo Group, LLC; Cener for Energy and Environment; DNV; OTS Energy, LLC; TRC Companies; UL Plano Texas; University of Nebraska Lab. 2025. Low-Load Efficient Heat Pump Investigation: 2020-2025 Summary Report.

[5] AWHI is a member-funded collaborative of building owners, utilities, federal agencies, state and local governments, manufacturers, engineers, installers, advocates, researchers, and building industry professionals from across the U.S.

- **Refrigerators:**
  - NEEA scoped a multi-phase lab testing effort to first assess various available test methods that value the performance of advanced adaptive compressors and then perform testing on a sample of refrigerators. The goal is a proof-of-concept where additional EE advocates or manufacturers can fund the lab testing to fully populate a new QPL for advanced refrigerators. NEEA is leading the development of the new QPL to help manufacturers and consumers recognize the energy savings from adaptive compressor technology and to influence updates to the DOE test procedures.
- **Laundry**:
  - In February 2025, the new leadership at the US Department of Energy announced indefinite postponements of the effective dates for federal standards on laundry appliances. Standards for both washers and dryers were adopted in 2024 through a process that was influenced by NEEA and other EE advocates and included a negotiated agreement with the Association of Home Appliance Manufacturers. NEEA is remaining in coalition with other advocates to be prepared to take advantage of the next opportunity to establish a firm effective date for these energy and money saving minimum efficiency levels.
  - NEEA gathered cost data to conduct analysis on the affordability of ENERGY STAR laundry appliances with the intent of identifying products and features that are common amongst ENERGY STAR products in the low-cost range. NEEA is currently exploring our organization's approach to incorporate affordability strategies in our market transformation work.
- **Televisions:**
  - NEEA partnered with Best Buy and Costco to support in-store promotions of ENERGY STAR televisions in late 2025. The promotions encourage consumers to choose the most efficient options while prompting retailers to market and manufacturers to certify televisions through ENERGY STAR.

Lighting

NEEA engages commercial lighting manufacturers and their supply chain to increase adoption of Luminaire Level Lighting Controls (LLLC) in the Northwest. NEEA is forecasting that these controls could bring the Northwest more than 40 aMW of Total Regional Savings. Findings from a 2025 evaluation show that the demand for LLLC continues to experience year-over-year growth.6 Product awareness is now nearly universal among installers and increasing percentages of installers and designer/specifiers reported an ability to bid on projects that include these controls.

To maintain momentum, NEEA will continue training and strengthening sales staff's ability to articulate the value of LLLC across different building types and applications. NEEA repackaged existing content and supplemented new content to create a comprehensive resource, LLLC installer toolkit on BetterBricks. The program created three marketing video success stories and one industry expert profile were created to feature the value of LLLC in Washington.

[6] Cadmus, 2025, Luminaire Level Lighting Controls: Market Progress Evaluation Report #3

Motor-Driven Systems

NEEA is now reporting agricultural savings from smart pump installations in Washington. NEEA's Extended Motor Products - Pumps program has been collaborating with manufacturer representatives to increase awareness of smart pump technologies and provide tools that demonstrate their value across sectors. The program has also partnered with the Hydraulic Institute to enhance awareness and usage of the Energy Rating label. NEEA is forecasting that these efficient pumps could bring the Northwest more than 25 aMW of Total Regional Savings.

New Construction

NEEA continues to advance innovation within the supply chain while helping shape voluntary specifications and codes to ensure consumers and building owners have access to products that perform reliably and save energy.

Washington

NEEA developed dozens of code change proposals for the 2024 WSEC cycle. Of the proposals directly supported by NEEA, the WSEC-C Energy Technical Advisory Group recommended many of them for approval. The intent of the few they did not recommend was generally covered through other approved proposals. The commercial approved proposals include efficiency improvements across various end uses, clearer code language incorporating the State Building Code Council's interpretations, and new metering and commissioning requirements to help buildings comply with the state's Building Performance Standard. The residential proposals approved also include efficiency improvements across a range of end uses plus measures to improve compliance and savings realization, and the adoption of a new compliance path based on home energy ratings.

Oregon

The 2025 Oregon Energy Efficiency Specialty Code (OEESC) went into effect on July 1, 2025. The code is based on the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1-2022 but contains amendments that reduce energy efficiency credit requirements and removes the onsite renewables requirement. The Pacific Northwest National Laboratory (PNNL) performed analysis in Q3 and found the 2025 OEESC to be 4.8% less efficient than 90.1 2022. Nonetheless, Oregon remains the first state to adopt 90.1 2022, and the new code delivers a 10.3% efficiency improvement over Oregon's prior commercial energy code.

For residential codes, in Q3, the Building Code Division released an updated 2026 Oregon Residential Specialty Code (ORSC) draft, published supporting inputs for the energy chapter, and completed the code change proposal period, receiving 14 proposals—four from NEEA staff. The Residential and Manufactured Structures Board approved forming a 2026 ORSC energy review committee, which convened a series of meetings in 2025. NEEA staff provided extensive technical support during the development process, including participating in the working group reviewing the preliminary draft, convening an Oregon Code Collaborative to engage stakeholders.

Idaho and Montana

In 2025, NEEA actively participated in the development process for the 2027 International Energy Conservation Code (IECC). Staff served on the Commercial Consensus Committee, the Commercial HVAC subgroup, and the Residential Modeling & Whole Building subgroup. During the first round of development, NEEA submitted four code change proposals, three as lead proponent and one as co-proponent. One proposal was approved for inclusion in the first draft of the 2027 IECC.

NEEA also completed code-compliance evaluations for Idaho's 2018 IECC (commercial), Montana's 2018 IECC (commercial and residential), and Montana's 2021 IECC (residential). These studies examined compliance pathways and assessed the level of compliance achieved. Findings from this analysis will guide NEEA's market intervention strategies for new construction, including future training and education programs.

Appendix B: Initiative Life Cycle

NEEA has a robust stage-gate process for managing its programs referred to as the initiative lifecycle (ILC). The ILC provides a set of core business processes & tools that ensure standardized management of investment, risk and best practices. Figure 1 shows how initiatives move through the cycle (from left to right) as NEEA learns more about their promise and potential for the region, the barriers preventing that promise from being achieved, and ways to leverage the power of the region to remove those barriers.The end of each phase is marked by a formal management review called a milestone. NEEA formally solicits approval from Natural Gas Advisory Committees at key program milestones.

Figure 1: Initiative Lifecycle

Memorandum

April 16, 2026

TO: Cost Effectiveness and Evaluation Advisory Committee

FROM: Elizabeth Daykin, Senior Manager, Planning and Analysis, NEEA

SUBJECT: Gas Annual Report 2025 Value Metrics and Cost Effectiveness

Background

NEEA is an alliance of utilities and energy efficiency organizations that pools resources and shares risks to transform markets toward energy efficiency that benefits consumers in the Northwest. NEEA's role is to establish technology and market conditions that advance energy efficiency in markets in a sustainable way.

Energy savings are enabled by the alliance's Market Transformation efforts in removing market barriers, influencing energy codes and appliance standards, and investment in tools, training, resources, data, research, and evaluation to support greater efficiency. These Market Transformation efforts seek to effect sustainable changes in markets, which then result in energy savings.

NEEA focuses on energy efficiency across multiple fuel types, including natural gas and electricity. While this memorandum provides an update for the natural gas portion of NEEA's portfolio, there is a separate companion memo that outlines the updates for the electric portion of NEEA's portfolio. For more information about NEEA's savings and cost effectiveness operational guidelines as well as other reference documentation please visit the Funder Portal on NEEA's SharePoint site (https://neea.sharepoint.com/sites/FunderPortal).

NEEA Energy Savings Approach

NEEA creates lasting change in the region, so that markets increasingly support and sustain higher levels of efficiency over time. NEEA manages a portfolio that spans early development of technologies and Market Transformation opportunities, through program and market development, and finally to the long-term, sustained state of efficiency well beyond NEEA's direct market investment.

Northwest Energy Efficiency Alliance

700 NE Multnomah Street, Suite 1300, Portland, OR 97232

503.688.5400 | Fax 503.688.5447

neea.org | info@neea.org

NEEA tracks and reports energy savings to measure the resulting benefits of change in the market toward energy efficiency. Each program in NEEA's portfolio is managed using a lifecycle management framework (Appendix B). The bolded programs under Market Development in Table 1 are included in our regional reporting of savings above Market Transformation baseline **("Co-Created Savings")** for 2025 as they are at the stage of recognizing market change and savings above baseline. Additional savings from codes, standards, and market diffusion are included in our regional reporting of savings, which are also shown in bold in Table 1. In all cases, NEEA tracks and reports incremental first year savings on an annual basis to monitor both adoption levels and associated energy savings.

Table 1: Programs in NEEA's Gas portfolio

Scanning / Concept Development	Program Development	Market Development	Codes & Standards; Market Diffusion
Additional Emerging Market and Technology Opportunities Gas High-Efficiency DOAS	Advanced Commercial Water Heating Dual-fuel HVAC	**Efficient Rooftop Units**	**Residential & Commercial Codes** – dual fuel **Residential & Non-Residential Standards** – dual fuel **Indirect Savings – XMP Pumps** – commercial, water heating **Indirect Savings – XMP Pumps** – residential, water heating **Indirect Savings – Manufactured Homes** – envelope measures

2025 Savings Results

Each year, NEEA estimates and reports annual energy savings from its portfolio. This process helps support the ongoing long-term viability and value estimation of Market Transformation efforts and serves as a foundation for funder needs and their local regulatory reporting activities. Table 2 highlights the actual reported savings for 2025.

Table 2: 2025 Co-Created Savings
814,499 annual Therms

The majority of reportable gas savings for 2025 come from new construction, through both residential and commercial building codes. The specific codes NEEA is reporting 2025 savings on are for Oregon:

- Residential: OR Specialty Code 2021 and OR Specialty Code 2023

- Commercial: OR 2021 Oregon Energy Efficiency Specialty Code (OEESC) and OR 2025 OEESC

Reportable gas savings also include savings from Efficient Rooftop Units and indirect savings[1] from Market Transformation efforts funded through the electric portfolio.

Additional Metrics

In addition to tracking and reporting the annual co-created energy savings for its regional portfolio, NEEA estimates the regional value of a set of additional metrics.

Benefit-Cost Ratio

One such metric is the benefit-cost ratio of NEEA's natural gas portfolio. For our current portfolio, there is one Market Transformation program that has advanced into Market Development: Efficient Rooftop Units. Leveraging regional assumptions and data from the Northwest Power and Conservation Council's (NWPCC) ProCost tool, NEEA has assessed the 20-year value of the regional investment in Market Transformation at a benefit-cost ratio of 1.06 for this program, meaning that for every dollar invested in the program it generates an estimated $1.06 in benefits. As new programs advance into Market Development, we will add those to the portfolio aggregation for this metric.

Avoided Carbon Emissions

NEEA also partners with the NWPCC to enable the regional reporting for avoided carbon emissions resulting from energy efficiency investments. For the estimation of avoided carbon emissions, NEEA includes the benefit from all the co-created savings of the gas portfolio. The 2025 co-created savings value of 814,499 Therms translates to a total of over 5,400 tons of avoided carbon emissions in 2025, at a monetized value of $396,633[2].

[1] More detail regarding Indirect Savings is available in the Key Inputs and Assumptions Annual Reporting Update.

[2] Avoided emissions are monetized using the Social cost of Carbon with a 2.5% discount rate. This value for 2025 is $73.39/ton.

Appendix A: 2025 Portfolio Highlights

NEEA collaborates with stakeholders across the Northwest and nationally to advance the adoption of energy efficient technologies. Work includes:

- Data collection, research, evaluation, and analysis
- Product development and testing
- Market implementation

These efforts help bring higher efficiency products and services to market, ultimately benefiting consumers and businesses, and generating energy efficiency savings. Below are key highlights for 2025.

Data Collection, Research, Evaluation, and Analysis

Building Stock Assessments

NEEA has five regional studies that hit milestones in 2025. The data collection phase of the 2025 Commercial Building Stock Assessment finished, and the study began developing data and reporting deliverables that will be posted on neea.org in 2026. The Home Energy Metering Study and Commercial Energy Metering Study both finished metering and deinstalled most meters. The study will now focus on analyzing the data and sharing key insights. The Motor-System Stock Assessment selected and onboarded two firms and began study-design and planning work. Lastly, NEEA formed the 2027 Residential Building Stock Assessment working group and with their input developed a request for proposals document that was released at the beginning of 2026.

Market Research and Evaluation

NEEA's Market Research and Evaluation team managed nearly 40 third-party research and evaluation studies to support alliance Market Transformation programs, building codes, and new product standards work, as well as NEEA's special project work in end use load flexibility and whole building/building performance standards. Some gas-related research included:

- Identifying purchase motivators for people with high-efficiency gas equipment to see if and where there is a market for a commercialized gas heat pump water heater.[3]
- Exploring the opportunities and barriers for adding gas to NEEA's High-Performance HVAC program, characterizing the market landscape, and assessing specifiers' perceptions of system configurations in hypothetical scenarios aligned with the program's targeted approach.[4]

[3] High Efficiency Gas Water Heater Research - Northwest Energy Efficiency Alliance (NEEA)

[4] Commercial HVAC Specifier Market Research: Gas High Efficiency DOAS - Northwest Energy Efficiency Alliance (NEEA)

- Increasing the region's understanding of gas and electric water heating systems across a selection of commercial buildings in the Northwest.[5]
- Completing the first Market Progress Evaluation Report for the Efficient Rooftop Units (ERTU) program (recently renamed the Advanced Performance Rooftop Units program).[6] The study found that six manufacturers currently offer ERTU products, including two of the five leading ERTU manufacturers. While adoption is still emerging, integrated energy recovery ventilator models appear to be gaining more traction than bolt-on options.

In addition, the team managed work on projects that measured compliance with updated building energy codes in Idaho and Oregon. These projects, along with the codes' market progress evaluation and a review of NEEA's approach for developing counterfactual baselines for state energy codes, provide the market with valuable information on the market's response to code changes, informs strategy, and supports evaluation of NEEA and its partners' influence on building energy codes.

Data Processing

NEEA continued to refine its commercial HVAC installation tracking process as well as expand market coverage. NEEA collects sales data, relying on trusted relationships with regional HVAC suppliers. NEEA augments the data by matching equipment model numbers to equipment efficiency attributes from the Air-Conditioning, Heating, and Refrigeration Institute certification database. NEEA's goal is to continue minimizing manual data cleaning and to expand its coverage with distributors as well as add sales through manufacturer representatives.

Product Development and Testing

Emerging Technology

NEEA's emerging technology team routinely scans for, assesses, and reports on the potential for newly identified efficient products, services, and practices. Once opportunities are identified, NEEA works with manufacturers to encourage creating products that meet regional needs and are confirmed to save energy. As a regional organization, NEEA focuses on opportunities that have broad benefits across the four Northwest states, including places that have unique barriers and opportunities for efficiency, such as rural markets and colder climates. By working together and aggregating investment, NEEA's funders and stakeholders share both the costs and the risks associated with bringing new energy efficient technology to markets.

In 2025, the emerging technology program conducted research to scan new products for NEEA's gas energy efficiency portfolio. The work included:

- A field study of 13 homes to investigate the flexibility and affordability benefits of dual-fuel residential HVAC systems in various climate and energy market conditions.

[5] Market Research on Existing Water Heaters in Select Commercial Buildings, Final Report - Northwest Energy Efficiency Alliance (NEEA)

[6] Efficient Rooftop Units Market Progress Evaluation Report #1 - Northwest Energy Efficiency Alliance (NEEA)

- A field and energy modeling study to test the benefits of integrating lighting and HVAC controls to expand the product and benefits of NEEA's current Luminaire Level Lighting Controls program. The crosscutting control system technology could provide a new avenue for energy savings in small-to-medium commercial buildings where control systems are not typical.
- A test of residential-sized gas fired absorption heat pump design for broad residential and commercial applications. Field data showed the hybrid system could achieve net efficiencies of up to 136%, with gas savings of 54% in hot water-only mode and up to 55% in combined heating modes at the multifamily site. At the residential sites, the system achieved net efficiencies between 110% and 130% in combined heating modes.[7]

Test Procedures and Energy Efficiency Standards

In 2025, NEEA staff served as an important voice in representing utility, industry, and market-wide impacts from Department of Energy (DOE) proposed rollbacks to certain Federal efficiency standards. The DOE has not yet issued final rules on these proposed rollbacks, which may be due, in part, to the breadth and depth of comments submitted by NEEA and other stakeholders representing a diverse group of manufacturers, industry trade associations, energy-efficiency advocacy groups, consumer advocates, and state and local government representatives. Because the DOE's standards program is not as active at the Federal level, NEEA has also been active in supporting state agencies in the Pacific Northwest to ensure that effective and efficient products continue to be available for consumers, as well as focusing on the development and improvement of test procedures for several products. These new test procedures will ensure that the latest technology is adequately represented and yield metrics that can effectively differentiate better-performing equipment in the market.

Market Implementation

Efficient Rooftop Units

In 2025, the program developed four new marketing resources:

- A case study for the KBOO Community Radio field demonstration,
- A re-design of the BetterBricks Efficient Rooftop Units page,
- A brochure for distributors that explains the benefits of the ERTU specification elements,
- A one-page flyer on ERTU program details.

The team also started development on a website campaign for 2026 that will help building owners or facility managers identify how ERTUs would be a good option for HVAC equipment replacement projects.

The program has made progress with manufacturer representatives identifying projects and applications suited for qualified efficient RTUs (e.g., schools, sports facilities, and other building types with high-ventilation needs). The program is looking to incentivize case study development and support for manufacturer representatives promoting qualified products.

[7] Gas-Fired Absorption Heat Pump: Hybrid System Approach Field Study - Northwest Energy Efficiency Alliance (NEEA)

The program also kicked off the Energy Recovery Ventilators /Heat Recovery Ventilators cleaning market study with MarketWise. Objectives are to gather perspectives on operational considerations for installing, commissioning, cleaning, and maintaining ERVs/HRVs, and investigate what ERV/HRV cleaning and maintenance looks like in real-world applications. A final report will be available in 2026.

Finally, NEEA completed a modeling study on commercial HVAC efficiency measures for various types of commercial rooftop units. The goal of broadening the modeling efforts to cover a greater portion of the United States is to enhance the region's understanding of how measure and tier impacts vary by climate region, which could eventually inform the development of a national program applicable to the RTU market and representative federal efficiency metrics for this product.[8]

High Efficiency Dedicated Outside Air Systems

NEEA is exploring opportunities to expand its Commercial High-Performance HVAC electric program to include gas products. The team is assessing the projected market potential, savings estimates, cost effectiveness, and barriers/opportunities to present to NEEA's gas-funding stakeholders in 2026.

Water Heating

The Advanced Commercial Water Heating program finished a market characterization report that should be published later this year. NEEA also continued engagement with manufacturers and tested the products through field demonstrations including a commercial gas heat pump system. NEEA is working with the North American Gas Heat Pump Collaborative on a new feasibility study to identify potential savings and market opportunities for a gas system for use in the commercial multifamily market. NEEA is also co-funding a Gas Technology Institute project to develop a new tool for designing and optimizing commercial water heating gas heat pump systems.

The research and analysis will help the program move into market development in 2026/2027.

New Construction

NEEA continues to advance innovation within the supply chain while helping shape voluntary specifications and codes to ensure consumers and building owners have access to products that perform reliably and save energy.

In 2025, NEEA actively participated in the development process for the 2027 International Energy Conservation Code (IECC). Staff served on the Commercial Consensus Committee, the Commercial HVAC subgroup, and the Residential Modeling & Whole Building subgroup. During the first round of development, NEEA submitted four code change proposals, three as lead proponent and one as co-proponent. One proposal was approved for inclusion in the first draft of the 2027 IECC.

[8] National Efficient Rooftop Unit Energy Modeling - Northwest Energy Efficiency Alliance (NEEA)

NEEA also completed a code compliance evaluation for Idaho's 2018 IECC (commercial).[9] The study examined compliance pathways and assessed the level of compliance achieved. Findings from this analysis will guide NEEA's market intervention strategies for new construction, including future training and education programs.

Gas savings from Washington codes phase out as the 2021 Washington State Energy Code moves builders to choose electric options. NEEA is monitoring the effects of codes as well as building performance standards. NEEA is researching future code options for high performance gas technology such as gas water heaters and gas/electric combo heat pumps.

[9] Opinion Dynamics. 2025. Idaho 2018 Commercial New Construction Code Compliance Evaluation.

Appendix B: Initiative Life Cycle

NEEA has a robust stage-gate process for managing its programs referred to as the initiative lifecycle (ILC). The ILC provides a set of core business processes & tools that ensure standardized management of investment, risk and best practices. Figure 1 shows how initiatives move through the cycle (from left to right) as NEEA learns more about their promise and potential for the region, the barriers preventing that promise from being achieved, and ways to leverage the power of the region to remove those barriers.The end of each phase is marked by a formal management review called a milestone. NEEA formally solicits approval from Natural Gas Advisory Committees at key program milestones.

Figure 1: Initiative Lifecycle

Northwest Energy Efficiency Alliance
700 NE Multnomah Street, Suite 1300, Portland, OR 97232
503.688.5400 | Fax 503.688.5447
neea.org | info@neea.org

Memorandum

April 16, 2026

TO: Cost Effectiveness Advisory Committee

FROM: Kathryn Bae, Principal Market Analyst, NEEA

SUBJECT: Conclusion of Monitoring the Reduced Wattage Lamp Replacement Program

Purpose

The purpose of this memo is to provide an overview of NEEA's decision to discontinue monitoring and energy savings reporting for the Reduced Wattage Lamp Replacement (RWLR) program. It informs committee members that NEEA will no longer track units or report associated energy savings for RWLR program. NEEA requests that committee members review this memo and come prepared for the April 23 meeting with any questions or concerns regarding the conclusion of RWLR program monitoring.

Background

Figure 1 is an illustration of NEEA's Initiative Lifecycle (ILC). When NEEA's program transitions from the Market Development phase to the Market Diffusion phase, NEEA ceases active market engagement but continues to monitor the adoption of energy efficiency measures. This allows NEEA to report associated energy savings and determine whether further market intervention is necessary.

Figure 1. NEEA's Initiative Lifecycle

As a program nears the end of the Market Transformation process, NEEA reviews whether it is appropriate to continue tracking adoption and estimate savings. Tracking typically ceases if criteria 1 and 2 are both met:

Northwest Energy Efficiency Alliance
700 NE Multnomah Street, Suite 1300, Portland, OR 97232
503.688.5400 | Fax 503.688.5447
neea.org | info@neea.org

1. Market Transformed: NEEA has successfully tracked savings for the full process of Market Transformation. The naturally occurring baseline adoption exceeds the current adoption; AND
2. Power Plan Baseline: The savings are categorized as part of the current Northwest Power and Conservation Council's Power Plan baseline.

Alternatively, tracking ceases if criteria 3 or 4 are met:

3. Data Limitations: The acquisition of reliable data is difficult and/or no longer cost-effective to obtain; OR
4. Market Shift: Demand for the product or service shifted to another product or service, resulting in the Market Transformation program no longer delivering additional savings to the region.

NEEA analyzed the 2024 annual regional lamp shipment data once it became available in late 2025 and determined that the RWLR program meets the Market Shift criteria (#4) outlined above as of 2024. The remainder of this memo provides an overview of the program and the rationale for discontinuing monitoring.

Market Transformation Overview for RWLR Program

NEEA's RWLR program aimed to make low wattage (25W and 28W) T8 lamps the standard replacement for 32W linear fluorescent lamps in the maintenance market. From 2015 to 2018, the RWLR program worked to achieve price parity between low wattage T8 lamps and 32W lamps by negotiating special price agreements with manufacturers. The program influenced distributor stocking practices to ensure low wattage lamps were on hand for customer purchase while making 32W lamps more difficult to obtain. Simultaneously, the program created bonus structures to motivate both corporate and branch level distributor staff to promote low wattage products and encourage customers to make the switch. Following significant progress in reducing market barriers, the program transitioned to the Market Diffusion phase in the ILC in 2019.

Over time, regional sales of linear fluorescent lamps declined as the market shifted toward TLEDs and LED fixtures, a trend that accelerated as TLED prices fell. In recognition of these market dynamics, the 2021 Power Plan included low wattage linear fluorescent lamps into its baseline.

This broader market transition has continued in recent years. Oregon's ban on fluorescent lamps which took effect on January 1, 2025, has further accelerated the decline, with retirements now exceeding new fluorescent lamp sales. As a result, no additional energy savings are forecast for the RWLR program. Washington's fluorescent lamp ban is also scheduled to go into effect in January 2029, reinforcing this trajectory.

Given the sustained shift to LED technologies and the absence of additional savings opportunities, NEEA will discontinue tracking and reporting for the RWLR program.

Over the lifetime, the RWLR program generated 3.9 aMW in co-created savings.