2020 Operations Plan

Organizational Priorities, Planned Market Transformation Program Activities and Budget

Final Draft - December 2019

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ABOUT THIS REPORT

The 2020 Operations Plan provides planned activities and a detailed budget for alliance electric and natural gas portfolios.

The goals of NEEA's annual operations planning process are to: identify areas where regional coordination and collaboration are required for market transformation success; flag potential areas of overlap or concern; and provide the region with information about NEEA's annual planned activities. This yearly planning process also helps ensure alliance flexibility, by presenting potential new opportunities in a timely manner as they emerge within the five-year business cycle.

The activities described in this plan were presented to alliance advisory committee members on October 16, 2019 and to Board members on October 30, 2019. NEEA staff have incorporated feedback from both committee members and Board members into the final draft. Additional comments or feedback on this plan should be directed to Becca Yates, NEEA's Director of Stakeholder Relations, Strategy and Communications, byates@neea.org.

Executive Summary

2020 OVERVIEW

This plan describes NEEA's planned activities and budget for 2020, the first year of the five-year (2020-2024) Business Plan. At the start of this business cycle (Cycle 6), the alliance's emerging technology pipeline is healthy, nearly double what it was at the beginning of Cycle 5. The current portfolio includes one dual-fuel, two natural gas and 10 electric market transformation programs. The organization is also monitoring and tracking market progress from six previously-funded initiatives and codes and standards that continue to deliver energy savings for the region.

As identified in the Business Plan, NEEA will employ five primary strategies to deliver value to the region in 2020: Emerging Technology; Effective Portfolio Execution; Codes and Standards, Market Intelligence; and Convene and Collaborate. For the first time, NEEA's portfolio will be managed in seven cross-sector, dual-fuel Product Groups to leverage shared relationships and market channels and to deliver efficiencies for both the alliance and supply chain partners.

2020 STRATEGIC PRIORITIES

Compared to Cycle 5, NEEA's current portfolio is less diverse, both in terms of risk profile (i.e. type of risk) and the number of programs delivering significant energy savings. To ensure both short- and long-term value delivery, NEEA staff are focused on: increasing overall portfolio diversity by advancing emerging technologies and bringing early-stage programs to scale faster; and ensuring success in the programs that are anticipated to deliver the bulk of Cycle 6 electric savings - Heat Pump Water Heaters, Retail Product Portfolio and Super-Efficient Dryers. For these consumer products programs, market transformation success will require increased market adoption both within the Northwest and outside of the region. Engaging extra-regionally to address program risk and deliver value to the Northwest is a focus area for the alliance in 2020. Another focus area is successfully collaborating with Northwest utility programs through the new advisory committee structure.

RISKS & OPPORTUNITIES

NEEA staff are actively tracking specific risks and opportunities that could impact the delivery of long-term value to the region. In addition to low portfolio diversity, risks include inaction at the federal level in codes and standards processes and the potential for misalignment between Northwest market transformation efforts and emerging models elsewhere. Opportunities include NEEA's new Product Group approach, which will enable efficiencies and streamline alliance work in the market, and state and local-level policies and goals aimed at achieving carbon reduction.

Executive Summary (cont.)

2020 STRATEGIC PRIORITIES

To ensure that the organization is aligned to deliver on its Business Plan goals and set-up for future success, NEEA staff has identified a number of 2020 strategic priorities:

- Increasing portfolio diversity by advancing new programs from scanning and accelerating early-stage programs.
- Ensuring success in the mature programs that are anticipated to deliver the majority of Cycle 6 savings - Heat Pump Water Heaters, Retail Product Portfolio and Super-Efficient Dryers.
- Implementing new advisory committee structure to support streamlined regional coordination and maximize the benefits of regional investment in energy efficiency.
- Conducting extra-regional engagement needed to address program and portfolio risk while also bringing value to Northwest.

2020 OPERATIONAL PRIORITIES

In 2020, NEEA will continue to support employee growth and capability through professional development, succession planning, performance management and employee engagement activities. Ensuring a focus on diversity, equity and inclusion is a 2020 organizational development priority, as is maintaining and growing market transformation expertise among staff.

VALUE DELIVERY

NEEA is estimating 27 average megawatts of electric co-created energy savings and 600 thousand therms of total regional natural gas savings in 2020. NEEA will publish a Business Plan metrics scorecard in its 2020 annual report.

Additional 2020 value delivery beyond energy savings will include: customer engagement opportunities; access to sales data and customized data-sharing; localized leverage of the Distributor Platform; peak savings; tracking of avoided carbon emissions; measure development (working with the Regional Technical Forum); and large-scale regional studies such as the Commercial Building Stock Assessment.

BUDGET OVERVIEW

NEEA's total 2020 Operations Plan budget is $40.3 million between electric ($31.7), natural gas ($4.1), End Use Load Research ($3.8) and Special Projects ($0.7 million) funding sources (Figure 1, page 4).

The 2020-2024 Business Plan includes a sample 2020 budget, which NEEA staff used as guidance to develop the 2020 Operations Plan budget. NEEA's 2020 Operations Plan budget is within two percent of the Business Plan guidance (Figure 2, page 4).

Budget Overview (cont.)

All budget figures shown are in millions of $U.S. dollars (see pages 37-45 for details).

FIGURE 1 - 2020 ORGANIZATION BUDGET BY FUNDING SOURCE: $40.3 M

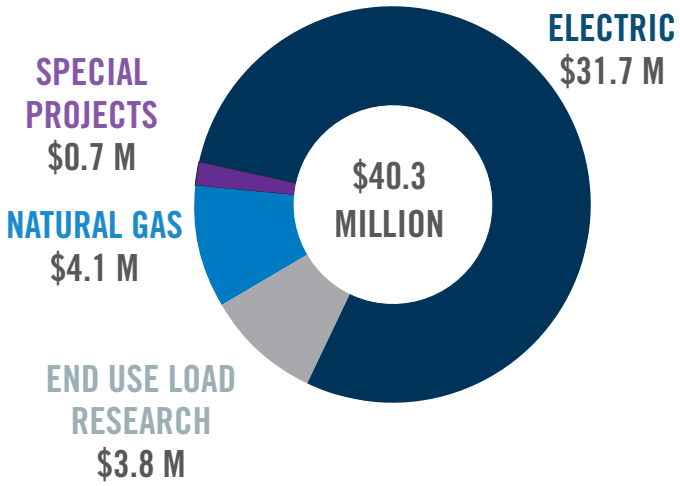
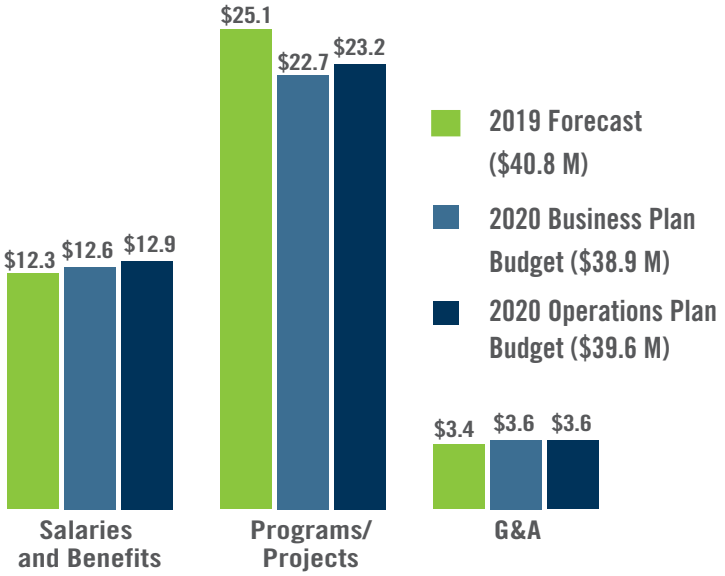


FIGURE 2 - TOTAL ORGANIZATION BUDGET BY EXPENSE CATEGORY ($ MILLIONS)



- Excludes $0.7 M in Special Projects
- Salaries & Benefits: + $0.3 M over Business Plan guidance due to market adjustments and promotions made after business plan development
- Program/ Projects: + $0.5 M over Business Plan estimate primarily due to increased End Use Load Research metering costs

FIGURE 3 - ELECTRIC BUDGET BY PRIMARY STRATEGY: $31.7 M

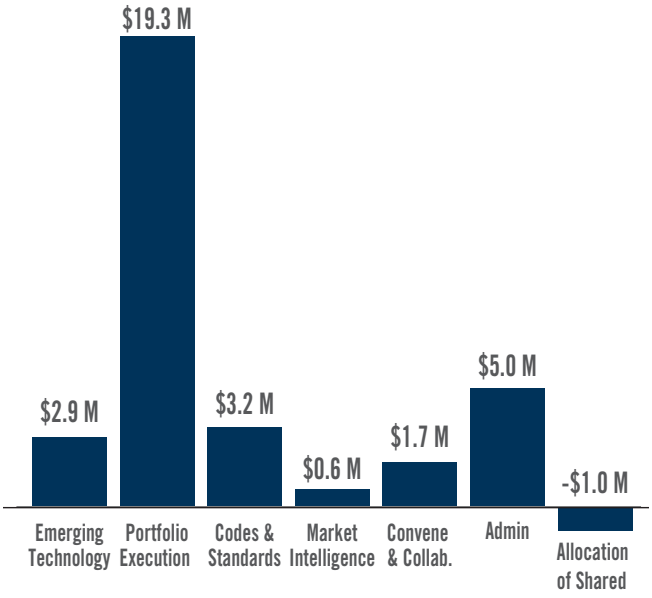


FIGURE 4 - NATURAL GAS BUDGET BY PRIMARY STRATEGY: $4.1 M

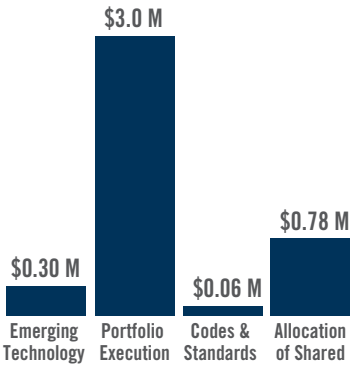


FIGURE 5 - END USE LOAD RESEARCH BUDGET: $3.8 M



2020 Overview: Transforming the Market for Energy Efficiency in the Northwest

The Northwest Energy Efficiency Alliance is funded in five-year Business Cycles. In December 2018, NEEA's Board of Directors approved the alliance's Cycle 6 (2020-2024) Strategic and Business Plans. This 2020 Operations Plan outlines NEEA's first year of planned activities to deliver on the goals established in the Business Plan.

INTRODUCTION

NEEA is an alliance of more than 140 electric and natural gas utilities serving customers in the four Northwest states: Idaho, Montana, Oregon and Washington. NEEA's purpose is defined in the 2020-2024 Strategic Plan:

"An alliance of utilities that pools resources and shares risks to transform the market for energy efficiency to the benefit of consumers in the Northwest."

By leveraging the market power of the Northwest, the alliance intervenes in markets to remove barriers or exploit opportunities to accelerate the adoption of cost-effective energy efficiency. This market transformation process results in lasting changes in market behavior and delivers a suite of energy efficiency benefits - energy savings and other value streams - to the Northwest. The details of this value-creation process are shown in the Appendix on page A2 (Alliance Business Model).

As described in the Business Plan, the alliance achieves market transformation through five primary, interrelated but distinct, strategies:

- Emerging Technology;
- Effective Portfolio Execution;
- Codes and Standards;
- Market Intelligence; and
- Convening and Collaborating with the region.

Planned 2020 activities under each strategy are described on pages 14-34.

SITUATIONAL ANALYSIS

STRONG FOUNDATION — Heading into Cycle 6, NEEA's emerging technology pipeline is healthy, nearly double what it was at the start of Cycle 5. Alliance funders and stakeholders have reaffirmed NEEA's purpose and strategic role in the region and the organization is effectively managing a portfolio of both natural gas electric market transformation initiatives, including one dual-fuel program.

MANAGING RISK — While strongly positioned to deliver on its business plan goals, the alliance is also facing some risks that will need to be managed effectively during this business cycle. Compared to Cycle 5, NEEA's current portfolio is less diverse, both in terms of risk profile (i.e. type of risk) and the number of programs delivering significant savings. Moreover, the region is not expecting energy savings

Situational Analysis (cont.)

from new federal codes and standards at the levels seen in the previous cycle. As a result, alliance savings are forecast to dip temporarily in Cycle 6 compared to Cycle 5. Finally, for the first time, there are models of market transformation developing in states beyond the Northwest. Potential misalignment between Northwest and extra-regional market transformation efforts puts the alliance's ability to keep national market decision makers engaged and focused on Northwest goals at risk.

REGIONAL AND NATIONAL POLICY — Across the region, policies targeting reductions in carbon emissions have been proposed or adopted. In particular, recently passed legislation in Washington State may create new opportunities for energy efficiency and market transformation in appliances and buildings. Regional energy system managers are grappling with defining appropriate policies and actions to maintain adequacy and reliability in the face of increasing variable energy from renewable sources while large coal-fired generating plants are retiring. Energy efficiency and flexible end-use loads can play a role in supporting energy reliability, but exactly what is needed varies across the region.

Finally, recent federal agency actions to pull back from codes and standards advancement pose a significant near-term risk to several alliance initiatives that are targeting changes in these policies as a primary market transformation strategy.

BUILDING FOR THE FUTURE — Looking beyond Cycle 6, it is expected that NEEA's market transformation portfolio will be comprised of fewer high-volume consumer products programs and more complex commercial opportunities, which tend to have more advanced design, sales and installation processes. While these programs will take longer to get to scale and have some measurability challenges, they represent significant energy savings opportunities for the region starting in 2025 and beyond (see 'Portfolio Overview' section beginning on page 7 for more detail).

SUPPORTING REGIONAL ENERGY EFFICIENCY EFFORTS — Cycle 6 will present both new and continued opportunities for the alliance to deliver value to the region beyond energy savings. This value includes: customer engagement opportunities; access to sales data and customized data-sharing; localized leverage of distributor platforms; peak savings; avoided carbon emissions tracking; measure development working with the Northwest Power and Conservation Council's Regional Technical Forum; and large-scale regional studies such as the Northwest End Use Load Research study, commercial and residential building stock assessments and potentially a specially-funded multi-family stock assessment planned to begin in 2020.

2020 Portfolio Overview

NEEA staff actively manage its electric and natural gas market transformation portfolios to balance risk and opportunity and to ensure that the organization is on track to meet its short- and long-term goals.

PORTFOLIO OVERVIEW

Many of NEEA's electric and natural gas programs are relatively new and not expected to deliver significant energy savings during this business cycle (2020-2024). In the electric portfolio, more than 80 percent of Cycle 6 energy savings are dependent upon on a short list of mature programs – Heat Pump Water Heaters, Retail Product Portfolio and Super-Efficient Dryers (Figure 6). Additionally, most Cycle 6 natural gas savings are anticipated from one program - Next Step Homes.

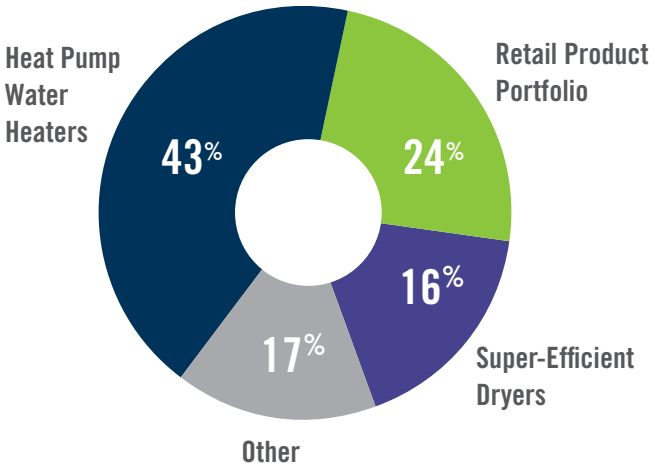
Looking ahead, the portfolio includes several programs that are poised to deliver significant savings in Cycles 7 and 8 (2025-2034), including Luminaire Level Lighting Controls, Window Attachments, High Performance HVAC, Extended Motor Products and Efficient Gas Water Heaters. However, these programs share some risk factors, including measurement challenges and typically slower adoption rates due to the type of product and market (Figure 7).

To ensure the alliance meets the Cycle 6 Business Plan goals, NEEA staff are actively managing risk in mature programs, while simultaneously expediting the advancement of other early-stage natural gas and electric programs. Portfolio management goals are:

1. **Increasing electric and natural gas portfolio diversity by accelerating early-stage programs and pursuing advancements in emerging technology.** New advancements in emerging technology will create opportunities to adjust the balance in the portfolio, both in terms of risk profile and savings delivery. The new Product Group approach will also help accelerate the advancement of early-stage opportunities (see call-out box on next page).

2. **Ensuring success of mature electric programs.** Achieving this goal will require support from local program activities and coordination both inside and outside the region. For some initiatives, market transformation success in the Northwest will depend on increasing market adoption outside of the region. For these efforts, NEEA will actively seek extra-regional partnerships and leverage extra-regional support to accelerate market adoption nationally.

FIGURE 6: CYCLE 6 ELECTRIC SAVINGS COMPOSITION ESTIMATE



2020 Portfolio Overview (cont.)

PRODUCT GROUP APPROACH

In 2020, the alliance portfolio of market transformation programs will be managed in seven cross-sector dual-fuel Product Groups:

- Building Envelope
- Consumer Products
- HVAC
- Lighting
- Motor-Driven Products
- New Construction
- Water Heating

Each Product Group includes multiple programs and emerging technologies that share supply chain opportunities. By managing the portfolio using this approach, the alliance will be able to leverage shared relationships and market channels to deliver efficiencies for both NEEA and supply chain partners.

3. **Active monitoring for extra-regional market transformation efforts that could affect program success in the Northwest.** These efforts will be focused on specific initiatives where misalignment between Northwest and national interests could pose significant risks to achieving regional goals. Any pro-active engagements to increase alignment will follow NEEA's G*uidelines for Extra-Regional Engagement*.

4. **Delivering additional benefits to funders**, including localized leverage of the Distributor Platform, customized data sharing and regional studies.

In 2020, NEEA is estimating 27 average megawatts of electric co-created energy savings and 600 thousand therms of total regional natural gas savings in 2020.

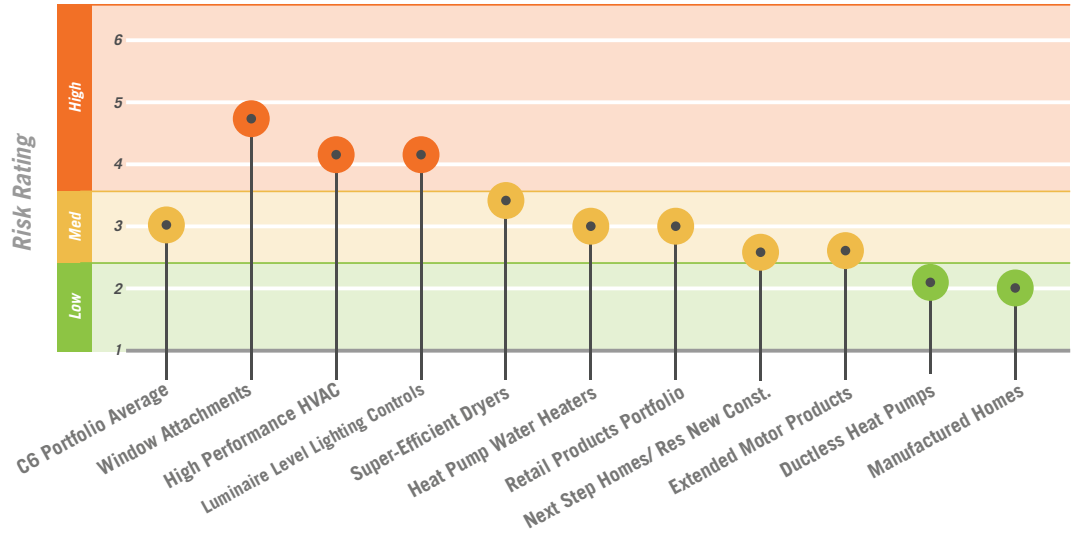


FIGURE 7: CYCLE 6 PORTFOLIO RISK PROFILE

Risk Rating is based on:

- Unproven Market
- Unproven Technology
- Cost-effectiveness
- Measurability of Savings
- Slow Adoption Rates

2020 Portfolio Composition

By Product Group and Level of Maturity

NEEA's current portfolio is comprised of both market transformation initiatives and infrastructure programs, which do not deliver savings but support alliance and local programs. NEEA is also conducting long-term monitoring and tracking of previously-funded initiatives and codes and standards that continue to deliver energy savings to the region.

PRODUCT GROUP	CONCEPT DEVELOPMENT	PROGRAM DEVELOPMENT	MARKET DEVELOPMENT	LONG-TERM MONITORING
Building Envelope	» Triple-Pane Windows	» Window Attachments		» Other Codes and Standards » Building Operator Certification Expansion » Certified Refrigeration Energy Specialist » Commissioning Buildings » Desktop Power Supplies » Drive Power - Motor Rewinds » Efficient Homes and Residential Codes
Consumer Products	» Clothes Washers	» Super-Efficient Dryers	» Retail Product Portfolio	
HVAC	» New Residential Heat Pumps	» High Performance HVAC » Condensing Rooftop Units (natural gas program)	» Ductless Heat Pumps	
Lighting			» Luminaire Level Lighting Controls	
Motor-Driven Products	» Fan Systems	» Extended Motor Products		
New Construction		» Next Step Homes (dual fuel program)	» Commercial Code Enhancement » Manufactured Homes	
Water Heating	» Efficient Gas Water Heaters (natural gas program)		» Heat Pump Water Heaters	
Enabling Infrastructure			» Distributor Platform » Retail Platform » Integrated Design Labs » BetterBricks » Top-Tier Trade Ally » Strategic Energy Mgmt	

2020 Organizational Priorities

Electric and Natural Gas

2020 OPERATIONAL PRIORITIES

An engaged and productive workforce, with deep market transformation expertise and technical and managerial skills, is vital to alliance success. In 2020, NEEA will continue to support employee growth and capability through professional development, succession planning, performance management and employee engagement activities. Ensuring a focus on diversity, equity and inclusion is a 2020 organizational development priority, as is maintaining and growing market transformation expertise among staff.

2020 STRATEGIC PRIORITIES

To ensure that the organization is both aligned to deliver on its Business Plan goals and set-up for future success, NEEA staff have identified four 2020 strategic priorities. These priorities, which cross multiple departments and will require organization-wide collaboration for success, fall under two main themes:

1. **Operationalize the Cycle 6 Business Plan to successfully deliver on Business Plan goals; and**
2. **Help the region maximize the value of its investment in the alliance.**

THEME 1: OPERATIONALIZE THE CYCLE 6 BUSINESS PLAN TO DELIVER ON CYCLE 6 GOALS

2020 STRATEGIC PRIORITIES:

1.1 – Increase portfolio diversity by advancing new programs from scanning into the portfolio and accelerating early-stage programs.

1.2 – Ensure success in the mature programs that are anticipated to deliver the majority of Cycle 6 savings, i.e. Heat Pump Water Heaters, Retail Product Portfolio and Super-Efficient Dryers.

Related goals and objectives:

» Strengthen NEEA/ manufacturer partnerships across Product Groups and fuels (electric and natural gas).

» Advance concepts/ programs for residential heat pumps, secondary windows and fans.

» Maintain viability of the Distributor Platform as an essential tool to support existing and new programs.

2020 Organizational Priorities (cont.)

- Increase sales of heat pump water heaters (regionally and nationally) to maintain manufacturer engagement and support the eventual launch of a natural gas product.
- Maximize influence on consumer products markets and support recruitment of additional national sponsors of ENERGY STAR Retail Products Portfolio (ESRPP).

THEME 2: MAXIMIZE THE VALUE OF REGIONAL INVESTMENT

2020 STRATEGIC PRIORITIES:

2.1 – Implement new advisory committee structure to support streamlined regional coordination and maximize the benefits of regional investment in energy efficiency.

2.2 – Successfully conduct extra-regional engagement needed to address program and portfolio risk while also bringing value to Northwest.

Related goals and objectives:

- Support funders to transition to new advisory committee structure; work with the Regional Portfolio Advisory Committee (RPAC) to monitor and refine the new process as necessary.
- Explore additional opportunities to streamline regional coordination.
- Identify coordination and collaboration opportunities and needs between market transformation and local programs.
- Explore where appropriate cost-sharing opportunities with extra-regional market transformation efforts that are aligned with Northwest interests; ensure that these opportunities either lower costs or bring additional value to the Northwest.
- Actively monitor developing market transformation efforts outside the Northwest and seek to align them with regional efforts where possible.

Key

H High
M Medium
L Low

Risk Management

RISK	IMPACT	CONTROLS AND MITIGATIONS	ASSOCIATED PRIORITY	DEGREE OF RISK / LIKELIHOOD
IF current lighting programs and mid-stream pilots do not provide sufficient value to keep distributors engaged...	THEN data gathering costs will increase and the region could lose valuable market insights.	Engage distributors to demonstrate value of midstream interventions. Continue to search for additional technologies and program leverage to build value for distributors.	1.1 - Portfolio diversity	L M H
IF a new residential HVAC program is not developed in 2020...	THEN alliance influence with supply chain partners, which is currently strong, may weaken.	Prioritize advancing a new residential heat pump program concept in 2020 that can leverage relationships and resources established by the Ductless Heat Pump program.	1.1 - Portfolio diversity	L M H
IF DOE rule-making schedule stalls and progress wanes on equipment efficiency standard rule-making activities...	THEN regional energy savings from equipment efficiency standards could be lost.	Redirect alliance resources to focus on state-level standards, the development of test-rating methodology and adoption of new methods that accurately measure real energy use.	1.2 - Success in mature programs	L M H
IF existing ENERGY STAR Retail Product Portfolio program sponsors cannot maintain participation or new program sponsors don't join...	THEN retailers may lose interest and leave the program.	Continue to provide technical support to program sponsors and support changes to program requirements to attract new participants.	1.2 - Success in mature programs	L M H

Key

H High
M Medium
L Low

Risk Management (cont.)

RISK	IMPACT	CONTROLS AND MITIGATION	ASSOCIATED PRIORITY	DEGREE OF RISK/ LIKELIHOOD
IF electric heat pump water heater retrofit sales remain flat year-over-year...	THEN the goal of influencing a 2023 Federal Standard for electric water heaters may be threatened; could potentially impact gas heat pump water heater market progress.	» Closely monitor retrofit sales trends and be prepared to shift incentive structure. » Increase efforts to support national sales. » Maintain strong lines of communication with key manufacturers.	**1.2 - Success in mature programs**	L M **H**
IF coordinating committee (CC) transition and implementation isn't successful...	THEN communication and relationship disconnects could threaten alliance success.	» Communicate pro-actively with funders to ensure clear roles and responsibilities. » Develop a metric and evaluate success.	**2.1 - New advisory committee structure**	L **M** H
IF the alliance can't leverage Northwest investment to amplify natural gas market transformation efforts with national funding...	THEN the region will have less influence on national markets leading to slower market progress or lost opportunities.	Continue to work extra-regionally, including supporting Midwest market transformation program establishment and identifying opportunities where North American market acceleration will benefit the Northwest.	**2.2 - Successful extra-regional engagement** **1.1 - Portfolio diversity**	L **M** H
IF extra-regional market transformation activities are misaligned with Northwest interests...	THEN national decision-makers may shift attention to other regions, Northwest needs may be deprioritized and portfolio savings may be affected.	» Monitor extra-regional market transformation efforts. » Develop partnerships as required to maintain Northwest influence.	**2.2 - Successful extra-regional engagement** **1.2 - Success in mature programs**	L **M** H

2020 Planned Activities: The following sections detail for NEEA's 2020 operations by primary strategy as defined in the 2020-2024 Business Plan.

Emerging Technology:

Electric and Natural Gas

By identifying, vetting and advancing emerging technologies, the alliance builds and maintains a pipeline of energy efficiency opportunities for the region. Key emerging technology activities identified in the 2020-2024 Business Plan are:

- Scanning for technologies;
- Translating those technologies into a product or measure that meets the region's goals; and
- Tracking regional emerging technology activities and gaps in coordination with the Regional Emerging Technology Advisory Committee (RETAC).

NEEA staff are currently investigating almost thirty emerging energy efficiency opportunities to determine their potential for the region.

2020 SCANNING PRIORITIES LIST - Appendix Page A68

2020 FOCUS AREAS AND GOALS

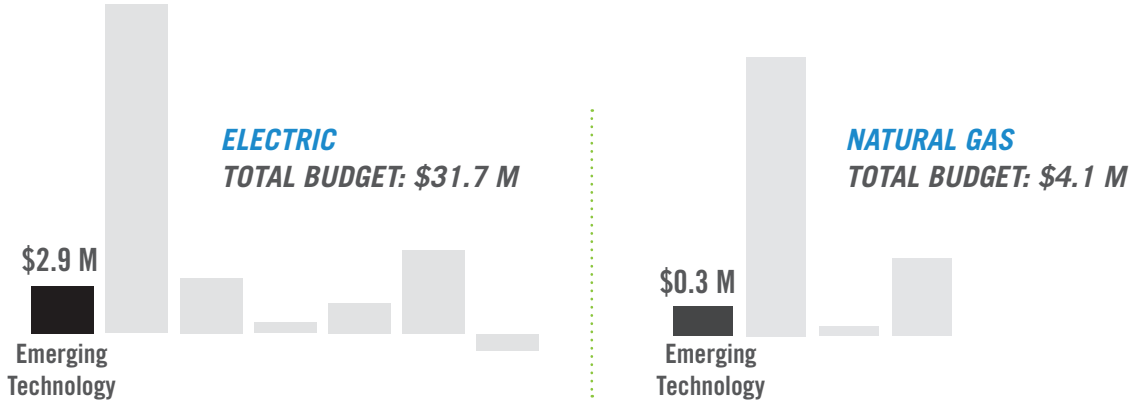
As described in the portfolio overview section, new advancements in emerging technology will create opportunities to adjust the balance in the portfolio both in terms of savings composition and risk. Whereas current portfolio savings are heavily dependent on water heating and consumer products, new opportunities in space-heating and cooling (i.e. residential HVAC, windows), and Motor-Driven Products (fans) have the potential to diversify portfolio savings. These opportunities do not have the measurability challenges associated with some of NEEA's other commercial sector programs. Efficient fans, in particular, could present a high-volume opportunity for future savings. Alliance 2020 focus areas and goals are:

NEW OPPORTUNITY SCANNING:

- Scanning for new opportunities with a focus on HVAC, water heating, motor driven systems, and controls.
- Advancing new concepts from scanning into NEEA's Market Transformation portfolio, including: new residential heat pumps, fan extended motor products, and residential triple pane windows. The new heat pump program concept will make use of the Canadian Standards Association's new variable capacity heat pump test procedure.

PRODUCT MANAGEMENT:

- Developing product application and research plans within each Product Group to identify areas of new technology potential and gaps.
- Strengthening partnerships with commercial HVAC manufacturers.
- Continuing to validate variable capacity test procedure for residential heat pumps to support a qualified product list, including a focus on cold climates. Early data shows a potential opportunity to accurately rate existing and new heat pumps for all Northwest climates so customers can confidently expect savings across all geographies.



» Completing field-test of luminaire level lighting controls to control HVAC, plug-loads and lighting.

» Launching regional field test of gas heat pumps.

REGIONAL COORDINATION:

» Maintaining and expanding regional emerging technology pipeline database with RETAC.

» Coordinating alliance product research with regional pipeline goals.

CRITICAL SUCCESS FACTORS

- Continued regional investment in emerging technology measure development and maintenance.
- Continued engagement with manufacturers to ensure product availability.
- New relationship development with commercial and residential HVAC manufacturers to address current gap.

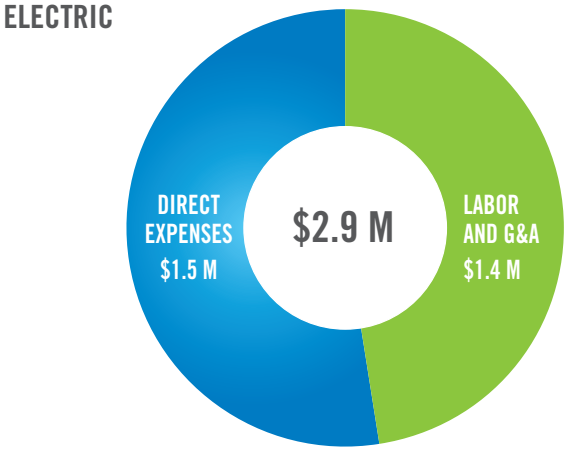
SUCCESS METRICS

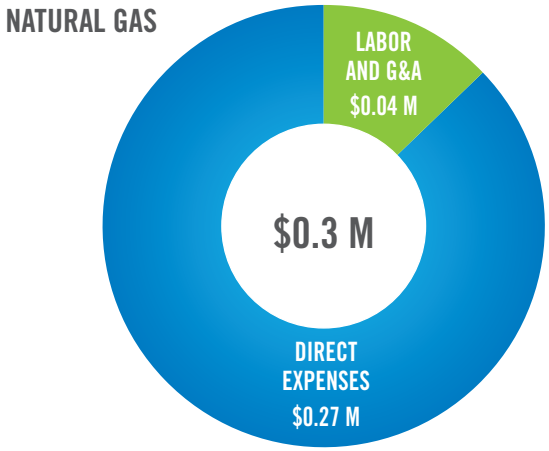
PORTFOLIO ADVANCEMENT: Total energy efficiency market potential of emerging technologies advanced into the alliance's market transformation portfolio over the five-year business cycle.

MARKET ADVANCEMENT: Total energy efficiency market potential of emerging technologies readied for market development over the five-year business cycle.

2020 EMERGING TECHNOLOGY BUDGET BY EXPENSE CATEGORY:

ELECTRIC AND NATURAL GAS





Effective Portfolio Execution

Electric and Natural Gas

OVERVIEW

Portfolio Execution is defined in the Business Plan as 'developing and implementing market transformation initiatives.' This primary strategy comprises the largest portion of NEEA's annual budget for both electric and natural gas. Activities include strategy development at the product-group and program level, and all facets of program management and measurement including market research and evaluation. A high-level overview of goals and focus areas within this primary strategy is presented on the following pages. Detailed program activities can be found in the Appendix.

2020 PROGRAM DETAIL - Appendix Pages A5-A67

2020 MARKETING CALENDAR - Appendix Page A73

In 2020, NEEA's portfolio will be managed in seven dual-fuel Product Groups. Each one includes multiple programs and emerging technologies that share supply chain opportunities. Across Product Groups, there are also shared characteristics and leverage points, which lend themselves to being managed together:

Products: These opportunities tend to be mass market consumer products, sold through retail and distributor channels in high volumes. They include Consumer Products, Motor-Driven Products and Water Heating Product Groups.

Integrated Systems: These opportunities tend to be complex products requiring advanced design and technical services for sales and delivery in the market. They are grouped together to address intersecting technology and market opportunities, such as integrated lighting-HVAC controls and whole building approaches and include Building Envelope, HVAC, and Lighting Product Groups.

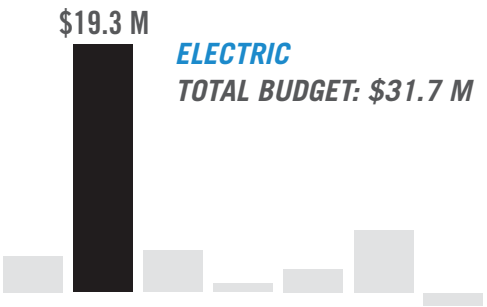
New Construction: New Construction programs focus on maximizing energy efficiency opportunities for new residential and commercial buildings through code requirements and enabling code advancement through identification and market adoption of energy-efficient products and practices.

2020 Effective Portfolio Execution focus areas align with NEEA's organizational priorities:

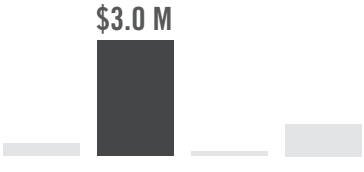
- **Operationalizing dual-fuel Product Group strategies;**
- **Increasing portfolio diversity and accelerating early stage programs; and**
- **Ensuring the success of mature programs to deliver market change and resulting Cycle 6 savings.**

2020 ELECTRIC FOCUS AREAS AND GOALS:

FURTHER DEVELOP, REFINE AND OPERATIONALIZE PRODUCT GROUP STRATEGIES:



ELECTRIC
TOTAL BUDGET: $31.7 M



NATURAL GAS
TOTAL BUDGET: $4.1 M

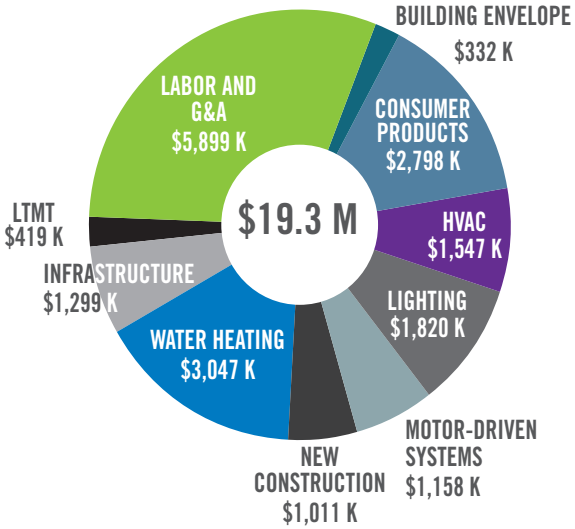
- Developing market transformation strategies for each Product Group, and identifying points of intersection and leverage among them.
- Developing market channel strategies for Building Professionals & Trades, Retail and Consumer channels.

INCREASE PORTFOLIO DIVERSITY BY DEVELOPING NEW PROGRAMS OR ACCELERATING EARLY-STAGE PROGRAMS:

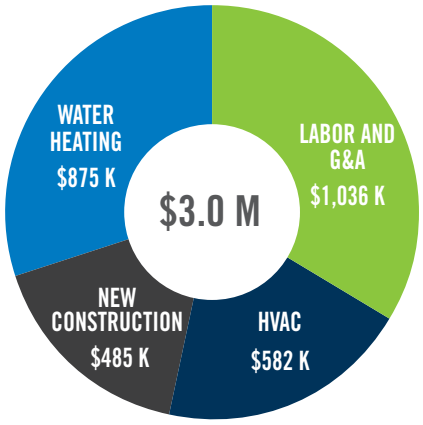
- Advancing programs/ concepts for residential heat pumps, secondary windows and fans.
- Accelerating luminaire level lighting controls (LLLC) adoption through increased supply chain engagement and promotion in the region.
- Maintaining viability of the Distributor Platform to continue distributor relationships and access to full category lighting sales data.
- Leveraging alliance programs and resources to support state-level deep energy savings policy and program goals.
- Leveraging the launch of the Attachments Energy Rating Council commercial products certification program to increase market awareness and demand for secondary window products.
- Building supply chain for VHE DOAS and expanding availability of efficient HRV products.
- Shifting Next Step Homes program focus

(Continued on page 18)

2020 EFFECTIVE PORTFOLIO EXECUTION BUDGET BY PRODUCT GROUP: ELECTRIC[1]



2020 EFFECTIVE PORTFOLIO EXECUTION BUDGET BY PRODUCT GROUP: NATURAL GAS[1]



1 - Portfolio Execution budget includes market research and evaluation expenses ($2.5 million), for both electric and natural gas programs, to reflect the full cost of market transformation.

Effective Portfolio Execution (cont.)

to emerging technologies and best-practice demonstrations to prepare the market and recommend future code changes.

ENSURE SUCCESS OF MATURE PROGRAMS:

- Increasing sales of heat pump water heaters, regionally and nationally, to maintain manufacturer engagement and support.
- Maximizing Retail Product Portfolio success by implementing product-specific intervention strategies that align with sales, specification or product development cycles.
- Facilitating/ supporting recruitment of additional national sponsors of ENERGY STAR Retail Product Portfolio program.

CRITICAL SUCCESS FACTORS

	Completion of commodity LED midstream pilots to inform future lighting strategy.
	Successful acceleration of HPWH market adoption beyond Northwest new construction markets.
	Continued access to manufacturer heat pump water heater sales data.

2020 NATURAL GAS FOCUS AREAS AND GOALS:

Natural Gas 2020 focus areas build upon foundational work started in 2019:

- Support dual-fuel Product Group strategies;
- Deliver successful savings reporting; and
- Support national alignment.

This work will support a well-rounded, successful portfolio of programs that meets the region's needs for market transformation impact, near-term savings, and managed market risk.

ENCOURAGE AND SUPPORT DUAL-FUEL STRATEGIES:

- Developing dual-fuel Product Group strategies that: support the identification of both short- and long-term natural gas opportunities; and enable staff to efficiently drive both electric and natural gas strategic goals when interacting with the market.

CONDUCT NATURAL GAS SAVINGS REPORTING:

- Finalizing models and reporting savings for Next Step Homes and Condensing Rooftop Unit programs.
- Establishing an agreed-upon framework with funders for future savings reporting and evaluations (e.g. advisory committee structure is in place and key metrics and methodologies are agreed upon).

Effective Portfolio Execution (cont.)

DRIVE NORTHWEST STRATEGIC PRIORITIES BY ENGAGING EXTRA-REGIONALLY:

- » Participating in North American Gas Heat Pump Water Heater Field Demonstration.
- » Participating in the development of a North American Gas Heat Pump Collaborative, which will enable coordination and efficient co-funding opportunities to accelerate gas heat pump market adoption.
- » Supporting Midwest market transformation programs and co-funding projects that further Northwest gas portfolio programs.

CRITICAL SUCCESS FACTORS



- Relationships with utilities across North America.
- Relationship with GTI (Gas Technology Institute) and the Energy Solutions Center.



- Continued funder support for extra-regional collaboration.
- Funder collaboration on savings reporting.

PORTFOLIO EXECUTION: BUSINESS PLAN SUCCESS METRICS (SEE APPENDIX A3)

ENERGY SAVINGS (ELECTRIC AND NATURAL GAS): Five- (2020-2024) and 10-year (2020-2029) Total Regional Savings[1] (electric and natural gas) and Co-Created Savings[2] (electric only).

LONG-TERM MARKET AVAILABILITY (ELECTRIC AND NATURAL GAS): Total energy savings potential that the alliance has enabled in the region based on the 20-year forecast energy savings estimate of all programs in the Market Development and Long-term Monitoring and Tracking phase of NEEA's Initiative Lifecycle process.

PEAK SAVINGS (ELECTRIC ONLY): Annual achieved and 5-year estimated regional peak savings forecast as a result of the Co-Created savings.

BENEFIT-COST RATIO (ELECTRIC AND NATURAL GAS): A portfolio benefit-cost ratio, reflecting the 20-year value of the regional investment in market transformation efforts.

AVOIDED CARBON EMISSIONS (ELECTRIC AND NATURAL GAS): Annual achieved and 5-year estimated regional avoided carbon emissions as a result of the Co-Created savings forecast.

BENEFIT-COST RATIO (ELECTRIC AND NATURAL GAS): The portfolio benefit-cost ratio reflects the 20-year value of the regional investment in market transformation efforts.

1 - Total Regional Savings: All savings calculated above the pre-intervention market starting point.

2 - Co-Created Savings: Savings above the naturally occurring market baseline established at the start of a program, including utility program savings and the calculated remainder called Net Market Effects.

Product Groups Overview

BUILDING ENVELOPE PRODUCT GROUP

STRATEGIC PRIORITIES	1. Increase availability of certified and labeled window attachment products 2. Drive awareness and sales of high-performing, energy-efficient window attachment products within the commercial sector, initially focusing on secondary-glazing systems and Low-E storm windows 3. Investigate market transformation opportunities for other window attachment products, such as films and shades
2020 FOCUS AREAS	» Building market for Attachments Energy Rating Council (AERC) certified commercial secondary glazing products via manufacturer engagement and Northwest field studies » Raising awareness of secondary windows among targeted, early adopters in the commercial building industry » Assessing product viability of additional primary and secondary glazing products entering the market (e.g., triple pane windows, films, shading devices)
KEY ENABLERS OF SUCCESS	» Supporting AERC as the market mechanism for secondary window product differentiation » Partnering with utilities and energy efficiency organizations to build scale for energy-efficient products to engage manufacturers » Leveraging city- and state-level policies and voluntary programs (e.g., City of Seattle Climate Action policy and Washington House Bill 1257) that target deep retrofits of existing buildings to achieve energy efficiency goals

CURRENT PROGRAMS	2019 FORECAST ($)	2020 BUDGET ($)	CO-CREATED SAVINGS POTENTIAL (2020-2029)
Building Envelope Strategy (Electric)	20,000	0	N/A
Window Attachments (Electric)	363,000	332,000	TBD
TOTAL PRODUCT GROUP	383,000	332,000	TBD

Product Groups Overview (cont.)

CONSUMER PRODUCTS PRODUCT GROUP

STRATEGIC PRIORITIES	1. Improve U.S. Department of Energy (DOE) or Environmental Protection Agency (EPA) test protocols so they accurately reflect real-world conditions and energy savings 2. Influence ENERGY STAR specifications or Federal Standard updates 3. Add additional products, retailers and program sponsors to the retail platform as needed to accelerate market transformation of consumer products
2020 FOCUS AREAS	» Developing strategy for incorporating online sales » Developing technology roadmaps for priority products » Engaging extra-regionally: • Facilitating/ supporting recruitment of additional national sponsors of ENERGY STAR Retail Products Portfolio program (ESRPP) • Developing strategic partnerships to increase adoption of key technologies (e.g. heat pump dryers, top-load washers) outside the Northwest • Strengthening alliance/ manufacturer partnerships across products/ fuels for appliances and electronics
KEY ENABLERS OF SUCCESS	» Building engagement among ESRPP program sponsors for participation in EPA and DOE standards, specifications and test procedure activities » Integrating online sales data into the Retail Platform for a more complete regional data set/ market view » Partnering with energy efficiency organizations and willing manufacturers to improve test procedures and to participate in specification and standards processes

CURRENT PROGRAMS	2019 FORECAST ($)	2020 BUDGET ($)	CO-CREATED SAVINGS POTENTIAL (2020-2029)
Consumer Products Strategy (Electric)	92,000	65,000	N/A
Retail Product Portfolio (Electric)	2,382,000	2,332,000	49-58 aMW
Super-Efficient Dryers (Electric)	369,000	251,000	14-17 aMW
Super-Efficient Dryers (Gas)	50	0	N/A
New Initiatives (Electric)	0	150,000	TBD
TOTAL PRODUCT GROUP (GAS & ELECTRIC)	2,893,000	2,798,000	63-75 aMW

Product Groups Overview (cont.)

HVAC PRODUCT GROUP

STRATEGIC PRIORITIES	1. Transform the market for residential (primarily) variable capacity heat pumps, very high efficiency dedicated outside air systems (VHE DOAS) and high efficiency rooftop units (RTUs) 2. Increase skills of Northwest specifiers and installers in identifying, designing, sizing and configuring the most efficient HVAC system for residential and commercial applications 3. Influence the voluntary market to enable VHE DOAS to be required in International Energy Conservation Code, ID, MT, OR and WA commercial building code 4. Influence a federal requirement of at least 90 percent efficiency for commercial warm air furnaces
2020 FOCUS AREAS	» Developing a long-term HVAC strategy, including a new residential program that leverages the research, test procedure and market relationships established by the Ductless Heat Pump (DHP) program » Reducing most market development activities for the existing DHP program, while ensuring: • No immediate signs of market backsliding – overall and in target markets • Completion of additional research on cost and cold climate barriers recommended by the latest Market Research and Evaluation report, and incorporation of findings into next phase of residential HVAC strategy • Collaboration with the region to support utilities to address cost effectiveness barriers that pose a risk to their continued role in driving market adoption » Supporting additional testing and advancement of the Canadian Standards Association's new variable capacity heat pump test procedure to support the development of a qualified heat pump product list, including a focus on cold climate heat pumps » Increasing distributor participation in HVAC sales data collection to inform savings tracking, future market interventions and regional market intelligence » Influencing manufacturers to increase availability of cost-effective, efficient HRV product lines and packaged RTU products » Identifying opportunities to influence codes, standards and labeling programs across high efficiency HVAC products

(Continued on page 23)

Product Groups Overview (cont.)

HVAC PRODUCT GROUP (CONT.)

KEY ENABLERS OF SUCCESS

- Collaborating with Northwest and national partners on residential applications of variable capacity heat pumps to influence adoption of new rating system and/ or improve codes, standards, Energy Star specifications, etc.
- Collecting sales and rebate data to inform heat pump market progress tracking, code and standard development, and future HVAC market interventions
- Leveraging BetterBricks platform for small and medium commercial program development collateral and market partner resources

CURRENT PROGRAMS	2019 FORECAST ($)	2020 BUDGET ($)	CO-CREATED SAVINGS POTENTIAL (2020-2029)
HVAC Strategy (Electric)	0	201,000	N/A
HVAC Strategy (Natural Gas)	0	97,000	N/A
Ductless Heat Pumps (Electric)	1,071,000	611,000	60-73 aMW
High Performance HVAC (Electric)	535,000	660,000	2.5-14 aMW
Condensing Rooftop Units (Natural Gas)	461,000	485,000	TBD
TOTAL PRODUCT GROUP (GAS & ELECTRIC)	2,067,000	2,054,000	63-87 aMW

Product Groups Overview (cont.)

LIGHTING PRODUCT GROUP

STRATEGIC PRIORITIES	1. Transform the market so that controls are a standard fixture feature 2. Identify market transformation opportunities for advanced lighting control systems in space types not well suited for luminaire level lighting controls (LLLC) 3. Identify efficiency opportunities for control systems that encompass lighting plus other building systems 4. Identify market transformation opportunities to drive the market toward higher efficacy light sources
2020 FOCUS AREAS	» Increasing supply chain engagement and promotion of LLLCs in the region » Increasing awareness of key influencers and decision makers on the benefits of LLLC technology » Increasing lighting trade ally skills via NXT Level Training and Lighting Design Lab collaboration to deliver higher quality lighting projects, including greater adoption of lighting controls » Informing future lighting program strategy with results from commodity LED midstream pilots and full category market sales data collected through the Distributor Platform » Researching and monitoring market development on the intersection between lighting, plug load and HVAC controls
KEY ENABLERS OF SUCCESS	» Engaging with Design Lights Consortium and national labs on product qualifications and driving long-term improvements in efficacy » Partnering with utility and energy efficiency organizations to leverage program strategies that provide greater scale and business value to manufacturers » Leveraging code development to drive Lighting Power Density (LPD) requirements down and adoption of lighting controls up » Growing trade ally skills to support the transition to connected lighting

CURRENT PROGRAMS	2019 FORECAST ($)	2020 BUDGET ($)	CO-CREATED SAVINGS POTENTIAL (2020-2029)
Lighting Strategy	4,000	512,000	N/A
Luminaire Level Lighting Controls (Electric)	943,000	1,308,000	12-13 aMW
TOTAL PRODUCT GROUP	947,000	1,820,000	12-13 aMW

Product Groups Overview (Cont.)

MOTOR-DRIVEN SYSTEMS PRODUCT GROUP

STRATEGIC PRIORITIES	1. Increase awareness, stocking and sales of efficient motor-driven products, initially focusing on pumps 2. Create market transformation opportunities for other motor-driven products, such as fans, compressed air systems, and high-performance motors 3. Support procurement practices and standards to drive adoption of more efficient motor-driven products with integrated controls 4. Eliminate inefficient products by influencing future U.S. Department of Energy rule-makings on pumps, fans, compressed air and motors
2020 FOCUS AREAS	» Engaging with Northwest pump distributors to test and refine market interventions for efficient pumps and circulators 50 horsepower and below » Identifying the most promising ways to deepen market engagement with smart pump distributors and distributors of other motor-driven systems
KEY ENABLERS OF SUCCESS	» Engaging with Hydraulic Institute (Pump Industry Trade Association) to partner on Energy Rating Label awareness building campaign » Aligning and coordinating with CEE (Consortium for Energy Efficiency) on pump program strategies » Identifying and supporting fan technology opportunities, including planning measure development and an industry-led fan labeling program

CURRENT PROGRAMS	2019 FORECAST ($)	2020 BUDGET ($)	CO-CREATED SAVINGS POTENTIAL (2020-2029)
Extended Motor Products (Electric)	826,000	1,158,000	TBD
TOTAL PRODUCT GROUP	826,000	1,158,000	TBD

Product Groups Overview (cont.)

NEW CONSTRUCTION PRODUCT GROUP

STRATEGIC PRIORITIES	1. Identify advanced technologies and building practices that can be adopted in future code cycles 2. Support utilities developing new construction incentives that align with future code requirements 3. Demonstrate whole building system efficiency concepts for future code adoption 4. Increase awareness of emerging technologies and advanced building practices
2020 FOCUS AREAS	» Helping the region prepare for future code cycles » Using residential new construction data collected through Next Step Homes program to inform code processes » Influencing code advancement, including increasing builder/ rater training, especially on measures that could lead to a code change (e.g. advanced walls) » Increasing awareness and consumer demand for the NEEM+ specification for manufactured homes
KEY ENABLERS OF SUCCESS	» Leveraging state policies and legislative mandates that include energy reduction goals » Supporting next version of the International Energy and Conservation Code (IECC) and ASHRAE 90.1 (Energy Standard for Buildings) » Leveraging utility program design (focusing on whole-building performance and system efficiency) from around the country to inform Northwest efforts

CURRENT PROGRAMS	2019 FORECAST ($)	2020 BUDGET ($)	SAVINGS POTENTIAL (2020-2029)	
			Co-Created (Avg. Megawatts)	Total Regional (Million Therms)
New Construction Strategy (Electric)	51,000	0	N/A	N/A
Commercial Code Enhancement (Electric)	512,000	345,000	TBD	N/A
Manufactured Homes (Electric)	510,000	230,000	2.5-4 aMW	N/A
Next Step Homes (Electric)	975,000	436,000	39.6 aMW	N/A
Next Step Homes (Natural Gas)	400,000	485,000	N/A	60.2 MMTh
TOTAL PRODUCT GROUP (GAS & ELECTRIC)	2,448,000	1,496,000	42-44 aMW	60.2 MMTh

Product Groups Overview (cont.)

WATER HEATING PRODUCT GROUP

STRATEGIC PRIORITIES	1. Support the adoption and integration of the Consumer Technology Association (CTA) communication protocol, CTA 2045, as standard practice across all heat pump water heaters (HPWH) supplied to the Northwest 2. Influence a Federal Standard requiring all electric water heaters be heat pump water heaters 3. Transform the residential gas water heating market ultimately making gas heat pump water heaters (GHPWH) the standard in gas water heating appliances
2020 FOCUS AREAS	» Increasing regional and national HPWH adoption, with a focus on the existing homes replacement market, to support Federal Standard passage: • Support HPWH programs in other key geographic areas (extra-regional) • Remove installation/ usage barriers • Drive Northwest installer adoption of HPWHs through targeted key account strategy • Increase supply chain support by implementing pilots designed to drive adoption » Supporting and preparing for GHPWH product launch: • Participate in North American field demonstration of a pre-production GHPWH unit (extra-regional) • Develop an upstream barrier reduction strategy » Identifying and supporting additional GHPWH technologies that can deliver UEF >1, have a Technical Readiness Level of 3 or higher, and have a path to cost-effectiveness
KEY ENABLERS OF SUCCESS	» Continuing to secure access to water heater sales data from manufacturers » Leveraging electric HPWH success to drive manufacturer interest in GHPWH development » Engaging extra-regionally: • Collaborating with national partners to drive HPWH adoption outside the Northwest and maintain manufacturer interest in product development • Collaborating with national partners to drive development and launch of a GHPWH product

CURRENT PROGRAMS	2019 FORECAST ($)	2020 BUDGET ($)	CO-CREATED SAVINGS POTENTIAL (2020-2029)
Heat Pump Water Heaters (Electric)	2,968,000	3,047,000	61-73 aMW
Efficient Gas Water Heaters (Natural Gas)	1,010,000	875,000	TBD
TOTAL PRODUCT GROUP (GAS & ELECTRIC)	3,978,000	3,922,000	61-73 aMW

Codes and Standards

Electric and Natural Gas

NEEA's Codes and Standards team works to influence the development and implementation of building codes, equipment standards and test methods to materially improve efficiency outcomes for the region.

2020 FOCUS AREAS AND GOALS

STATE AND LOCAL CODE DEVELOPMENT:

- Identify new technologies and best practices from NEEA's New Construction programs (i.e., Next Step Homes and Commercial Code Enhancement) and develop new code proposals based on market-proven practices and technologies.
- Support development of the Oregon State Residential Code.
- Support development of the ASHRAE Standard 90.1 (Energy Standard for Buildings).
- Continue to provide technical support for stretch code development in Washington State or other states and localities where support is desired.

CODE TRAINING & TECHNICAL SUPPORT:

- Provide technical support, education and training related to energy codes in all four Northwest states.
- Leverage learnings from NEEA's New Construction programs (Next Step Homes and Commercial Code Enhancement) to influence and improve NEEA's code training offerings.
- Update NEEA's Washington commercial code online compliance portal.

NEW TEST METHODS:

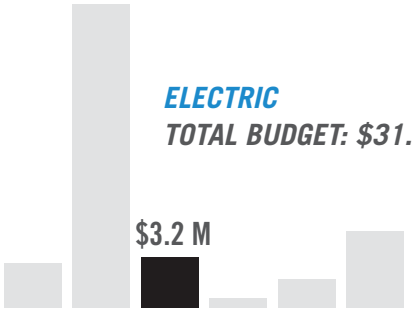
- Develop a load-based test rating method for Rooftop Units.
- Conduct repeatability testing of heat pumps using a new load-based testing rating standard.

FEDERAL RULE-MAKING:

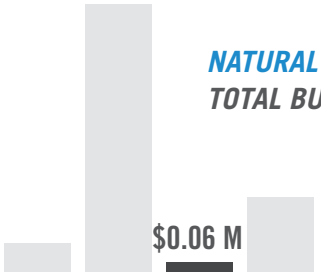
- Participate in the federal rule-making processes for: 1) Variable Refrigerant Flow (VRF) air conditioners and heat pumps; and 2) clothes dryers and clothes washers.

SUPPORT FOR FLEXIBLE DEMAND TECHNOLOGY:

- Explore demand response opportunities for the Washington 2021 code and/ or ASHRAE Standard 90.1 (Energy Standard for Buildings).



ELECTRIC
TOTAL BUDGET: $31.7 M



NATURAL GAS
TOTAL BUDGET: $4.1 M

2020 CRITICAL SUCCESS FACTORS

- Staff successfully engage with the Oregon code adoption process.
- Building design professionals embrace the Washington code online compliance portal.
- DOE meets statutory rule-making schedules to advance equipment efficiency standards.

SUCCESS METRICS

COUNT OF NEW CODE PROPOSALS adopted each year which reduce regional energy intensity.

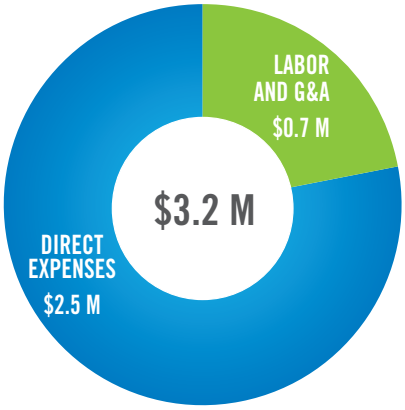
COUNT OF NEW PRODUCT STANDARDS adopted each year which reduce regional energy intensity.

TOTAL REGIONAL SAVINGS (aMW) forecast over 20 years from new test procedures, codes and standards.

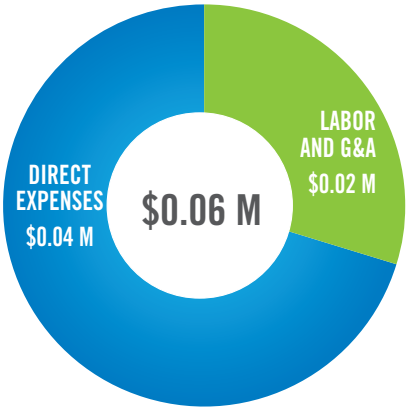
2020 CODES & STANDARDS BUDGET BY EXPENSE CATEGORY

ELECTRIC AND NATURAL GAS

ELECTRIC



NATURAL GAS



Market Intelligence

Electric and Natural Gas

NEEA's Market Intelligence activities are conducted by the Market Research and Evaluation, Market Analytics and Energy-Use Studies teams, which together comprise NEEA's Research, Analytics and Evaluation Division. This Division is new in this Business Cycle and was created to better align the organization to deliver on Cycle 6 goals.

Market Research and Evaluation (MRE) – Provides actionable information for market transformation efforts and formal evaluations of alliance programs in market development.

2020 MRE CALENDAR - Appendix Page A71

Market Analytics – Provides cost-benefit analyses, energy savings forecasting and reporting, value metrics reporting, market analysis and development, and maintenance of a centralized sales data hub.

Energy-Use Studies – Develops and manages large regional studies and associated data sets, such as building stock assessments and the Northwest End Use Load Research project.

2020 FOCUS AREAS AND GOALS

MARKET RESEARCH AND EVALUATION:

» Continue to improve the quality, relevance and timeliness of research to inform program strategy.

» Streamline and coordinate research by Product Group to deliver findings more cost-effectively.

» Deliver more than 25 market research or Market Progress and Evaluation reports to support both electric and natural gas programs (see Appendix page A71).

» Refine vendor Request for Qualifications (RFQ) process to broaden the number of market research and evaluation firms engaged in alliance work.

MARKET ANALYTICS:

» Maximize the value of the data that the alliance gathers for the region, by:

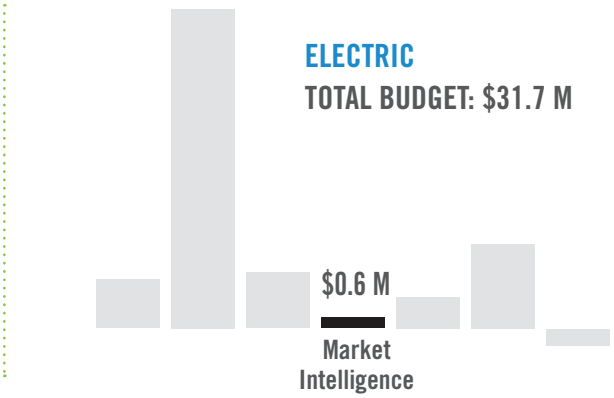
- Continuing to bring data and analytic capabilities in-house;
- Creating Data Needs Assessments and Gap Plans for each alliance program; and
- Developing a data centralization tool and best practice guidelines.

» Continue to provide natural gas and electric funders with analytical expertise, forecasting and reporting of energy savings.

ENERGY-USE STUDIES:

» Continue End Use Load Research project by:

- Aligning methodologies for load shape calculations, definitions and data formats;
- Delivering database and monthly updates;
- Completing 150 installations for Home Energy Metering Study (HEMS) and 25 installations for Commercial Energy Metering Study (CEMS).



- Secure Multi-Family Stock Assessment Funding and start competitive solicitation process.
- Publish final Commercial Building Stock Assessment database and report.
- Develop a comprehensive plan for large regional building studies to deliver better results cost-effectively for the region.

CRITICAL SUCCESS FACTORS

Attracting qualified third-party vendors to respond to Request for Proposals to ensure high-quality research deliverables.

Regional engagement to support the development of a comprehensive plan for regional building studies.

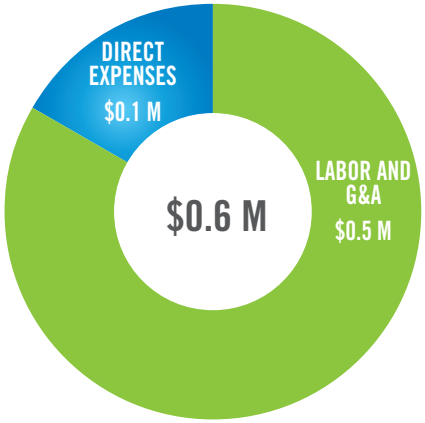
SUCCESS METRICS

ACTIONABLE INFORMATION for program planning and validated evaluation of assumptions for best accuracy of energy savings and other value reporting.

CUSTOMER SERVICE: Regional needs for energy savings forecasting, reporting and other data or market intelligence are met in a timely, accurate manner.

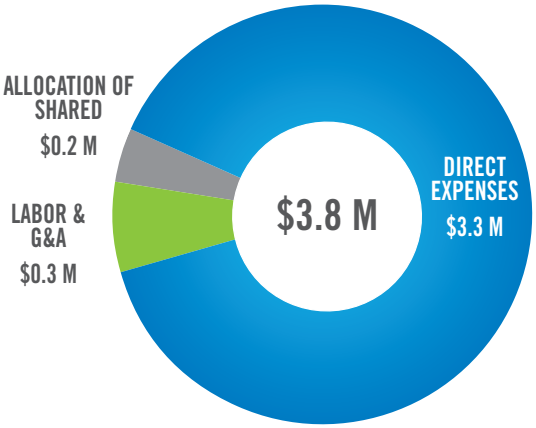
ACTIONABLE DATA: Increased and/ or comprehensive access to data, data infrastructure and analytics.

2020 MARKET INTELLIGENCE BUDGET[1] BY EXPENSE CATEGORY: ELECTRIC ONLY



1 - 2020 Market Research and Evaluation expenses ($2.5 million), for both electric and natural gas programs, are budgeted under the Portfolio Execution strategy to reflect the full cost of market transformation.

2020 END USE LOAD RESEARCH BUDGET



Convene and Collaborate

Electric and Natural Gas

Alliance Convene and Collaborate activities are overseen by the Stakeholder Relations and Corporate Strategy and Communications functions at NEEA.

Stakeholder Relations - The role of Stakeholder Relations is to help NEEA staff maintain high-functioning two-way engagement with its stakeholders to ensure effective collaboration and satisfaction with alliance activities. Stakeholder Relations facilitates NEEA's advisory committees and acts as key account managers to its funders and key stakeholders.

Corporate Strategy and Communications - Corporate Strategy and Communications is responsible for leading a planning and communications function at NEEA that plays a central role facilitating discussions and leading initiatives to define strategic objectives, build organizational alignment, drive corporate performance and manage external communications and events that support the organization's long-term business goals.

2020 FOCUS AREAS AND GOALS:

BOARD AND COMMITTEE FACILITATION:

» Ensure a smooth transition to the new streamlined advisory committee structure, including development of targets and measuring effectiveness (organizational priority project 2.1).

» Ensure successful Board of Directors and Board Committee facilitation.

FUNDER ACCOUNT MANAGEMENT:

» Engage individually with advisory committee members to understand individual and organizational priorities and ensure they are aware of, and satisfied with, opportunities to collaborate with NEEA staff.

CORPORATE STRATEGY (NEW FUNCTIONAL ROLE, ADDED SUBSEQUENT TO BUSINESS PLAN PUBLICATION):

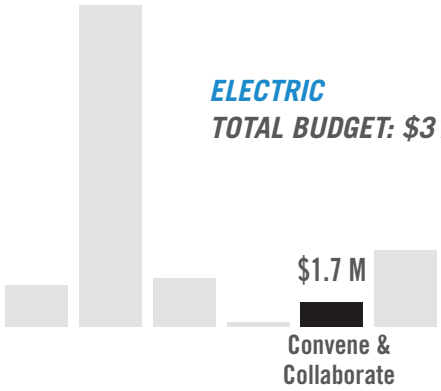
» Ensure organization has systems and processes in place to support successful delivery of Cycle 6 Business Plan.

» Support Northwest alignment of extra-regional opportunities that advance alliance programs and business plan goals, bringing value to the Northwest.

» Support organization to operationalize Cycle 6 business plan through annual operations planning, organizational priority identification and staff engagement.

EXTERNAL COMMUNICATIONS:

» Bring external results reporting into alignment with Cycle 6 funding agreements and 2020-2024 Business and Strategic Plans.



» Develop and maintain channels and materials to support convening, collaborating and communicating with funders and stakeholders.

EFFICIENCY EXCHANGE CONFERENCE:

» Transition Efficiency Exchange to self-funding model for 2020-2024 conferences.

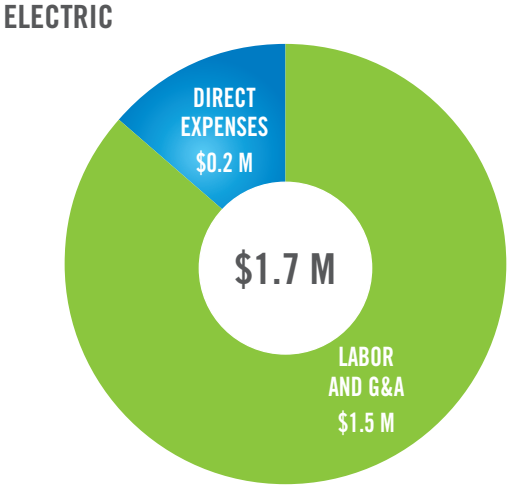
CRITICAL SUCCESS FACTORS

- Clear lines of communication with RPAC to facilitate creation and staffing of new Coordinating Committees
- Attendance at Efficiency Exchange conference sufficient to support self-funding model

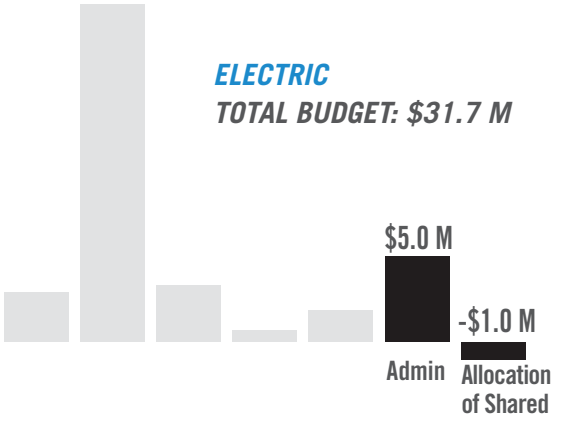
SUCCESS METRIC

POSITIVE STAKEHOLDER AND FUNDER SATISFACTION with NEEA and staff overall, as measured by annual funder satisfaction survey.

2020 CONVENE & COLLABORATE BUDGET BY EXPENSE CATEGORY: ELECTRIC ONLY[1]



1 - All Convene and Collaborate costs are incurred within the electric budget and reimbursed by Natural Gas, End Use Load Research and Special Projects for their allocations.



Administration

Electric and Natural Gas

Administration includes NEEA's Executive Office, Business Administration, Human Resources and IT functions.

2020 FOCUS AREAS AND GOALS:

IMPROVE SYSTEMS AND PROCESSES:

- Implement NIST cybersecurity framework, or other selected security framework, and audit.
- Close out Cycle 5, including funder reconciliations, while supporting transition to Cycle 6.
- Review existing contact management system (NCS) and propose options for improved business results.

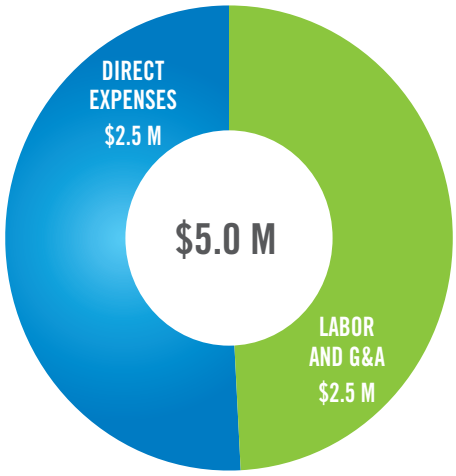
OPTIMIZE RESOURCE ALLOCATION:

- Leverage resource planning and reporting tools to ensure resources are optimally allocated.

FOCUS ON LEADERSHIP DEVELOPMENT, DIVERSITY, EQUITY AND INCLUSION (DEI) AND SPACE PLANNING:

- Execute leadership development curriculum focusing on core competencies and leadership growth.
- Provide DEI training for staff; define DEI baseline and metrics; continuously improve reach and equity of hiring, retention and employee engagement practices.
- Prepare for building lease expiration in early 2021.

ELECTRIC[1]



1 - NEEA's 2020 Administrative costs are $5 million budgeted within Electric. In 2020, approximately $1.0 million of those costs will be reimbursed by Natural Gas ($800K), End Use Load Research ($200K) and Special Projects ($79K), resulting in a net cost to Electric of $4.0 million.

Governance

Advisory Committee Structure and Leadership Team

ADVISORY COMMITTEES

To maximize the region's investment in the alliance, NEEA facilitates a robust regional collaboration process to ensure Northwest input is considered in program planning and decision-making. This coordination happens at many levels throughout each respective organization.

In 2019, after a year-long process, a task-force comprised of NEEA staff and Regional Portfolio Advisory Committee (RPAC) Members recommended an evolution to NEEA's existing electric program advisory committee structure. Specifically, the task force proposed that existing electric sector advisory committees - one each for commercial, residential and industrial programs - be replaced with two Coordinating Committees based on portfolio needs. Coordinating Committees will collaborate with NEEA staff and report outcomes to RPAC. The task force also recommended that workgroups be organized on an as-needed basis and for a limited term. This proposed structure achieves the following goals:

- Improves efficiency resulting in the $50k/year reduction to NEEA's Convene and Collaborate function, as requested by the Board for the 2020-2024 Business Cycle.
- Improves effectiveness through clarified roles, responsibilities and reporting structure, and reduced redundancy between the various advisory forums.
- Evolves the sector-based advisory structure to align with NEEA's Product Group structure in the 2020-2024 Business Plan.

NEEA's Board has asked staff to track and measure the effectiveness of the new advisory committee structure. NEEA staff committed to developing a metric and reporting performance to RPAC and the Board by the end of 2020. While this initial effort focused on electric sector advisory committees, the alliance will look at remaining advisory committees to see if there are additional opportunities to streamline, integrate or better clarify roles between committees.

(Note: NEEA's Board reviewed the proposed changes to the advisory committee structure during its September 2019 Board meeting and will vote on the changes during its December 2019 meeting.)

PROPOSED ADVISORY COMMITTEE ROLES & RESPONSIBILITIES

REGIONAL PORTFOLIO ADVISORY COMMITTEE (RPAC)

- Advise NEEA's Executive Director on portfolio performance and program advancement; "challenge flag" process; RPAC+ downstream marketing elections.
- Monitor developments from other advisory committees with regard to regional coordination, market progress and emerging technology.

Governance

Advisory Committee Structure and Leadership Team

COORDINATING COMMITTEES (CC)

» Collaborate with NEEA Staff and RPAC on coordination and optimization of NEEA programs and related activities, to identify and manage through potential implementation challenges between NEEA and local utility activities, and seize opportunities for amplified market influence.

COST EFFECTIVENESS AND EVALUATION ADVISORY COMMITTEE (CEAC)

» Advise NEEA's Executive Director on methods, data sources and inputs for use in NEEA's cost-benefit analysis and energy savings reporting.

» Advise NEEA's Executive Director on market research and evaluation methodologies.

REGIONAL EMERGING TECHNOLOGY ADVISORY COMMITTEE (RETAC)

» Advise NEEA's Executive Director on NEEA's work toward achieving strategic pipeline goals.

» Track and coordinate the progression of energy-efficient technologies to improve technology readiness and market adoption in the Northwest.

NATURAL GAS ADVISORY COMMITTEE (NGAC)

» Provide NEEA with broad-based advice, experience and guidance.

» Work to reach consensus on the prioritization and advancement of natural gas programs to help steer NEEA's work toward achievement of the organization's strategic goals, priorities and objectives.

WORKGROUPS

» Formed by RPAC on an as-needed basis and staffed with as-needed expertise, for a limited term and specific purpose that is distinct from that of RPAC, the Coordinating Committees, and other advisory committees or workgroups.

NEEA LEADERSHIP

EXECUTIVE DIRECTOR:

» Susan E. Stratton

NEEA LEADERSHIP TEAM:

» Kyle Burchard, Director, Business Administration

» Julia Harper, Director, Market Development and Transformation

» Jeff Harris, Chief Market Transformation Officer

» Susan Hermenet, Director, Research, Evaluation and Analytics

» Becca Yates, Director, Stakeholder Engagement, Strategy and Communications

2020 Draft Operations Plan Budget

Values have been rounded to the nearest thousand, which may have resulted in rounding discrepancies.

TABLE 1 - 2020 OPERATIONS PLAN BUDGET (YEAR 1) AS A PERCENTAGE OF 5-YEAR BUSINESS PLAN BUDGET

By Primary Strategy ($ Thousands) - PUBLIC

	ELECTRIC			NATURAL GAS			EULR		
PRIMARY STRATEGIES	YEAR 1 BUDGET	5-YEAR BUDGET	% OF 5-YEAR BUDGET	YEAR 1 BUDGET	5-YEAR BUDGET	% OF 5-YEAR BUDGET	YEAR 1 BUDGET	5-YEAR BUDGET	% OF 5-YEAR BUDGET
EMERGING TECHNOLOGY	2,870	14,516	20%	305	1,401	22%	0	0	—
EFFECTIVE PORTFOLIO EXECUTION	19,329	89,642	22%	2,979	12,001	25%	0	0	—
CODES & STANDARDS	3,197	16,455	19%	57	363	16%	0	0	—
MARKET INTELLIGENCE	629[1]	8,378	8%	0	1,186	0%	3,616	8,956	40%
CONVENE & COLLABORATE	1,748	9,740	18%	0	0	—	0	0	—
ADMIN	4,956	24,871	20%	0	300	0%	0	0	—
ALLOCATION OF SHARED SERVICES*	-1,007	-4,252	23%	778	3,677	21%	151	575	26%
TOTAL ACTIVITIES	**31,722**	**159,350**	**20%**	**4,119**	**18,928**	**22%**	**3,767**	**9,531**	**40%**
SPECIAL PROJECTS	688								
TOTAL ALL ACTIVITIES	**32,410**								

* Shared Services = Convene and Collaborate and Administration;

Footnote:

1 - Market Intelligence budget will ramp-up in later years of the Business Cycle as large-scale building stock assessments (Residential Building Stock Assessment and Commercial Building Stock Assessment) get underway

TABLE 2 - 2020 OPERATIONS PLAN (OP) BUDGET VS. 2020 BUSINESS PLAN (BP) GUIDANCE

By Functional Expenses ($ Thousands) - PUBLIC

	ELECTRIC ($)	NATURAL GAS ($)	EULR ($)	TOTAL 2020 BUDGET ($)	2020 BP GUIDANCE ($)	% VARIANCE
SALARY & BENEFITS	11,617	1,036	251	**12,904**	12,583	3%
G&A						
PROFESSIONAL SERVICES	811	10	0	**821**	827	-1%
EQUIPMENT & SOFTWARE	473	0	0	**473**	414	14%
TRAVEL & PROFESSIONAL DEVELOPMENT	707	42	12	**761**	776	-2%
CORPORATE STRATEGY & COMMUNICATIONS	248	0	0	**248**	298	-17%
DEPRECIATION	245	0	0	**245**	274	-11%
FACILITIES & OTHER	1,081	1	0	**1,082**	1,019	6%
ALLOCATION OF SHARED SERVICES*	-1,007	778	151	**-78***		
SUB-TOTAL G&A	**2,558**	**831**	**163**	**3,552**	**3,608**	**-2%**
PROGRAMS/ PROJECTS	17,547	2,252	3,353	**23,152**	22,718	2%
TOTAL EXPENSES	**31,722**	**4,119**	**3,767**	**39,608**	**38,909**	**2%**
BUSINESS PLAN GUIDANCE	31,525	4,017	3,367	**38,909**		
VARIANCE (%)	1%	3%	12%	**2%**		
SPECIAL PROJECTS	688			**688**		
TOTAL ACTIVITIES	32,410	4,119	3,767	**40,296**		

* Shared Services = Convene and Collaborate and Administration; negative total reflects allocation of costs to Special Projects

Variance to Business Plan Guidance:

- Salaries & Benefits: $321K (+3%) increase due to market adjustments and promotions made after business plan development
- Equipment and Software: $59K (+14%) increase driven primarily by security-related services, specifically email security, network monitoring and infrastructure monitoring
- Corporate Strategy and Communications: -$50K (-17%) decrease driven by operating efficiencies and moving some professional services in-house
- Depreciation: -$29K (-10%) decrease due to lower than anticipated Netsuite implementation costs

TABLE 3 - 2020 OPERATIONS PLAN BUDGET VS. 2020 BUSINESS PLAN (BP) GUIDANCE

By Primary Strategy ($ Thousands) - PUBLIC

PRIMARY STRATEGIES	EXPENSE TYPE	ELECTRIC ($)	NATURAL GAS ($)	EULR ($)	TOTAL ($)	2020 BP GUIDANCE ($)	% VARIANCE
EMERGING TECHNOLOGY	LABOR & G&A	1,418	36	0	**1,454**	1,436	1%
	DIRECT	1,452	270	0	**1,722**	1,722	0%
EFFECTIVE PORTFOLIO EXECUTION	LABOR & G&A	5,899	1,036	0	**6,935**	6,005	15%
BUILDING ENVELOPE	DIRECT	332	0	0	**332**	291	14%
CONSUMER PRODUCTS	DIRECT	2,798	0	0	**2,798**	3,333	-16%
HVAC	DIRECT	1,547	582	0	**2,129**	2,365	-10%
LIGHTING	DIRECT	1,820	0	0	**1,820**	1,500	21%
MOTOR-DRIVEN SYSTEMS	DIRECT	1,158	0	0	**1,158**	1,151	1%
NEW CONSTRUCTION	DIRECT	1,011	485	0	**1,496**	1,119	34%
WATER HEATING	DIRECT	3,047	875	0	**3,922**	3,642	8%
ENABLING INFRASTRUCTURE	DIRECT	1,299	0	0	**1,299**	1,318	-1%
LTMT	DIRECT	419	0	0	**419**	375	12%
EFFECTIVE PORTFOLIO EXECUTION SUB-TOTAL	DIRECT	13,431	1,942	0	**15,373**	15,094	2%
CODES & STANDARDS	LABOR & G&A	667	17	0	**684**	955	-28%
	DIRECT	2,530	40	0	**2,570**	2,420	6%
MARKET INTELLIGENCE	LABOR & G&A	493	0	263	**756**	1,338	-43%
	DIRECT	135	0	3,353	**3,488**	3,284	6%
CONVENE & COLLABORATE	LABOR & G&A	1,500	0	0	**1,500**	1,591	-6%
	DIRECT	248	0	0	**248**	298	-17%
ADMIN	LABOR & G&A	2,440	0	0	**2,440**	2,578	-5%
	DIRECT	2,516	0	0	**2,516**	2,190	15%
ALLOCATION OF SHARED SERVICES*		-1,007	778	151	**-78***	N/A	–
TOTAL ACTIVITIES		**31,722**	**4,119**	**3,767**	**39,608**	**38,909**	**2%**
BUSINESS PLAN GUIDANCE		31,526	4,016	3,367	**38,909**		
VARIANCE (%)		1%	3%	12%	**2%**		
SPECIAL PROJECTS	LABOR & G&A	256	—	—	**256**		
	DIRECT	432	—	—	**432**		
TOTAL ALL ACTIVITIES		32,410	4,119	3,767	**40,296**		

* Shared Services = Convene and Collaborate and Administration; negative total reflects allocation of costs to Special Projects

Variance to Business Plan Guidance:

- Effective Portfolio Execution (Labor and G&A): $930K (+15%) increase primarily due to 2019 salary adjustment and moving 2.5 FTEs into Portfolio Execution from Market Intelligence (1.0 FTE) and Codes and Standards (1.5 FTE)
- Effective Portfolio Execution (Direct Costs): $279K (+2%) increase due to shifts in strategy and market dynamics since Business Plan was published (see Appendix for program details)
- Codes and Standards (Labor and G&A): -$271K (-28%) decrease due to moving 1.5 FTE in to Effective Portfolio Execution
- Market Intelligence (Labor and G&A): -$582K (-43%) decrease due to: moving 1.5 FTEs out of Market Intelligence to Effective Portfolio Execution (1.0 FTE) and EULR (0.5 FTE); moving planned data purchases from G&A to direct program costs within the Market Intelligence strategy; moving some software licenses and maintenance fees to Effective Portfolio Execution
- Convene and Collaborate (Directs): -$50K (-17%) decrease driven by operating efficiencies and moving some professional services in-house
- Admin (Directs): $326K (+15%) increase driven by security-related services, specifically email security, network monitoring, and infrastructure monitoring; increase in cybersecurity insurance & IT professional services; professional development consolidation under Human Resources budget

TABLE 4 - 2020 EFFECTIVE PORTFOLIO EXECUTION BUDGET VS. 2019 FORECAST

Direct Expenses By Product Group ($ Thousands) - PUBLIC

		ELECTRIC ($)			NATURAL GAS ($)		
PRODUCT GROUP	PROGRAM/ INITIATIVE	2019 FORECAST	2020 BUDGET	NET CHANGE ($)	2019 FORECAST	2020 BUDGET	NET CHANGE ($)
BUILDING ENVELOPE	BUILDING ENVELOPE STRATEGY	20	0	-20	0	0	0
	WINDOW ATTACHMENTS	363	332	-31	0	0	0
	TOTAL BUILDING ENVELOPE	**383**	**332**	**-51**	**0**	**0**	**0**
CONSUMER PRODUCTS	CONSUMER PRODUCTS STRATEGY	92	65	-27	0	0	0
	RETAIL PRODUCT PORTFOLIO	2,382	2,332	-51	0	0	0
	SUPER-EFFICIENT DRYERS	369	251	-118	50	0	-50
	NEW INITIATIVES	0	150	150	0	0	0
	TOTAL CONSUMER PRODUCTS	**2,843**	**2,798**	**-45**	**50**	**0**	**-50**
HVAC	HVAC STRATEGY	0	201	201	0	97	97
	CONDENSING ROOFTOP UNITS	0	0	0	461	485	24
	DUCTLESS HEAT PUMPS	1,071	611	-460	0	0	0
	HIGH PERFORMANCE HVAC	535	660	125	0	0	0
	NEW INITIATIVES	0	75	75	0	0	0
	TOTAL HVAC	**1,606**	**1,547**	**-59**	**461**	**582**	**121**
LIGHTING	LIGHTING STRATEGY	4	512	508	0	0	0
	LUMINAIRE LEVEL LIGHTING	943	1,308	365	0	0	0
	TOTAL LIGHTING	**947**	**1,820**	**873**	**0**	**0**	**0**
MOTOR-DRIVEN PRODUCTS	EXTENDED MOTOR PRODUCTS	826	1,158	332	0	0	0
	TOTAL MOTOR-DRIVEN PRODUCTS	**826**	**1,158**	**332**	**0**	**0**	**0**
NEW CONSTRUCTION	NEW CONSTRUCTION STRATEGY	51	0	-51	0	0	0
	COMM. CODE ENHANCEMENT	512	345	-167	0	0	0
	MANUFACTURED HOMES	510	230	-280	0	0	0
	NEXT STEP HOMES	975	436	-540	400	485	85
	TOTAL NEW CONSTRUCTION	**2,048**	**1,011**	**-1,037**	**400**	**485**	**85**
WATER HEATING	EFFICIENT GAS WATER HEATERS	0	0	0	1,010	875	-135
	HEAT PUMP WATER HEATERS	2,968	3,047	79	0	0	0
	NEW INITIATIVES	0	0	0	0	0	0
	WATER HEATING TOTAL	**2,968**	**3,047**	**79**	**1,010**	**875**	**-135**
INFRASTRUCTURE	BETTER BRICKS	84	470	386	0	0	0
	COMMERCIAL REAL ESTATE	440	0	-440	0	0	0
	INDUSTRIAL TECHNICAL TRAINING	187	0	-187	0	0	0
	INTEGRATED DESIGN LABS	560	400	-160	0	0	0
	LIGHTING MIDSTREAM PILOT	481	0	-481	0	0	0
	LIGHTING RESOURCES	81	0	-81	0	0	0
	STRATEGIC ENERGY MANAGEMENT	173	0	-173	0	0	0
	TOP-TIER TRADE ALLY	432	429	-3	0	0	0
	TOTAL INFRASTRUCTURE	**2,438**	**1,299**	**-1,139**	**0**	**0**	**0**
LTMT	**LTMT TOTAL**	**576**	**419**	**-157**	**0**	**0**	**0**
TOTAL		**14,635**	**13,431**	**-1,204**	**1,921**	**1,942**	**21**

TABLE 5 - 2020 ELECTRIC EFFECTIVE PORTFOLIO EXECUTION BUDGET

Direct Expenses by Product Group and Activity ($ Thousands) - PUBLIC

	BUILDING ENVELOPE	CONSUMER PRODUCTS	HVAC	LIGHTING	MOTOR-DRIVEN PRODUCTS	NEW CONSTRUCTION	WATER HEATING	INFRA-STRUCTURE	LTMT	TOTAL
LAB & FIELD TESTING										653
DATA COLLECT. & ASSMNT										1,457
INTEGRATED DESIGN LABS										400
MID/UPSTREAM INCENTIVES										4,015
MKT CHANNEL DEVEL.										1,756
MARKET EVALUATION										565
MARKET RESEARCH										466
MARKETING										1,551
PROGRAM MGMT										967
STKHLDR SUPPORT										82
TECH SUPPORT/ TRAINING										340
TECHNICAL RESEARCH										1,179
TOTAL 2020 BUDGET	332	2,798	1,547	1,820	1,158	1,011	3,047	1,299	419	13,431

CONFIDENTIAL

Lab and Field Testing: In situ and laboratory testing to validate energy savings assumptions or product quality

Data Collection & Assessment: Activities related to the collection, analysis, management assessment & reporting of data

Integrated Design Labs: Accelerating market transformation through research, technical assistance and training

Midstream/ Upstream Incentives: Financial incentives to manufacturers, distributors and other midstream supply chain participants

Market Channel Development: Activities to develop relationships, support and engage with supply-chain market actors

Market Evaluation: Activities to measure and assess program performance, such as Market Progress Evaluation Reports

Market Research: Activities to increase understanding of markets and market barriers

Marketing: Consumer awareness building, business case development, developing marketing resources for partners

Program Management: Activities related to contractor project management, reporting, coordination and evaluation

Stakeholder Support: Utility coordination and communication activities, engagement with national and regional stakeholders

Technical Support and Training: Lab technical support, technical tool development, RTF measure preparation, technical training

Technical Research: Research to support program development, measure development with the RTF, technical roadmaps, codes or standards, etc.

TABLE 6 - 2020 NATURAL GAS EFFECTIVE PORTFOLIO EXECUTION BUDGET

Direct Expenses by Product Group and Activity ($ Thousands) - PUBLIC

	BUILDING ENVELOPE	CONSUMER PRODUCTS	HVAC	LIGHTING	MOTOR-DRIVEN PRODUCTS	NEW CON-STRUCTION	WATER HEATING	INFRA-STRUC-TURE	LTMT	TOTAL
LAB & FIELD TESTING										815
DATA COLLECT. & ASSMNT										153
INTEGRATED DESIGN LABS										9
MID/UPSTREAM INCENTIVES										25
MKT CHANNEL DEVEL.										252
MARKET EVALUATION										45
MARKET RESEARCH										265
MARKETING										153
PROGRAM MGMT										54
STKHLDR SUPPORT										
TECH SUPPORT/ TRAINING										65
TECHNICAL RESEARCH										106
TOTAL 2020 BUDGET	0	0	582	0	0	485	875	0	0	**1,942**

CONFIDENTIAL

Lab and Field Testing: In situ and laboratory testing to validate energy savings assumptions or product quality

Data Collection & Assessment: Activities related to the collection, analysis, management assessment & reporting of data

Integrated Design Labs: Accelerating market transformation through research, technical assistance and training

Midstream/ Upstream Incentives: Financial incentives to manufacturers, distributors and other midstream supply chain participants

Market Channel Development: Activities to develop relationships, support and engage with supply-chain market actors

Market Evaluation: Activities to measure and assess program performance, such as Market Progress Evaluation Reports

Market Research: Activities to increase understanding of markets and market barriers

Marketing: Consumer awareness building, business case development, developing marketing resources for partners

Program Management: Activities related to contractor project management, reporting, coordination and evaluation

Stakeholder Support: Utility coordination and communication activities, engagement with national and regional stakeholders

Technical Support and Training: Lab technical support, technical tool development, RTF measure preparation, technical training

Technical Research: Research to support program development, measure development with the RTF, technical roadmaps, codes or standards, etc.

TABLE 7 - 2019 FORECAST VS. 2020 OPERATIONS PLAN BUDGET

By Functional Expense ($ Thousands) - PUBLIC

	2019 YEAR END FORECAST					2020 BUDGET					
	ELECTRIC	NATURAL GAS	EULR	SPECIAL PROJECTS	TOTAL	ELECTRIC	NATURAL GAS	EULR	SPECIAL PROJECTS	TOTAL	NET CHANGE (%)
SALARY & BENEFITS	11,124	952	180	65	**12,321**	11,617	1,036	251	178	**13,082**	6%
G&A											
PROFESSIONAL SERVICES	603	26	0	0	**629**	811	10	0	0	**821**	31%
EQUIPMENT & SOFTWARE	377	0	0	0	**377**	473	0	0	0	**473**	25%
TRAVEL & PROFESSIONAL DEVELOPMENT	713	54	11	4	**782**	707	42	12	0	**761**	-3%
CORPORATE STRATEGY & COMMS	245	0	0	1	**246**	248	0	0	0	**248**	1%
DEPRECIATION	305	0	0	0	**305**	245	0	0	0	**245**	-20%
FACILITIES & OTHER	1,044	2	0	0	**1,046**	1,081	1	0	0	**1,082**	3%
ALLOCATION OF SHARED SERVICES*	-1,009	847	132	30	**0**	-1,007	778	151	78	**0**	
SUB-TOTAL G&A	**2,278**	**929**	**143**	**35**	**3,385**	**2,558**	**831**	**163**	**78**	**3,630**	**7%**
PROGRAMS/ PROJECTS	20,272	2,934	1,639	253	**25,098**	17,547	2,252	3,353	432	**23,584**	-6%
TOTAL EXPENSES	**33,674**	**4,815**	**1,962**	**353**	**40,804**	**31,722**	**4,119**	**3,767**	**688**	**40,296**	**-1%**

* Shared Services = Convene and Collaborate and Administration

Change from 2019 Forecast:

- Salaries and Benefits: $639K (+5%) increase due to market adjustments and promotions made after business plan development; additionally attrition was higher than historical levels in 2019 resulting in higher vacancy savings levels; expect attrition to return to forecasted levels in 2020
- Professional Services: $192K (+31%) increase to implement enhanced IT and website data security measures
- Equipment and Software: $96K (+26%) increase driven primarily by increase in software license and maintenance fees for IT security-related services, specifically email security, network monitoring, and infrastructure monitoring
- Depreciation: $50K (+20%) increase as NEEA's financial software, Netsuite, will be fully depreciated by mid-2020

TABLE 8 - 2019 FORECAST VS. 2020 ELECTRIC EFFECTIVE PORTFOLIO EXECUTION BUDGET

By Sector ($ Thousands) - PUBLIC

PRIMARY STRATEGIES	EXPENSE TYPE	2019 FORECAST	2020 BUDGET	NET CHANGE ($)	NET CHANGE (%)
EFFECTIVE PORTFOLIO EXECUTION	**LABOR & G&A**	**4,900**	**5,899**	**999**	**20%**
RESIDENTIAL	DIRECT	8,416	7,338	-1,081	-13%
COMMERCIAL	DIRECT	3,203	4,375	1,172	37%
INDUSTRIAL & AGRICULTURE	DIRECT	0	0	0	0%
ENABLING INFRASTRUCTURE	DIRECT	2,440	1,299	-1,141	-47%
LONG-TERM MONITORING AND TRACKING (LTMT)	DIRECT	576	419	-157	-27%
SUB-TOTAL DIRECT EXPENSES	**DIRECT**	**14,635**	**13,431**	**-1,207**	**-8%**
TOTAL		19,535	19,330	-208	-1%

TABLE 9 - 2019 FORECAST VS. 2020 NATURAL GAS EFFECTIVE PORTFOLIO EXECUTION BUDGET

By Sector ($ Thousands) - PUBLIC

PRIMARY STRATEGIES	EXPENSE TYPE	2019 FORECAST	2020 BUDGET	NET CHANGE ($)	NET CHANGE (%)
EFFECTIVE PORTFOLIO EXECUTION	LABOR & G&A	952	1,036	84	9%
RESIDENTIAL	DIRECT	1,460	1,407	-53	-4%
COMMERCIAL	DIRECT	461	535	74	16%
INDUSTRIAL & AGRICULTURE	DIRECT	0	0	0	0%
ENABLING INFRASTRUCTURE	DIRECT	0	0	0	0%
LONG-TERM MONITORING AND TRACKING (LTMT)	DIRECT	0	0	0	0%
SUB-TOTAL DIRECT EXPENSES	**DIRECT**	**1,921**	**1,942**	**21**	**1%**
TOTAL		2,873	2,978	105	4%

TABLE 10 - 2020 SPECIAL PROJECTS BUDGET

By Project ($ THOUSANDS) - PUBLIC

Please note: Special projects are supported by revenue sources that are outside of the Business Plan budget.

SPECIAL PROJECT	EXPENSE TYPE	TOTAL ($)
EFFICIENCY EXCHANGE CONFERENCE[1]	LABOR & G&A	6
	DIRECT	232
EXTRA-REGIONAL[2]	LABOR & G&A	97
	DIRECT	-
MULTI-FAMILY STOCK ASSESSMENT[3]	LABOR & G&A	36
	DIRECT	-
STRATEGIC ENERGY MANAGEMENT[4]	LABOR & G&A	117
	DIRECT	200
SMART THERMOSTATS[5]	LABOR & G&A	TBD
	DIRECT	TBD
TOTAL		688
ALL SPECIAL PROJECTS	LABOR & G&A	256
	DIRECT	432

Footnotes:

1 - Efficiency Exchange registration fees will offset 100% of direct expenses in 2020; Labor and G&A will be reconciled at the end of the 5-year Business cycle once total revenue has been calculated. Estimated Labor and G&A is provided here for visibility.

2 - Funding has been secured from organizations outside the Northwest; Labor and G&A includes $19K allocation for Shared Services.

3 - Project is currently being scoped, budget assumes a small amount of planning work in 2020.

4 - Project is currently being scoped, budget reflects current funding commitments from Northwest utilities; Labor and G&A includes $59K allocation for Shared Service.

5 - As part of the Cycle 5 Business Plan, NEEA facilitated development of a Regional Strategic Market plan for consumer products and established a Consumer Products Strategic Market Sub-Committee managed by the Regional Portfolio Advisory Committee. The Smart Thermostat Special Project was identified, scoped and developed by this sub-committee to meet the requirements of the Regional Technical Forum's (RTF) connected thermostat research plan. Fulfilling the requirements of the RTF's research plan will ensure the current connected thermostat measure from the RTF will not sunset in 2019. Direct costs will be paid for and determined by the number of funders participating (TBD). NEEA labor that will be paid for under this contract is estimated to be $21,000.

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Alliance Business Model

NEEA is an alliance of utilities that pools resources and shares risks to transform the market for energy efficiency to the benefit of consumers in the Northwest.

KEY INPUTS

FUNDERS AND STAKEHOLDERS

Collaboration and Coordination with the region

PEOPLE AND KNOW-HOW

Employee skills, knowledge and market transformation expertise

RELATIONSHIPS AND REPUTATION

Relationships with supply chain participants and reputation in the market

INFORMATION

Data, information and knowledge critical to market transformation

PRIMARY STRATEGIES: ACTIVITIES AND OUTCOMES

EMERGING TECHNOLOGY

Scanning for emerging technologies and then advancing them into NEEA's pipeline.

A robust pipeline of emerging technologies for the region at lower risk and cost than multiple individual efforts.

EFFECTIVE PORTFOLIO EXECUTION

Identifying and removing market barriers to energy efficiency

Faster adoption of energy efficient products, services and practices. More cost-effective energy efficiency.

CODES AND STANDARDS

Supporting energy code development and adoption, training and implementation

Progressively more efficient energy codes and equipment standards.

MARKET INTELLIGENCE

Identifying, collecting, analyzing and disseminating data, information and insights.

More informed decision-making, greater ability to strategically influence markets. measurable transformation.

CONVENE AND COLLABORATE

Facilitating collaboration, executing account management and ext. communications

Effective and transparent regional collaboration, greater market influence, more market transformation success.

MARKET TRANSFORMATION OUTPUTS

OUTPUTS

- Sustained market change
- A regional pipeline of energy efficiency opportunities
- Progressively effective codes and standards
- Energy efficiency tools and resources
- Customer engagement opportunities
- Data, knowledge and market insights

SUCCESS METRICS

The 2020-2024 Business Plan identifies value delivery metrics for the alliance.

- Energy savings
- Capacity savings
- Portfolio advancement
- Market advancement
- Private sector co-investment
- Employee engagement
- Employee retention
- Funder satisfaction

Business Plan Scorecard

MARKET TRANSFORMATION METRICS

			5-YEAR TARGET
MARKET TRANSFORMATION DEVELOPMENT METRICS (5-YEAR = 2020-2024)	**Electric Portfolio (aMW)**	Portfolio Advancement (aMW)	600
		Market Advancement (aMW)	175
		5-year Co-Created Savings (aMW)	115-152
		5-year Total Regional Savings (aMW)	360-500
		5-year Long-term Market Availability (aMW)	>600
	Natural Gas Portfolio (million Therms)	Portfolio Advancement (Therms)	**REPORT ONLY**
		Market Advancement (Therms)	**REPORT ONLY**
		5-year Total Regional Savings (Therms)	11-18 million
		5-year Long-term Market Availability (Therms)	**REPORT ONLY**

VALIDATION AND ADDITIONAL BENEFITS METRICS

VALIDATION METRICS	**Electric Portfolio**	Codes and Standards Engagement for Long-term Energy Savings (aMW, % total MW load)	**FORECAST AND REPORT**
		Private Sector Co-Investment ($USD)	**REPORT ONLY**
	Natural Gas Portfolio	Codes and Standards Engagement for Long-term Energy Savings (Therms)	**REPORT ONLY**
		Private Sector Co-Investment ($USD)	**REPORT ONLY**
ADDITIONAL BENEFITS METRICS	**Electric Portfolio**	Avoided Carbon Emissions (Tons CO2)	**FORECAST AND REPORT**
		5-year Peak Savings from Co-Created Savings (MWp)	**FORECAST AND REPORT**
	Natural Gas Portfolio	Avoided Carbon Emissions (Tons CO2)	**FORECAST AND REPORT**

OPERATIONAL METRICS

			ANNUAL TARGET
OPERATIONAL METRICS	**Electric Portfolio**	Annual Budget ($ Millions)	$31.7
		Administrative Budget (% total)	<18%
		Portfolio Benefit-Cost Ratio	≥1
		Portfolio Investment Levelized Cost (cents/ kWh)	**REPORT ONLY**
	Natural Gas Portfolio	Total Annual Budget ($ Millions)	$4.1
		Portfolio Benefit-Cost Ratio	≥1
		Portfolio Investment Levelized Cost (cents/ Therm)	**REPORT ONLY**
	Organization-wide Annual Employee Retention Rate (% of total)		≥88%

Initiative Lifecycle Process

NEEA INITIATIVE LIFE-CYCLE PROCESS

NEEA has established a portfolio management system which provides a clear framework for decision-making on market transformation program investments. Through the Natural Gas Advisory Committee and the Regional Portfolio Advisory Committee, NEEA staff actively manage the portfolio of electric market transformation activities to deliver value based on a range of criteria, including: energy savings; levelized cost of energy saved; regional equity; rural/ urban equity; and risk.



Product Group: Building Envelope

Window Attachments

Executive Summary – The Window Attachments program seeks to accelerate the adoption of high-performance window attachment products in existing residential, commercial and multi-family buildings. The current focus for the program is secondary windows - a window unit with a pane and frame that attaches to an existing window. Since 2016, the program has supported the Attachments Energy Rating Council (AERC) to deliver product differentiation and certification for secondary windows. In 2018, certification began for residential products, including low-e storm windows (LeS), and certification for commercial products, including secondary glazing systems and storm windows, is expected to begin in early 2020. In 2020, the program will undertake activities to increase product differentiation, engage manufacturers to certify products and share sales data, design and implement field tests, and gather data to inform and refine the program strategy in preparation of the next phase of the program.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	High-performance window attachments become established as a standard product and practice for addressing low-performing existing windows
Program Status	Currently in Market and Product Assessment; Next milestone: Product Readiness, 2021
Key Accomplishments to date	• With support from the alliance, including technical support provided by the University of Oregon Energy Studies in Buildings Lab, the Attachments Energy Rating Council (AERC) has been developing a testing procedure and certification for commercial products • The program played a critical role in developing an ENERGY STAR label and the AERC in developing a residential testing procedure, certification, and label for Low-e Storm Windows (LeS), released in 2018 • With program support, AERC membership has almost doubled since 2016. The program continues to support AERC in developing a business case for manufacturer and utility engagement to grow its membership, influence and financial self-sufficiency
Barriers and Opportunities	**Barriers:** • Insufficient supply chain knowledge to design and sell products • Lack of awareness in Northwest among all audiences • Lack of proof of performance in Northwest • Lack of product differentiation in market • Scale of investment (whole building retrofit is cost prohibitive and small projects may not be cost effective) **Opportunities:** • Business opportunity for installers and manufacturers • Minimal occupant disruption to install • One-third to half the cost of replacement windows depending on the product • Non-energy benefits • Diverse pool of manufacturers now engaged with AERC and the alliance • Current and emerging legislation in Northwest and nationally that could push building owners to upgrade envelope in existing buildings

Table 2 –Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	TBD – This program is in early development
Energy Savings (aMW)	Program is in development and annualized forecast is still uncertain
Additional Value Delivery	**Maximize Efficiencies**: Coordination with other alliance programs – High-performance HVAC, Luminaire Level Lighting Controls, and BetterBricks to leverage existing work and collaborate where applicable
	Target Audience Engagement Opportunities: Awareness-building and training events/presentations, as well as savings and incentive opportunities for funders
	Data and Tools: Create or partner to develop product analysis, tools and market insights to inform program design and strategy
	Enable Progress toward City and State Level Policies for Deep Energy Savings: As an example, Washington State HB 1257 reduction targets for commercial buildings likely cannot be met without addressing envelope. Secondary windows, combined with HVAC and lighting upgrades, are an effective measure to achieve deep energy savings.

Table 3 – Goals and Barriers

Goals and Barriers	Activities	Target	Threshold
Goal: Support product differentiation of secondary window products **Barrier:** Lack of product differentiation	• Continue to support AERC's membership growth, material development and capabilities • Continue to support launch of the commercial certification program • Leverage AERC to test, rate and certify products	Q1 AERC commercial certification launch	Q2 AERC commerical certification launches
Goal: Raise awareness of secondary windows among targeted, early adopters in the commercial building industry in the Northwest **Barrier:** Lack of awareness in Northwest among all audiences	• Continue integrating market feedback into development and promotion of collateral and tools • Utilize alliance's BetterBricks platform for program-developed collateral and market partner resources • Conduct market awareness activities among targeted channels including BetterBricks partnerships • Create case studies and conduct photoshoots of field test installations that take place in 2020	Three awareness-building events/ presentations to targeted early adopters	Two awareness-building events/ presentations to targeted early adopters
Goal: Engage manufacturers to certify products and gather sales data **Barrier:** Lack of product differentiation	• Establish agreements with manufacturers to certify products with AERC, allow access to sales data, and bring a sales focus to the Northwest • Provide upstream incentives for manufacturers to certify products to build early traction for the certification programs • Support development of an AERC database to gather sales data from manufacturers for certifed products	Four manufacturers certify commercial products in 2020	Three manufacturers certify commerical products in 2020

Goals and Barriers	Activities	Target	Threshold
Goal: Support installations of secondary windows in commercial buildings to validate energy performance and inform future program design **Barrier:** Lack of proof of performance in Northwest	• Leverage AERC certified commercial products list for field tests in the Northwest • Collaborate with utilities to design field tests and assist with recruitment • Gain market intelligence through interviews and observation of building decision makers and installers for installations taking place in 2020 • Gather in-field performance data for secondary window products for installations taking place in 2020 • Continue collaboration with the Regional Technical forum (RTF) to develop secondary window measures and Unit Energy Savings (UES) • Support RTF in creation of a retail measure for LeS to support utility programs by providing simulation results • Provide updated calculator, simulation results and research on base case windows in the Northwest • Provide early results from field tests to validate energy savings estimates	Launch field tests in Q3	Launch field tests in Q4

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$363,000	$332,000	
Key Assumptions Driving Budget Estimates	Field test design, metering plan and launch		
	Master Service Agreements with an estimated seven manufacturers and stipends for residential and commercial product certification and data collection		
	AERC contract to support certification, member recruitment and data collection.		
	Program budget assumes Emerging Technology budget for testing of new, non-glass secondary window products by Lawrence Berkeley National Labs (LBNL) (estimated 4 manufacturers provide products for testing)		
	Model and calculator development to expand building types in RTF's UES planning		
	Matrix development for base case windows in the Northwest to determine U-value of secondary window pairing to equal code		
	Awareness building among key market actors through case study promotion and events/presentations		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF AERC does not expand its membership with energy efficiency organizations and utilities…	THEN there will not be a strong business case for manufacturers to participate and AERC's influence, financial stability, and ability to create product differentiation may be in jeopardy	The program is using NEEA channels to help AERC garner national utility, regional efficiency organizations and manufacturer support. In addition, the program is requiring manufacturers to include AERC's commercial certification as a pre-requisite for participating products in field tests
IF the program is unable to gather full category sales data directly from manufacturers or through the AERC…	THEN the program will not have the data necessary to establish a baseline	The program is incenting manufacturers to share data by covering the cost to certify products for three years. In addition, the program is supporting AERC's long-term business plan to serve as a national hub for sales data
IF buildings do not sign up to participate in field tests for commercial secondary window products…	THEN the program will not have data to help the RTF move the planning UES to a proven UES or have data points for the RTF to expand the planning UES beyond large and medium office buildings	The program could potentially leverage external regional data from manufacturers and utilities, however, the RTF ideally needs data from field tests in the region
IF the program cannot keep up in performance testing and fit for use assessment of new products entering the market…	THEN new products may act like competitors in the market, taking market share and creating missed savings opportunities	The program is working with LBNL and NEEA's emerging technology team to affordably test and evaluate non-glass secondary window products. The emerging technology team will review manufacturer materials to determine if new products fit within the program's product definition, performance requirements and fit for use criteria

Product Group: Consumer Products

Retail Product Portfolio

Executive Summary – In 2020 NEEA's Retail Product Portfolio (RPP) program will continue to closely coordinate with EPA ENERGY STAR Retail Product Portfolio (ESRPP) Program and work directly with national retailers to provide midstream incentives on qualified energy-efficient products. Incentives influence retail buying and stocking decisions so that Northwest customers will have a wider variety of efficient choices. They also drive market share, which further influences manufacturing processes and higher product standards and specifications. Participating retailers provide the alliance with full-category sales data, which provides market insights to help NEEA staff identify appropriate market transformation strategies for consumer products.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	Manufacturers respond to ENERGY STAR specification revisions and market changes and build energy efficiency into product design, creating permanent change to their processes
Program Status	Advanced to Market Development in Q3 2019
Key Accomplishments to date	• Built a centralized data management system that is agreeable to both participating retailers and other program sponsors and that provides clean, reliable data for program management purposes • Developed a robust portfolio management process with support from the RPP Workgroup, supported by program data and adopted by the ENERGY STAR RPP Products Taskforce • Confirmed that midstream incentives can have influence on retailer buying decisions based on feedback from participating retailers
Barriers and Opportunities	**Barriers** • Energy efficiency is not considered by corporate retail buyers • Manufacturers are unlikely to respond outside of specification and standards process to increase energy efficiency of consumer products • Benefits of energy savings are too small to impact consumer choice • Lack of access to full category sales data inhibits ability to influence formal specification/standards process and allow for informed program decisions • Uncertainty of regulatory acceptance among ESRPP sponsors outside of the Northwest **Opportunities** • Expand RPP incentive offering to include online sales from participating retailers • ENERGY STAR specification revision will extend into 2020 for: room air cleaners and soundbars; and, Ultra HD TVs and related test clip/ procedure development • New ENERGY STAR Most Efficient criteria for 2020 for freezers • ENERGY STAR has indicated it will open specification revision processes in 2020 for washers and dryers • DOE has published a Request for Information (RFI) pertaining to review of federal standard for washers • DOE has published notice of proposed rulemaking pertaining to test procedure for dryers • ENERGY STAR has indicated it will develop a new specification for portable AC units

Table 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	1.5			
Energy Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	0.6-1.5	0.6-1.5	0.3-0.7	0.3-0.7
2020-2024 Estimate	9-22	9-22	6-16	6-16
2020-2029 Estimate*	74-87	74-87	49-58	49-58
Additional Value Delivery	Sales data used for the alliance's Super-Efficient Dryers program (both dryers and washers) and other potential consumer products			
	Sales data used for Long-term Monitoring and Tracking for several products			
	Sales data available for funders' use			
	Point of sale marketing opportunities for funders			

*Note: the savings accelerate after 2024 because NEEA staff anticipates many of the RPP measures will be a part of new standards effective during the Cycle 7 Business Plan

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Incorporate online sales from participating retailers **Barrier**: Lack of access to full-category sales data inhibits program activities	• Develop strategy to include online sales from participating retailers • Incorporate data into data portal, clean, and analyze • Consider alternative incentive structure to best address online sales	Obtain/analyze online sales data from all participating retailers	Obtain/ analyze online sales data from two participating retailers
Goal: Effectively implement product-specific strategies **Barrier:** Manufacturers are unlikely to respond outside of energy efficient specs/standards	• Test alternative incentive or bonus structure to best influence buying decisions • Integrate findings from Market Test report and pending product research (refrigerator and washer) • Explore targeted activities to support products with highest savings (refrigerator and washer) • Develop Unit Energy Standard (UES) for Ultra HD TVs	Document significant market progress or influence related to five products	Document significant market progress or influence related to three products
Goal: Maximize influence on codes, standards andspecification opportunities **Barrier:** Manufacturers are unlikely to respond outside of energy efficient specifications and standards	• Continue close coordation with ESRPP program and product teams • Scope and conduct review of NEEA staff engagement in ESRPP specification process to identify how to better engage • Optimize internal alignment to best engage in state and national codes and standards opportunities	Develop roadmap for successful engagement on specifications and standards, based on past experience and future opportunities	Develop insights for successful engagement on specificationss and standards

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$2,382,000	$2,332,000	Variance due to decreased evaluation expenses and lab testing (washers)
Key Assumptions Driving Budget Estimates	Assumes no new products added or dropped to provide room in budget for additional products. 2020 incentive portfolio will include washers, dryers, refrigerators, freezers, and room AC		
	Incentive budget ($1,486,000) has high variability due to consumer preferences, manufacturer response to ENERGY STAR criteria, sales patterns and weather		

Section 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF EPA stops managing the program and providing facilitation support to the collaborative of program sponsors…	• THEN it would be a challenge for current program sponsors to collaborate efficiently and support program operations without the leadership and infrastructure currently funded by EPA • THEN NEEA staff may need to take on additional program management responsibilities to assure the collaboration continues effectively	Funders and stakeholders have asked if NEEA staff would be able to take over the program management/ facilitation function if EPA steps away. NEEA staff have begun discussing what this would look like, as well as exploring other alternatives for program support. These activities will continue until EPA has confirmed its plans.
IF the ENERGY STAR RPP effort cannot continue to grow due to concerns about evaluation…	THEN it could curtail/end the program beyond 2020 (unlikely to affect 2020 budget)	NEEA staff will continue to engage national evaluation stakeholders to provide assistance, as needed, on market transformation evaluation approaches. However, NEEA has limited ability to influence evaluation outcomes in other jurisdictions
IF existing program sponsors cannot maintain participation or new program sponsors do not join...	THEN retailers may lose interest and drop out of the program causing the 2020 budget to be reduced significantly; program could end or significantly scale down in in following years	NEEA staff will continue to provide technical support to other program sponsors to build their market transformation engagement and help them bridge to appropriate evaluation framework. NEEA staff will also support changes to program requirements to attract new participants

Product Group: Consumer Products

Super-Efficient Dryers

Executive Summary - In 2020, the Super-Efficient Dryers (SEDs) program will focus on building market demand to increase the number of qualified dryer models available to Northwest consumers. Key activities will include leveraging partnerships with regional market actors and manufacturers to influence adoption of the technology and reduce the cost. To date, four manufacturers have released SEDs in the U.S. market. Early adoption has been minimal, and the market needs additional support to overcome identified market barriers.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	• Influence the passage of a federal standard requiring current ENERGY STAR level performance for all clothes dryers • Influence voluntary specifications (ENERGY STAR) to require heat pump level performance
Program Status	• Strategy testing and finalization • Next milestone: Scale-Up expected in late 2020 or early 2021
Key Accomplishments to date	• Successfully passed concept approval for clothes washer initiative to support paired laundry approach • Heat pump dryers floored at big box retailer throughout the region • Regional Technical Forum (RTF) confirmed the Utility Combined Energy (UCEF) metric is superior to Department of Energy (DOE) metric for measuring energy use of dryers in the field • Leveraged lab test results to validate and increase ENERGY STAR dryer savings for the region • Convinced Whirlpool to participate in ENERGY STAR Most Efficient certification for its qualifying heat pump models
Barriers and Opportunities	**Barriers:** • Inaccurate federal test protocol • High incremental cost • Limited product availability • Unclear manufacturer and retailer value proposition • Inadequate consumer awareness **Opportunities:** • Seven-year federal standards and test protocol cycle; DOE has published notice of proposed rulemaking pertaining to test procedure (July 2019) • Continued introduction of heat pump dryer models in the U.S. market • Manufacturer interest in selling combined washer & dryer pairs

Table 2 –Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	1.3			
Energy Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	1.1-1.8	1.1-1.8	0.7-1.1	0.7-1.1
2020-2024 Estimate	7-11	7-11	4-7	4-7
2020-2029 Estimate	24-28	24-28	14-17	14-17
Additional Value Delivery	• Strong partnership with ENERGY STAR that can be leveraged across other consumer products initiatives • New clothes washer initiative brings in new potential partners for utilities (water & wastewater utilities)			
	• Customer engagement opportunities for retailer pilots, partnerships, trainings and findings from market research			

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Refine SED technology roadmap **Barriers:** • Limited product availability • High incremental cost	• Investigate SED emerging technologies • Investigate mitigation strategies for heat pump performance issues (lint build-up, etc.) • Align with natural gas team on manufacturer outreach as appropriate	Complete draft technology roadmap	Complete outline of technology roadmap
Goal: Support utility programs for SEDs **Barriers:** • Unclear value proposition for manufacturers and retailers • Inadequate consumer awareness • High incremental cost	• Create messaging around efficient laundry products to inform in-market communications • Continue support of manufacturer marketing campaigns leveraging findings from previous market research • Continue to provide training and resources to support utility-customer engagement	Complete messaging guide, deploy with at least one market partner	Complete messaging guide

Table 4 –Budget	**2019 Forecast**	**2020 Budget**	**Variance Explanation**
Annual Expense	$369,000	$251,000	Reduced marketing contractor support and market research
Key Assumptions Driving Budget Estimates	Assumes sales and incentives remain relatively flat		
	Assumes funding for clothes washer activities comes from another source		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF consumer demand remains low and manufacturers do not achieve economies of scale that enable cost reduction…	• THEN cost of product will remain high to consumers • THEN consumers will not adopt the technology and sales will remain flat or will decline • THEN manufacturers could discontinue the product	• Increase demand by providing upstream incentives that reduce cost of product • Demonstrate value proposition to supply chain by illustrating regional commitment and consumer adoption • Work with manufacturers to address pricing and message benefits • Leverage findings from consumer value proposition research and segmentation to help market increase awareness
IF market tests/promotions continue to be delayed…	THEN the initiative team cannot learn what tactics work at the retail level to drive sales diminishing the program's ability to identify and quantify supply chain value propositions	• Investigate alternative market tests that do not require marketing activities • Approach funders to run their own retailer pilots and share results with NEEA staff • Leverage existing manufacturer promotions to achieve core market test goals
IF the DOE does not move forward with expected standards and test procedure revisions…	THEN savings from the initiative will be delayed because program cannot push forward with its desired specification and test procedure improvements	• Leverage manufacturer relationships to gain support for increased performance requirements • Continue to collaborate with ENERGY STAR to drive voluntary specifications forward • Develop partnerships outside the region (with California and Canada) to align interests in increased specifications

Product Group: HVAC

High-Performance HVAC

Executive Summary – The High-Performance HVAC program aims to transform the HVAC market in the Northwest by accelerating the adoption of high efficiency HVAC systems and components, resulting in substantial energy and non-energy benefits throughout the region. At the onset, the High-Performance HVAC program is focusing on Very High Efficiency Dedicated Outside Air Systems (VHE DOAS) in the commercial sector. While common in other parts of the world, VHE DOAS is a new HVAC system configuration to North America with few installations in the Northwest. Results from alliance pilot projects indicate average whole building savings of 40 percent and average HVAC savings of 60 percent or greater when compared to code-minimum equipment. The very high efficiency heat recovery ventilator (HRV) technology that enables this system became available in North America in 2016, and there is currently one manufacturer that has product which meets NEEA's specification.

In 2020, the High-Performance HVAC program will focus on: increasing the number of manufacturers with qualifying HRV product lines; building the value proposition for VHE DOAS; raising experience level with VHE DOAS within targeted supply chain innovators and a limited group of potential early adopter specifiers; and, raising awareness of VHE DOAS among targeted early adopters in the commercial building community.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	VHE DOAS is common practice for energy efficiency and indoor air quality performance throughout the Northwest in existing and new small and medium commercial buildings
Program Status	Currently in Market and Product Assessment Next milestone: Product Readiness, 2020
Key Accomplishments to date	• Partnered with manufacturer to bring first high-efficiency HRV product line to North America • Created and refined VHE DOAS product and design guidelines through seven pilot demonstration projects, validating substantial savings over code minimum equipment • Completed market characterization, market test plan and manufacturer strategy development
Barriers and Opportunities	**Barriers:** • Lack of product availability (only one, small manufacturer with qualifying HRV product line available in North America) • Lack of awareness of VHE DOAS and benefits • Lack of experience selling, designing and installing VHE DOAS • Resistance to change in business practices • Perception of high capital cost **Opportunities:** • Alliance code program activities, including updates to DOAS in Washington code, exploration of HRV test procedures, and investigation of leveraging Total System Performance Ratio (TSPR) calculation tool for utility incentives • Regional and national interest and cooperation, including ongoing collaboration with PG&E as well as energy efficiency organizations, cities and states where VHE DOAS could fit into policy and/or strategy goals

Table 2 –Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	TBD – This program is in early development			
Energy Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	0.0	0.0	0.0	0.0
2020-2024 Estimate	0-1	0-1	0-1	0-1
2020-2029 Estimate	2.5-14	2.5-14	2.5-14	2.5-14
Additional Value Delivery	• Conduct research, gather data, and collaborate with code developers in the Northwest and beyond to enable and inform future codes • Coordinating with other alliance programs, including Natural Gas Condensing Rooftop Units, BetterBricks, Ductless Heat Pumps, and Strategic Energy Management, to leverage existing work and collaborate where applicable • Customer and supply chain engagement opportunities to build awareness, offer trainings and share information about savings/incentives for funders • Help utilities, cities and states meet goals related to deep energy efficiency targets and carbon reduction			

Table 3 –Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Increase number of manufacturers with qualifying HRV product lines **Barrier:** Limited product availability and perception of high capital cost	• Continue outreach with prospective manufacturers identified in 2019 • Identify strategic activities (e.g. research and development, field test sites, etc.) to support manufacturer progress toward additional qualifying HRV	Engagement with three priority manufacturers for new qualifying HRV product lines	Engagement with two priority manufacturers for new qualifying HRV product lines
Goal: Raise experience level with VHE DOAS within targeted supply chain innovators **Barrier:** Lack of experience selling, designing and installing VHE DOAS systems	• Provide technical support to funder and market partners who identify potential VHE DOAS projects through initial vetting and assistance during the design and installation • Hold limited, informal training sessions (e.g. lunch and learns, presentations at industry conferences) and in-depth events (e.g. high efficiency ventilation trainings with partner manufacturers) • Expand limited, targeted outreach and informal training opportunities to additional geographic area(s)	Deliver six informal training sessions to targeted supply chain innovators	Deliver four informal training sessions to targeted supply chain innovators

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Build the value proposition for VHE DOAS **Barrier:** Resistance to change in business practices and by market, status quo stronghold	• Continue developing and honing business case by: - Conducting additional cost/benefit analysis work to illustrate relative value of installing VHE DOAS vs. lower efficiency systems - Leveraging informal trainings to gather feedback and refining key topic areas • Refine product requirements and strategy to improve value proposition: - Continue product requirement vetting process through engagement with key HVAC industry experts - Investigate whether and how to tier VHE DOAS - Explore equipment testing and/or Quality Product List (QPL) development to determine most effective path for advancement of HRV efficiency • Research inclusion of VHE DOAS in TSPR software to enable utilities to more easily provide incentives • Generate market-facing resources (e.g. distilled research findings, updated test and/or calculation methods, etc.) to support business case/value proposition	Generate & disseminate three market-facing resources that illustrate the value proposition of VHE DOAS	Generate & disseminate two market-facing resources that illustrate the value proposition of VHE DOAS
Goal: Raise awareness of VHE DOAS among targeted early adopters in the commercial building community **Barrier:** Lack of awareness of VHE DOAS and benefits by the market	• Continue integrating market feedback into development and promotion of collateral and tools (e.g. real world case studies, design/build specification, etc.) • Use alliance's BetterBricks platform for program-developed collateral and market partner resources • Conduct market research and testing to refine outreach channels and leverage points • Use tools developed by building value proposition in outreach and education efforts	Three awareness-building sessions to targeted early adopters	Two awareness-building sessions to targeted early adopters

Table 3 –Goals and Barriers cont.

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$535,000	$660,000	Program research and development ramping up per assumptions below
Key Assumptions Driving Budget Estimates	• Execution of manufacturer strategy to encourage qualifying HRV product lines, including execution of at least two strategic activities (e.g. research and development, field test sites, etc.) to support manufacturer progress toward additional qualifying HRVs • Ongoing technical assistance to encourage VHE DOAS installations and support associated data collection efforts • Expanded targeted outreach and at least five training opportunities for target supply chain market actors in additional geographic area(s) • Product definition and strategy refinement, including further research into equipment testing/QPL development and system tiering • Investigation of additional mid-stream incentives to encourage adoption of system specification		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF other HRV manufacturers do not see the value in producing/distributing a second qualifying product line…	THEN there will be a delay in abilities to scale and more resources/funds will be needed to develop business case and value proposition	• Develop value proposition: - Encourage sales of qualifying systems to illustrate early successes - Show market interest and alignment of VHE DOAS with emerging policy (legislation and codes) - Gather relevant market intelligence/research data to contribute to business case • Partner with utilities and energy efficiency organizations interested in promoting VHE DOAS within and outside of Northwest to increase leverage and share data/resources to maximize efficiencies
IF there is perception that VHE DOAS pushes the market too far in the near term and there is a desire to pursue lower-efficiency system approach (e.g. coupling high efficiency heating/cooling system with standard efficiency HRV or high efficiency HRV with standard efficiency heating/cooling system) …	THEN there could be further confusion in the market around 'DOAS,' which is already unclearly defined. Additional time and resources would be needed to focus on minimizing confusion	• Gain understanding of cost-effectiveness criteria and how to illustrate VHE DOAS business case • Encourage and support inclusion of VHE DOAS as higher tier or level for incentives
IF there are few new VHE DOAS installations in the region…	THEN there will be less opportunity to gather additional data and market intelligence and additional funds will be needed for marketing and implementation strategies to generate interest/installs	• Continue supporting Ventacity and its supply chain allies by: - Providing technical support to encourage VHE DOAS projects - Increasing midstream incentives to encourage more installs - Documenting/highlighting successful projects through case studies - Providing marketing assistance where possible

Product Group: HVAC

Ductless Heat Pumps

Executive Summary – Since 2008, the Ductless Heat Pump (DHP) Program has worked to accelerate the adoption of inverter driven ductless heat pumps in electrically-heated homes by building distribution channels, market capacity and consumer demand for DHPs. NEEA has engaged in a range of market interventions such as influencing manufacturers and distributors to expand distribution to the Northwest, educating and training installers, supporting supply chain actors with consumer-focused marketing, and providing resources to utilities to create DHP programs. Today DHPs are widely available to purchase, trained DHP installers are working throughout the Northwest, and DHP sales and installations have increased each year. More than 100,000 DHPs have been installed in NEEA's target markets since 2008, and there is strong utility support for DHPs, with 108 utilities currently offering DHP rebates and roughly 80% of DHP installations have received a utility rebate.

In Q3 2019, the 8th Ductless Heat Pump Market Progress Evaluation Report (MPER), which evaluated readiness for NEEA to reduce active market development and transition the program to long-term monitoring and tracking (LTMT), was completed. Findings from the MPER suggest that the market for DHPs in the Northwest will continue to transform without direct support from NEEA. The MPER also identified a few remaining knowledge gaps, particularly with respect to the sustainability of the market for DHPs in cold climates, and recommended that NEEA complete additional research to better gauge the prevalence of cold climate-specific barriers to adoption. Additionally, the MPER identified a risk to continued market transformation in target homes if utility programs no longer offer rebates due to cost effectiveness challenges, especially if DHP costs rise and measure savings diminish.

Informed by the MPER findings, and input gathered from stakeholders, NEEA plans to transition the program, as has been defined by the specific measure of single head DHP in electrically-heated homes, to LTMT at the end of 2020. Program activities in 2020 will be heavily weighted towards collaboration with the region on utility program cost effectiveness and market support for cold climate DHPs. Simultaneously, NEEA will be further while simultaneously developing a broader HVAC strategy and residential HVAC program concept that will help bring more high-efficiency options to the market. While the DHP program will reduce most of its direct market interventions by the end of 2020, both in 2020 and beyond NEEA will continue to monitor the DHP market, assess where additional intervention may be warranted, and support new and improved technologies, new applications, and best practices to reach more of the residential market.

Additionally, acknowledging the challenges that remain regarding utility program cost effectives and cold climate adoption of DHPs, in 2020, the program will continue to collaborate with the region to ensure that identified research gaps are addressed. Program staff will also support utilities to address cost effectiveness barriers that pose a risk to their continued role in driving market adoption, primarily through continued field and lab studies aimed at identifying additional opportunities to improve energy savings, completing cold climate research, and implementing actions resulting from both the cold climate research and the Q4 2019 cost analysis.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	Adoption of inverter-driven ductless heat pumps in electrically heated homes by building product distribution channels, market capacity and consumer demand
Program Status	After almost ten years in market development, the program will ramp down direct market interventions in 2020 and work collaboratively with the region to plan for transition to long-term monitoring and tracking
Key Accomplishments to date	• Strong product distribution channel (number of distributors, geographic dispersion, installer training and support offered, on-hand stock) • Strong market capacity (large, skilled installer base; product availability) • Strong and growing consumer demand for the technology (year-over-year growth) • Development and availability of a variable capacity heat pump test procedure
Barriers and Opportunities	The program interventions have aimed at reducing the following market barriers: • Limited product availability • Inadequate consumer awareness • Poor or unclear supply chain value proposition • Inadequate standards of practice • High first cost • Inadequate performance metrics and specs MPER 8 found sufficient evidence that most barriers have been reduced and that the market will continue to grow in the absence of direct NEEA intervention. First cost of a DHP to the consumer has not decreased in recent years and, in fact, MPER 8 found evidence of higher cost as compared to MPER 6. Despite this, DHP sales continue to grow in target markets and in the region overall. However, as the MPER recommends, continuing to monitor DHP cost and sales will be critical to determine if first cost becomes a barrier to adoption. The MPER also identified ongoing risk to utility program cost effectiveness and need for additional research of market transformation barriers in colder climates. In 2020, the program will complete additional research on barriers in heating zone 3 and collaborate with the region on improving utility program cost effectiveness as part of the transition strategy to LTMT.

Table 2 –Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	1.1			
Energy Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	4.9-6.3	4.9-6.3	2.7-3.5	2.7-3.5
2020-2024 Estimate	29-39	29-39	14-20	14-20
2020-2029 Estimate	70-84	70-84	60-73	60-73

Table 2 – Benefit & Value cont.

Additional Value Delivery	• Manufacturer and distributor relationships provide value to alliance HVAC sales data collection support and the Natural Gas program, and access to market insights on emerging technology for future commercial and residential HVAC work • Lab and field studies, specifications, recommendations and trainings are used by new homes program for builder and rater training • Manages Oriented and Master installer networks on behalf of the region

NOTE: Current forecasted savings for 2015-2019 Business Cycle is 19.3 aMW compared to business cycle target of 22 aMW

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Continued market growth of DHPs in target markets	• Maintain GoingDuctless.com in order to provide ongoing utility, consumer and supply chain access to marketing collateral, product information, Installer Finder, rebate information and other resources • Continue to disseminate NEEA's 2019-published cold climate specifications and best practice recommendations to build cold climate market confidence in the technology • Complete additional market research on cold climate market transformation progress and inform transition plan to LTMT • Conclude study with Pacific Northwest National Labs (PNNL) on back-up heat controls ("Maximizing Mini-Splits") and disseminate findings to the market in order to improve performance in target market homes and increase the value proposition to homeowners • Continue the existing work to educate supply chain on the new test procedure and HVAC Sizing Tool in order to improve confidence in - and strengthen adoption of the technology	• Continued year-over-year growth in DHP sales overall and in target markets • Complete cold climate (heating zone 3) market research	Continued year-over-year growth in overall DHP sales and in primary target markets of single family, zonally-heating homes
Goal: Support utilities in addressing programmatic challenges, including cost effectiveness	• Incorporate findings from 2019 Q4 DHP cost analysis into 2020 program activities and LTMT plan development • Continue to work with the RTF and utilities on identifying DHP measures that preserve options for utility programs cost effectiveness • Convene with utilities and regional partners to share tactics and identify opportunities for utilities to address measure cost effectiveness challenges • Continue ongoing cost effectiveness studies and support utilities on implementing improvements for cost effectiveness (i.e. new test procedure, HVAC Sizing Tool, PNNL's maximizing mini-split research, cold climate specifications and recommendations)	Screened measure completed	Screened measure defined and data collected
Goal: Prepare the program for a successful	• Complete additional research identified in the MPER 8 to close knowledge gaps about costs and cold climate markets	Transition to LTMT in Q4	Transition to LTMT in Q1 2021

2020 Goals and Barriers	Activities	Target	Threshold
transition to long-term monitoring and tracking	and inform whether any additional interventions are necessary • Develop and begin executing transition strategy for all program assets, collateral, activities, supply chain relationships, and extra-regional collaborations • Ensure any identified opportunities for ongoing work to support utility program cost effectiveness are included in the overall HVAC strategy and assumed by NEEA's Emerging Technology team for continued support beyond 2020		

Table 4 – Budget

	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$1,071,000	$611,000	• Reduced Market Research budget; limited to research focused on Cold Climate knowledge gaps • Supply chain engagement and marketing activities will be reduced in 2020 and heavily weighted towards cold climates • HVAC data collection budget moved to product group level
Key Assumptions Driving Budget Estimates	Research and product management budget allocated to conclude PNNL Maximizing Mini-Splits study, futher develop HVAC Sizing Tool, study cold climate region market progress, continue variable capacity heat pump test procedure development, and engage with RTF and utilities on measure options.		
	Market budget is earmarked for as-needed development of utility and supply chain-facing communications, training materials, and website content to disseminate cold climate DHP specification, recommendations, and best practices as well as results of PNNL Maximizing Mini-Splits study and new test procedure findings.		
	Budget retained for ongoing supply chain and utility trainings or interventions related to improved measure cost effectiveness opportunities and adoption in cold climates.		
	No budget for consumer facing marketing		
	Ongoing management of GoingDuctless.com content, the Learning Management System and Oriented and Master Installer list		
	Continued investment in the NEEP qualified products list subscription, and HARDI membership (HVAC distribution industry association)		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF planned research results show cold climates require different or	THEN transitioning out of the cold climate markets in 2020 may result in adoption backsliding	NEEA will re-evaluate 2020 resources, activities and LTMT plan to incorporate actions to address the findings

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
ongoing market interventions to ensure sustained adoption…		
IF the new testing and rating procedure proves not viable or likely to be adopted by the market...	THEN the region will lose this strategy for more reliable savings ratings and predictive system performance	Lean more heavily on other ways to increase performance and differentiate good products from bad (e.g. Maximizing mini-split research, cold climate specification, post install performance bonuses, etc.)
IF utilities no longer offer DHP rebates due to cost effectiveness challenges...	THEN DHP adoption in target market homes may slow down and miss market transformation targets	• NEEA is conducting further cost analysis in 2019 to identify remaining opportunities to influence install costs. Results will be considered for additional 2020 market interventions. NEEA will also work with funders to identify improved savings opportunities; for example, from results of current Product Management research or via adoption of an improved screened RTF measure • NEEA's Emerging Technology team will continue, in 2020 and beyond, to scan for less expensive technologies and improved out-of-the-box and configuration solutions to bring to market
IF data collection methods do not yield sufficient DHP market data to determine market activity…	THEN NEEA will not be able to reliably measure the program's sustained market transformation or savings in the future	• Work with funders, regional stakeholders and other NEEA program teams to improve and strengthen the success of the region's sales data collection efforts • Support NEEA's development of a future residential HVAC program to maintain strong supply chain relationships
IF a new Residential HVAC program does not develop in 2020…	THEN NEEA's influence with the supply chain may weaken and set back their support for a future NEEA residential program	Work with other NEEA teams (Next Step Homes, natural gas, HPWH, VHE-DOAS) to help facilitate uptake of relationships

Product Group: HVAC

Condensing Rooftop Units

Executive Summary: The Natural Gas Condensing Rooftop Unit (C-RTU) program aims to transform the commercial HVAC market through establishing a minimum efficiency level of 90% for commercial warm air furnaces found in rooftop units (RTUs). Cost-effectiveness is a barrier to market uptake, and high installation costs are largely driven by the cost and effort required for condensate disposal. As a result, only buildings with high heating loads will be cost-effective unless NEEA staff can uncover a way to significantly reduce installation costs; even then, buildings with high heating loads will have the best payback. In 2020, the program will follow two paths. The first path will research avenues to reduce the cost and/or installation effort required of condensate disposal in an effort to broaden the range of C-RTU applications. The second path will continue to prepare and support C-RTU adoption in buildings with high heating loads and investigate other efficient RTU measures for the broader market.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	C-RTUs installed as standard practice and ultimately, federal minimum efficiency level set at 90% efficiency for furnaces used in commercial rooftop applications by 2032
Program Status	Currently in Market and Product Assessment
Key Accomplishments to date	• Completed the second four-unit field demonstration project, validating product performance and energy savings • Completed fan energy penalty analysis and technical market opportunity assessment to better understand C-RTU cost sensitivities • Supported development of an HVAC roadmap tool for assessing alternate or complementary technologies • Further refined Canadian Standards Association (CSA) P.8 commercial gas furnace test procedure
Barriers and Opportunities	**Barriers:** • Condensate management increases installation cost/effort and reduces replacement unit viability • Limited value aside from energy savings • Lack of product availability • No value proposition for HVAC supply chain **Opportunities:** • Condensing technology is well established and cost-effective in residential applications • Large purchasers, such as national chains and property management firms, have sustainability goals to meet and are looking for opportunities to reduce carbon • RTUs are generally a commodity market, where low-cost and easy, 1:1 replacement is critical. C-RTUs offer these characteristics more readily than other emerging systems-based technologies • New test procedure gives credit to efficiency measures within packaged RTUs • Canadian federal, provincial and territorial governments have a goal that all gas space heating for sale in Canada must be condensing by 2025 • The large size of the overall market for gas rooftop furnaces (including low outside air applications) could lead to substantial energy savings

Table 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	TBD – This program is in early development
Energy Savings (aMW)	Program is in development and annualized forecast is still uncertain
Additional Value Delivery	Activities to remove barriers and increase adoption will support existing funder RTU programs and provide funders with customer and/or trade ally engagement opportunities including trainings, pilots and incentive program development/enhancement
	Will help utilities, cities and states meet goals related to deep energy efficiency targets and carbon reduction
	Coordination with other alliance programs (High Performance HVAC, BetterBricks, Ductless Heat Pumps, and Strategic Energy Management) will leverage existing work and collaboration

Table 3 –Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Test strategies and identify solutions to reduce condensate management installation costs and/or effort **Barriers:** • Condensate management increases installation cost and effort • No support from HVAC supply chain	• Conduct research identifying viable technical solution(s) to remove condensate disposal barrier • Share research findings, site selection criteria and condensate management guide with manufacturer(s) to assess potential market impact and develop product strategy • Share site selection criteria and condensate management guide with market partners to test messaging, gather feedback, refine and identify dissemination options • Offer technical support to utility programs that specify and install C-RTUs	One manufacturer is partnering with NEEA on investigating and/or prototyping a technical solution	One viable technical solution identified
Goal: Identify opportunities to influence codes, standards and labeling programs **Barrier:** Limited value aside from energy savings	• Conduct lab test(s) to validate assumptions in new test procedure • Identify opportunities for new test procedure adoption (e.g., crediting/ labeling programs, codes, utility programs) • Identify additional code and standard opportunities (e.g., IECC, benchmarking)	Test procedure assumptions validated and adoption opportunities identified by Q2	Test procedure assumptions validated and adoption opportunities identified by Q4

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Influence manufacturer(s) to increase availability of cost-effective, efficient packaged RTU products **Barrier:** Lack of product availability	• Build manufacturer relationship(s) to understand motivations, existing efficiency products and product roadmaps; gather and assess feedback on specifications to create buy-in and awareness of efforts • Share program research and manufacturer engagement findings with market partners (e.g., utilities, energy efficiency and government organizations) to build momentum toward unified program and product strategy	Eight manufacturers engaged by Q1 and Version 2.0 of specifications by Q2	Six manufacturers engaged by Q1 and Version 2.0 of specifications by Q3

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$461,000	$485,000	N/A
Key Assumptions Driving Budget Estimates	CSA P.8 test procedure continues through committee process and is approved, creating third-party market differentiation of RTU efficiency options; if this effort is delayed, NEEA staff will either need to continue pushing its adoption through committee, take the test procedure on internally, or shop to a different third-party		
	Technical solutions to condensate management exist, are identified and manufacturer interested in prototyping a solution is found		
	Projects related to HVAC Roadmap investigation will be spent via the Scanning budget		
	Execution of manufacturer engagement strategy to further understand barriers to condensate disposal, opportunity for efficient RTU products, and review of draft specifications		
	Budget assumes no extra-regional utility partnership opportunities		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF NEEA staff are unable to identify a technical solution to condensate management installation cost and/or manufacturers are not willing to implement a solution…	THEN interest in C-RTUs will remain low and cost-effective applications will be very limited	• Expand manufacturer conversations beyond condensing to include research and market information regarding efficient RTUs and other technologies • Garner market partner and manufacturer feedback and buy-in on product specifications • Partner with extra-regional utilities to advance manufacturer interest through increased market share and funding • Prototype creative technical solution(s) for condensate management and present findings to partners
IF CSA P.8 standard is not approved by the review committee...	THEN a broadly-accepted performance metric which gives credit for efficiency measures will be unavailable	• Advocate for P.8 inclusion in and outside of committee meetings • If indications that P.8 approval unlikely, explore additional procedure creation opportunities

Product Group: Lighting

Luminaire Level Lighting Controls

Executive Summary – The Luminaire Level Lighting Controls (LLLC) program is working to transform the market so that LLLC systems become standard practice for commercial buildings. Program activities target new construction, major renovation and lighting retrofits. To lower incremental cost to customers, in advance of economies of scale eventually bringing down prices, the program leverages downstream customer incentives that NEEA funders put into place in 2018-2019 and in 2020 will support additional funders in launching customer incentives. Other 2020 areas of activity include: 1) providing education and resources targeting installers, lighting designers and specifiers to build the capacity to deliver and promote LLLC technology; and, 2) engaging key influencers in the supply chain and sales channels to create more effective champions of LLLC adoption in the market.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	Adoption of LLLCs becomes standard practice for commercial buildings, as the majority of lighting products come with embedded sensors and controls as the default option
Program Status	Currently in Market Development
Key Accomplishments to date	• Strong and increasing availability of product, with 20 systems qualified from 14 manufacturers • Approval of energy savings by Regional Technical Forum (RTF), helping to support funders in offering downstream incentives • In collaboration with funders, over 300 trade allies trained during 18 in-person educational sessions across all four states in the region • Incorporation of LLLC as an option in Washington Code and IECC 2018 national code base

Barriers and Opportunities	**Barriers:** • Product readiness – Program has achieved good availability of qualified product and continues to promote improvements in out-of-box usability • Trade ally knowledge and capabilities – In partnership with NEEA funders, the program has started to address installation, set up and programming skills regionally through training, in partnership with NEEA funders • Awareness of value proposition – Program will strengthen its activities to increase the understanding and acceptance of LLLC lighting, energy and other business benefits to decision-makers and influencers • First cost – Incremental cost is starting to come down; Program continues to support utility efforts to offset project cost through utilities' downstream incentives **Opportunities:** • Solid state lighting trends – Program leverages the strong regional and national market interest in adopting LEDs through its promotion of LLLC as best LED option • Manufacturer investment – LLLC is viewed as a way to expand value of lighting by offering additional customer benefits, such as data and connectivity with other business and building systems

Table 2 –Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	1.2 – 2.2			
Energy Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	0	0	0	0
2020-2024 Estimate	2-5	2-5	2-3	2-3
2020-2029 Estimate	14-17	14-17	12-13	12-13
Additional Value Delivery	Training to build controls installation capabilities and to support funder relationships with trade allies			
	Increased customer engagement opportunities for funders			
	Data and research on lighting controls for the region, including establishing Regional Technical Forum (RTF) savings rate and incremental cost			
	Support for specification development resulting in reduced market confusion and a qualified product list available to funder programs and the market			
	Common marketing and education resources that funders can leverage in their programs and thus provide benefits to trade allies working across service areas			
	Market development for LLLC supports funder efforts to help customers reach building energy-use goals and supports future funder demand response initiatives			

Table 3 – Goals and Barriers

2020 Goals and Barriers	**Activities**	**Target**	**Threshold**
Goal: Deepen technical skills of installers, lighting designers and specifiers to deliver LLLC **Barrier:** Trade ally knowledge and capabilities	• Build upon foundation already established through program training efforts by - Offering additional training topics - Expanding reach to additional audiences • Develop marketing resources to support education efforts • Continue collaboration with Lighting Design Lab and Design Lights Consortium to develop and deliver trainings • Collaborate with manufacturers to bring additional training and technical support to region • Support NEEA funders as requested in their efforts to promote LLLC to their customers and to educate their trade and design allies	150 participants in newly developed training in 2020	100 participants in newly developed training in 2020
Goal: Increase promotion of LLLC through key manufacturer sales channels **Barrier:** Awareness of value proposition	• Establish agreements with a targeted set of influential manufacturers to ensure promotion of LLLC by their Northwest sales channels and to secure access to sales data to support program savings reporting • Develop resources to support local manufacturer representatives' and distributor sales efforts	Four manufacturers have agreements in place	Three manufacturers have agreements in place

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Increase awareness of LLLC benefits and applications among key decision makers and influencers **Barrier:** Awareness of value proposition	• Develop resources targeting key decision influencers – lighting installers, designers and specifiers – to increase their acceptance of LLLC and enable them to serve as champions in the market • Use LLLC champions to educate broader target audience about benefits, capabilities and common applications through - Earned media in trade publications - Leveraged industry partnerships via the BetterBricks platform - Engagement with influential firms and thought leaders - Presentations at conferences and events	Four earned media campaigns to increase awareness of LLLC value proposition among key audiences through their trusted sources and publications	Three earned media campaigns to increase awareness of LLLC value proposition among key audiences through their trusted sources and publications

Table 4 – Budget

	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$943,000	$1,308,000	• Program has entered market development • Market research and evaluation activities will increase in 2020
Key Assumptions Driving Budget Estimates	**Data Collection & Assessment:** Continued collection of sales data from distributors at current stipend level. Assuming addition of data collection from manufacturers and local manufacturer representatives without necessity for data stipends.		
	Market Channel Development: Program implementer ramping up activities. Action plans to increase promotion will be put in place with key manufacturers and their sales channel by end of 2019. Program will begin outreach to influencers to increase recommendation of LLLC. Collaboration with Integrated Design Labs to bolster awareness.		
	Market Research & Evaluation: Market assessment to inform program activities. Annual study of LLLC prices and installation cost. Research to support energy savings forecasting and reporting.		
	Marketing: Program marketing materials designed to be used by funders to help bolster market awareness. Collaboration with industry associations and market partners raise acceptance of LLLC. Securing earned media and attending events to educate key target audiences and boost market awareness. Development of case studies to provide credible examples for market actors.		
	Technical Research: Completion of study to collect and analyze existing energy savings data.		
	Technical Support & Training: Collaboration with Lighting Design Lab to develop training and resources to increase acceptance among trade allies and design allies. Training gap analysis and development of detailed program plans to address market needs to be completed in January 2020.		

Table 5: Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF new strategy of engagement with manufacturers to create sales channel promotional plans does not create champions for LLLC in the market…	• THEN delays in market adoption of LLLCs will create lost opportunity for savings and result in near and midterm impacts to program savings estimates • THEN increased spend may be required in future years if change in strategy is needed	• Learn and refine after launching first few action plans with manufacturers • Implement multiple program strategies simultaneously such as training, marketing and case studies • Leverage learnings from upcoming 2020 market assessment study • If plan is not getting results by end of Q3, revise plan which may include bolstering marketing and engagement activities and exploring additional mid and upstream incentives for distributors, manufacturer reps, specifiers, and/or manufacturers in 2021
IF unable to collect market sales data under the current data plan (via distributors, manufacturers and local manufacturer representatives) …	• THEN there will be significant near-term and long-term diminishment of program savings reporting • THEN increased spend may be required to develop additional strategies to obtain data	• Build in data collection as a required component of promotional plans with manufacturers and local manufacturer representatives • Leverage learnings from upcoming 2020 market assessment study • If plan is not getting results by end of Q3, explore additional strategies and sources to capture market data
IF NEEA funders decrease LLLC program focus and downstream incentives…	• THEN market adoption will be delayed and lead to continued installation of LED fixtures without integrated controls, resulting in lost opportunity and impact on program savings outlined above • THEN increased spend may be required in future years to bolster marketing and mid- and upstream activities to fill the gap in generating customer demand, increasing awareness of value proposition and addressing the cost barrier	• Continue engagement with funders to provide resources to support their programs • Leverage regional collaboration efforts around networked controls to provide additional tools to funders to support incentive and training programs • Implement multiple program strategies simultaneously such as supply and sales chain collaboration, education, marketing and case studies • If needed, explore further mid- and upstream activities and incentives, as well as marketing

Product Group: Motor-Driven Systems

Extended Motor Products

Executive Summary – The Extended Motor Products (XMP) program works to accelerate the adoption of more efficient motor-driven products, such as pumps, fans, and compressors, focusing initially on packaged pump systems in applications of 50 horsepower (hp) and below. In 2020, the program will continue working with Northwest pump distributors to better understand how to shift the sales mix toward efficient pumps and circulators 50hp and below; and, collect data to inform the region of the stock and sales flow in the pumps and circulators market. The program will also raise market awareness and uptake of the Hydraulic Institute Energy Rating Label and identify the most promising ways to deepen market engagement with smart pump distributors and distributors of other motor-driven systems.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	The marketplace specifies, stocks and sells efficient motor driven products, initially focusing on pumps and circulators 50hp and below, which will influence future federal standards
Program Status	Market/Product Assessment; Preparing for Product Readiness milestone in Q1 2020
Key Accomplishments to date	• Completed research study on 454 pumps across the Northwest to validate energy savings estimates in the Regional Technical Forum (RTF) planning measures for pumps and circulators • Signed three-year participation agreements for data sharing and promoting energy-efficient pumps with five Northwest pump distribution companies who sell Hydraulic Institute Energy Rating labeled products
Barriers and Opportunities	**Barriers**: • Lack of deemed savings and/or verifiable savings • Energy efficiency benefits rarely impact customer product selection • Lack of access to full category data on pumps sold through supply chain • Distributor stocking and promotion practices do not prioritize energy efficiency • Customer buying preferences do not prioritize lifecycle cost analysis • Pump specifiers, buyers and installers often do not pay or see the energy bills associated with the pump systems they select **Opportunities:** • Federal standard driving pump energy efficiency for covered pump types up to 200hp taking effect January 27, 2020 • Hydraulic Institute Energy Rating Label makes clear the relative energy performance differences between models. In 2020 the Hydraulic Institute will begin to include Energy Rating Labels for circulators • New deemed savings measures (RTF planning) are available for pumps and circulators, many of these measures are anticipated to reach RTF proven status in 2020 as a result of the pumps research study NEEA completed in 2019 • Traction with pump distribution partners is enabling market data access and analysis • Ability to measure and track the product category wide Energy Rating level of pump sales • Strong relationships and engagement with pump manufacturers and their trade association, the Hydraulic Institute

Table 2 –Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	TBD – This program is in early development
Energy Savings (aMW)	Program is in development and annualized forecast is still uncertain
Additional Value Delivery	Market analytics that provide "line of sight" into the pump market and into the impact of incentives on promoting energy efficient equipment
	Opportunities for midstream market channel leverage, enabling research, and development of other motor driven system
	Deemed measure development for circulator pumps and clean water pumps

Table 3 –Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Northwest pump distributors actively participating in data sharing, sales and marketing support, and customer education to test and refine market interventions for efficient pumps and circulators 50hp and below **Barriers**: • Small individual savings amount per product, challenging market intervention • Lack of full category data of pumps sold through distribution • Distributors do not stock and promote efficient pump systems • Pump buyers select products with low first cost without lifecycle cost analysis	• Partner with pump distributors to identify what tactics work in what market segments to shift the sales mix toward higher Energy Ratings and packaged systems • Gather and analyze data to inform the region of the stock and sales flow in the pumps and circulators market	Seven active manufacturer representatives or wholesale distributors	Five active manufacturer representatives or wholesale distributors
Goal: Raise Northwest market awareness of the Hydraulic Institute Energy Rating label **Barriers**: • Pump buyers unaware of or not interested in energy performance differences between models • Pump buyers select products with low first cost without lifecycle cost analysis	• Support the Hydraulic Institute and pump manufacturers in their 2020 awareness campaign promoting energy-efficient technology and the Energy Rating Label • Partner with utilities and Northwest manufacturer representatives to educate pump buyers and specifiers on value of smart pumps and the Energy Rating Label	100 Northwest pump buyers and specifiers made aware of the Energy Rating Label through distributor-led lunch-and-learns, trainings and other events	70 Northwest NW pump buyers and specifiers made aware of the Energy Rating Label through distributor-led lunch-and-learns, trainings and other events

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Identify the most promising ways to deepen market engagement with smart pump distributors and distributors of other motor-driven systems **Barriers**: • Lack of deemed savings and/or verifiable savings • Small individual savings amount per product, challenging market intervention	• Conduct stakeholder outreach and field research to better understand data and functionality requirements necessary to connect utility incentives to motor driven product distribution	Program design memo informed by stakeholder insights complete by Q3 2020	Program design memo informed by stakeholder insights complete by Q4 2020

Table 4 – Budget

	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$826,000	$1,158,000	Ramping up activities to gain traction with distributors to inform program development
Key Assumptions Driving Budget Estimates	• Assumes seven participating distributors in 2020 • Assumes an Energy Rating Label awareness campaign co-funded by Hydraulic Institute and NEEA • Assumes manufacturers continue supporting Northwest sales channel partner efforts to increase sales of packaged pump systems		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF alliance dollars do not result in access to full category pump sales data from distributors…	THEN XMP initiative would have significant measurement and savings reporting challenges	Leverage Distributor Platform, data services and NEEA Market Intelligence group to make participation in data sharing simple, secure and mutually beneficial for participating distributors
IF alliance midstream market shift strategy does not result in measurable market uptake…	THEN the program will need to find another distributor strategy or a completely different strategy to move the market.	Work collaboratively with Northwest utilities and market actors such as the distribution channel and the Original Equipment Manufacturer (OEM) to design, test and remain coordinated on downstream and midstream incentives targeting pumps and circulators
IF the Hydraulic Institute's Energy Rating Label does not achieve strong market acceptance among pump OEMs and pump buyers/specifiers…	THEN NEEA staff will need to explore other strategies for raising the energy efficiency of the Northwest pump market	Partner with Hydraulic Institute and pump OEMs to raise awareness of the value of energy efficiency and the ER label by educating pump buyers, specifiers and owners

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF national-level partnerships on utility intervention points, Energy Rating Label, or other aspects of smart pumps market transformation prove to be unviable…	THEN NEEA staff will need to rethink the possibility for an online marketplace connecting utilities and distributors outside the region	Work with key extra-regional stakeholders within The Consortium for Energy Efficiency (CEE), Hydraulic Institute and utilities to build buy-in and understanding of an online marketplace concept, adjusting the programs approach to meet key stakeholder requirements while remaining focused on meeting shared market transformation goals
IF smart pump product advantages do not gain market uptake over less efficient pump products…	THEN NEEA staff may need to shift focus away from smart pumps and onto other (likely less impactful) pump energy efficiency strategies…	Partner with pump distributors, wholesalers, manufacturer representatives, and utilities to build market acceptance, showcase success stories and educate pump buyers/specifiers about the advantages of smart pumps

Product Group: New Construction

Next Step Homes

Executive Summary – The Next Step Homes (NSH) Program works to increase the market adoption of above-code energy-efficient new construction single-family homes and influence and accelerate future residential energy code adoption in the region. Previous program activities included rater/verifier development and above-code programs coordination. These efforts resulted in the increased participation of above-code homes, advanced homes technology and practice data sharing, and Axis database infrastructure to support utility performance path programs. In 2020, NSH will transition the program goal from increasing participation in utility residential above-code programs to focus on activities that will more directly influence future code advancement. In addition, the Program will seek Scale Up Milestone in 2020.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	• Increase market adoption of energy-efficient above-code new construction homes • Influence and accelerate future code adoption in the region
Program Status	Currently in Strategy Testing and Finalization; program will prepare for Scale Up milestone in 2020
Key Accomplishments to date	• Increased above-code home construction in the region by creating a stable rater/verifier market, establishing the Northwest Performance Path modeling protocol and launching the Performance Path utility programs • Collected data from over ten incentive programs offered in the region that provided insights into how above-code homes were being built and best practices to inform future code proposals. Used market-based data to determine energy savings from the program • Established BetterBuiltNW website as a regional resource for techncial information, maket trends, opportunities and network connections between key market partners
Barriers and Opportunities	**<u>Barriers</u>** • Lack of consistency in the region among residential above-code programs • Unclear value proposition for above-code construction for builders and raters • Lack of knowledge and experience which limits builder and rater's ability to build more energy efficient homes. • Limited access to data showing the technologies and best practices from the above-code efficient homes **<u>Opportunities</u>** • Develop protocols and establish a consistent Performance Path utility program to motivate builders and raters to participate in above-code programs across the region • Educate the market on emerging technologies and best practices which will increase market acceptance of future code improvement • Collect above-code home data, conduct market trends analysis, and identify code proposals

Table 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	MT, ID and WA =>1 OR = 0.8-1.0. Ratio assumes lower future costs; NEEA will update analysis in Q4 2019 to align with current state goals			
Electric Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	N/A	2.3	N/A	2.3
2020-2024 Estimate	5-12	18.2	5-12	18.2
2020-2029 Estimate	9-13	43.1	9-13	39.6
Gas Savings (million Therms)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	N/A	0.6	N/A	0.6
2020-2024 Estimate	N/A	15.4	N/A	15.4
2020-2029 Estimate	N/A	60.2	N/A	60.2
Additional Value Delivery	Performance Path framework provides utilities with an opportunity to engage with their local residential new construction market and offer incentives on energy-efficient homes			
	Data streams provide an understanding of market trends and informs future code proposals			
	Training and education engagement provides a mechanism to build relationships and creates support of above-code homebuilding, leading to future code advancement			

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Use residential new construction data collected through NSH to inform code proposals **Barrier:** Limited access to data showing the technologies and best practices from the above-code efficient homes	• Collect above-code homes data to inform code proposals • Conduct market trend analyses on above-code home practices and provide recommendations for future code proposals • Continue pilot study on advanced wall system and evaluate the technology feasibility and cost-effectiveness for future code consideration • Use NSH education resources and network to support code proposals in upcoming code cycles	• Technical road map for future residential code development • Three code proposal recommendations provided internally to codes to team	• Technical road map for future residential code development • One code proposal recommendation provided internally to codes to team

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Shift program strategy and activities to focus more on emerging technologies and best practice demonstrations to prepare the market for future code changes **Barrier:** Limited access to data showing the technologies and best practices from the above-code efficient homes	• Conduct two market research studies to provide an understanding of current builder and rater status in the market and use findings to inform the program transition plan • Implement transition strategy in 2020 focused on transitioning NSH program from utility incentive program support to increase market adoption of new technologies and best practices, which will directly influence future code advancement	Transition plan developed in Q1 2020 and implemented in Q4 2020	Transition plan developed in Q2 2020 and implemetned in Q1 2021

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$1,375,000 (Total) $ 975,000 (Electric) $ 400,000 (Gas)	$921,000 (Total) $436,000 (Electric) $485,000 (Gas)	Planned reduction in NSH program budget. In 2019, an investment was made to enhance the Axis database and other NSH program resources to increase use. Consequently, less budget is needed in 2020.
Key Assumptions Driving Budget Estimates	• New activities and budget shift to focus on data analysis, pilot projects on advanced wall system and other emerging technologies and best practices • Market evaluation and market research studies • Technical support and trainings to builders, raters, and verifiers on Performance Path and Axis database • Data collection of above-code homes • Host the Home Efficiency Forum • Update and maintain BetterBuiltNW website		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF the rater/verifier network fails to expand or drive enough business to justify their presence in a local market…	THEN there is no 3rd party market partner to support builders participating in above-code programs. Lower participation in above-code programs could result in reduced builder acceptance for future code changes	• Provide technical support, training and future focused code training for raters/verifiers to strengthen the value they provide to builders • Determine key markets for residential new construction and above-code programs using data and market research and assess rater/verifier coverage. Implement rater/verifier development activities where needed
IF the single-family new construction market slows down…	THEN less above-code participation and reduction of energy savings	Highlight above-code programs and energy efficiency as a market differentiator through trainings and education to increase the value proposition of energy efficient home building

Product Group: New Construction

Commercial Code Enhancement

Executive Summary – Commercial Code Enhancement (CCE) works with utilities and key code stakeholders to identify future code proposals and align utility programs and market best practice with future code changes. In 2020, CCE will continue to focus on improvements in building efficiency and work within established state energy code collaboratives to prepare for future code cycles. Utility feedback will provide guidance on what future code technologies and practices are incorporated into commercial new construction incentive programs. CCE will support key code stakeholders, utilities and the market in staying ahead of code and using market best practice to inform future code proposals.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	States reach energy reduction goals and adopt state energy codes that continue to lower energy use in commercial new construction buildings
Program Status	• Approved for market development in 2017 • Integrated with Codes and Standards in 2019
Key Accomplishments to date	• State Coordination Plans developed for each state • Two Washington proposals adopted into new commercial code • Three Montana technical briefs completed • Successful integration with existing state code collaboratives in Idaho and Montana • Washington Commercial Code Technical Roadmap – in progress • Coordination with Energy Trust to offer ASHRAE Standard 90.1* trainings and lighting roundtable (Q4 2019) *In 2019 Oregon adopted ASHRAE Standard 90.1-2016 as the new commercial energy code requirement which goes into effect in October 2019.
Barriers and Opportunities	**Barriers:** • Each state has different code requirements, processes, legislative policies, and stakeholder motivations • Moving to the market to a whole building system-oriented approach, vs prescriptive measures • Complex and diversified decision makers in commercial building designs and construction **Opportunities:** • State policies with energy code efficiency and energy reduction goals. • Collaboration with key code stakeholders and utilities in all 4 states. • Increased alignment internally with NEEA Codes & Standards and new construction

Table 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	TBD – This program is in early development
Energy Savings (aMW)	Currently developing models for savings forecast
Additional Value Delivery	Increase coordination and alignment between code, utility programs and the market to advance energy efficiency
	Provide a communication platform for utilities to follow code development and opportunities in their state
	Identify future utility program measures

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Identify technologies/ building strategies to support in upcoming code cycles in Oregon and Washington **Barriers:** • Lack of proof of technical viability of technologies & practices • Lack of affordability and technical viability of technologies and practices	• Develop strategy to support and influence future ASHRAE Standard 90.1 proposals • Identify system performance efficiency demonstation projects that CCE can support • Complete the Washington commercial code technical roadmap and prepare proposals for the 2021 Washington code	• ASHRAE Standard 90.1 support strategy is complete • Publish the Washington Commercial Code Technical Roadmap • Two pilot projects focused on the system performance efficiency • Identify three code change proposals	• NEEA staff or contractor on ASHRAE committee • Publish the Washington Commercial Code Technical Roadmap • One pilot project focused on the system performance efficiency • One code change proposal
Goal: Identify opportunities to increase awareness of above code best practice in Idaho and Montana **Barriers:** • Business as usual approach of developers & builders • Resistance to change among code officals • Lack of affordability and technical viability of technologies and practices	• Develop case studies/tech briefs/technical support demonstrating successful use of advanced tech or practice in new buildlings • Continue participation/ relationship building with code collaboratives • Raise awareness in the design community for future IECC requirements by adding future code focused content to code trainings	• Two support activities in each state • CCE as an agenda item at each collaborative meeting • Four trainings on above-code best practices and emerging technologies	• One support activity in each state • CCE bi-annual updates • Two trainings on above-code best practices and emerging technologies

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$512,000	$345,000	Planned reduction in CCE program budget
Key Assumptions Driving Budget Estimates	Washington's code roadmap presents actionable steps to take in 2020 to prepare for 2021 WA commercial code		
	Energy Trust is interested in moving toward whole building and system performance efficiency programs		
	Idaho and Montana support in raising greater awareness for advanced technologies/practices		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF NEEA staff and Washington Stakeholders do not select proposals for CCE to support in 2021…	• THEN Washington state commercial code does not have significant increase in energy efficiency. State falls behind on 2031 goals • THEN technical budget will not get used on efforts to support Washington's 2021 code cycle	Bring stakeholder groups together early in 2020 to review Washington technical roadmap and plan a strategy for 2021 code
If state code doesn't progress in Idaho and Montana…	THEN Idaho and Montana continue to adopt IECC, and potentially create amendments that reduce energy efficiency. NEEA staff will have to consider a longer investment in Idaho and Montana	• Continue participation and relationship building in Code Collaboratives. This will open up a greater willingness to look beyond code • Look for quick win opportunities. (example: three tech briefs developed for Montana in 2019)
IF Oregon's adopts ASHRAE Standard 90.1 in its 2019 code requirements…	THEN code requirements get ahead of current market practice, resulting in lower compliance	• Develop a training strategy that integrates code requirements and above code best practice to help the market meet and exceed code • Coordinate training opportunities with Energy Trust to reach the design community responsible for applying code requirements to commercial new construction projects

Product Group: New Construction

Manufactured Homes

Executive Summary – In 2018, the alliance's Manufactured Homes program launched the NEEM+ specification, an advanced tier of energy efficient manufactured home leveraging ENERGY STAR's NEEM (Northwest Energy Efficient Manufactured Housing) program. In 2019, the alliance secured participation from two key manufacturers and their champion retailers. In 2020, the program will solidify manufacturer participation to ensure NEEM+ is available throughout the region, focus on the role of the retailer to drive NEEM+ sales and create sustained consumer demand while NEEA reduces investment into the program.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	The NEEM program influences the next Housing and Urban Development (HUD) code and NEEM+ becomes the new above code specification in the region and has a long-term market share of 40+ percent
Program Status	Program is preparing for Scale-Up milestone in Q4 2019
Key Accomplishments to date	• 25 NEEM+ homes sold at retail • Two manufacturers committed to building NEEM+ homes • Two key retailers actively selling NEEM+ homes • Digital media campaign achieving >5% conversion rate vs. the goal of 2.5% • 28+ utilities offering NEEM+ incentives
Barriers and Opportunities	**Barriers:** • Consumer awareness and demand is still low • Busy manufacturers are not interested in NEEM+ • Delays in the supply chain disrupt manufacturers production schedule **Opportunities:** • Key manufacturers/retailers demonstrating success will bring along other market actors • Strong relationships with market partners can be leveraged for emerging technologies; NEEA staff will be testing quick connect heat pump refrigerant systems and manufactured homes are a primary testing market

Table 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	2.8			
Energy Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	0.1	0.1	0.1	0.1
2020-2024 Estimate	0.8-2	0.8-2	0.8-1.8	0.8-1.8
2020-2029 Estimate	5-8	5-8	2.5-4	2.5-4
Additional Value Delivery	Program serves rural or low-income customers			
	Increasing NEEM+ market adoption positions the specification to be the next ENERGY STAR spec in the Northwest when the HUD code changes			
	Work with utilities to require NEEM+ in manufactured home replacement programs			

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: A stable market for NEEM+ exists **Barrier:** Limited product availability, knowledge/capability	• Support retailers with NEEM sales tools, collateral, and other mechanisms (non-financial incentives, engagement opportunities) • Generate homebuyer demand through NEEM+ branding recognition • Support utilities in developing NEEM+ homebuyer incentives	10% NEEM+ market share per participating manufacturer	7% NEEM+ market share per participating manufacturer
Goal: Solidfy current NEEM+ manufacturer support and increase the number of manufacturers offering NEEM+ **Barrier:** Limited product availability, higher first cost	• Provide $500 manufacturer incentives and extend participation agreements through 2020 • Continue providing manufacturer/retailer outreach and support	Two additional manufacturers offer NEEM+	The two committed manufacturers continue offering NEEM+
Goal: Increase the number of retailers ordering NEEM+ **Barrier:** Limited product availability, knowledge/capability, unclear Value proposition	• Leverage relationships with retailers to increase NEEM+ awareness • Develop retailer sales tools that communicate the value of NEEM+ to homebuyers • Raise consumer demand through awareness campaigns	25% of retailers from active manufacturers sell NEEM+	15% of retailers from active manufacturers sell NEEM+

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$510,000	$230,000	Reduced incentive dollars.
Key Assumptions Driving Budget Estimates	• Manufacturers continue to build NEEM+ with decreased incentives; 2020 incentive budget is for 200 homes at $500/home • Over 15% of retailers from participating manufacturers are selling NEEM+ • Manufacturer outreach budget goes toward bringing additional manufacturers into the program		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF current participating manufacturers drop NEEM+ without incentives…	THEN there is no NEEM+ supply to meet retailer and consumer demand	Propose reducing the manufacturer incentive ($1,000 in 2019 to $500 in 2020) to begin a more gradual transition of NEEA support.
IF additional manufacturers do not offer NEEM+…	THEN there is less competition, risk of regional inequity by only having two manufacturers participating	Continue to implement marketing plan aimed at increasing consumer demand

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF retailers do not sell NEEM+…	THEN NEEM+ is not actively marketed to homebuyers at the point of purchase	• Brainstorm different retailer engagement options • Gain retailer feedback on what will be most effective • Plan engagement by quarter at the beginning of 2020 and remain flexible
IF the NEEM brand goes away…	THEN homebuyer demand generation efforts and budget are not effective	• Create a stable market for NEEM 1.1 (ENERGY STAR) and NEEM+ • Maintain relationships with manufacturers and retailers

Product Group: Water heating

Heat Pump Water Heaters

Executive Summary – The Northwest Power and Conservation Council (Council) has identified 600 aMW of 20-year savings potential for electric water heating. Realizing this significant savings opportunity requires influencing a federal standard in 2023. Regional and national heat pump water heater (HPWH) sales are not currently on-track to achieve this goal. In 2020, the program is significantly shifting its activities to drive a three-fold increase in sales over 2019 levels. To drive this growth, the program is focusing on retrofit electric water heater installations – both planned and emergency – by working with select "Key Account" regional installers and various national entities, while also exploring opportunities to leverage decarbonization momentum.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	Influence adoption of a federal standard Final Rule requiring HPWHs for all electric storage tanks 45 gallons or larger by 2023*. HPWH is the dominant technology for electric water heating for tanks 45 gallons or greater * A federal standard Final Rule by 2023 would result in new standard effective date 2028
Program Status	HPWH program is in Market Development
Key Accomplishments to date	• Updated Advanced Water Heater Specification (AWHS) to version 7.0 • Grew market availability from a single startup company to all major water heater manufacturers producing HPWHs • Built strong national/extra-regional relationships • Delivered 47,233 regional installs between 2012-2018 (6.2% share of electric water heater sales); On track for 13,000-14,000 installs in 2019
Barriers and Opportunities	**Barriers**: • Supply Chain is resistant to install HPWHs compared to standard electric resistance tanks • Consumers are unfamiliar with water heating technologies, especially in emergency replacement • Current Federal Standard does not adequately motivate market actors to install the most efficient products **Opportunities**: • New manufacturer(s) looking to enter the HPWH market in 2020 • Washington State HB1444 water heater requirements take effect on January 1, 2021, which will engage manufacturers in 2020 • Numerous California cities moving to heat pump technologies in all applications

Table 2 –Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	1.8			
Energy Savings (aMW)	**Total Regional**		**Co-Created**	
	Target	**Forecast**	**Target**	**Forecast**
2020 Estimate	1.4-2.3	1.4-2.3	1.1-1.8	1.1-1.8
2020-2024 Estimate	11-25	11-25	9-21	9-21
2020-2029 Estimate	70-84	70-84	61-73	61-73
Additional Value Delivery	Access to water heater full-category distributor dataset			
	Capacity value for demand response (DR) standard communication protocol and installation of DR-enabled water heaters			
	Opportunity for manufacturer and other market actor relationships to be leveraged outside of HPWH program			
	Key greenhouse gas reduction strategy for local and state governments. Also developing background on emissions reduction credit opportunity for utilities			

Table 3 – Goals and Barriers

2020 Goals and Barriers	**Activities**	**Target**	**Threshold**
Goals: • Increase chances of Federal Standard passage by increasing regional and national HPWH adoption • Remove installation/usage barriers (both actual and perceived by installers) to drive sales **Barrier**: Current Federal Standard does not adequately motivate market actors to recommend/install most efficient products	• Work with stakeholders in California to encourage active support of the AWHS • Develop program implementation resources and support for key utilities throughout the nation • Map national and regional HPWH sales goals over the next three years needed to support Federal Standard • Position HPWHs as a tactic to meet carbon goals set forth by local, state and regional actors • Educate supply chain via training, case studies and other education channels • Explore opportunity to increase exposure and influence of Federal Standards process • Work with manufacturers to launch 120-volt HPWH product to address some challenging installs	• Increase regional HPWH sales to 18,000 • Increase national HWPH sales by 20% • Retrofit sales targets identified by Q1	• Increase regional HPWH sales to 15,000 • Increase national HWPH sales by 10% • Retrofit sales targets identifed by Q2

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Drive installer adoption of HPWH retrofit installations through targeted Key Account strategy **Barrier**: Supply chain resistant to install HPWHs compared to electric resistance tanks	• Deliver supply chain company-wide engagement strategies and trainings to ensure widespread knowledge/ adoption of HPWHs • Provide marketing consultation, including sales and lead generation support • Execute consumer awareness tactics in collaboration with manufacturers and retailers, driving demand for HPWHs	Engage and deploy activities/strategies for 15 Key Accounts by Q3	Engage and deploy activities/strategies for 10 Key Accounts by Q4
Goal: Increase supply chain support by implementing up to three pilots designed to drive adoption of HWPH technology; The pilots will be designed to engage the supply chain and/or other HPWH market stakeholders **Barrier**: Supply chain is resistant to install HPWHs compared to standard electric resistance tanks	• Carbon Offset Pilot: Explore leveraging currently untapped revenue/value stream of carbon credits to support generation of verified and registered carbon credits from a recognized verification body expanding reach of HPWH opportunity to wider audience • Fixed Retail Price Install Pilot: Implement a fixed installation pilot at retail to identify tipping point cost of installation that eliminates first cost concerns • Extended Warranty Pilot: Work with up to three trade allies to pilot an extended warranty that includes parts and labor mitigating perceived call back risk by installers	Complete one pilot for evaluation by Q3	Complete one pilot for evaluation by Q4

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$2,968,000	$3,047,000	
Key Assumptions Driving Budget Estimates	• <15,000 units sold in the region • <15 active key accounts • Completion of at least 1 of 3 regional pilots • Similar incentives to 2019 (distributor bonuses for achieving targets and $40/unit admin fee)		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF HPWH retrofit sales do not grow considerably in the next 2-3 years…	THEN there may be issues with market adoption, threatening Federal Standards goal	• Continue to closely monitor retrofit sales trends • Move to a bonus/tiered incentive structure • Focus on key installation company partners • Increase national efforts to increase national sales • Increase mass deployment efforts
IF manufacturers lose interest and commitment to technology…	THEN manufacturers may limit product promotion and investment in technology	• Strongly encourage region to continue incenting products and move to midstream incentives • Work on supply chain engagement • Build consumer awareness • Increase national engagement • Increase mass deployment efforts
IF new construction market significantly slows…	THEN a significant portion of the HPWH market will slow	• Continue Key Account activities to build retrofit market

Product Group: Water Heating

Efficient Gas Water Heaters

Executive Summary – The goals of the Efficient Gas Water Heater (EGWH) program are to develop the market for efficient gas water heating products, bring a gas heat pump water heater (GHPWH) to market and ultimately influence the passage of a federal standard by 2030. Currently, one major manufacturer is in the process of commercializing a GHPWH, and it is estimated that the product will launch in 2022.

In 2020, the program will join with utilities across North America in a field demonstration of near-production GHPWH units. This effort will support product launch by spurring utility program development, validating performance in cold climates, identifying potential barriers to market acceptance, and initiating market awareness and experience with the product. The program will also seek to identify additional natural gas technologies that can deliver similar levels of performance and to better understand how existing efficient gas water heater technology can prime the market for GHPWHs. Finally, the program will explore opportunities to highlight the potential of GHPWHs to play an instrumental role in achieving carbon reduction goals.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	Influence the passage of a Federal Standard requiring residential gas storage water heaters greater than 35 gallons to have a Uniform Energy Factor (UEF) >1
Program Status	Currently in Concept and Opportunity Assessment; Preparing for Initiative Start milestone in 2022, pending a confirmed launch date for a commercialized GHPWH
Key Accomplishments to date	• Partnered with major manufacturer to validate GHPWH business case, accelerate product development and initiate launch strategy • Collaborated with multiple technology providers to support their product development and evaluate consumer market potential • Updated Advanced Water Heater Specification (AWHS) with natural gas criteria to ensure performance and comfort in cold climates • Drove development of a North American GHPWH field demonstration (NA Field Demo) and collaborated with utilities, energy efficiency partners and major manufacturer to secure co-funding • Worked with A.O. Smith, Bradford White, Rheem, GE, Rinnai, and other key market actors to increase awareness of GHPWH technologies and increase interest in commercialization
Barriers and Opportunities	**Barriers**: • Lack of commercialized product • Lack of awareness and demand for EGWHs • High first costs, especially at product launch

Table 1 – Program Overview cont.

Barriers and Opportunities	**Opportunities**: • Bolstering product launch by driving NA Field Demo, supporting major manufacturer product development and identifying alternate technologies. Leveraging increased focus on decarbonization as business case enhancement • Leveraging NA Field Demo to create early product "installer advocates" and stimulate utility program development • Partnering with major manufacturer to develop launch strategy • Utilizing increased attention to and demand for carbon reduction as an avenue to amplify awareness of gas-fired solutions to achieving decarbonization goals • Leveraging NA Field Demo to stimulate utility program development, developing opportunities for regional and/or national upstream cost-reduction strategies in coordination with launch and performing product development projects to identify related savings opportunities

Table 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	TBD – This program is in early development
Energy Savings (aMW)	Program is in development and annualized forecast is still uncertain. 20-year total regional savings potential is 13MM-100MM annual therms
Additional Value Delivery	Activities to prime the market for GHPWH launch will support existing funder gas water heater programs and provide funders with customer and/or trade ally engagement opportunities including trainings, pilots, and incentive program development/enhancement
	Learnings from development of gas heat pumps for water heating will be leveraged by both NEEA and market actors to utilize the technology for other end uses (combination systems, furnaces, rooftop units, etc.)

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Install near-production units to validate performance, prepare utility incentive programs, support product finalization and accelerate product launch; 100 estimated total installations between Q4 2020 and Q1 2021 **Barrier**: Lack of commercialized product	• Drive NA Field Demo development and commencement • Coordinate with alliance gas funders to support identification of demo sites and installation of units	30 (of one 100 total) units installed in North America	Confirmed shipping dates for 30 units

Table 3 – Goals and Barriers cont.

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Identify and support additional residential GHPWH technologies, beyond those currently under development, that can deliver UEF >1, have a Technical Readiness Level (TRL) of 3 or higher and have a path to cost-effectiveness **Barrier**: Lack of commercialized product/ product diversity	• Develop strategy to identify additional technologies • Scan market and investigate promising technologies • Partner with technology developers and/or manufacturers to demonstrate technical readiness	Two additional technologies identified	One additional technology identified
Goal: Prepare for product launch by developing an upstream barrier- reduction strategy **Barrier**: High first costs, especially at product launch	• Collaborate with market actors, utility partners and/or manufactuer(s) to develop draft strategy, including funding opportunities • Explore opportunities to integrate GHPWHs as a tactic to meet carbon goals set forth by local, state and regional actors	Broad, North American upstream barrier-reduction strategy developed	Northwest barrier-reduction strategy developed

Table 4 – Budget	**2019 Forecast**	**2020 Budget**	**Variance Explanation**
Annual Expense	$1,010,000	$875,000	
Key Assumptions Driving Budget Estimates	• NA Field Demo proceeding as planned, with first installations starting in Q3 (factors include overall timeline adherence, co-funding commitments secured as planned, product readiness, demonstration site selection, etc.) • Total NA Field Demonstration budget estimated ~$5M, alliance contribution (over 3 years) estimated to be 20% or less of total • Opportunities to develop currently-known products are developed as expected • Additional GHPWH technologies exist and are identified		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF current leading technology developer has not scaled up to mass production and/or it cannot adequately scale-up production of gas heat pump core-component production…	THEN the NA Field Demo may be significantly delayed or cease; without a "leading technology" the program risk level substantially increases	• Support efforts to bolster production and monitoring progress • Perform ongoing scanning to identify additional technologies • Drive multiple technology developers/manufacturers to evaluate/begin commercialization of GHPWH

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF significant product issues arise during the NA Field Demo…	THEN timeline to and/or likelihood of launch may be negatively impacted	• Structure Field Demo contracts to minimize risk; tying progress and achievements to milestone payments • Influence Field Demo project design to ensure thorough quality control and monitoring efforts are integrated and adhered to • Liaise between Field Demo actors and manufacturer to drive real-time product improvements • Perform ongoing scanning to identify additional technologies
IF no alternate GHPWH technologies are identified…	THEN additional budget could be required to stimulate technology and/or product development	• Drive multiple technology developers/manufacturers to evaluate/begin commercialization of GHPWH • Develop strategy to stimulate technology and/or product development

Enabling Infrastructure

BetterBricks

Executive Summary – BetterBricks is a long-standing, regional resource that supports the alliance's commercial programs by raising market awareness and capability for energy-efficient technologies and decision making. The target audiences for BetterBricks include building owners, property managers, buildings facilities staff, architects, designers, engineers and contractors. In 2020, the focus of BetterBricks is to further position itself as a trusted resource for commercial building professionals and pursue meaningful two-way engagement with key partners. This will allow alliance programs to better learn about energy efficiency best practices and technologies while simultaneously expanding cross-program leverage of the BetterBricks platform.

Table 1 – Program Overview

Description	BetterBricks is a centralized market engagement platform that enables alliance and funder programs to leverage NEEA's extensive relationships, resources, and market knowledge in the commercial building market in an effective, coordinated and streamlined manner. There are four pillars of the BetterBricks platform: 1. Relationships (with trade and member associations) 2. Data collection (via BetterBricks digital surveys and web analytics) 3. Tools and resources (such as case studies and CREHub) 4. Reputation and communication channels (position as a trusted resource)

Table 2 – Benefit & Value

Value Delivery	**Customer & supply chain engagement opportunities:** Build awareness for alliance programs; support savings, incentive and customer engagement opportunities for utilities; increase value exchange between alliance programs and market partners through coordinated, streamlined and two-way engagement experiences **Maximize efficiencies:** Support alliance commercial programs, including High-Performance HVAC, Natural Gas Condensing Rooftop Units, Window Attachments, Luminaire Level Lighting Controls, and Strategic Energy Management **Energy efficiency resources:** Identify research opportunities, and disseminate tools, resources and case studies for regional stakeholders to advance commercial building energy efficiency

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Build and leverage relationships with key market partners to increase the reach of commercial programs and create cross-program efficiencies **Barrier:** • Low awareness/inadequate understanding, Lack of market capacity to implement energy-efficient technologies or approaches	• Continue sponsorships of key partner organizations and industry events • Leverage Integrated Design Labs and similar partners to engage and promote alliance programs to key building professional audiences • Build relationship management tools and establish communication processes to support NEEA programs • Highlight partner stories on BetterBricks.com and through BetterBricks communication channels	Arrange 15 speaking and/or training opportunities for program teams	Arrange 10 speaking and/or training opportunitiess for program teams
Goal: Increase BetterBricks.com site traffic and utilization of resources from Northwest building professionals who own, operate, and manage commercial buildings **Barriers:** • Low awareness/inadequate understanding • Lack of market capacity to implement energy efficiency technologies or approaches • Unclear or uncompelling value proposition	• Develop and repost case studies from utilities, create and disseminate content - Website - Newsletter - Influencer channels - LinkedIn, social networks • Continue presence at industry events - Booths - Speaking engagements - Trainings • Evaluate and optimize the way users navigate and utilize BetterBricks.com	• Increase BetterBricks.com session numbers by 5% from 2019 • Increase BetterBricks.com session numbers by 5% from 2019	• Betterbricks.com session numbers are 95% of 2019 totals • Betterbricks.com resources accessed are 95% of 2019 totals

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Accelerate the adoption of technologies and practices among alliance programs and increase awareness and utilization of utility programs **Barrier:** • Low awareness/inadequate understanding • Lack of market capacity to implement energy-efficient technologies or approaches	• Develop decision-making, educational, and communication tools for use by BetterBricks, alliance programs and market partners • Highlight relevant alliance/utility program offerings within BetterBicks' communication channels • Cross-promote program technologies through BetterBricks communications • Support the City of Seattle Retrofit Accelerator pilot with technical assistance via the Univeristy of Washington Integrated Design Lab in order to gather learnings and resources for regional use • Develop a BetterBricks positioning strategy with consideration of other NEEA integrated systems program resources	• Create and add three new tools/ resources to BetterBricks.com • Increase utility traffic referrals by 5% from 2019 • Increase NEEA program site referrals by 10% from 2019	• Create and add two new tools/ resources on BetterBricks.com • Utility traffic referrals are 95% of 2019 totals • NEEA program site referral numbers equal to 2019

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$84,000	$470,000	Per the Cycle 6 Business Plan, the legacy Commercial Real Estate (CRE) infrastructure program is combined with BetterBricks. The CRE assets—including market relationships, tools and resources—are included within the scope of the BetterBricks platform in 2020 and through the next business cycle.
Key Assumptions Driving Budget Estimates	At least 10 sponsorships and other partnership investment opportunities exist and directly support the program goals (e.g., New Buildings Institute, Seattle 2030, Building Owners and Managers Association)		
	BetterBricks.com is a content-rich web property and requires regular optimization and maintenance to remain an effective alliance resource; BetterBricks.com requires a moderate site update in 2020		
	Developing a formal relationship management platform to fully support alliance and utility programs requires additional investment. This includes vendor support to help develop and maintain the platform as well as to support coordination of partner relationships		
	BetterBricks will maintain the legacy Spark tool at a minimum level in 2020 and continue to engage with funders on policy drivers and needs for addressing deep energy retrofits		
	Continue to support the City of Seattle to evolve the Tune-up Accelerator program to a Retrofit Accelerator pilot in 2020, providing key resources and learnings to inform the region on deep energy retrofit solutions		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF the BetterBricks platform is not consistently leveraged by alliance programs…	THEN the region's investment into the platform cannot be fully realized, and full value cannot be extracted	• Collaborate with funders to help leverage the BetterBricks platform for utility program opportunities • Regularly check in with programs to ensure the platform is providing value and is easily understood and used
IF a BetterBricks partner does not perceive an adequate level of value through its relationship with NEEA…	THEN opportunities and leverage points for all alliance programs may be reduced	• Maintain a clear engagement plan with partners that includes alignment on goals and identifies ways to maximize value exchange • Establish regular touch points to check in with partners for feedback • Provide relationship management best practices and guidance for alliance staff that engage with partners
IF BetterBricks.com does not consistently provide current, relevant content or is difficult/confusing to use among target audiences due to changing user expectations…	THEN the effectiveness of BetterBricks.com is greatly diminished as audiences are not able to find the help/information they are looking for. This may affect the sites position in the market as a trusted resource, reducing future opportunities	• Evaluate BetterBricks' adherence to current web best practice each quarter • Work with program teams and program vendors to ensure BetterBricks is adequately focused on the proper strategic opportunities and providing relevant content

Enabling Infrastructure

Top Tier Trade Ally

Executive Summary – Through the NXT Level training and designation, the Top Tier Trade Ally (TTTA) infrastructure program builds lighting trade ally skills through to support the delivery and market differentiation of more advanced energy-efficient commercial and industrial lighting retrofit projects. In 2020, the program will focus on: 1) continuing to expand the base of trade allies with Level 1 and Level 2 designation; and 2) positioning the NXT Level training platform to eventually transition to the market by increasing the efficiency and scalability of NXT Level implementation and growing market demand for NXT Level designated contractors. Continued collaboration with funders to host and promote training events for their trade ally networks remains a major tenet of training adoption. However, the program will also continue to explore additional avenues for marketing and outreach, and support current designees in retaining their NXT Level designation. The program will collaborate with funders throughout 2020 to define long-term goals of the training program, as well as exit criteria for a transition to market.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	TTTA's NXT Level Training builds lighting contractor skills and provides a designation and market differentiation that enables funder programs to effectively leverage this base of trade allies to deliver deep energy savings through quality, advanced commercial and industrial lighting retrofit projects
Program Status	Currently in Market Development
Key Accomplishments to date	• Program adapted the format of training offerings over time to increase reach across the region: - In 2018, the program delivered 17 NXT Level 1 training sessions both in-person and via webinar to a total of 473 participants - In 2019, the program will deliver two NXT Level 2 workshops via a 2-part webinar series • 227 individuals and 49 companies have been designated NXT Level 1 • 25 individuals have been designated NXT Level 2 since rollout of Level 2 in Q4 2018, with an additional 69 trade allies currently enrolled
Barriers and Opportunities	• Lack of an effective base of skilled contractors in the Northwest • Lack of contractors in the Northwest with advanced skills • Lack of differentiation of experienced contractors from inexperienced contractors

Section 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	N/A – Infrastructure Program
Energy Savings (aMW)	N/A – Infrastructure Program
Additional Value Delivery	• Providing training to build market capability for installation of energy-efficient lighting projects • Supporting funder trade ally engagement • Supporting overall market transition to LED technologies • Supporting lighting best practices and regional code compliance • Reinforcing and complementing advanced controls training efforts to support Luminaire Level Lighting Controls (LLLC) market transformation goals

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Increase market adoption of NXT Level 1 and NXT Level 2 training and designation **Barriers:** • Lack of contractors in the Northwest with advanced skills • Lack of differentiation between experienced and inexperienced contractors	• Conduct promotional and marketing activities to drive participation in training • Support funders in their efforts to promote NXT Level training and provide additional value to designees • Develop and/or provide new resources to contractors to support them in navigating regional ecosystem of lighting training • Conduct limited and targeted promotional and marketing activities to increase demand for NXT Level designated contractors in the market	• Additional 50 trade allies and 10 companies achieve NXT Level 1 designation • Additional 50 trade allies achieve NXT Level 2 designation	• Additional 30 trade allies and 5 companies achieve NXT Level 1 designation • Additional 30 trade allies achieve NXT Level 2 designation
Goal: Retain NXT Level designees over time **Barriers:** Lack of an effective base of skilled contractors in the Northwest	• Support funders in their efforts to promote NXT Level training and provide additional value to designees • Conduct outreach activities to NXT Level designees up for redesignation • Conduct limited promotional and marketing activities to increase demand for NXT Level designated contractors in the market	75% of NXT Level trade ally designees up for redesignation achieve it	60% of NXT Level trade ally designees up for redesignation achieve it
Goal: Increase efficiency of NXT Level implementation	Identify and implement strategies to increase efficiency, transferability and scalability of NXT Level implementation, including outreach, training, designation and redesignation activities	Implementation and marketing cost per participant reduced by 10% from 2019	Implementation and marketing cost per participant reduced by 5% from 2019

Table 4 – Budget	**2019 Forecast**	**2020 Budget**	**Variance Explanation**
Annual Expense	$434,000	$429,000	
Key Assumptions Driving Budget Estimates	Overall implementation costs will reduce slightly in 2020 due to operational efficiencies, though there will be some added costs to support strategy development for the future transition of the program to the market.		
	Includes implementation costs previously associated with the Lighting Resources program, primarily for support of Online Lighting Basics. The cost of this support is expected to be less than $10,000 in 2020.		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF there is insufficient NXT Level trade ally designation…	THEN the skills that enable advanced projects will not be sufficiently prevalent in the market. This could lead to lost opportunity to raise the quantity and quality of energy efficient projects in the region, and require greater program effort for marketing and outreach, integration with funder programs, or training delivery and program implementation costs to usher enrollees into designation	• Continue to invest in recruiting applicants and support them in designation completion • Support designees in redesignation process to retain their NXT Level 1 designation, and prioritize NXT Level 2 as the path to do so • Continue coordination with funders to promote designation via their programs • Utilize testimonials and case studies from designees to communicate value proposition and provide publicity benefit to designees • Continue to offer NXT Level 2 curriculum as both in-person and webinar formats to increase opportunity to participate
IF funder programs do not sufficiently supplement inherent value of training to trade allies…	THEN the case for trade ally investment of time/effort in NXT Level training may be weakened, affecting demand for training. It also may impact value of the training to 3rd party market implementers, create lost opportunity during transition to market or risk needing to exit the market entirely	• Use findings from Q4 2019 research to develop new marketing resources and better articulate value proposition of training outside of funder programs • Continue collaboration with funders to create multiple sources of value for designated trade allies • Collaborate with funders to more effectively differentiate Level 1 and Level 2 value • Develop initial guidelines for NXT Level 3 curriculum to build additional market value of the training
IF market confusion is created by other actors in the training landscape…	THEN NXT Level traction with trade allies and/or funders may be slowed	• Develop marketing messaging that differentiates training and designation • Develop or provide new resources to support trade allies in navigating the training landscape • Coordinate with other programs and market partners delivering lighting training • Coordinate with funders in designing right-fit training offerings and events for their trade ally networks • Develop better understanding of current ecosystem of lighting training and track trends to inform transition planning of NXT Level to the market

Enabling Infrastructure

Integrated Design Labs

Executive Summary – The mission of the Integrated Design Labs (IDLs) is to transform the design, construction, and operations of commercial, institutional and residential buildings to advance energy-efficient, high-performance, and healthy buildings in the Northwest. IDLs exist at Universities of Idaho, Oregon and Washington, and Montana and Washington State Universities. The IDLs are a critical partner to alliance programs, accelerating market transformation through research, technical assistance and education that are used by NEEA programs and market partners. There are two types of NEEA funding for the Labs: (1) Base funding, which funds lab operations, such as exploratory research, facility and equipment costs, and/or staff; and (2) Services funding, which provides funds for particular projects or work being requested of the labs. Services funding supports NEEA's Emerging Technology and Initiative work, and is included in other Operations Plans and budgets. Examples of anticipated projects with the IDLs in 2020 include training, awareness and adoption support in the building professional community for Luminaire Level Lighting Controls (LLLCs); lab and field testing of new HVAC and lighting controls technologies; and support for the City of Seattle Retrofit Accelerator pilot with technical assistance in order to gather learnings and resources for regional use by the BetterBricks platform.

Table 1 –Overview

Description	The IDLs are a critical source of and testing ground for emerging technologies and practices. They can be leveraged to support local and regional efficiency programs through case studies, training, testing and evaluation of new technologies, building awareness of new programs or technologies within the design community. Designers, engineers and the building owners and managers they work with are a critical leverage point for efficient building practices across programs and they need resources to support their understanding and ability to implement energy-efficient building practices.

Table 2 – Benefit & Value

Value Delivery	Bring solutions to rapidly emerging challenges specific to each micro-region, feeding the emerging technology pipeline
	Influence new construction and renovation projects to cost-effectively achieve exceptional energy performance targets and serve as a model for future buildings and practices
	Develop and advance tools, methods and technologies to accelerate energy-efficient buildings through research and project-based education
	Quantify and verify energy savings from new technologies and practices
	Deliver educational programs and experiences that form the next generation of leaders in the building industry
	Create leads and opportunities at very early phases of project development, when efficiency can most effectively be influenced

Section 3 – Progress Indicators/ Goals

2020 Goals and Barriers	Activities	Target	Threshold
Influence new construction and renovation projects to achieve exceptional energy performance targets and serve as a model for future buildings and practices	Specific activities vary by IDL and progress is reported bi-annually to the region	N/A	N/A
Use the IDLs expertise, tools and relationships to deliver valuable energy efficiency resources that serve multiple product initiatives as well as funders and their customers	Specific activities vary by lab and progress is reported bi-annually to the region	N/A	N/A

Section 4 – Budget	**2019 Forecast**	**2020 Budget**	**Variance Explanation**
Annual Expense	$560,000	$400,000	Base funding for labs decreased by 20% in the Cycle 6 business plan
Key Assumptions Driving Budget Estimates	Cycle 6 Business Plan budget ($2M total) will be distributed evenly in each year of the cycle.		
	Base funding will be allocated to individual labs based primarily on the number and size of commercial customers in their territory, in alignment with the formula used to determine NEEA funders' funding shares		
	A General Communication Task is included in service contract funding to cover one all-Director meeting per year, one Product Council or other presentation to NEEA staff, and bi-annual reporting that is delivered to NEEA and funder stakeholders		

Enabling Infrastructure

Distributor Platform

Executive Summary – The Distributor Platform is comprised of key market relationships, ongoing data collection activities and repeatable program processes originally developed through the Reduced Wattage Lamp Replacement (RWLR) program. The Platform supports multiple programs across different Product Groups, including Lighting, Motor-Driven Systems and Water Heating and is comprised of 25 electrical distributors, covering 275+ branches in the Northwest with geographic representation across all four states. In 2020, the Platform will support data collection and market intelligence for the regional Commercial Lighting Sales and Data dashboard, Long Term Monitoring and Tracking (LTMT) for the RWLR Program, Non-Residential Lighting commercial lighting research, and the Luminaire Level Lighting Controls (LLLC) program. Additionally, the Platform supports the implementation and data gathering efforts of the LED commodity lamp midstream pilots with Seattle City Light (SCL) and Snohomish PUD, which are testing the opportunity for possible midstream market transformation interventions that could be applied more broadly as the region's LED programs respond to changes in the market.

Section 1 – Program Overview

Description	The Platform has two key objectives; • Leverage its relationships, interventions and data capabilities to help streamline program implementation, reduce program costs and support new utility customer engagement opportunities across multiple product categories • Foster mutually beneficial relationships between distributors and the alliance that: - Motivate distributors to stock and sell targeted energy-efficient products - Incentivize and facilitate secure delivery of branch-level sales data for targeted product categories

Table 2 – Benefit & Value

Value Delivery	• Enables greater market transformation by influencing stocking and sales practices • Ensures access to sales data and insights that can inform program strategies, unit sales to inform energy savings estimation, and reduce cost of data gathering • Reduces the cost of entry for new programs by leveraging existing platform • Supports utilities with cost-effective savings (utilities can utilize the Platform to capture savings that are too small or costly to be captured through traditional, downstream programs). • Creates new funder and regional midstream engagement opportunities that could complement and offer new pathways for the region's programs

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Leverage the Platform to accelerate the transformation of targeted energy-efficient products and provide programmatic stepping stone for funders as technologies transition in the market **Barriers:** • High transaction costs for small savers • Persistence of inefficient options in market	• Complete the Seattle City Light and Snohomish PUD commodity LED midstream pilots and disseminate results and lessons learned to the region • Engage with other alliance members as they transition their lighting programs with Distributor Platform assests (data, relationships, systems) • Continue to leverage the Platform to support distributor engagement for alliance programs, including LLLC, NXT Level, Extended Motor Products, and Heat Pump Water Heaters	Three additional funders utilitze the platform to support transitions in their Commercial and Industrial Lighting programs	Two additional funders utilitze the platform to support transitions in their Commercial and Industrial Lighting programs
Goal: Collect full category market sales data for lighting at reduced cost for the region **Barriers:** • Rapidly changing LED market conditions drive need for frequent full category data • Budget and time required for data cleaning, analysis and reporting	• Continue to recruit new lighting distributors to the Platform, including LED-focused distributors, online distributors and retailers • Ensure value exchange with current distributors to continue full category data reporting • Support RWLR long term monitoring and tracking • Gather data and market intelligence for LLLC • Support non-regional research in data gathering from electrical distributors	Four additional distributors providing data (including one retail big box on commercial sales)	Three additional distributors providing data
Goal: Bring greater visibility and precision to the lighting market to benefit alliance members and their programs via enhanced Pricing and Sales Data Dashboard **Barrier:** Lack of visibity of regional trends in lighting market without full category data	• Add additional LED commodity lighting products to data dashboard • Disseminate trends in lighting market to alliance members via lighting work group, planning work groups, Regional Technical Forum (RTF), etc	Three lighting webinars to alliance members	Two lighting webinars to alliance members

Table 4 – Budget	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	N/A	N/A	
Key Assumptions Driving Budget Estimates	There is no budget allocated for the Distributor Platform itself, rather it is leveraged by other lighting Product Group activities and programs. In the Lighting Product Group budget, budget associated with the Platform is included in the following areas: **Lighting Strategy**: In 2020, there is $382,000 budgeted for commercial lighting Data Collection & Assessment; this includes the costs for working with distributors to acquire the full category data on commodity LED products, survey distributors on annual sales across all products (work previously conducted by BPA in the 2014-2020 funding cycle), clean and analyze the data, and continue to build out the value of the Commodity Lighting Data Dashboards for the alliance. **Lighting Midstream Pilot**: There is $130,000 in Emerging Technologies budget to complete the Lighting Midstream Pilots for Seattle City Light and Snohomish PUD as a test for the region. **LLLC**: The LLLC program has budgeted $40,000 for distributor stipends for data collection, which will be administered via the Platform.		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF current programs and pilots do not provide sufficient value to distributors to keep them engaged…	• THEN some distributors disengage with the alliance as they do not realize enough value to continue the relationship • THEN costs for data gathering for regional data, RWLR and other alliance programs increase due to lack of leverage • THEN the region loses valuable market insights	• Engage distributors on data gathering to demonstrate value of midstream interventions • Continue to search for additional technologies and program leverage to build value for distributors
IF distributors are unwilling or unmotivated to deliver data after conclusion of RWLR program…	THEN data collection costs to support RWLR long-term monitoring and tracking will increase	Include data ask for RWLR with any other programmatic offering with distributors
IF complexity of LED products drives cost of data gathering and analysis beyond the value derived from it…	THEN Distributor Platform loses value for the alliance. The granularity and timeliness of the data provides the region insight into market trends currently unavailable anywhere else	Continue to look for streamlined methods to acquire and manage the data from distributors and continue to look for additional programs/technologies that may involve Distributor Platform
IF midstream pilots do not prove to be feasible program option as utilities exit LED commodity lighting…	THEN the Distributor Platform value is diminished both to distributors and alliance members	Continue to package and communicate about the missed opportunity in the LED lighting market

Enabling Infrastructure

Strategic Energy Management Infrastructure (Special Funding)

Executive Summary – The region has long identified a need for a set of common resources and best practices to guide commercial and industrial businesses in strategically managing their energy. To address these shared needs cost effectively, the Strategic Energy Management (SEM) Infrastructure Program aims to:

1. Support Northwest program administrators with high-value SEM tools and resources to launch, grow, and sustain regional SEM programs.
2. Enable commercial and industrial customers to see value in SEM as a strategy for meeting their sustainability and energy performance goals.
3. Understand baseline SEM practices and identify targeted savings opportunities.
4. Build regional and national consensus on SEM as a best practice or de facto standard.

In Cycle 6, the SEM Infrastructure program is a Special Project funded by a portion of NEEA's funders. The program will continue to offer a holistic set of tools and resources via SEM Hub and will convene the Northwest SEM Collaborative with a focus on the most pressing needs of funders. In addition to these existing resources, aggregating and analyzing data to inform programs will be an important new tool for identifying best practices and opportunities. Across these three areas of activity – SEM Hub, Northwest SEM Collaborative and Data Plan implementation – NEEA staff will focus SEM Infrastructure Program efforts based on funder priorities, as informed by a Steering Committee made up of SEM Program funders.

Table 1 – Program Overview

Ultimate Desired Outcome for Sustained Market Change	Grow adoption of SEM in the Northwest by facilitating active collaboration on SEM delivery and delivering valuable SEM tools that meet stakeholders' needs in support of 368 aMW of 20-year savings potential identified by the 7th Power Plan in Commercial and Industrial SEM
Program Status	• The 2015-19 funding cycle work established valuable SEM tools and resources on the online SEM Hub knowledge center, increased consensus on common SEM standards, and improved regional and national collaboration on SEM initiatives. • SEM Hub exceeding goals for page views and resource downloads • Northwest SEM Collaborative active and encompassing Commercial and Industrial SEM
Key Accomplishments to date	• Launched SEM Hub, including an Energy Management Assessment (EMA) Tool and Learning Management System. All consistently track to adoption and use goals • Completed and then renewed two U.S. Dept. of Energy grants in support of 50001 Ready research and data tools to facilitate SEM engagements • Achieved significant engagement in the Northwest SEM Collaborative • Regional SEM Data Plan completed in Q3 2019 informs ways in which data can serve the region in furthering SEM adoption
Barriers and Opportunities	Priority needs identified by funders include: • **Marketing and recruiting**: Knowing who to reach out to and how to get them engaged • **Engaging new business types**: Understand how to effectively engage medium and small businesses, and a wider range of business types than are commonly served today • **Baseline models**: Identifying best practices in developing baselines to improve cost effectiveness and accuracy for each customer type • **Cost effectiveness**: Finding ways to reduce costs of implementation and establish measure life and savings

Table 2 – Benefit & Value

Benefit/Cost Ratio on 20-year savings forecast	N/A – Infrastructure program
Energy Savings (aMW)	N/A – Infrastructure program
Additional Value Delivery	• **Energy efficiency resources**: Knowledge and use of high-value SEM tools and resources by regional stakeholders to develop, grow and sustain regional SEM programs • **aMW savings**: Support growing regional savings achievements in SEM and help improve program cost effectiveness through enhanced tools and resources, agreement on common SEM terms, measurement and verification approaches, eventually measure and capture SEM diffusion savings • **Customer engagement opportunities for the region/funders**: SEM is increasingly understood as a pathway to increased capital project velocity within utility deemed measure programs and as the foundation for deep and lasting customer relationships • Build regional and bi-national consensus on SEM as a best practice or de facto standard

Table 3 – Goals and Barriers

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Support the implementation and growth of funders' SEM programs as a key platform to engage commercial and industrial customers **Barrier:** Lack of sustained and reinforced SEM practices	• Establish a steering committee of program funders to guide program investments • Align on priorities for SEM Hub, Data and Learning Management System updates and new resources	Alignment among funders on 2020-21 priorities for SEM Hub, Data and Learning Management System updates and new resources by end of Q1	Alignment by end of Q2
Goal: SEM practitioners actively collaborate with one another on shared challenges via alliance sponsored structure **Barrier:** Lack of sustained and reinforced SEM practices	• Continue to convene, facilitate and provide leadership to the Northwest SEM Collaborative • Support maturation of the North American SEM Collaborative as a complementary organization to the Northwest SEM Collaborative	• 80 or more participants in 2020 Northwest SEM Collaborative events • Three or more Northwest SEM Collaborative workgroups meeting actively and producing outputs for regional or national presentation or publication	• 60 or more participants in 2020 Northwest SEM Collaborative events • Two or more Northwest SEM Collaborative workgroups meeting actively and producing outputs

2020 Goals and Barriers	Activities	Target	Threshold
Goal: Manage SEM Hub to provide a centralized knowledge center that houses high-value SEM tools and resources **Barrier:** Lack of sustained and reinforced SEM practices	• Actively promote use of SEM Hub to support funder use of SEM as a fundamental customer engagement tool • Grow the resource collection on the SEM Hub and build it into the primary place for SEM implementation resources	Update one training module and create another new one; make both available via the Learning Management System by Q3	Update one training module and create another new one; make both available via the Learning Management System by Q4

Table 4 – Budget

	2019 Forecast	2020 Budget	Variance Explanation
Annual Expense	$173,000	$200,000	
Key Assumptions Driving Budget Estimates	Funders and funding shares will match the Cycle 6 proposal delivered in July 2019		
	Activities informed by the funder priority activities listed in the Cycle 6 proposal		

Table 5 – Risks and Mitigations

Key Risk Areas for 2020 Goals	Potential Impacts	Mitigation/Contingency Plan
IF unable to align on specific activities of common interest…	THEN the program will work with funders to prioritize activities	Create a Steering Committee comprised of SEM leads from funding utilities to inform the direction of major NEEA SEM Infrastructure activities
IF the program is unable to grow SEMHub.com traffic, awareness, and uploads/downloads…	THEN SEMHub.com may fail to become a valued/trusted SEM resource and the region's long-term savings from market adoption of SEM practices would be reduced	NEEA staff encourages SEM resource sharing activity via SEMHub.com by demonstrating/ describing how to use the site at events/webinars/conferences and by promoting SEM resource-sharing through periodic newsletters
IF the North American SEM Collaborative does not meet the needs of SEM practitioners…	THEN it may not be a viable entity for the long-term and the region loses an important market channel for bi-national coordination on SEM data practices, tool use, problem solving, advocacy and awareness building	The program remains dynamic and flexible in how it supports the North American SEM Collaborative using a combination of staff hours, sponsorship dollars, and in-kind support
IF the program is unable to build consensus for an alliance role in measuring SEM market adoption and regional progress…	THEN the opportunity for SEM savings measurement in the market will continue to be missed and there will be fewer opportunities to support SEM innovation through market-level learnings, improved program cost effectiveness, and NWPCC 7th Plan savings targets	Use data captured from SEM Hub's EMA tool to continue building consensus on regional SEM benchmarking effort and ongoing SEM program innovation opportunities

2020 SCANNING PRODUCTS AND ACTIVITIES

This chart lists the products and activities NEEA staff are planning for 2020 to understand and advance emerging technologies. A short definition for each activity is listed after the chart.

PRODUCT GROUP	PRODUCTS	TECHNICAL POTENTIAL ASSESSMENT	TEST METHOD DEVELOPMENT	PERFORMANCE SPECIFICATION DEVELOPMENT	MANUFACTURER ENGAGEMENT	MARKET MONITORING	LAB TESTING	FIELD TESTING
BUILDING ENVELOPE	WINDOW ATTACHMENTS (FILMS, BLINDS)		✓					
	THIN TRIPLE PRIMARY WINDOWS							
CONSUMER PRODUCTS	ULTRA-HIGH DEFINITION TELEVISIONS							
	LAUNDRY - TOP LOAD WASHERS		✓					
	ROOM AIR CONDITIONERS	✓	✓					
	REFRIGERATOR/FREEZER							
	SOUND BARS (A/V)		✓					
HVAC	VARIABLE CAPACITY HEAT PUMP	✓	✓	✓	✓	✓	✓	✓
	ALTERNATIVE REFRIGERANTS							
	COLD TEMPERATURE HEAT PUMP	✓		✓	✓	✓	✓	✓
	RADIANT HEATING/COOLING	✓						
	HEAT RECOVERY VENTILATION		✓	✓	✓	✓	✓	✓
	CONDENSING ROOF TOP UNITS		✓	✓	✓			✓
	INVERTER DRIVEN PTHPS	✓			✓			✓
	SMART THERMOSTATS		✓	✓	✓	✓	✓	✓
	ENGINE DRIVEN HEAT PUMP (NATURAL GAS)	✓			✓			✓

2020 SCANNING PRODUCTS AND ACTIVITIES

This chart lists the products and activities NEEA staff are planning for 2020 to understand and advance emerging technologies. A short definition for each activity is listed after the chart.

PRODUCT GROUP	PRODUCTS	TECHNICAL POTENTIAL ASSESSMENT	TEST METHOD DEVELOPMENT	PERFORMANCE SPECIFICATION DEVELOPMENT	MANUFACTURER ENGAGEMENT	MARKET MONITORING	LAB TESTING	FIELD TESTING
LIGHTING	ZONAL LAMP CONTROL & HVAC				✓	✓		✓
	LED HUMAN FACTORS TESTING			✓			✓	
MOTOR-DRIVEN PRODUCTS	EXTENDED MOTOR PRODUCTS (XMP) MARKET TEST ASSESSMENT							
	SWITCHED RELUCTANCE MOTORS	✓						
	COMMERCIAL AND INDUSTRIAL POWER SUPPLIES					✓	✓	
NEW CONSTRUCTION	INTEGRATED DESIGN/PERFORMANCE PATH CODE	✓		✓		✓		
WATER HEATING	HEAT PUMP WATER HEATER TIER 4 & 5 AND GAS 120-VOLT		✓	✓	✓	✓	✓	✓
	LOWER COST HPWH TECHNOLOGY AND PRODUCTS				✓	✓	✓	
	DR ENABLED WATER HEATERS				✓			
	SPLIT SYSTEM WATER HEATERS			✓	✓			✓
	LARGE SCALE MULTI-FAMILY AND LOW INCOME HPWH WATER HEATING. BUILT UP SYSTEMS			✓				
	COMBINATION SPACE AND WATER HEATING		✓	✓	✓	✓	✓	✓

Definitions:

Technical Potential Assessment: Estimate of technical energy savings potential of a product given its in-the-field energy savings and the number of locations where it could be installed.

Test Method Development: Test methods are used to distinguish the performance of one product from another. A good method is repeatable, reasonably priced, and approximates real world operating conditions.

Performance Specification Development: Once a test method is available, the performance of efficient products can be compared to market average (or Federal standard) products. A performance specification and certification can be added making it easy for the market to identify the efficient product. (i.e. Energy Star, etc.)

Manufacturer Engagement: Connecting with manufacturers and sharing the value of energy efficiency encourages manufacturers to consider energy efficiency during product development. Manufacturers provide important information on technology limitations and other constraints that may slow or stall product commercialization.

Market Monitoring: Tracking market trends and structure helps identify opportunities and barriers for new efficient products and often provides clues when strategic interventions in the market would be most effective.

Lab Testing: Used to understand energy efficiency and operation of products in a controlled environment. Enables isolation of innovations to better understand their impact on energy efficiency and product performance. When a standardized test method is used, enables comparison with other products.

Field Testing: Used to establish and validate savings in real world situations.

MARKET RESEARCH AND EVALUATION CALENDAR

This chart lists the Market Research and Evaluation studies that NEEA staff are planning for 2020. The checkmark indicates when each study will be published.

PRODUCT GROUP	DELIVERABLE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
BUILDING ENVELOPE	COMMERCIAL WINDOW ATTACHMENTS MARKET CHARACTERIZATION (PHASE 2)	CONT. FROM 2019	✓										
CONSUMER PRODUCTS	RETAIL PRODUCTS PORTFOLIO MPER #1										PUBLISH DATE JULY 2021		
HVAC	DHP COLD CLIMATE INSTALLER RESEARCH (FOLLOW UP) SUMMARY REPORT				✓								
	HIGH-PERFORMANCE HVAC MARKET RESEARCH SUMMARY REPORT									✓			
	C-RTU INSTALLER QUALITATIVE RESEARCH SUMMARY REPORT (NATURAL GAS)											✓	
	COMMERCIAL HVAC INSTALLER – MARKET ACTOR PROFILE					✓							
LIGHTING	LUMINAIRE LEVEL LIGHTING CONTROLS (LLLC) MARKET ASSESSMENT	CONTINUED FROM 2019				✓							
MOTOR-DRIVEN PRODUCTS	EXTENDED MOTOR PRODUCTS (XMP) MARKET TEST ASSESSMENT											✓	
NEW CONSTRUCTION	NEXT STEP HOMES (NSH) MPER 1												✓
	NSH QUANTITATIVE STUDY TO ASSESS RATER & BUILDER DECISION-MAKING				✓								
	MANUFACTURED HOMES LTMT INITIATIVE HISTORY AND EVALUATION PLAN											✓	

MARKET RESEARCH AND EVALUATION CALENDAR

This chart lists the Market Research and Evaluation studies that NEEA staff are planning for 2020. The checkmark indicates when each study will be published.

PRODUCT GROUP	DELIVERABLE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
WATER HEATING	INSTALLER MARKET RESEARCH PHASE 1 SUMMARY REPORT					✓							
	INSTALLER MARKET RESEARCH PHASE 2 SUMMARY REPORT											✓	
	NORTH AMERICAN DEMONSTRATION PILOT SUMMARY REPORT	CONTINUED FROM 2019											✓
	HEAT PUMP WATER HEATER MPER #6								✓				
CODES AND STANDARDS	OR RESIDENTIAL CODES	CONT. FROM 2019		✓									
	WA RESIDENTIAL CODES	CONT. FROM 2019	✓										
	WA COMMERCIAL CODES	CONTINUED FROM 2019											✓
	COMMERCIAL CODE ENHANCEMENT MPER									✓			
	STANDARDS (AIR COMPRESSORS AND SPRAY VALVES)	CONTINUED FROM 2019			✓								
LONG-TERM MONITORING & TRACKING (LTMT)	RESIDENTIAL LIGHTING						✓						
	BUILDING OPERATOR CERTIFICATION			✓									
	COMMISSIONING	CONT. FROM 2019		✓									
	GREEN MOTOR REWINDS	CONT. FROM 2019		✓									
	80 PLUS (DESKTOP POWER SUPPLIES)	CONT. FROM 2019		✓									
	REDUCED WATTAGE LIGHTING REPLACEMENT (RWLR)	CONT. FROM 2019			✓								

2020 MARKETING CALENDAR

This chart lists the marketing activities that NEEA staff are planning for 2020.

NEEA 2020 PRODUCTS MARKETING OVERVIEW

HEAT PUMP WATER HEATERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
SUPPORT INSTALLER KEY ACCOUNTS (TRAINING, MARKETING, INCENTING)												
COLLABORATE WITH MIDSTREAM MARKETING (MANUFACTURER)												
CREATE CONSUMER CONTENT - DISTRIBUTE VIA OWNED / EARNED CHANNELS (I.E. NO PAID MEDIA)												
CREATE INSTALLER CONTENT - DISTRIBUTE VIA OWNED / EARNED CHANNELS (I.E. NO PAID MEDIA)												
EFFICIENT GAS WATER HEATING												
SUPPORT CONFIDENTIAL MANUFACTURER IN BRINGING NEW GHPWH PRODUCT TO MARKET BY OFFERING STRATEGIC MARKETING CONSULTATION												
SUPER EFFICIENT DRYERS												
CREATE EFFICIENT DRYER MESSAGING MATRIX												
SUPPORT MANUFACTURER / RETAILER PROMOTIONS (TBD)												
EXTENDED MOTOR PRODUCTS												
DEVELOP AND DISTRIBUTE CASE STUDIES												
CREATE AND ADD XMP RESOURCES TO BETTERBRICKS TO FACILITATE MARKET PROMOTION OF SMART PUMPS												
INCREASE VISIBILITY OF CASE STUDIES WITH EARNED MEDIA CAMPAIGN												
DEVELOP CUSTOM-BRANDABLE VIDEO ABOUT SMART PUMP VALUE AND ROI												
DEVELOP MANUFACTURER/ DISTRIBUTOR VALUE PROPOSITION TEMPLATE												
SUPPORT HYDRAULIC INSTITUTE ENERGY RATING LABEL AWARENESS EFFORTS												

2020 MARKETING CALENDAR

This chart lists the marketing activities that NEEA staff are planning for 2020.

NEEA 2020 INTEGRATED SYSTEMS MARKETING OVERVIEW

LUMINAIRE LEVEL LIGHTING CONTROLS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
CREATE COLLATERAL TO SUPPORT SUPPLY CHAIN ENGAGEMENT												
DEVLOP AND DISTRIBUTE CASE STUDIES												
OPTIMIZE BETTERBRICKS CONTENT TO ENCOURAGE DESIGNERS, ENGINEERS AND SPECIFIERS TO UTILIZE LLLC												
INCREASE VISIBILITY OF CASE STUDIES AND RESEARCH FINDINGS WITH EARNED MEDIA EFFORTS												
SUPPORT PROPOSAL SUBMISSIONS AND SPEAKING OPPORTUNITIES FOR 2020 TRADE INDUSTRY CONFERENCES												
DEVELOP MARKETING AND EDUCATION COLLATERAL TO SUPPORT LIGHTING DESIGN LAB (LDL) OUTREACH AND TRAININGS												
DEVELOP CASE STUDY VIDEO TO EDUCATE DESIGNERS, ENGINEERS AND SPECIFIERS ON LLLC TECHNOLOGY												
TOP TIER TRADE ALLY												
COMMUNICATIONS PUSH TO DRIVE NXT LEVEL 1 PARTICIPANTS TO COMPLETE THEIR TRAINING												
DEVELOP AND DISTRIBUTE CASE STUDIES												
PROMOTE NXT LEVEL 2 TRAINING												
PROMOTE AND COORDINATE FOR REFERRAL PROGRAM												
SEND QUARTERLY E-NEWSLETTER (TO LIGHTING CONTRACTORS)												
HIGH-PERFORMANCE HVAC												
DEVELOP CASE STUDIES												
SUPPORT AND PROMOTE TRAINING												
CREATE INSTALLATION BEST PRACTICES / EDUCATIONAL MATERIAL												
CREATE PRODUCT POSITIONING AND SPECIFIER MESSAGING MATRIX												
PHOTOGRAPH DEMONSTRATION PROJECT												
DUCTLESS HEAT PUMPS												
CONTINUE ONGING UPDATES AND SUPPORT OF GOINGDUCTLESS.COM												
CONTINUE OPPORTUNISITIC INSTALLER ENGAGEMENT												

2020 MARKETING CALENDAR

This chart lists the marketing activities that NEEA staff are planning for 2020.

NEEA 2020 INTEGRATED SYSTEMS MARKETING OVERVIEW CONT.

CONDENSING ROOFTOP UNITS (GAS)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
DEVELOP CASE STUDIES							■	■	■			
SUPPORT TRAINING AND SUPPLY CHAIN SALES/PROMOTIONS								■	■	■	■	
CREATE INSTALLATION BEST PRACTICES / EDUCATIONAL MATERIAL			■	■					■	■		
STRATEGIC ENERGY MANAGEMENT												
SUPPORT AND OPTIMIZE EMA TOOL	■	■	■	■	■	■	■	■	■	■	■	■
SUPPORT RECRUITMENT AND CREATION OF NEW WHITE-LABEL EMA SITES	■	■	■	■	■	■	■	■	■	■	■	■
UPDATE AND OPTIMIZE SEMHUB.COM	■	■	■	■	■	■	■	■	■	■	■	■
SEND QUARTERLY E-NEWSLETTER (TO UTILITY AND PROGRAM IMPLEMENTERS)	■			■			■			■		
PURSUE EARNED-MEDIA TRADE PUBLICATION PLACEMENTS							■	■	■	■	■	■
SUPPORT PROPOSAL SUBMISSIONS AND SPEAKING OPPORTUNITIES FOR 2020 TRADE INDUSTRY CONFERENCES		■	■							■	■	
COMMUNICATE DATA MANAGEMENT AND RESEARCH PROJECTS RESULTS				■	■				■	■		
WINDOW ATTACHMENTS												
DEVELOP CASE STUDIES		■	■			■	■			■	■	
SUPPORT AND PROMOTE TRAININGS			■	■				■	■			
DEVELOP BUSINESS CASE, VALUE PROPOSITION AND MESSAGING					■	■	■					
SUPPORT MANUFACTURERS IN PRODUCT PROMOTION				■	■	■						
DEVELOP EARNED MEDIA / ARTICLES; CONDUCT OUTREACH (TO SPECIFIERS)			■	■					■	■		
BETTERBRICKS PLATFORM												
UPGRADE AND OPTIMIZE BETTERBRICKS.COM			■	■	■	■	■	■				
DEVELOP VIDEO CASE STUDY TO SUPPORT ADOPTION OF INTEGRATED BUILDING SYSTEMS				■	■				■	■		
DEVELOP AND SUPPORT TRADE INDUSTRY CONFERENCE SPONSORSHIPS	■			■			■			■		
CONTINUE PRESENCE/PRESENTATIONS AT INDUSTRY EVENTS (EVENTS TBD)	■	■	■	■	■	■	■	■	■	■	■	■
SEND BETTERBRICKS E-NEWSLETTER (MONTHLY)	■	■	■	■	■	■	■	■	■	■	■	■
PARTNER WITH ORGANIZATIONS FOR TRAINING AND EDUCATIONAL EFFORTS (E.G., NEW BUILDINGS INSTITUTE, INTEGRATED DESIGN LABS, ETC.)				■	■	■	■	■	■	■	■	■

2020 MARKETING CALENDAR

This chart lists the marketing activities that NEEA staff are planning for 2020.

NEEA 2020 NEW CONSTRUCTION MARKETING OVERVIEW

COMMERCIAL CODE ENHANCEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
CREATE CODE PROPOSAL EDUCATIONAL MATERIALS (CASE STUDIES, TECHNOLOGY FACT SHEETS)		■	■	■				■	■	■		
MANUFACTURED HOMES												
CREATE NEEM+ HOMEOWNER TESTIMONIAL VIDEO (TO BE CONFIRMED)	■	■										
CREATE NEEM+ RETAILER MARKETING MATERIALS			■	■	■	■						
SUPPORT WEB STRATEGY FOR NEEM WEBSITE	■	■	■									
ENGAGE IN NEEM+ RETAIL SALESPERSON CHALLENGE	■	■	■	■								
SUPPORT NEEM/ NEEM + DIGITAL CAMPAIGN			■	■	■	■	■	■	■	■		
NEXT STEP HOMES												
UPDATE BETTERBUILTNW.COM WEBSITE	■	■	■	■	■	■	■	■	■	■	■	■
PLAN AND EXECUTE HOME EFFICIENCY (HEF) FORUM 2020					■	■	■	■	■	■		
PROMOTE HEF 2020 EMAIL NEWSLETTER							■	■	■	■		
SEND QUARTERLY MID-STREAM INDUSTRY NEWSLETTERS			■			■			■			■
CREATE TARGETED RESIDENTIAL NEW CONSTRUCTION MID-STREAM EMAIL BULLETINS (AS NEEDED)	■	■	■	■	■	■	■	■	■	■	■	■