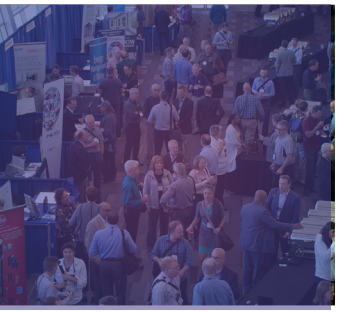

STRATEGIC & BUSINESS PLANS 2020-2024

Looking Forward

On behalf of its Board of Directors, staff and stakeholders across the region, the Northwest Energy Efficiency Alliance (NEEA) is pleased to present its 2020-2024 Strategic and Business Plans.

NEEA's Board has unanimously approved these plans after a two-year collaborative outreach process, establishing the alliance's primary purpose: To pool resources and share risks to transform the market for energy efficiency to the benefit of consumers in the Northwest.

Working together, the alliance drives market adoption of energy-efficient electric and natural gas products, services and practices throughout the states of Idaho, Montana, Oregon and Washington. Since 1996, the alliance has cost-effectively realized more than 1,400 average Megawatts (aMW) of energy savings through market transformation.

For most of its existence, the alliance has focused on driving market adoption of energy-efficient products, services and practices powered by electric use. However, in 2014 the alliance began investing in natural gas market transformation energy efficiency initiatives. The alliance is building on these successful initial efforts by creating its first dual-fuel integrated business plan, incorporating both electric and natural gas market transformation efforts.

The Plan expands the metrics for measuring alliance success and builds on regional research efforts such as the groundbreaking End Use Load Research study, which will inform future, data-driven energy efficiency planning in the region. And, by providing flexibility in how the alliance transforms markets to realize the full benefits of energy efficiency as the Northwest's least-cost resource, the Plan paves the way for sustained market change moving forward.

Susan E. Stratton
Executive Director

Andrew Grassell
Board Chair
Chelan County PUD
Manager, Energy Development and Conservation

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STRATEGIC PLAN 2020-2024

STRATEGIC PLAN | 2020-2024

Introduction

More than 20 years ago, utilities[1] and energy efficiency stakeholders from Idaho, Montana, Oregon and Washington came together to address the challenges of a changing utility environment. They established the Northwest Energy Efficiency Alliance (NEEA) to share the costs and benefits of coordinating efforts to transform markets for efficiency. Today, the alliance represents more than 140 Northwest utilities and energy efficiency organizations working on behalf of more than 13 million energy consumers.

These alliance supporters fund the activities and programs of NEEA, which is a fuel-neutral organization dedicated to accelerating both electric and natural gas energy efficiency in the region. Alliance activities are directed by the Board of Directors and delegated to and implemented by NEEA staff. While NEEA is an entity of regional funders, it is a separate and unique organization established to realize the benefits of energy efficiency that individual funders are not able to as easily or as efficiently achieve on their own. Some of the benefits of this long-term value-creating relationship include: access to knowledge, new ideas and expertise; improved market power; and, shared expenses and risk.

Through collaboration and pooling of resources, the region's utilities and stakeholders have harnessed their collective influence to drive market adoption of efficient products, services and practices for the benefit of utilities, consumers and the alliance. As a result, since 1996, the region has cost-effectively delivered more than 1,720 average Megawatts (aMW) of efficiency through market transformation - enough energy to power more than 1.2 million Northwest homes each year.

In addition, Northwest energy consumers have benefited from lower utility bills than otherwise might have been and from products, services and practices that have bettered lives in many ways, including improving the:

- value and comfort of homes;
- number of family wage jobs; and,
- profitability and competitiveness of businesses.

Ultimately, this commitment to energy efficiency as a preferred resource and the region's focus on long-term collaborative action through NEEA has contributed to an economically vibrant and more sustainable Northwest.

Situational Overview

Through the Strategic Planning process in 2017-2018, NEEA's Board of Directors worked together to identify i) major trends shaping the future of efficiency in the Northwest; and ii) funder needs relative to the key strengths and potential roles of NEEA. These macro trends and organizational merits form the foundation of this Strategic Plan.

MACRO TRENDS

1. In some Northwest markets, loads are flat to declining and commodity costs are relatively low and stable. Such circumstances make it more difficult to justify efficiency investments under required cost-effectiveness tests. Yet, opportunities for significantly more cost-effective efficiency have been identified in the integrated resource plans of Northwest utilities as well as the 7th Plan of the Northwest Power and Conservation Council (Council).

[1] *Utilities are defined as the region's utilities as well as the Bonneville Power Administration and the Energy Trust of Oregon.*

MACRO TRENDS (CONTINUED)

2. For many utilities, managing demand peaks to relieve capacity limits – not just to reduce usage – has become a priority. The need for operating flexibility is intensifying, particularly with the significant addition of intermittent generating resources. The Council's analysis for its 7th Plan shows that efficiency and demand response can contribute significant capacity value.

3. While the commodity cost of energy has trended down, other costs (e.g., capital replacement and operating expenses) have been on the rise. The net effect is upward pressure on rates – a trend generally opposed by most consumers and their advocates.

4. At the same time, consumer and supply chain interest in efficiency is keen, as is utility interest in supporting their customers. Because efficiency expenditures reduce bills, access to utility efficiency programs is popular with consumers and their advocates.

5. Dynamics related to the availability of transmission and generation capacity as well as the energy policies and practices of interconnected states (especially California) are also influencing long-term market and localized needs for efficiency. The changing mix of generation (e.g. more solar and wind), newly announced retirements of major generating resources and shifts in patterns of consumer energy use are among the influencing factors.

6. Uncertainty remains regarding future local, state and/or federal legislation regarding climate change, carbon regulation and greenhouse gas (GHG) reduction. West Coast states and local governments are embracing policies to decrease carbon emissions for utilities and other sectors, notably transportation. In addition, carbon reduction is increasingly a driving factor for international supply chains for products and services.

7. The pace of change in technology, on both the customer and utility side of the meter, is increasing. On the customer side, increased use of new devices can increase energy intensity for end-uses that were thought to have been "conquered" for efficiency. On the utility side of the meter, an increasing amount of renewable electric generation on the grid poses new challenges to how generation and capacity demand are balanced to reliably and cost-effectively meet load.

In sum, new technologies, policies and incentives are changing the balance of where and how energy demand and generation occurs. In turn, the locational value of efficiency is affected and resource planning for timely, sufficient and cost-effective resources becomes more challenging. In response to these trends, NEEA is sharpening its focus to assure its market transformation endeavors continue to deliver meaningful, cost-effective support of regional energy needs.

ORGANIZATIONAL TRENDS

1. NEEA enjoys a trusted, regional and national reputation for its expertise in transforming efficiency markets. Capable and committed board and staff coupled with processes for gathering market intelligence, discerning points of intervention, and coordinating interests across the region are notable.

2. Outcomes from NEEA's efforts yield insights that can be applied in complementary ways. This self-reinforcing cycle informs and strengthens other initiatives such as work on codes, standards, market evaluation, transformation methods, and the like.

3. Because of the funders' and stakeholders shared commitment, NEEA can show long-term support and the critical mass needed to influence other market actors. NEEA has also developed proven methods for moving technologies through the diffusion of innovation curve faster than would otherwise happen – and beyond what any organization could do individually as easily or efficiently.

4. As an alliance, the NEEA Board and staff must balance multiple funder perspectives as well as the diverse expectations of other stakeholders. To this end, a complex system of checks-and-balances has evolved in support. But interests sometime vary significantly and can be costly to resolve. For example:

   - The cost-effectiveness of market transformation initiatives is an over-arching expectation. However, the time horizon of interest and methods of evaluation differ among NEEA's stakeholders. Some focus on near-term energy savings; others want options for new efficiency measures to be at-the-ready for later implementation. Most are interested in transforming the long-term market – something none can as easily or as efficiently do alone.
   - Regulatory treatment of efficiency investment varies across jurisdictions. For example, under Washington law, efficiency required of utilities hinges in part on the Northwest Power and Conservation Council's Power Plan. Other states have no such tie. As another example, NEEA's investments in infrastructure, training, manufacturer relationships, market analysis and the like enable but don't directly yield energy savings on which the prudence of utilities' spending is determined. Also, how efficiency benefits achieved are allocated among funders also varies. Some jurisdictions allow apportionment based on percentage of funding; others demand evidence of specific results by measure or locale.

In sum, NEEA represents a unique mix of competencies and capabilities that has proven to move markets for efficiency. Continuing to leverage this asset in the face of new market dynamics requires that NEEA's Board be specific and clear about the organization's purpose and role. Standard metrics of success are also crucial for optimal alignment of efforts for all concerned.

Strategic Direction

The NEEA Board has applied this increased clarity to refine NEEA's Strategic Direction – that is, the collection of NEEA's purpose, values and principles, priorities and strategies.

PURPOSE

NEEA is an alliance of utilities[2] that pools resources and shares risks to transform the market for energy efficiency to the benefit of consumers in the Northwest.

GUIDING PRINCIPLES

As part of its commitment to the region, NEEA operates under a set of organizational values and principles of conduct that apply to how the NEEA Board and staff collaborate to meet business goals, while maintaining

[2] *Utilities are defined as the region's utilities as well as the Bonneville Power Administration and the Energy Trust of Oregon.*

transparency and accountability. In addition, NEEA operates under predetermined principles of planning, in order to perform a distinct yet complementary role in advancing energy efficiency in the region.

1. **Organizational Values – Cultural qualities serving as the foundation of how things get done**
   - Integrity as an individual and institutional priority
   - Innovation as a mindset for market transformation

2. **Principles of Conduct – Committments fundamental to effective organizational performance**
   - Transparency in all things
   - Accountability for results
   - Careful stewardship and prudent use of organization resources
   - Collaboration as standard practice

3. **Principles of Planning – Cornerstones of organizational design and operation**
   - Focus on long-term opportunities
   - Represent the region's collective voice
   - Strive for lasting, regionally equitable results
   - Complement and leverage others' efforts
   - Share risks in support of shared interests

OVERARCHING PRIORITIES

Two overarching goals are proposed for the 2020-2024 planning cycle. The first focuses on transformation and inter-related support functions. The other sets expectations for continuous improvement in operations.

Transformation Goal – Sustain a portfolio of initiatives and support functions that enable more cost-effective efficiency to occur sooner, in larger amounts and/or at lower cost than otherwise expected.

Operations Goal – Continuously improve organizational culture and performance efficacy, ensure accountability and transparency and strive for innovation in service to the benefit of all stakeholders.

PRIMARY STRATEGIES

The following areas of strategic emphasis (not in rank order) rely upon NEEA's established assets and competencies (e.g., market transformation and product life cycle expertise, market analytics, funder engagement and relationships with trade allies and manufacturers). All are inter-dependent and self-reinforcing. The results from work on any one strategy informs and supports others.

1. **Codes & Standards –** Influence development and support successful implementation of building codes and equipment efficiency standards and test methods to materially improve efficiency outcomes.

2. **Emerging Technologies Identification and Assessment** – Routinely scan for, assess, and report on the potential for newly identified efficiency products, services, and practices and test the field performance of the most promising opportunities.

3. **Market Intelligence –** Research, analyze, and provide actionable insight to support identification and pursuit of efficiency opportunities and results reporting.

4. **Convene and Collaborate –** Selectively support dialogue and coordinate activities among stakeholders interested in accelerating efficiency through market transformation in the Northwest.

5. **Prioritization Standards –** Establish Board-determined policies to assure equitable allocation and appropriate prioritization of efforts.

6. **Optimized Resource Allocation –** Engage funders and other qualified advisors to identify, develop, and sustain a portfolio of efficiency-enabling initiatives and activities that are consistent with NEEA's purpose.

7. **Effective Portfolio Execution –** Implement the prioritized portfolio of initiatives, routinely evaluate progress, and adapt as necessary to achieve accelerated and sustained market adoption.

SUCCESS METRICS

NEEA staff tracks and regularly reports to the Board and others on a variety of performance statistics.

The Board believes that greater specificity in measuring the alliance's success will help prioritize efforts and align stakeholder expectations, and will determine success metrics for the 2020-24 business cycle during the Business Planning Process.

BOUNDARY CONDITIONS

As with any effort, a manager's adherence to promised boundaries is as important as outcomes achieved. The Board believes alignment of NEEA's resources can be improved by a more policy-driven approach to how investments in market transformation are prioritized.

Boundaries can help reduce the friction of uncertainty and improve operating focus and efficiency. Boundary Conditions also help assure clear roles and accountabilities for the: i) Board in strategy and policy; ii) staff in operational execution; and, iii) advisors in technical and analytic guidance.

Boundary conditions have been established for each primary strategy and can be found in the appendix.

LOOKING FORWARD

The rapid and dramatic changes that the utility industry is experiencing will almost certainly continue beyond 2020. Facing this future, where energy efficiency opportunities are more challenging and complex, collective action is essential for the alliance to continue to deliver on its promise of cost-effective efficiency.

NEEA's five-year Strategic Plan outlines a path to boost the region's energy resilience, by accelerating the adoption of new energy-efficient technologies and practices that meet the evolving needs of the region's utilities and energy efficiency organizations.

NEEA welcomes this opportunity to rededicate its efforts to moving markets for energy efficiency - and to continue to work closely with each funding organization to shape and create the energy landscape of the Northwest.

BOUNDARY CONDITIONS

BOUNDARY CONDITIONS - CODES AND STANDARDS

PURPOSE AND OVERVIEW

This Boundary Condition guides NEEA's engagement in developing, testing, and increasing the energy efficiency aspects of building codes, product and equipment standards, and applicable voluntary industry standards that incorporate and enable the most energy-efficient and reliable technology and practices. The Policy supports the Codes and Standards Strategy to:

Influence development and support successful implementation of building codes and equipment efficiency standards to materially improve efficiency outcomes.

PRINCIPLES – TO GUIDE PLANNING AND IMPLEMENTATION

1. **Geographic Scope –** Engage with entities that develop, propose, or adopt codes and standards that impact efficiency in the region.
2. **Types of Energy Uses –** Influence codes and standards that impact the efficiency of building types and energy uses in the Northwest. Also, engage in codes and standards that enable communications with connected loads and devices if doing so contributes to efficiency in the region.
3. **Methods of Engagement –** Engage in developing, testing and promulgating codes and standards that address energy uses in the region by:
   - Offering relevant data, procedures and analysis to support codes and standards believed to be cost effective, achievable and applicable in the region; and,
   - Assisting local and state authorities in training, education and assessing compliance with officially adopted codes and standards.
4. **Relative Allocation of Resources –** Prioritize Codes and Standards efforts among organization-wide efforts by applying these criteria:
   - Cost effectiveness of the code or standard as measured by the criteria developed in consultation with NEEA's Cost Effectiveness Advisory Committee;
   - Potential for energy and capacity savings in the region; and,
   - NEEA's unique contribution relative to other entities of comparable influence engaged in the effort.

REQUIREMENTS – FOR STRICT ADHERENCE

1. NEEA will not engage in the enforcement of codes and standards compliance.
2. Except as permitted by the NEEA Board or this Policy, NEEA will not lobby to adopt, or not adopt, specific codes and standards.

MONITORING AND EVALUATION – TO ASSESS AND ASSURE ONGOING EFFECTIVENESS

The Executive Director will provide, and the Board will review, quarterly progress reports on the qualitative and quantitative effects of NEEA's efforts hereunder, summarized from performance metrics established in Business and Operation Plans.

BOUNDARY CONDITIONS – EMERGING TECHNOLOGY

PURPOSE AND OVERVIEW

This Boundary Condition guides NEEA's effort to identify, test, refine, and pilot emerging technologies with the potential to increase efficiency in the Northwest. This is core work where NEEA can identify and evaluate new technology more quickly and cost effectively than Funders can likely do on their own. The Policy supports the Emerging Technology Strategy to:

Routinely scan for, assess, and report on the potential for newly identified efficiency products, services, and practices and test the field performance of the most promising opportunities.

PRINCIPLES – TO GUIDE PLANNING AND IMPLEMENTATION

1. Leverage the Regional Emerging Technology Advisory Committee (RETAC) and Regional Portfolio Advisory Committees (RPAC) to facilitate the prioritization of opportunities for joint regional action, cooperative efforts, and disseminated high priority emerging technologies and to otherwise guide implementation of this policy.
2. Focus efforts on emerging technologies with the potential to deliver energy savings to the region as the primary outcome including:
   - Existing commercially available product or technology that can be used in a new, more efficient manner;
   - Work with supply chain actors to accelerate the integration of new and emerging technologies into commercialized products;
   - Testing emerging technologies for adherence to claims by developer or manufacturer, assessing safe and durable function, recommending improvements or enhancements to suit the Northwest's diverse climate zones and sharing findings and insights with distributors and other manufacturers, when allowed; or
   - Emerging technology initiatives where the predominate value is capacity savings or flexibility, for separate funding by voluntary participants as approved in advance by the Board.

REQUIREMENTS – FOR STRICT ADHERENCE

1. NEEA will not invest any effort in basic research.
2. NEEA will not assume liability or financial risk to the organization of product development such as investing in a specific company or product.

MONITORING AND EVALUATION – TO ASSESS AND ASSURE ONGOING EFFECTIVENESS

The Executive Director will provide, and the Board will review, quarterly progress reports on the qualitative and quantitative effects of NEEA's efforts hereunder, summarized from performance metrics established in Business and Operation Plans.

BOUNDARY CONDITIONS - MARKET INTELLIGENCE

PURPOSE AND OVERVIEW

This Boundary Condition is to provide a clear sense of Board expectations of how the organization gathers and uses market intelligence. It is also to help ensure that NEEA's market research efficiently complements the research of funders and other market actors. The Policy supports the Market Intelligence Strategy to:

Research, analyze and provide actionable insight to support identification and pursuit of efficiency opportunities and results reporting.

PRINCIPLES – TO GUIDE PLANNING AND IMPLEMENTATION

1. Thoroughly explore and utilize less expensive secondary research before investing in primary research, taking advantage of existing bodies of research (e.g., E-Source, EPRI).
2. The research portfolio should address the full range of regional markets, including rural markets and markets east of the Cascades.

REQUIREMENTS – FOR STRICT ADHERENCE

1. Prepare and present regional research activities and budgets, as part of the annual Operations Plan, for Board review and approval, including activities, labor and expense budgets, and key performance metrics.
2. Establish clear purpose prior to conducting any research.
3. Make available the findings of any research to funders and other interested parties, unless approved otherwise by the Board.
4. Seek out opportunities for collaboration with funders and other market actors during the planning phase of regional research projects to leverage resources, add complementary value, and avoid redundancies.
5. Coordinate with utilities and funders, especially as may be affected by downstream research project.

MONITORING AND EVALUATION – TO ASSESS AND ASSURE ONGOING EFFECTIVENESS

The Executive Director will, as part of regular quarterly updates, provide the Board with a summary of activities pending, in progress, and research completed under the approved annual Operations Plan.

BOUNDARY CONDITIONS - CONVENING AND COLLABORATING

PURPOSE AND OVERVIEW

This Boundary Condition guides NEEA's effort to ensure the: i) scope of activities best serves the core needs and purpose of NEEA and its Funders; and ii) economy of time, money, and effort for all. The Policy supports the Convening and Collaborating Strategy to:

Selectively support dialog and coordinate activities among stakeholders interested in accelerating efficiency through Market Transformation in the Northwest.

PRINCIPLES – TO GUIDE PLANNING AND IMPLEMENTATION

1. Focus engagement activities on energy efficiency and Market Transformation that benefit the region.
2. Prioritize collaborative activities that support NEEA's purpose and deliver Business and Operation Plan performance, for the benefit of funders and the region.

REQUIREMENTS – FOR STRICT ADHERENCE

1. As part of the annual Operations Plan, specify the major activities, labor and expense budgets, and key performance metrics intended to support the convening and collaborating strategy.
2. Ensure that NEEA staff participating and coordinating work groups and advisory committees will serve as neutral conveners and technical subject matter experts.
3. Committees and workgroups will operate consistent with Board-approved charters.

MONITORING AND EVALUATION – TO ASSESS AND ASSURE ONGOING EFFECTIVENESS

1. The Executive Director will, as part of regular quarterly updates, provide the Board with a summary of activities pending and results achieved under the approved annual Operations Plan.
2. The Board will periodically review the charters of advisory committees for fit with NEEA strategies, policies, and business and operating plans and annually evaluate advisory committee adherence to the charters.

BOUNDARY CONDITIONS - PRIORITIZATION STANDARDS

PURPOSE AND OVERVIEW

This Boundary Condition is to assure resources are equitably allocated and fairly prioritized to meet NEEA's obligations to funders and the region. The Policy supports the Prioritization Standards Strategy to:

Establish polices to assure equitable allocation and appropriate prioritization of efforts.

PRINCIPLES – TO GUIDE PLANNING AND IMPLEMENTATION

1. All policies and related planning are to be guided by the understanding that the costs and benefits of collaborative efforts are not equal but strive to achieve many of the goals/needs of each funder over time.
2. The Board will deliberate in good faith and make all decisions by consensus if possible, and otherwise according to NEEA's Bylaws such that Board directors support Board decisions even if the outcome is not their preferred option.
3. Policies adopted and other decisions of the Board will be clearly defined and articulated so that the limits and meaning of each policy and decision are clearly understood by all.
4. NEEA's responsibility is to maintain a portfolio that balances benefits equitably across the region.

REQUIREMENTS – FOR STRICT ADHERENCE

1. Prepare and present an annual view of the portfolio, as a part of the Operations Plan that shows conformance of portfolio initiatives relative to Board policies and allocation criteria developed in consultation with the Regional Portfolio Advisory Committee.
2. NEEA shall prioritize efforts that directly benefit the region, specifically the initiatives and activities for which support NEEA's purpose and benefit its Funders and the region.

MONITORING AND EVALUATION – TO ASSESS AND ASSURE ONGOING EFFECTIVENESS

As part of the annual Operations Plan process, the Executive Director will prepare and present an annual report to the Board on the organization's adherence to Policy principles and requirements and portfolio allocation criteria including the costs and consequences of such adherence.

BOUNDARY CONDITIONS - OPTIMIZED RESOURCE ALLOCATION

PURPOSE AND OVERVIEW

This Boundary Condition is to ensure: i) stewardship of energy efficiency Market Transformation efforts; ii) operating plans are clearly defined as to scopes and budgets; and iii) productive engagement of NEEA staff with Board, funders, and their customers, markets, regulators, trade allies, and others. The Policy supports the Optimized Resource Allocation Strategy to:

Engage funders and other qualified advisors to identify, develop, and sustain a portfolio of efficiency-enabling initiatives that support funders' needs and are consistent with NEEA's purpose.

PRINCIPLES – TO GUIDE PLANNING AND IMPLEMENTATION

1. Seek out opportunities for collaboration with funders and other market actors during the planning phase of activities to leverage resources, add complementary value, and avoid redundancies.
2. Prioritize engagements that deliver direct and measurable energy efficiency Market Transformation value to the region and its funders.
3. Market Transformation will focus primarily on sustained market changes resulting in energy efficiency.

REQUIREMENTS – FOR STRICT ADHERENCE

1. Maintain systems, process, records, and reporting protocols sufficient to always demonstrate fiscal responsibility and effective risk management practices in all aspects of operations.
2. Material changes, whether anticipated or recently incurred, to the approved Business and annual Operating Plans, initiatives and activities, labor and expense budgets, and key performance metrics shall require approval by the Board.

MONITORING AND EVALUATION – TO ASSESS AND ASSURE ONGOING EFFECTIVENESS

The Executive Director will, as part of regular quarterly updates, provide the Board with a summary of activities pending, in progress and results achieved in engaging funders and other qualified advisors under the approved annual Operations Plan.

BOUNDARY CONDITIONS - EFFECTIVE PORTFOLIO EXECUTION

PURPOSE AND OVERVIEW

This Boundary Condition is to maximize the market adoption achievements of the portfolio and to demonstrate the effective use of funding and delivery of value to customers in the region. The Policy supports the Effective Portfolio Execution Strategy to:

Implement the prioritized portfolio of initiatives, routinely evaluate progress, and adapt as necessary to achieve accelerated and sustained market adoption.

PRINCIPLES – TO GUIDE PLANNING AND IMPLEMENTATION

1. Implementation practices are adaptive rather than prescriptive (i.e., data, evaluation and research findings are to be used to continuously improve portfolio results).
2. Reports of results are to include over- and under-achievement relative to planned and expected outcomes.
3. Focus efforts that reduce and/or remove market barriers, primarily upstream and midstream and on readiness of market transforming energy efficiency for best overall value and sustained market change.

REQUIREMENTS – FOR STRICT ADHERENCE

1. Ensure regular staff communication with the Regional Portfolio Advisory Committee and other Board-chartered committees, as appropriate, throughout the process of identifying, prioritizing, planning and implementing the portfolio.
2. NEEA must act in accordance with the Rules of Engagement for coordinating Market Transformation efforts between NEEA staff and funders.

MONITORING AND EVALUATION – TO ASSESS AND ASSURE ONGOING EFFECTIVENESS

The Executive Director will present a quarterly scorecard of portfolio performance based upon success metrics identified in the Business Plan.

BUSINESS PLAN | 2020-2024

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Organizational Purpose

More than 20 years ago, utilities around the region established the Northwest Energy Efficiency Alliance (NEEA or the alliance), in a coordinated effort to transform markets for energy efficiency. NEEA's 2020-2024 Strategic Plan states its purpose:

NEEA is an alliance of utilities[1] that pools resources and shares risks to transform the market for energy efficiency to the benefit of consumers in the Northwest.

Working together, the alliance drives market adoption of natural gas and electric energy efficiency products, services and practices throughout the states of Idaho, Montana, Oregon and Washington. Since 1996, the alliance has cost-effectively realized more than 1,720 average Megawatts (aMW) of electric energy savings through market transformation.

For most of its existence, the alliance has focused on driving market adoption of energy efficiency products, services and practices powered by electric use. However, in 2014 the alliance began investing in natural gas market transformation energy efficiency initiatives. The alliance is leveraging those initial efforts and is including both natural gas and electric portfolios, as well as beginning its first dual-fuel program—Residential New Construction—in this combined Business Plan.

1. Utilities are defined as including the Northwest region's natural gas and electric utilities as well as the Bonneville Power Administration and the Energy Trust of Oregon. These are NEEA's funders.

The Value of the Alliance

Through collaboration and pooling of resources, the region's utilities and stakeholders harness their collective influence to drive market adoption of efficient products, services and practices for the benefit of utilities, consumers, and the region in ways that reduce risk for each individual funder and deliver economies of scale for the Northwest. This Business Plan uses the strategic investment in the alliance to help realize the full benefits of energy efficiency as the region's least-cost resource and to drive sustained market change.

Stewardship of Resources

Energy efficiency delivered through the alliance continues to be a resource in:

1. Providing cost-effective energy resources for the region;
2. Positioning funders as a trusted energy advisor to customers; and
3. Addressing environmental stewardship policies.

Alliance Value

By leveraging the market power of the Northwest, the alliance provides economies of scale and reduced risk for individual funders in delivering:

1. Energy efficiency resources that complement funder resources; and
2. New customer engagement opportunities for funders.

The 2020-2024 Business Plan will deliver energy efficiency opportunities that support the region in providing flexibility in how funders deliver reliable and affordable electricity and natural gas in a dynamic market. The work will facilitate energy efficiency opportunities that:

1. Enable demand management options in complementary and additive ways to the alliance's core energy efficiency work;
2. Mitigate energy and capacity constraints;
3. Provide opportunity for funders to meet regulatory and potential carbon reduction requirements;
4. Account for regional equity; and
5. Offer diversification in funders' portfolios of energy resources.

2020–2024 Strategic Goals

NEEA will deliver on its purpose, guided by two complementary goals identified in the 2020–2024 Strategic Plan.

1. Transformation Goal: Sustain a portfolio of initiatives and support functions that enable more cost-effective efficiency to occur sooner, in larger amounts and/or at lower cost than otherwise expected.

Primary strategies, as outlined in NEEA's 2020–2024 Strategic Plan, that the alliance will employ to meet this market transformation goal are:

- **Emerging Technology:** Routinely scan for, assess, and report on the potential for newly identified efficiency products, services, and practices and test the field performance of the most promising opportunities.

- **Effective Portfolio Execution:** Implement the prioritized portfolio of initiatives, routinely evaluate progress, and adapt as necessary to achieve accelerated and sustained market adoption.

- **Codes and Standards:** Influence development and support successful implementation of building codes and equipment efficiency standards and test methods to materially improve efficiency outcomes.

- **Convene and Collaborate:** Selectively support dialogue and coordinate activities among stakeholders interested in accelerating energy efficiency through market transformation in the Northwest.

- **Market Intelligence:** Research, analyze, and provide actionable insight to support identification and pursuit of efficiency opportunities and results reporting.

2. Operations Goal: Continuously improve organizational culture and performance efficacy, ensure accountability and transparency, and strive for innovation in service to the benefit of all stakeholders.

The primary strategies, as outlined in NEEA's 2020–2024 Strategic Plan, that the alliance will employ to meet this operational efficiency goal are:

- **Optimized Resource Allocation:** Engage funders and other qualified advisors to identify, develop, and sustain a portfolio of efficiency-enabling initiatives and activities that are consistent with the alliance's purpose.

- **Prioritization Standards:** Establish Board-determined policies to assure equitable allocation and appropriate prioritization of efforts.

In addition to the five-year Strategic and Business Plans, NEEA's Board of Directors approves an annual Operations Plan and budget. The Operations Plan links these key strategies to specific initiatives, performance metrics and milestones. It also provides input to alliance portfolio management systems to ensure the portfolio delivers value to the region based on a range of criteria, including: energy savings, levelized cost of energy saved, regional equity, rural/ urban equity and risk. This yearly planning process also helps ensure the alliance's flexibility, by presenting new opportunities in a timely manner as those emerge within the five-year business cycle.

Alliance Energy Savings and Other Value Metrics for this Plan

The activities outlined in this Business Plan will produce market changes leading to energy savings in the near and long term as well as other value to the region and funders, which are highlighted below.

1. **5-year savings (electric):**115-152 aMW of Co-Created Savings and 360-500 aMW of Total Regional electric energy savings within the 2020-2024 funding cycle.

2. **10-year savings (electric):** 210-300 aMW of Co-Created Savings and 650-930 aMW of Total Regional Savings between 2020-2029. This includes savings from previous and current investment funding.

3. **5-year savings (gas):** 11-18 million Therms of Total Regional Savings between 2020-2024.

4. **10-year savings (gas):** 14-34 million Therms of Total Regional Savings between 2020-2029.

5. **5-year (electric) capacity savings:** 155-278 MWp of total 5-year regional peak capacity electric savings across summer and winter.

6. **5-year (electric) carbon reduction:** 419,000-554,000 Tons of avoided $CO2$[2].

A temporary dip is forecasted in the electric co-created savings stream during this Business Plan due to previous investments phasing out and new programs phasing in at a slower rate. The forecast increases again after 2025, largely due to an expected federal standard on electric water heaters mandating heat pump levels of performance. Savings models are still being developed for natural gas, but these efforts should realize their first significant savings beginning in 2019. These energy savings estimates are detailed further in Appendix 6.

2. Peak Capacity Savings and Avoided Carbon Emissions are tracked to identify additional value derived from energy efficiency work, but have no associated goal or target.

Budget Summary

Figure 1 highlights the budget required by key strategy to deliver on the activities outlined in the Business Plan. See the Operations and Budget section for more detail.

Figure 1: Proposed 5-Year Budget by Strategy ($ Thousands)

PRIMARY STRATEGIES (DIRECT COSTS AND SALARY & BENEFITS)	ELECTRIC	NATURAL GAS	EULR[3]	TOTAL	% OF BUDGET
Emerging Technology **Routinely scan for, assess, and report on the potential for newly identified efficiency products, services, and practices and test the field performance of the most promising opportunities.** Includes scanning and product management.	$14,516	$1,401		$15,917	8.5%
Effective Portfolio Execution[4] **Implement the prioritized portfolio of initiatives, routinely evaluate progress, and adapt as necessary to achieve accelerated and sustained market adoption.** Includes existing and new programs, including program implementation, marketing, planning, market research, evaluation, market intelligence, as well as codes and standards activities directly associated with specific programs.	$89,642	$12,001		$101,643	54.1%
Codes & Standards **Influence development and support successful implementation of building codes and equipment efficiency standards and test methods to materially improve efficiency outcomes.**	$16,455	$363		$16,818	9%
Market Intelligence **Research, analyze and provide actionable insight to support identification and pursuit of efficiency opportunities and results reporting.** Includes market research, evaluation, planning and market intelligence work that crosses multiple programs.	$8,378	$1,186	$8,884	$18,448	9.8%

3. End Use Load Research is a Special Project.

4. All marketing costs are in the Business Plan budget. The Guiding Principles for Downstream Marketing Activities, outlined in Appendix 9, will determine how the alliance will coordinate and implement execution options for implementing and funding regional marketing campaigns directed at end-use customers.

PRIMARY STRATEGIES (DIRECT COSTS AND SALARY & BENEFITS)	ELECTRIC	NATURAL GAS	EULR[3]	TOTAL	% OF BUDGET
Convene and Collaborate (Shared Services) **Selectively support dialogue and coordinate activities among stakeholders interested in accelerating efficiency through market transformation in the Northwest.** Includes Stakeholder Relations and Corporate Communications functions.	$9,740			$9,740	5.2%
Administration (Shared Services) **The people, processes, and technology to support effective execution to the Business Plan.** Includes IT, contracting, finance, accounting, legal and human resources.	$24,871	$300	$72	$25,243	13.4%
Allocation of Shared Services[5]	(4,252)	$3,677	$575		
Sub-Total Shared Services	$30,359	$3,977	$647	$34,983	18.6%
SUB-TOTAL NEEA CORE ACTIVITIES	**$159,350**	**$18,928**	**$9,531**	**$187,809**	**100%**
Special Projects[6]	TBD	TBD		TBD	
TOTAL ALL NEEA ACTIVITIES	**$159,350**	**$18,928**	**$9,531**	**$187,809**	**100%**

5. All of the Shared Services costs are incurred within the electric budget with End Use Load Research and Natural Gas reimbursing Electric for its allocation of Shared Services staff/labor, building space usage and supplies.

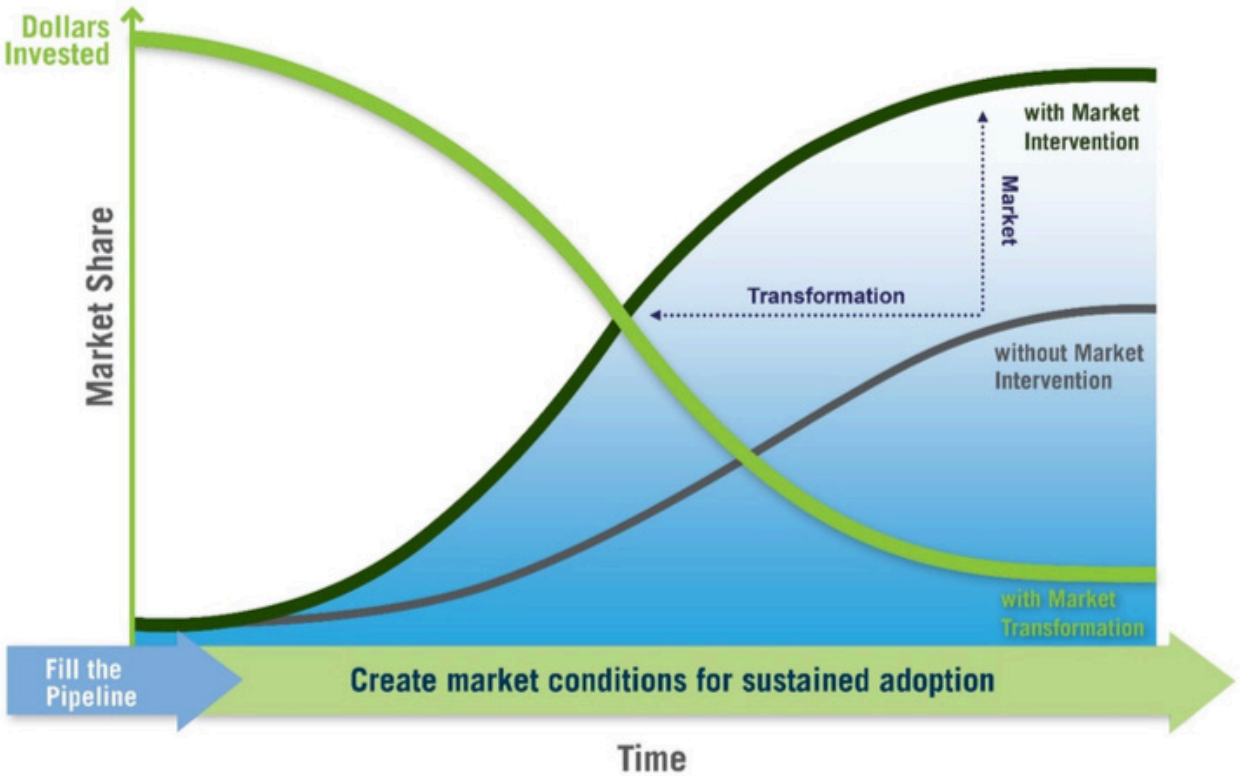
6. Special Projects approved for the alliance to pursue as part of this Business Plan include investment in a Multi-Family Dwelling Stock Assessment, Strategic Energy Management and Industrial Technical Training Enabling Infrastructure. See Electric Portfolio section and the Natural Gas portfolio section for more information. Additional opportunities described in this plan for the Board to consider include "Accelerating and Increasing Flexible Demand Resources in Baseline Efficient Products" and "Integrated Energy Storage in Equipment and Buildings." See the Business Opportunities Beyond the Plan: Special projects section for more information on these opportunities.

NEEA'S APPROACH TO MARKET TRANSFORMATION

Market Transformation Approach

NEEA's market transformation approach focuses on: identifying energy efficiency opportunities and the barriers that are preventing this opportunity from being realized; and developing and implementing market intervention strategies to remove barriers and exploit market opportunities that accelerate adoption of cost-effective energy efficiency and create lasting market change.

Figure 2: Market Adoption—With and Without Market Intervention



The alliance developed its approach to market transformation more than 20 years ago and has since been using this approach to transform markets to become increasingly energy-efficient. Using this approach, the alliance has delivered 1,720 average megawatts (aMW) of electric energy efficiency savings to the Northwest, the equivalent of powering more than 1.2 million Northwest homes each year.

Market interventions need to be deployed strategically, with the sequence and timing of the interventions and the audiences varying depending on the stage in the adoption curve and the specific identified barriers. Figure 2 illustrates this adoption curve and the affect market transformation has on accelerating market adoption of energy-efficient products, practices and services.

Key activities that the alliance will continue to pursue over the next five years as part of its market transformation approach include:

1. Conducting market scanning and assessment to identify energy efficiency opportunities;
2. Testing and readying new products and services;
3. Designing innovative market strategies to accelerate energy efficiency;
4. Executing market transformation programs to remove barriers and accelerate energy efficiency;
5. Leveraging NEEA's well-established codes and standards expertise and relationships and;
6. Facilitating regional coordination and planning.

To create long-term change in the market, interventions often influence the technology developed and brought to market as well as the behavior of both the supply-and demand-side market actors. NEEA's 2020-2024 Strategic Plan outlines numerous macro trends affecting the utility and energy industries. Additional market trends affecting the supply chain include the need to focus on energy efficiency solutions that can be applied across national and global markets. Market consolidation, alignment with state or national regulation, global competition and pressures for greater speed to market are the key drivers of this national and global focus. Supply chain partners also described customer demand for energy efficiency as one of several drivers of their investment in energy efficiency programs.

Complementary Skills and Competencies

NEEA is one of many organizations working toward improving energy efficiency in the Northwest. However, the alliance maximizes return on investment by focusing on areas that leverage its core competencies and unique strengths in ways that complement local energy efficiency programs. Below are characteristics that distinguish the alliance's role.

- **Aggregation of Market Resources:** NEEA is the only alliance of both public and private utilities that represents the entire Northwest to national and global market partners. The aggregation of market resources will provide the region with greater potential to influence market actors, as well as greater economies of scale for the benefit of its regional stakeholders.
- **Objective Promotion of Energy Efficiency:** The alliance's focus will continue to be on energy efficiency. Because it has no product or service to sell or promote, it presents a credible, objective face to the market.
- **Risk Pooling:** The alliance continues to create a regional impact that delivers at a local level, complementing the efforts of every partner while mitigating individual risk to any one utility or organization.
- **Long-Term Orientation:** Though the alliance identifies and acts on short-term opportunities that emerge in the market, the alliance's long-term focus identifies and develops emerging technologies that allow investment in riskier, long-term energy efficiency initiatives not typically undertaken by individual utilities. It also enables and strengthens partnerships with manufacturers, distributors, retailers and trade allies.

The alliance represents a unique mix of competencies and capabilities that has proven to move markets for efficiency, creating a collective impact that exceeds what any one organization could accomplish alone. The alliance will utilize these skills and key competencies in implementing the seven strategies that are part of its portfolio and business operations approach, for both electric and natural gas. Those two portfolios are detailed separately in the following sections.

ELECTRIC PORTFOLIO

TRANSFORMATIONAL GOAL:

Sustain a portfolio of programs and support functions that enable more cost-effective efficiency to occur sooner, in larger amounts, and/or at lower cost than otherwise expected.

Key Transformational Strategies

1. Emerging Technology - pg 32
2. Effective Portfolio Execution - pg 36
3. Codes and Standards - pg 48
4. Convene and Collaborate - pg 58
5. Market Intelligence - pg 52

Special Projects

1. Strategic Energy Management - pg 45
2. Industrial Technical Training - pg 46
3. Multi-Family Dwelling Stock - pg 54 Assessment Study

STRATEGY 1: EMERGING TECHNOLOGY

Description: Emerging technologies and new efficiency measures offer new and significant energy efficiency and demand reduction potential for the region as documented in the 7th Power Plan.[7] Additionally, new innovations are coming to market faster than ever, driven in part by international clean energy investments in energy efficiency technologies that reached their highest level ever in 2017.[8] New opportunities are present in every sector and for every end use. Unit efficiencies are improving, and integrated intelligence is amplifying the benefits and savings. Along with increasing connectivity, these trends are creating new opportunities to embed flexible demand capability in energy-efficient products and services as additive value to existing energy efficiency-focused market transformation work.

DEFINITIONS

Emerging Technology:
An energy-efficient product, service, or best practice that has the potential for improving performance, expanding to new markets, and/or bringing new value to the market.

Pipeline: Emerging technologies at various levels.

Market Conditions and Assumptions Driving Emerging Technology Work

1. Energy efficiency emerging technology opportunities will continue to exist for the region through 2024 and beyond.
2. While emerging energy efficiency technologies are plentiful, their complexity will continue to increase due to the common occurrence of integrated sensors and controls along with connectivity in new products.
3. Pay-for-performance and other performance-based energy measurement approaches will become more common due to the growth of products that are intelligent and connected, enabling performance adjustments and new features at a pace that virtually negates traditional custom and prescriptive approaches to unit energy savings. This will add a layer of complexity to regional emerging technology and program efforts.

Objectives

1. Help the region achieve its long-term savings goals by tracking and assessing new measures identified in the power plans and by the Regional Technical Advisory Committee process.
2. Increase regional savings potential by scanning, tracking and assessing new technologies not captured in the 7th Power Plan.

7. The Seventh Northwest Power Plan (Plan) identified 4,300 average MegaWatts (37.7 million MWh per year) of energy efficiency potential in the Northwest by 2035. Approximately 50% of these savings are from new or emerging technologies. https://www.nwcouncil.org/energy/powerplan/7/plan/

8. Bloomberg Clean Energy Investment Trends, 2017; Abraham Louw; Published January 16, 2018.

3. Advance the alliance's portfolio of market transformation programs by introducing new emerging technologies with the strongest market transformation potential.

Success Metrics

1. Portfolio Advancement: Total energy efficiency market potential of emerging technologies advanced into the alliance's market transformation portfolio over the 5-year business cycle.

2. Market Advancement: Total energy efficiency market potential of emerging technologies readied for market development over the 5-year business cycle.

Key Activities to Provide Value to the Region

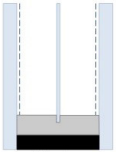
Within the alliance's portfolio of programs, a large portion of the work will focus on scanning for emerging technologies and advancing them through product management. These product management activities will address products relevant to the markets specific to those programs. Additional emerging technology efforts outside of programs will scan for new opportunities and will track and advance the readiness of those technologies to achieve the transformation goals. By leveraging the alliance's core strengths of market influence, economies of scale and risk pooling, the region can benefit from emerging technologies at a lower risk and cost than if each organization explored these technologies on their own.

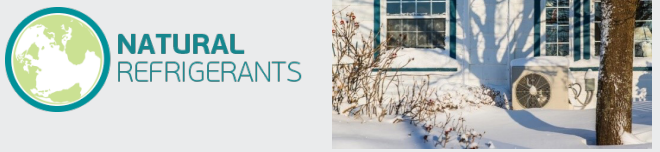
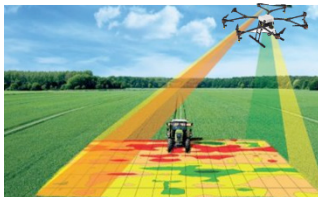
1. **Scanning:**
   The alliance scans for technologies through:
   a. An open unsolicited proposal process;
   b. Collaboration with U.S. DOE National Labs, APRA-e, and other organizations outside the Northwest; and
   c. Engagement with manufacturers and other market actors.
2. **Tracking:**
   In cooperation with members of the Regional Emerging Technology Advisory Committee (RETAC), NEEA staff developed a regional pipeline that includes emerging technologies and needed or active projects to assess these technologies. A common framework for the status (readiness) of the technologies along with a common taxonomy for categorizing the technologies enables anyone interested in or working on emerging technologies to see opportunities and add their contributions (See Emerging Technology Appendix 7). The regional pipeline has increased the effectiveness of regional coordination and encouraged out-of-region organizations to reference and build on the region's work. The regional pipeline, combined with regional and national collaboration, will continue to be core organizing elements in advancing emerging technologies in the 2020–2024 business cycle.
3. **Product Management:**
   Once technologies are identified and prioritized, the alliance works to translate the technologies into a product or measure that can be evaluated for energy savings, tracked in the market, and is useful in meeting the region's goals. Product management involves defining the product, considering the product's value, based on opportunities and market barriers, developing and evaluating test methods, collaborating on performance specifications, testing commercially available products, planning for product evolution and collaborating with manufacturers to adjust products to better meet the needs of the Northwest. Product management activities vary significantly between products, but they are more aligned within product groupings. High-level product management activities are highlighted in the description of the product groups that follow in the Effective Portfolio Execution section.

Examples of Electric Emerging Technology Opportunities

Figure 3 provides some examples of technologies that the alliance is tracking that could accelerate energy efficiency opportunities for the region.

Figure 3: Electric Emerging Technology Opportunity Examples

END USE	EMERGING TECHNOLOGY	EXAMPLES
Envelope	• Light-weight triple pane windows • Surface applied window films with self-powered/dynamic control of solar gain and light bending for deeper day lighting and low emissivity for reduced solar gain	 Thin glass triple pane
Lighting	• Lamps with twice the efficiency of today's LEDs • Integrated batteries in lamps, light fixtures and other products encourage highest efficiency and provide built-in resiliency	 
Motors and Drives	• Brushless motors with 5% or better efficiency improvement and greater longevity • Motor systems with integrated sensors and controls ensuring efficient operation across wide operating conditions	
HVAC	• Heat pumps capable of remaining productive and efficient through low and high temperatures; controls enable flexible load management • Broader range of sizes to enable more applications	
Water Heating	• Water heaters with improved heat pumps and flexible demand controls for energy storage and load shifting; smaller form factors for multi-family water heating	

END USE	EMERGING TECHNOLOGY	EXAMPLES
Heat Pump Advances	• CO2 and other natural or low carbon refrigerants • Variable capacity and control to efficiently heat and cool over a broader temperature range	
Consumer Products	• Level 2 battery chargers 5% more efficient and 15x faster than level 1 chargers • Televisions and displays with higher resolution, brighter colors and larger sizes without energy intensity gains • Connected home devices that control lighting, HVAC, appliances and electronics, etc.	
Compressed Air	• Intelligent valves that save compressed air, track usage, and provide alerts when something is wrong • Smart air nozzles that use 50% of the compressed air compared to other nozzles	
Agriculture	• Data collection through drones and other sensors provide valuable feedback to better manage water, fertilizers, etc. to improve yields and lower costs	

STRATEGY 2: EFFECTIVE PORTFOLIO EXECUTION

Description: Once a new energy efficiency opportunity is identified and proven to deliver reliable energy savings, the alliance develops and implements market transformation initiatives at a scale designed to accelerate adoption of these new opportunities. For 2020–2024, the alliance is proposing to operate a portfolio of market transformation programs that can be grouped into seven Cross-Sector Product Categories or Product Groups.[9]

Within each Product Group, the alliance is developing and implementing programs and enabling infrastructure activities that have the potential to deliver significant energy savings opportunities for the region, while transitioning out of programs with diminishing potential.

Product Group Approach

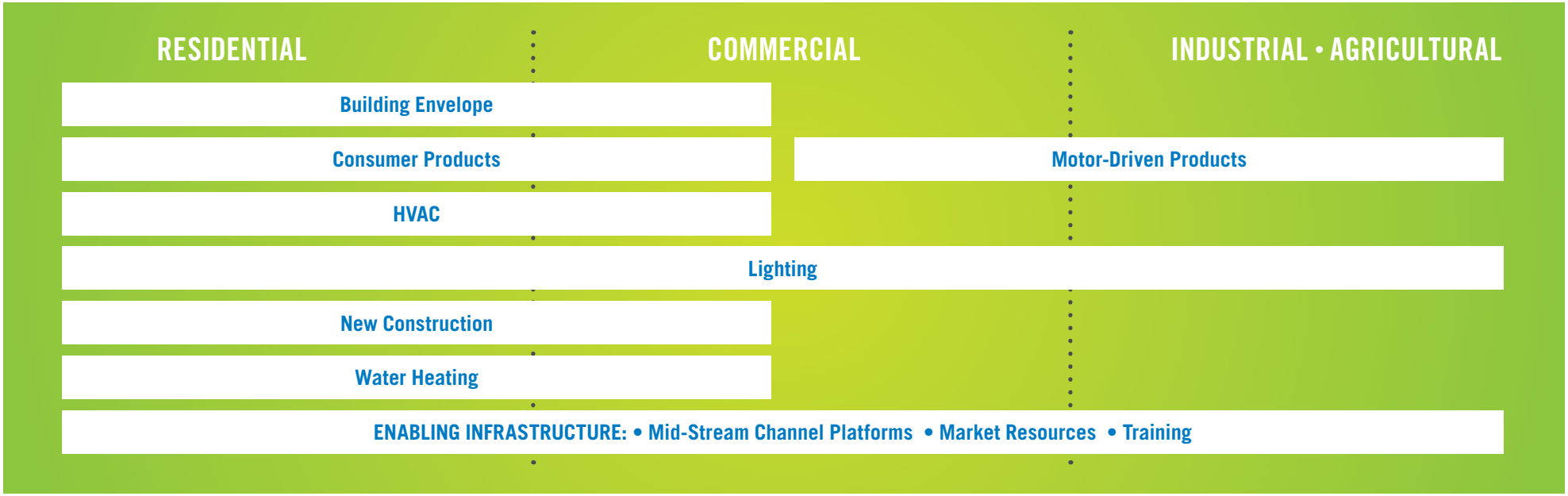
NEEA's market transformation framework will continue to enable energy savings opportunities for the region by leveraging relationships and market channels to align with Product Group opportunities. This creates efficiencies for the supply chain whose delivery channels and technology applications frequently target multiple customer sectors. This approach also creates greater leverage across alliance programs, resulting in increased operating efficiencies. Figure 4 illustrates the categories of Product Groups the alliance will focus on, although additional categories may emerge. Each Product Group includes multiple programs and emerging technologies that share supply chain and market opportunities.

Each Product Group also includes enabling infrastructure that is leveraged by multiple market transformation programs across sectors in building market capability, awareness and demand for energy-efficient products, services and practices or new customer engagement opportunities for funders.

The alliance will also investigate and pursue emerging technology opportunities within each Product Group.

9. Products as defined in this Business Plan refer to products, practices and services.

Figure 4: Product Groups and Enabling Infrastructure



Increasing Northwest Market Leverage Through Extra-Regional Collaborations

The alliance will seek to leverage its own efforts to increase market adoption through collaborations with extra-regional organizations that share the same goals and objectives. Traditional collaborators have included ENERGY STAR, Consortium for Energy Efficiency (CEE), American Council for an Energy-Efficient Economy (ACEEE), U.S. DOE, DOE National Laboratories and others. The alliance also collaborates with extra-regional utilities in specific programs and on codes and standards activities.

Partnerships with these entities have influenced efficient product designs and changed distribution and stocking strategies. NEEA staff has unique relationships with these market actors built on a long history of success in the Northwest. However, the alliance has limited ability to influence market demand for these products outside the Northwest; which national and global market actors require to fully support new, efficient technologies. To do that, the alliance works with extra-regional partners that can help build market demand outside the region in coordinated and consistent ways.

See the Operations Efficiency section for more information on how the alliance will collaborate within the Northwest.

Embedding Flexible Demand Capability in Energy-Efficient Products and Services

Many of the technologies that generate energy efficiency–NEEA's first priority–have a secondary ability to control or modify the demand that these devices place on the system. If properly configured and connected, these technologies can provide both energy and capacity in support of the changing needs of the system. This provides additive value to existing energy efficiency-focused market transformation work by conducting the following activities.

1. NEEA will work with market actors to make the necessary changes to enable efficient products to be capable of being exercised as flexible demand resources.
2. NEEA will also work with standard setting organizations, utilities and manufacturers to move toward common technical specifications

An example of this work is Heat Pump Water Heaters (HPWHs). HPWHs already include sensors, controls and connectivity options as part of the standard feature set for these products. Adding capability to be grid-enabled is primarily a matter of configuring the software and connectivity of the product. However, manufacturers need to know what protocols to design to before they are willing to make the investment to change their manufacturing processes. The alliance can leverage its strong position with manufacturers ensure all HPWHs have specific product capabilities that reflect a regional consensus on technical requirements. that the industry can adopt, resulting in economies of scale and further reductions in the incremental cost of this capability.

Market Conditions and Assumptions

NEEA's 2020–2024 Strategic Plan outlines numerous macro trends affecting the utility and energy industries. Additional market trends affecting the supply chain and their work with the alliance emerged through interviews conducted with the supply chain. Key themes from these interviews and the Strategic Plan inform the following assumptions:

1. Market consolidation, alignment with state or national regulation, global competition and pressures for greater speed to market are all increasing pressure for manufacturers to seek solutions that cross regional territories. To maintain leverage with these market actors, the alliance must focus on energy efficiency solutions that can be applied across national and global markets and coordinate consistent delivery of these solutions across the nation.
2. Low commodity costs are making it more difficult to acquire energy efficiency cost-effectively and require new and different approaches to capitalize on synergies and reduce program costs.
3. The supply chain and the alliance assume that increased customer loyalty can be achieved through energy efficiency programs.

Objectives

1. Implement market transformation initiatives that deliver sustained market change resulting in energy savings, capacity savings and avoided carbon emissions.
2. Increase market channel leverage for funders and the region.

Success Metrics

1. **Energy Savings:** Estimated five (2020-2024) and ten (2020-2029) year Total Regional Savings[10] and Co-Created Savings[11] forecasts for the alliance portfolio.
2. **Peak Capacity Savings[12]:** Annual achieved and 5-year estimated regional capacity savings forecast as a result of the Co-Created savings forecast.
3. **Avoided Carbon Emissions[13]:** Annual achieved and 5-year estimated regional avoided carbon emissions as a result of the Co-Created savings forecast.
4. **Benefit-Cost Ratio:** The Portfolio benefit-cost ratio reflects the 20-year value of the regional investment in market transformation efforts.

Key Activities to Provide Value to the Region

1. **Product Groups: Develop and implement market transformation programs by identifying and removing market barriers**
   See Figure 5 and Appendix 1 for more information about each of these Product Groups, the unique role the alliance will play in successfully implementing them in the market and how this will be done.

10. Total Regional Savings: All savings calculated above the pre-intervention market starting point.
11. Co-Created Savings: Savings above the naturally occurring market baseline that is established at the start of the program. This includes local utility program savings and the calculated remainder called Net Market Effects.
12. Peak Capacity Savings are tracked to identify additional value derived from energy efficiency work, but have no associated goal or target.
13. Avoided Carbon Emissions are tracked to identify additional value derived from energy efficiency work, but have no associated goal or target.

Figure 5: Product Groups

PRODUCT GROUPS	MARKET DESCRIPTION	OBJECTIVES
Building Envelope	Includes the supply chain that manufactures, distributes and sells the physical separator between the interior and exterior of a building (a.k.a. the building envelope), which includes walls, fenestration and roofs, the end-consumers who purchases them. NEEA's current focus is window products because they are the weak link in the envelope. These products include secondary glazing systems (SGS), low-e storm windows (LES), shades and blinds.	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 SGS and LES. 3. Create market transformation opportunities for other window attachment products, such as films and shades. 4. Identify and explore market transformation opportunities for new high performance primary windows and innovative lower cost wall systems.
Consumer Products	Includes the supply chain (manufacturers, distributors, physical and online retailers, contractors and installers) that delivers consumer goods and services in high volume as well as end-consumers who purchase them.	1. Improve U.S. DOE or EPA test protocols so that they accurately reflect real-world conditions and energy savings. 2. Influence ENERGY STAR specifications or federal standard updates.
Motor-Driven Products	Includes the supply chain that manufactures, distributes, specifies, designs and installs motor-driven products such as pumps, fans, compressed air systems and high-performance motors as well as the decision makers who influence the purchase of these products.	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. DOE rulemakings on Pumps, Fans, Compressed Air, and Motors.

PRODUCT GROUPS	MARKET DESCRIPTION	OBJECTIVES
HVAC	Includes the supply chain that manufactures, distributes, specifies, designs and installs commercial and residential HVAC products and end-consumers who purchase them.	1. Transform the market so that unitary, inverter-driven, variable speed heat pumps (VSHP) are the affordable product of choice to replace electric forced-air-furnaces in single-family site-built and manufactured homes. 2. Increase Northwest specifiers and installers skill in identifying, designing, sizing and configuring the most efficient HVAC system for each application. 3. Transform the market so that Very High Efficiency Dedicated Outside Air Systems (VHE DOAS) are common practice in applicable existing and new small to medium-sized commercial buildings. 4. Influence the voluntary market to enable VHE DOAS to be required in International Energy Conservation Code, ID, MT, OR and WA commercial building code.
Lighting	Includes the supply chain that manufactures, distributes, specifies, designs and installs lighting products, including lamps, ballasts, controls and fixtures as well as end-consumers who purchase these products.	1. Transform the market so that controls are a standard fixture feature for little-to-no additional cost. 2. Identify market transformation opportunities for advanced lighting control systems in space types not well suited for Luminaire Level Lighting Controls– retail is an especially significant opportunity. Also, identify efficiency opportunities for control systems that encompass lighting plus other building systems. 3. Identify market transformation opportunities to drive the market toward higher efficacy light sources. The Distributor Platform, as an existing mechanism for influencing distributor sales practices and tracking progress via sales data, offers a valuable market lever for this goal.

PRODUCT GROUPS	MARKET DESCRIPTION	OBJECTIVES
New Construction	Includes the supply chain that designs, builds, verifies and sells residential single-family site built new homes, manufactured homes, and commercial new construction, as well as the end-consumer of these products.	1. Maximize energy efficiency opportunities for new buildings in commercial and residential new construction code requirements. 2. Inform and enable code advancement through market adoption of energy-efficient products and practices. On a limited basis, support the manufactured home market to establish NEEM 2.0 as the primary above code manufactured home option.
Water Heating	Includes all tank type electric water heaters, including the supply chain that manufactures, distributes (wholesale and retail), specifies, designs and installs commercial water heaters and end-consumers who purchase these products.	1. Support the adoption and integration of the Consumer Technology Association communication protocol CTA 2045 as standard practice across all heat pump water heaters supplied to the Northwest. 2. Contribute to a federal standard requiring all electric water heaters be heat pump water heaters.

2. **Alliance Marketing: Create and execute marketing strategies that support Product Groups in successfully achieving market transformation goals.**

   Marketing is a key tool in removing barriers and capitalizing on opportunities to increase the adoption of energy-efficient technologies and practices. The energy savings estimates provided in the business plan are contingent on marketing interventions to influence broad regional audiences and achieve market transformation goals. Barriers that marketing addresses include supply chain readiness, product availability, product quality, awareness, product acceptance and price.

   In 2020-2024 the alliance will focus regional collaboration opportunities on areas that maximize alliance goals and address critical decision-making topics. One such area is marketing and how those activities are developed and coordinated. The Guiding Principles for Downstream Marketing Activities, outlined in Appendix 9, will determine how the alliance will coordinate execution options for implementing and funding regional marketing campaigns directed at end-use customers.

   The alliance is thoughtful and targeted in the use of marketing to support market transformation and there is substantial regional coordination on marketing activities. Marketing activities are conducted in concert with other program interventions to achieve the following outcomes:

   1. Engaging upstream.
   2. Engaging midstream.
   3. Understanding audiences.
   4. Providing awareness and education to residential end-use customer audiences.
   5. Supporting utility and market partner marketing efforts.

   Marketing activities vary based on program maturity and goals, product availability, and supply chain and market acceptance of the product. Marketing is commonly requested by upstream and midstream market actors to amplify the impact of their activities and assist in building awareness of energy-efficient technologies in the region. Market research is undertaken to validate and provide clarity around barriers to product adoption. When the research indicates awareness or education about efficient technologies is a primary barrier, marketing activities are a vital strategy employed to address the barrier. A few examples include:

   1. When a product is new to the market marketing is often a key tool in engaging and demonstrating commitment and value to manufacturers.
   2. As more products enter the market, manufacturers request region-wide education and awareness from an unbiased third party to augment their individual product marketing efforts.
   3. Marketing support motivates midstream audiences to complete trainings and to stock and prominently display products.
   4. Regional websites provide tools and resources in an internet-driven world to educate and inform end-use customer audiences and then drive them to utility or partner websites.

   Alliance marketing activities are designed to work in concert with funder marketing activities. Together, the alliance provides broad education about features, benefits and which customer demographics and climate zones are appropriate for the technology. Once the customer is aware of the technology and benefits, they often seek more information on cost and availability. Utility marketing support focuses on available incentives that make product pricing competitive and may also provide information on qualified installers and other energy efficiency program benefits. The combination of these two approaches effectively provides appropriate information to customers based on their level of awareness and interest in the product.

   See Appendix 3 for more information about marketing, how it will be implemented and associated success metrics for this work.

Figure 6: Alliance Marketing

	DESCRIPTION	OBJECTIVES
Marketing	Marketing activities accelerate market transformation by providing a clear understanding of the upstream, midstream and downstream target audiences and the best ways to influence them. Marketing directly addresses key market barriers prevalent across the portfolio including lack of awareness, differentiation of energy-efficient products, understanding of product benefits, and lack of supply chain support and investment. Alliance marketing strategies and activities are created and executed in close collaboration with Northwest utilities, extra-regional efficiency organizations, the supply chain and national partners.	Drive the adoption of the practices and technologies that the alliance supports through: 1. Awareness building and education 2. Partnerships with manufacturers, national/regional organizations 3. Uniform messaging and promotion to target audiences in the Northwest

3. Enabling Infrastructure: Develop and implement Cross-Cutting Enabling Infrastructure that builds market capability, awareness and demand for energy-efficient products, services and practices or new customer engagement opportunities for funders.

Figure 7: Enabling Infrastructure

INFRASTRUCTURE	DESCRIPTION	OBJECTIVES
MIDSTREAM CHANNEL PLATFORMS		
Distributor Platform	This platform is comprised of key relationships, ongoing data collection activities and repeatable program processes developed through previous program work. The platform supports multiple programs within a number of Product Groups, including lighting, motor-driven systems and water heaters.	1. Leverage the relationships, interventions and data capabilities of the distributor platform to achieve cost effective savings and new utility customer engagement opportunities across multiple product categories. 2. Foster mutually beneficial relationships between distributors and the alliance that: a. Motivate distributors to stock and sell targeted energy-efficient products. b. Incentivize and facilitate secure delivery of branch-level sales data for targeted product categories.
Retail Platform	While primarily supporting the Retail Product Portfolio program, the Retail Platform is designed to support virtually any energy-efficient Consumer Product flowing through the retail channel. To date, the platform has resulted in deeper relationships with strategic national retailers and extra-regional partners, has provided access to full-category sales data, and has given the region greater influence on the ENERGY STAR specification process. For retailers, the platform significantly reduces costs associated with administration of efficiency programs by creating a consistent process for sharing data and transferring incentive payments.	1. Add additional products and retailers to the platform as needed to accelerate market transformation of consumer products. 2. Leverage the platform to support funders' local midstream efforts as requested.

INFRASTRUCTURE	DESCRIPTION	OBJECTIVES
MARKET RESOURCES		
Integrated Design Labs	The Labs are an important partner to alliance programs, accelerating market transformation through research, technical assistance and education that are used by alliance programs and market partners.	1. Influence new construction and renovation projects to cost-effectively achieve exceptional energy performance targets and serve as a model for future buildings and practices. 2. Deliver valuable energy efficiency resources that serve multiple product initiatives as well as funders and their customers.
BetterBricks	BetterBricks is a resource that supports the alliance's commercial and industrial programs by raising market awareness and capability for energy efficiency technologies and decision-making. The target audiences for this work include building owners, property managers, building facilities staff, architects, designers, engineers and contractors. The BetterBricks resource is supported by two main components: 1. The BetterBricks website, which provides information, tools and resources about efficient buildings 2. Market relationships	1. Position BetterBricks as a trusted resource for professionals who own, operate, and manage commercial buildings to learn about energy efficiency best practices and technologies. 2. Facilitate broader adoption of energy-efficient products and practices and higher utilization of utility programs and incentives for commercial buildings.
Commercial & Industrial Strategic Energy Management (Special Project)	Strategic Energy Management (SEM) is recognized as a pathway to deeper energy efficiency within commercial and industrial programs, and is a foundation for deeper and more enduring customer relationships. Existing SEM infrastructure is the result of several years of regional investment and collaboration. The 2015-2019 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.	1. Enable commercial and industrial customers to see value in SEM as a strategy for meeting their sustainability and energy performance goals. 2. Enable greater development and use of high-value SEM tools and resources by regional stakeholders to launch, grow, and sustain regional SEM programs. 3. Leverage the SEM Hub Energy Management Assessment (EMA) tool to measure baseline SEM practices and identify targeted savings opportunities. 4. Build regional and national consensus on SEM as a best practice or de facto standard.

INFRASTRUCTURE	DESCRIPTION	OBJECTIVES
TRAINING		
Top Tier Trade Ally Training	The Top Tier Trade Ally infrastructure builds lighting trade ally skills to support the delivery of energy-efficient commercial and industrial lighting retrofit projects. Investment in the 2015-2019 funding cycle established NXT Level training and designation, which are the foundation for advanced training infrastructure that will enable the region to meet evolving training needs of commercial and industrial lighting trade allies. As the NXT Level base grows, NEEA will seek market partners to sustain market delivery and regional support.	1. Train trade allies to effectively specify, design, sell and install the most efficient technology, in support of alliance initiatives and funder program goals. 2. Grow NXT Level training and designations to support regional programs.
Industrial Technical Training (Special Project)	Industrial Technical Training infrastructure provides coordinated technical training on key industrial energy efficiency concepts to support industrial energy efficiency programs and build market capacity to implement industrial energy efficiency projects.	1. Build industrial energy efficiency awareness and technical capacity among the region's industrial end-users. 2. Achieve economies of scale for providing industrial energy efficiency training in support of alliance programs.

Figure 8: Enabling Infrastructure

Enabling Infrastructure supports existing and future market transformation programs, which each Product Group leverages, as indicated below. See Appendix 5 for more information.

	DISTRIBUTOR PLATFORM	RETAIL PLATFORM	BETTERBRICKS	C&I SEM (Special Project)	TOP TIER TRADE ALLY	INDUSTRIAL TECHNICAL TRAINING (Special Project)
Building Envelope	X	X	X	X		
Consumer Products		X				
Motor Driven Products	X		X	X		X
HVAC	X		X	X		
Lighting	X	X	X	X	X	X
New Construction			X			
Water Heating	X	X				

STRATEGY 3: CODES AND STANDARDS

Description: Building energy codes set minimum efficiency requirements for residential and commercial buildings for the design, materials and equipment used in new construction and major renovations. Energy codes present a unique opportunity to assure savings through efficient building design, technologies and construction practices in a cost-effective way. The alliance supports regional stakeholders in energy code development and adoption, training and implementation.

Appliance and equipment standards specify the minimum energy and/or water efficiency levels of specific products including major home appliances like clothes washers and refrigerators, commercial and industrial equipment such as motors and transformers, HVAC equipment, lighting, and electronics. Equipment standards are set by U.S. Department of Energy (U.S DOE) through a public rulemaking process. NEEA staff serve as technical experts and providers of data in U.S. DOE's rulemakings to encourage the adoption of federal appliance and equipment efficiency standards.

Market Conditions and Assumptions Driving Codes and Standards Focus

1. The codes and standards landscape has evolved substantially over the course of the 2015-2019 Business Plan. The current federal administration has set aside U.S. DOE's federal standards and test and rating procedure rulemakings for an undetermined period. In response, the standards community has turned to state and regional forums to further this work. New partnerships will enable the development of new, more effective test and rating procedures that can be used in voluntary programs to promote the best-performing equipment and systems.

2. Codes and standards continue to be one the most cost-efficient ways to ensure adoption of efficiency measures and provide significant benefits to consumers. The alliance will continue to work with emerging technologies, utility programs and market research to develop road maps and long-term goals for advancing codes and standards through strategic partnerships.

Objectives

1. Influence the development of and support for successful implementation of building energy codes in each of the four states in the region.

2. Continue to advance equipment efficiency standards and improve test rating methods and procedures.

Success Metrics

1. Count of new code proposals, which reduce regional energy intensity that are adopted each year.

2. Count of new product standards, which reduce regional energy intensity that are adopted each year.

Key Activities to Provide Value to the Region

With its extensive background in product technologies of many types, and a growing catalog of field data, the alliance can be a leader in these collaborative efforts to advance progressively more efficient codes and standards. Several alliance programs and utility programs can leverage the new test and rating procedures to advance regional efficiency work. Later, this work can be leveraged to upgrade federal procedures. In the codes realm, the region has seen some notable achievements in energy code enhancement, especially in Washington State. The adoption of new codes in all four states demonstrates regional progress in constructing better buildings and acknowledges steady improvement in building and system technologies. Post-adoption education, training and technical support to local jurisdictions support high compliance rates that, in turn, optimize building performance and realize energy savings in a cost-effective way. Specific activities the alliance implements to support these efforts include:

1. **Developing and supporting energy code development in individual states.** In Idaho and Montana, this requires supporting code proposals in the national model code International Energy Conservation Code process. In Oregon and Washington, this means supporting code proposals in their respective state-specific code processes.

2. **Providing codes education, training and technical support to individual states,** which will support the implementation of codes and achieve energy savings in buildings.

3. **Supporting new test methods for several products and systems including:**
   - **a.** heat pump and air conditioning systems;
   - **b.** packaged commercial HVAC equipment;
   - **c.** clothes dryers and clothes washers;
   - **d.** certain types of fans, pumps; and,
   - **e.** several types of split-system hydronic heat pump and chilled water products.

4. **Participating in the U.S. DOE equipment standards and test procedures rulemaking process** by providing technical input, testing and market data and analysis.

5. **Collaborating with emerging technology activities, utility programs and market research** to develop roadmaps and long-term goals for advancing codes and standards through strategic partnerships, such as the Canadian Standards Association and the Pacific Coast Collaborative.

6. Working with Consumer Technology Association, Institute of Electrical and Electronics Engineers, U.S. DOE and state and local agencies to standardize requirements governing open standard protocols for flexible demand functionality as an integral component of efficient products and buildings.

STRATEGY 4: CONVENE AND COLLABORATE

Description: The alliance's Convene and Collaborate activities are overseen by the Stakeholder Relations and Corporate Communications functions at NEEA. They include internal and external activities that support effective and transparent regional collaboration and market transformation programs.

Assumptions Driving Convene and Collaborate Activities

1. Funders and stakeholders require communication and coordination on the plans for and results of alliance work through formal and informal channels. Existing channels include:
   a. Workgroups: Alliance programs convene workgroups to inform program implementation strategies and activity coordination with funders and stakeholder programs. There are currently 10 workgroups.
   b. Advisory committees: These are used to inform program design and market strategies. There are currently seven advisory committees.
   c. Board committees: These provide Board oversight and governance of the organization. There are currently four standing and four ad-hoc Board committees.
2. Stakeholder coordination will be sized to align with available resources while balancing regional needs.
3. NEEA staff must have adequate understanding of funder and key stakeholder business needs and how they relate to alliance programs to effectively and efficiently design and execute the alliance's portfolio of work.
4. Market partners and supply chain actors must understand the alliance and the value it brings them for successful execution of market transformation programs.
5. Regional collaboration (both online and in-person) drives market transformation success and brings value to funders and stakeholders.
6. Facilitation of regional collaboration is required to achieve regional strategic goals identified by funders and stakeholders.

Objectives

1. Ensure alliance stakeholders are heard and their viewpoints inform alliance work as it evolves by following established Rules of Engagement (see Strategy 6: Optimized Resource Allocation).
2. Convene the region to enable regional energy efficiency work that reflects the diverse needs of the region.
3. Bolster the alliance's market influence to maximize support for market transformation efforts.
4. Support organizational development and effectiveness of NEEA staff in understanding funder and regional business needs.

Success Metric

Positive funder and stakeholder satisfaction: Measure and maintain strong funder and stakeholder satisfaction through an annual satisfaction survey and regular funder and stakeholder engagements.

Key Activities to Provide Value to the Region

1. **Board of Directors, Advisory Committee, and Workgroup meeting facilitation to foster:**
   a. Regional input and conversations that drive alliance work in ways that complement funders' and alliance programs;
   b. Board of Director leadership, oversight governance of and advocacy for the organization, and contributions of insight and other support and value; and
   c. Collaboration between market actors, researchers, funders and industry leaders to understand technology and market trends, opportunities and pitfalls as well as advance energy efficiency opportunities.

2. **Funder Account Management** to understand and convene discussion on funder and regional perspectives on alliance initiatives, ensure funder coordination plans are implemented throughout every stage of the Initiative Lifecycle Process (see Operations Efficiency section) and that funders have the information and resources needed to collaborate effectively in alliance work.

3. **External Communications** that increase supply chain understanding of the alliance and the value it can provide market partners through NEEA's corporate website, program communications materials and other strategic communications, including those related to Strategic and Business Planning. Corporate communication supports market transformation programs through recognition and celebration of market partner success and participation in alliance programs.

4. **Efficiency Exchange Conference** to provide a forum for knowledge-sharing to help regional energy efficiency professionals achieve their goals as well as networking opportunities. The Efficiency Exchange Conference is an event provided for the benefit of staff from funding and stakeholder organizations.

STRATEGY 5: MARKET INTELLIGENCE

Description: Market Intelligence (MI) is defined as the systematic and objective identification, collection, analysis, and dissemination of data, information, and insight for assisting decision making to advance and report progress of energy efficiency and market transformation. This description covers work in evaluation, research, regional studies, planning and market trend analysis.

Assumptions Driving Market Intelligence Focus

1. **Market Research and Evaluation efforts:**
   - **a.** The region will continue to value independent evaluations of all programs.
   - **b.** The number and complexity of programs will continue to increase over time.
   - **c.** The demand for information gathered through Market Research will continue to increase to support adaptive management and continual improvement on programs.

2. **Large-scale Data Collection and Analyses Studies:**
   - **a.** The region will continue to value the Residential Building Stock Assessment (RBSA) and Commercial Building Stock Assessment (CBSA).
   - **b.** The depth and number of codes that will be necessary to evaluate will increase.
   - **c.** Large-scale data collection and analysis studies will require the same level of stakeholder engagement.
   - **d.** A lack of awareness of existing data has led to expensive duplication of research, and enabling direct access to regionally-specific energy efficiency data would help streamline and enhance regional energy efficiency efforts.
   - **e.** There is an emerging need for a Multi-Family Stock Assessment. Multifamily buildings make up a large and increasing share of new construction in the region, with nearly a third (31%) of commercial building floor area since 2013 happening in these building types, including an increasing portion in Idaho and Montana. (This assumption applies to a potential Special Project.)

3. **Market Planning:**
   - **a.** The region will continue to value the alliance's work to analyze, estimate, document, report and forecast the potential energy savings and other value metrics associated with the market transformation efforts of each measure and for the full portfolio, in accordance with current energy savings accounting practices.
   - **b.** Funders will continue to require reporting and forecast needs as is currently done.
   - **c.** Measure levels are increasing in complexity and volume. Alliance measures have grown from 80 measures in 2014 to a current volume in 2018 of 170+. The alliance expects the size and complexity of its portfolio to remain at this current level, if not increase due to the system integration overlap complexity of future measure work.
   - **d.** Granular data gathering efforts will continue to be needed to inform service territory performance.
   - **e.** Market data gathering above and beyond program data needs will be needed to support Northwest Power and Conservation Council data and planning needs.

4. **Marketplace Trend Analytics:**
   - **a.** Requests for data analytics that target customer types, buildings, or other areas that are most likely to engage with specific technologies or activities will continue or increase.
   - **b.** Many of the data sets, tools and capabilities NEEA has organized for Marketplace Trend Analytics are done cost effectively, leveraging NEEA's nonprofit status.
   - **c.** Applying the findings of the RBSA and EULR to the region's building stock will continue to identify opportunities for improved performance and identify gaps in regional energy efficiency efforts.

Objectives

1. Ensure valuable and defensible evaluation, market progress tracking and energy savings accounting and estimating to assess results from market transformation efforts.
2. Provide research and market intelligence that lends value to program and business planning needs for internal and external partners.
3. Maintain data collection and housing best practices.

Success Metrics

1. **Actionable information:** Conduct evaluations that provide valuable inputs for program planning and validated assumptions for best accuracy of savings and other value reporting.
2. **Customer service:** Meet individual funder and Power Council needs for savings forecasting, reporting and other data or market intelligence needs in a timely, accurate manner.
3. **Actionable data:** Increased and/or comprehensive access to data, data infrastructure and analytics necessary to strategically influence the market toward measurable transformation.

Key Activities

Through the MI work, NEEA enhances decision making and mitigates risk for the region for current programs, as well as for the next generation of resource planning and programs. When done on a regional scale, this work provides substantial economies of scale. Specific MI activities that support the alliance's market transformation work include:

1. **Market Research and Evaluation** to inform market transformation efforts as well as formal evaluations of programs in market development. When possible, the alliance leverages secondary research first to inform program efforts. Primary market research in both quantitative and qualitative forms is used when secondary research is unavailable or inadequate for regional needs. Primary research provides:
   a. Insight into potential target market sizing and segmentation.
   b. Market characterization efforts.
   c. Baseline estimates that project adoption of energy-efficient products, services and practices.
   d. Independent, third-party evaluations to assess the impact or processes of alliance-funded programs.
2. **Market Planning** to support the organization with analytical expertise responsible for forecasting and reporting cost effective, energy savings and other value metrics. The department develops and manages cost effectiveness models, defensible methodologies to measure the effects of market interventions and other valuation tools to support alliance programs at various stages of the market transformation initiative's lifecycle. Market Planning is also responsible for the portfolio management system to ensure that the alliance is on track to meet its business plan goals.
3. **Marketplace Trend Analytics** delivers insights to alliance programs and regional stakeholders to assist in their strategic decision-making. NEEA creates, purchases, and compiles gigabytes of regional data to answer business questions through the blending of data sets. These analyses may be as simple as targeting households based on structure and demographic data for a single program to inform targeted outreach or as complex as identifying representative census blocks for building stock analysis research in the Northwest. This work will include development of an open data catalog, which will enable secure sharing of data across the region easily among stakeholders and creation of interactive web-based views of building stock, demographics, business types, and other critical factors for program staff and stakeholders to consider while developing market transformation strategies.

Other Market Intelligence activities that support alliance and regional energy efficiency efforts include:

1. **Large-Scale Data Collection and Analysis Studies.** NEEA manages large-scale data collection and analysis studies, including:

Stock Assessments

- **Regional Building Stock Assessments (Commercial & Residential)** that characterize the existing building stock to account for regional differences such as climate, building practices and fuel choices. The residential assessment will focus on single family homes. These stock assessments will also collect and analyze plug load data to help the region identify opportunities to manage plug load growth and may address "the why" behind the energy trends of building stock and behavioral tendencies of occupants for the residential single family study. This will improve the alliance's ability to understand these trends and influence energy efficiency efforts going forward. The commercial stock assessment will be scoped and started in the 2020-2024 Business Plan and will be concluded early in the next business cycle (2025-2029).

- **Multi-Family Dwelling Stock Assessment Study** (Special Project): To accurately characterize the Multi-Family Dwelling Unit building stock, sample design and data collection protocols need to be different from single family residential buildings and commercial buildings. By performing a Multi-Family Building Stock Assessment, the alliance will have a better understanding of the market, which will support new energy efficiency opportunities.

Code Compliance Evaluations

- **State-Specific Code Compliance Evaluations (Commercial & Residential)** that measure the impact of code on energy consumption in residential & commercial new construction, identifying the most impactful code and performance opportunities for the region to address.
- This Business Plan proposes to conduct a single family residential study in two states.

2. **Specially Funded Initiative: Northwest End-Use Load Research Study**
   The alliance, in collaboration with organizations in the Northwest, is currently conducting a specially-funded Northwest End Use Load Research Study to determine how residential and commercial customers in the region are using electricity. To perform this study, NEEA and its partners plan to meter electric circuits in 400 residences throughout the Northwest for five years at one-minute intervals. Energy use data for key residential end uses of electricity, including heat pumps, heat pump water heaters, forced air furnaces, central air conditioners and electric baseboard heaters will be obtained. In the commercial sector, approximately 100 buildings are planned for metering.

   This information will help the region achieve its energy goals by providing a more accurate assessment of the contributions of energy-efficient technologies toward reducing peak demand, and lowering energy resource costs.

NATURAL GAS PORTFOLIO

TRANSFORMATIONAL
GOAL:

Sustain a portfolio of programs and support functions that enable more cost-effective efficiency to occur sooner, in larger amounts, and/or at lower cost than otherwise expected.

Key Transformational Strategies

1. Emerging Technology - pg 58
2. Effective Portfolio Execution - pg 61
3. Codes and Standards - pg 64
4. Convene and Collaborate - pg 66
5. Market Intelligence - pg 68

Budgeted Special Projects

1. Strategic Energy Management - pg 63
2. Industrial Technical Training - pg 63
3. Multi-Family Dwelling Stock - pg 69 Assessment Study

STRATEGY 1: EMERGING TECHNOLOGY

Description: Emerging technologies offer new and significant energy efficiency for the region. Though efficient natural gas technologies have historically lagged behind electric technologies, the Northwest's investment in natural gas efficiency in the 2015-2019 business cycle, along with investments by other utilities around the country, have accelerated market interest in commercialization efforts for new efficient products.

In the 2020-2024 funding cycle, the alliance's emerging technology efforts will continue focusing on identifying and vetting efficient natural gas products, practices and services with the potential to increase consumer choices and more efficiently use natural gas in the Northwest.

DEFINITIONS

Emerging Technology:
An energy-efficient product, service, or best practice that has the potential for improving performance, expanding to new markets, and/or bringing new value to the market.

Pipeline: Emerging technologies at various levels.

Market Conditions and Assumptions Driving Emerging Technology Work

1. Energy efficiency emerging technology opportunities will continue to exist for the region through 2024 and beyond.
2. While emerging energy efficiency technologies are plentiful, many face cost effectiveness challenges.
3. Product cost reductions through cost engineering and potential economies of scale hold promise for meeting utility cost effectiveness targets.

Objectives

1. Help the region achieve its long-term savings goals by scanning, tracking and assessing new gas measures.
2. Advance the alliance's portfolio of market transformation programs by introducing new emerging technologies with the strongest market potential.

Success Metrics

1. **Portfolio Advancement:** Total energy efficiency market potential of emerging technologies advanced into the alliance's market transformation portfolio over the 5-year business cycle.
2. **Market Advancement:** Total energy efficiency market potential of emerging technologies readied for market development over the 5-year business cycle.

Key Activities to Provide Value to the Region

Within the alliance portfolio of programs, a portion of the work will focus on emerging technologies and product management. These activities will address products relevant to markets specific to those programs. Additional emerging technology efforts outside of programs will scan for new opportunities and will track and advance the readiness of those technologies to achieve transformation goals. By leveraging the alliance's core strengths of market influence, economies of scale and risk pooling, the region can benefit from emerging technologies at a lower risk and cost than if each organization explored these technologies on their own.

1. **Scanning:**
   The alliance scans for technologies through:
   - **a.** An open unsolicited proposal process;
   - **b.** Annual sponsorship and technical partnership with the Gas Technology Institute;
   - **c.** Collaboration with utilities, DOE National Labs, DOE Advanced Research Projects Agency-Energy (ARPA-E) and other organizations outside the Northwest; and,
   - **d.** Discussions with manufacturers and other market actors.

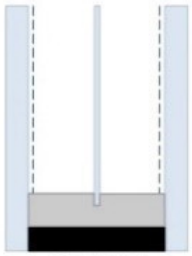
2. **Tracking:**
   In cooperation with members of the Regional Emerging Technology Advisory Committee (RETAC), NEEA staff developed a regional pipeline that includes both gas and electric emerging technologies and needed or active projects to assess these technologies. A common framework for the status (readiness) of the technologies along with a common taxonomy for categorizing the technologies enables anyone interested in or working on emerging technologies to see opportunities and add their contributions (see Emerging Technology Appendix 7). This regional pipeline has increased the effectiveness of regional coordination and encouraged out-of-region organizations to reference and build on the region's work. The regional pipeline, combined with regional and national collaboration, will continue to be core organizing elements in advancing emerging technologies in the 2020–2024 business cycle.

3. **Product Management:**
   Once technologies are identified and prioritized, the alliance works to translate the technologies into an evaluable product or measure that is useful to meet the region's goals. Product management involves defining the product, considering the product's value based on opportunities and market barriers, developing and evaluating test methods, collaborating on performance specifications, testing commercially available products, planning for product evolution and collaborating with manufacturers to adjust products to better meet the needs of the Northwest. Product management activities vary significantly between products, but they are more aligned within product groupings.

Examples of Natural Gas Emerging Technology Opportunities

Some examples of technologies that the alliance is tracking that could provide value to the region can be seen below.

Figure 9: Natural Gas Emerging Technology Opportunity Examples

END USE	EMERGING TECHNOLOGY	EXAMPLES
Envelope	• Light-weight triple pane windows • Surface-applied window films with self-powered / dynamic control of solar gain and light bending for deeper day lighting and low emissivity for reduced solar gain	  Thin glass triple pane
HVAC	• Gas-driven combination systems capable of heating space and water at greater than 100% efficiency • Systems that are able to provide cooling capabilities and/or backup power as well as utilize internal combustion engine, adsorption/absorption or modified sterling engine technology	 
Water Heating	• Gas-fired heat pump water heaters capable of achieving a UEF >1 • Smart circulator pumps that reduce heat loss	

STRATEGY 2: EFFECTIVE PORTFOLIO EXECUTION

Description: Once a new energy efficiency opportunity is identified and proven to deliver reliable energy savings, the alliance develops and implements market transformation initiatives at a scale that can accelerate adoption of these new opportunities.

In 2015-2019, the alliance began its first collaboration on natural gas market transformation. For this first five-year period, the alliance adopted a strategy that focused on implementing a small portfolio of initiatives, designed to allow the alliance to gain experience working on gas market transformation together and minimize major organizational changes. This initial foray resulted in significant progress in product development and market characterization as well as funder collaboration within the region and with extra-regional partners, such as the Gas Technology Institute. Some products from the initial portfolio met with unexpected barriers (dryers and hearths) or didn't progress as quickly as expected (combination units) and are therefore not included as full programs in the 2020–2024 business cycle.

For 2020–2024, NEEA is proposing to operate a portfolio of natural gas market transformation programs that includes two gas-only programs (Condensing Rooftop Units, Efficient Gas Water Heating) and one dual-fuel program (Next Step Homes). This diverse portfolio covers residential and commercial products, retrofit and new construction applications, a range from pre-commercialized products to those currently in the market, and three product groups: HVAC, Water Heating, and New Construction.

The market transformation theory and key activities for each of these natural gas market transformation programs are detailed further in Appendix 2. Per the Operations Efficiency section of this plan, NEEA staff will manage the portfolio adaptively, potentially shifting resources between programs with funder guidance, as market opportunities emerge throughout the 5-year cycle.

Market Conditions and Assumptions

NEEA's 2020–2024 Strategic Plan outlines numerous macro trends affecting the utility and energy industries. Additional market trends affecting the supply chain and their work with the alliance surfaced through interviews conducted with the supply chain. Key themes from those interviews inform the following assumptions:

1. Market consolidation, alignment with state or national regulation, global competition and pressures for greater speed to market are increasing pressure for manufacturers to seek solutions that cross regional territories. To maintain leverage with these market actors, the alliance must focus on energy efficiency solutions that can be applied across national and global markets and coordinate consistent delivery of these solutions across the nation.
2. The supply chain sees value in energy efficiency programs to reach new customer segments or increase customer loyalty.
3. Low commodity costs are making it more difficult to acquire energy efficiency cost-effectively and requiring new and different approaches to capitalize on synergies and reduce program costs.

Objectives

1. Implement market transformation initiatives that deliver energy savings and avoided carbon emissions.
2. Increase market channel leverage for funders and the region.

Success Metrics

Because the programs in the natural gas portfolio are early stage (pre-Market Development), they have an estimated 20-year savings potential but no detailed models have been developed yet to forecast short-term savings. Therefore, success metrics for the 2020-2024 business cycle will be reported, but specific targets have not been defined. All metrics are currently under review and the timing and scale of savings will be further refined as alliance natural gas savings models are developed.

1. **Energy Savings:** Estimated Total Regional Savings forecasts for the alliance Portfolio. Five (2020-2024) and ten (2020-2029) year forecasts of the initiative investment portfolio will be provided.
2. **Avoided Carbon Emissions:** Annual achieved and 5-year estimated regional avoided carbon emissions as a result of the total Co-Created savings forecast.
3. **Benefit-Cost Ratio:** A Portfolio benefit-cost ratio that reflects the 20-year value of the regional investment in market transformation efforts.

Key Activities to Provide Value to the Region

1. **Programs:** develop and implement market transformation programs by identifying and removing market barriers. See Figure 10 and Appendix 2 for more information about these programs.
2. **Alliance Marketing:** Create and excecute marketing strategies that support programs in successfully achieving market transformation goals. The alliance will begin to develop marketing activities for its natual gas programs in 2020-2024, based on the approach outligned in Appendix 3.
3. **Enabling Infrastructure: Develop and implement Cross-Cutting Enabling Infrastructure that builds market capability, awareness and demand for energy-efficient products, services and practices or new customer engagement opportunities for funders.** See Figure 11 for examples of enabling infrastructure needed. Other activities may be identified as natural gas programs develop.

Figure 10: Natural Gas Programs

PROGRAMS	MARKET DESCRIPTION	OBJECTIVES
Condensing Rooftop Units (C-RTUs)	Includes the supply chain that manufactures, distributes, specifies, designs and installs commercial HVAC products and the end consumer who purchases them.	1. Transform the market so that Northwest commercial building owners and managers install C-RTUs as standard practice in applicable existing and new small to medium-sized commercial buildings. 2. Increase Northwest specifier and installer skill in designing, sizing and configuring C-RTUs for applicable commercial buildings. 3. Influence a federal requirement of at least 90% efficiency for commercial warm air furnaces. 4. Influence the development of a readily-available C-RTUs with cost, weight and reliability in line with a C-RTUs.
Next Step Homes	Includes the supply chain that designs, builds, verifies and sells residential single-family site built new homes. Leverages the work and resources of the alliance's established, electric Next Step Homes program.	1. Maximize energy efficiency opportunities for new homes in residential new construction code requirements. 2. Influence developers and builders to incorporate advanced energy-efficient products and practices in new homes. 3. Inform and enable code advancement through market adoption of energy-efficient products and practices.
Efficient Gas Water Heating (EGWH)	Includes the supply chain that manufactures, distributes (wholesale and retail), specifies, designs and installs residential gas-fired water heaters and the end consumers who purchase these products.	1. Transform the residential gas water heating market, ultimately making gas heat pump water heaters the standard in gas water heating appliances. 2. Influence federal manufacturing standards for residential storage gas water heaters to require a Uniform Energy Factor >1 for units larger than 35 gallons by 2030.

Figure 11: Enabling Infrastructure

INFRASTRUCTURE	DESCRIPTION	OBJECTIVES
MARKET RESOURCES		
Commercial & Industrial Strategic Energy Management (Special Project)	Strategic Energy Management (SEM) is recognized as a pathway to deeper energy efficiency within commercial and industrial programs, and is a foundation for deeper and more enduring customer relationships. Existing SEM infrastructure is the result of several years of regional investment and collaboration. The 2015-2019 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.	1. Enable Commercial and industrial customers to see value in SEM as a strategy for meeting their sustainability and energy performance goals. 2. Enable greater development and use of high-value SEM tools and resources by regional stakeholders to launch, grow, and sustain regional SEM programs. 3. Leverage the SEM Hub Energy Management Assessment (EMA) tool to measure baseline SEM practices and identify targeted savings opportunities. 4. Build regional and national consensus on SEM as a best practice or de facto standard.
TRAINING		
Industrial Technical Training (Special Project)	Industrial Technical Training infrastructure provides coordinated technical training on key industrial energy efficiency concepts to support industrial energy efficiency programs and build market capacity to implement industrial energy efficiency projects.	1. Build industrial energy efficiency awareness and technical capacity among the region's industrial end-users. 2. Achieve economies of scale for providing industrial energy efficiency training in support of alliance programs.

STRATEGY 3: CODES AND STANDARDS

Description: Building energy codes set minimum efficiency requirements for residential and commercial buildings for the design, materials and equipment used in new construction and major renovations. Energy codes present a unique opportunity to assure savings through efficient building design, technologies, and construction practices in a cost-effective way. The alliance supports regional stakeholders in energy code development and adoption, training and implementation, as well as assessing code compliance.

Appliance and equipment standards specify the minimum energy and/or water efficiency levels of specific products including major home appliances such as clothes washers and water heaters, commercial and industrial equipment, and HVAC equipment such as gas furnaces. Equipment standards are set by U.S. DOE through a public rulemaking process. NEEA staff serve as technical experts and providers of data in U.S. DOE's rulemakings to encourage the adoption of federal appliance and equipment efficiency standards.

Market Conditions and Assumptions Driving Codes and Standards Focus

1. The codes and standards landscape has evolved substantially over the course of the current business plan. The current federal administration has set aside U.S. DOE's federal standards and test and rating procedure rulemakings for an undetermined period. In response, the standards community has turned to state and regional forums to further this work. New partnerships will enable the development of new, more effective test and rating procedures that can be used in voluntary programs to promote the best-performing equipment and systems, while demonstrating the changes needed in federal procedures to be pursued in later rulemakings.
2. Codes and standards continue to be one the most cost-efficient ways to ensure adoption of efficiency measures and provide significant benefits to the consumers. The alliance will continue to work with emerging technologies, utility programs and market research to develop roadmaps and long-term goals for advancing efficient codes and standards through strategic partnerships, such as with the Canadian Standards Association (CSA) and the Pacific Coast Collaborative.

Objectives

1. Influence the development of and support for successful implementation of building energy codes in the region.
2. Continue to advance the equipment efficiency standards and improve the test rating methods and procedures.

Success Metrics

1. Count of new code proposals reducing regional natual gas energy intensity that are adopted each year.
2. Count of new product standards which reduce regional natual gas energy intensity that are adopted each year.

Key Activities to Provide Value to the Region

With its extensive background in product technologies of many types, and a growing catalog of field data, the alliance can be a leader in these collaborative efforts to advance progressively more efficient codes and standards. Several of the alliance programs and utility programs can leverage the new test and rating procedures to advance regional efficiency work. Later, this work can be leveraged to upgrade federal procedures.

In the codes realm, the region has seen some notable achievements in energy code enhancement, especially in Washington State. The adoption of new codes in all four states demonstrates the regional progress in constructing better buildings and acknowledges steady improvement in building and system technologies. Post-adoption education, training and technical support to local jurisdictions support high compliance rates that, in turn, optimize building performance and realize energy savings in a cost-effective way. Specific activities the alliance implements to support these efforts include:

1. Developing and supporting energy code development in individual states. In Idaho, this requires supporting code proposals in the national model code through the International Energy Conservation Code process. In Oregon and Washington, this means supporting code proposals in their respective state-specific code processes through the Washington Department of Commerce and the Oregon Department of Energy.

2. Providing codes education, training and technical support to individual states which will support the implementation of codes and achieve energy savings in buildings.

3. Supporting the new test methods on products and systems including packaged commercial HVAC equipment.

4. Participating in the U.S. DOE equipment standards and test procedures rulemaking process by providing technical input, testing and market data and analysis.

5. Collaborating with Emerging Technology, utility programs and market research to develop roadmaps and long-term goals for advancing codes and standards through strategic partnerships, such as the Canadian Standards Association and the Pacific Code Collaborative.

6. Working with Consumer Technology Association, Institute of Electrical and Electronics Engineers, U.S. DOE and state and local agencies to standardize requirements governing open standard protocols for flexible demand functionality as an integral component of efficient products and buildings.

STRATEGY 4: CONVENE AND COLLABORATE

Description: Alliance convene and collaborate activities are overseen by the Stakeholder Relations and Corporate Communications functions at NEEA. They include internal and external activities that support effective and transparent regional collaboration and market transformation programs.

NEEA staff work closely with the Natural Gas Advisory Committee (NGAC), whose purpose is to provide NEEA with broad-based advice, experience and guidance. The committee works to reach consensus on the prioritization and advancement of market transformation natural gas programs to help steer the alliance's work toward achievement of its strategic goals, priorities and objectives.

This committee is a management advisory committee, providing support to the work of NEEA managers and other staff in its program development and implementation responsibilities.

Assumptions Driving Convene and Collaborate Activities

1. The Natural Gas Advisory Committee guides and informs program design and market strategies.
2. Board committees provide oversight and governance of the organization. There are currently five standing Board committees, including a Natural Gas Committee.
3. Funders and stakeholders require communication and coordination on the plans for and results of alliance work through formal and informal channels.
4. NEEA staff must have adequate understanding of funder and key stakeholder business needs and how they relate to alliance programs to effectively and efficiently design and execute the alliance's portfolio of work.
5. Market partners and supply chain actors must understand the alliance and the value it brings them for successful execution of market transformation programs.
6. Regional collaboration (both online and in-person) drives market transformation success and brings value to funders and stakeholders.
7. Facilitation of regional collaboration is required to achieve regional strategic goals identified by funders and stakeholders.

Objectives

1. Ensure all alliance stakeholders are heard and their viewpoints continuously inform alliance work as it evolves by following established Rules of Engagement (see Strategy 6: Optimized Resource Allocation).
2. Convene the region to enable regional energy efficiency work that reflect the diverse needs of the region.
3. Bolster the alliance's market influence to maximize support for market transformation efforts.
4. Support organizational development and effectiveness of NEEA staff in understanding funder and regional business needs.

Success Metric

Positive funder and stakeholder satisfaction: Measure and maintain strong funder and stakeholder satisfaction through an annual satisfaction survey and regular funder and stakeholder engagements.

Key Activities to Provide Value to the Region

1. **Board of Directors, Board Committee, and Advisory Committee meeting facilitation to foster:**
   a. Regional input and conversations that drive alliance work in ways that complement funders' and alliance programs.

b. Board of Director leadership, oversight and governance of and advocacy for the organization, and contributions of insight and other support and value.

c. Collaboration between market actors, researchers, funders and industry leaders to understand technology and market trends, opportunities and pitfalls as well as advance energy efficiency opportunities.

2. **Funder Account Management** to understand and convene discussion on funder and regional perspectives on alliance initiatives, ensure funder coordination plans are implemented throughout every stage of the Initiative Lifecycle Process (see Operations Efficiency section) and that funders have the information and resources needed to collaborate effectively in alliance work.

3. **External Communications** that increase supply chain understanding of the alliance and the value it can provide market partners through NEEA's corporate website, program communications materials and other strategic communications, including those related to Strategic and Business Planning. Corporate Communications supports market transformation programs through recognition and celebration of market partner success and participation in alliance programs.

4. **Efficiency Exchange Conference** to provide a forum for knowledge-sharing to help regional energy efficiency professionals achieve their goals as well as networking opportunities. The Efficiency Exchange Conference is an event provided for the benefit of staff from funding and stakeholder organizations.

STRATEGY 5: MARKET INTELLIGENCE

Description: Market Intelligence (MI) is defined as the systematic and objective identification, collection, analysis and dissemination of data, information and insight for assisting decision making to advance and report progress of energy efficiency and market transformation. This description covers work in evaluation, research, regional studies, planning and market trend analysis.

Assumptions Driving Market Intelligence Focus

1. Market Research and Evaluation:
   - **a.** The region will continue to value independent evaluations of all programs.
   - **b.** The number and complexity of programs will continue to increase over time.
   - **c.** The demand for information gathered through Market Research will continue to increase to support adaptive management and continual improvement on programs.
2. Large-scale Data Collection and Analyses Studies:
   - **a.** The region will continue to value the Residential Building Stock Assessment (RBSA) and Commercial Building Stock Assessment (CBSA). This will be the first cycle that gas funding supports the stock assessments.
   - **b.** The depth and number of codes that will be necessary to evaluate will increase.
   - **c.** Large-scale data collection and analysis studies will require the same level of stakeholder engagement.
   - **d.** A lack of awareness of existing data has led to expensive duplication of research, and enabling direct access to regionally-specific energy efficiency data would help streamline and enhance regional energy efficiency efforts.
   - **e.** There is an emerging need for a Multi-Family Stock Assessment. Multi-family buildings make up a large and increasing share of new construction in the region, with nearly a third (31%) of commercial building floor area since 2013 happening in these building types, including an increasing portion in Idaho and Montana. (This assumption applies to a potential Special Project.)
3. Market Planning:
   - **a.** The region will continue to value the alliance's work to analyze, estimate, document, report and forecast the potential energy savings and other value metrics associated with the market transformation efforts of each measure and for the full portfolio, in accordance with current energy savings accounting practices.
   - **b.** Funders will continue to require reporting and forecast needs as is currently done.
   - **c.** Measure levels are increasing in complexity and volume. Alliance electric measures have grown from 80 measures in 2014 to a current volume in 2018 of 170+, and have expanded to address both electric and natural gas efficiency. The alliance expects the size and complexity of its portfolio to remain at this current level, if not increase due to the system integration overlap complexity of future measure work.
4. Marketplace Trend Analytics:
   - **a.** Many of the data sets, tools and capabilities NEEA has organized for Marketplace Trend Analytics are done cost effectively, leveraging NEEA's nonprofit status.
   - **b.** Findings from the RBSA will continue to identify opportunities for improved performance and identify gaps in regional energy efficiency efforts.

Objectives

1. Ensure valuable and defensible evaluation, market progress tracking and savings accounting and estimating to assess results from market transformation efforts.
2. Provide research and market intelligence that lends value to program and business planning needs for internal and external partners.
3. Maintain data collection and housing best practices.

Success Metrics

1. **Actionable Information:** Evaluations that provide valuable inputs for program planning and validated assumptions for best accuracy of savings and other value reporting.
2. **Customer Service:** Meet individual funder needs for savings forecasting, reporting and other data or market intelligence needs in a timely, accurate manner.
3. **Actionable Data:** Increased and/or comprehensive access to data, data infrastructure, and analytics necessary to strategically influence the market toward measurable transformation.

Key Activities

Through the MI work, NEEA enhances decision making and mitigates risk for the region for current programs, as well as for the next generation of resource planning and programs. When done on a regional scale, this work provides substantial economies of scale. Specific MI activities that support the alliance's market transformation work include:

1. **Market Research and Evaluation** to inform market transformation efforts as well as formal evaluations of programs in market development. When possible, the alliance leverages secondary research first to inform program efforts. Primary market research in both quantitative and qualitative forms is used when secondary research is unavailable or inadequate for regional needs. Primary research provides:
   a. Insight into potential target market sizing and segmentation;
   b. Market characterization efforts;
   c. Baseline estimates that project adoption of energy-efficient products, services and practices; and
   d. Independent, third-party evaluations to assess the impact or processes of alliance-funded programs.
2. **Market Planning** to support the organization with analytical expertise responsible for forecasting and reporting cost effective, energy savings, and other value metrics. The department develops and manages cost effectiveness models, defensible methodologies to measure the effects of market interventions and other valuation tools to support alliance programs at various stages of the market transformation initiative's lifecycle. Market Planning is also responsible for the portfolio management system to ensure that the alliance is on track to meet its business plan goals.
3. **Marketplace Trend Analytics** delivers research findings to alliance programs and regional stakeholders to assist in their strategic decision-making. NEEA creates, purchases, and compiles gigabytes of regional data to answer business questions through the blending of data sets. These analyses may be as simple as targeting households based on structure and demographic data for a single program
or as complex as identifying representative census blocks for building stock analysis research in the Northwest.

Other Market Intelligence activities that support alliance and regional energy efficiency efforts include large-scale data collection and analysis studies, including:

1. **Regional Building Stock Assessments (Commercial & Residential)** that characterize the existing building stock to account for regional differences such as climate, building practices and fuel choices. The residential assessment will focus on single family homes. The commercial stock assessment will be scoped and started in this 2020-2024 Business Plan and will be concluded early in the next business cycle (2024-2029).
2. **Multi-Family Dwelling Stock Assessment Study** (Special Project) To accurately characterize the Multi-Family Dwelling Unit building stock, sample design and data collection protocols need to be different
from single family residential buildings and commercial buildings. By performing a Multi-Family Building Stock Assessment, the alliance will have a better understanding of the market that will support new energy efficiency opportunities.

OPERATIONS EFFICIENCY

OPERATIONS
GOAL:

Continuously improve organizational culture and performance efficacy, ensure accountability and transparency, and strive for innovation in service to the benefit of all stakeholders.

Key Operations Strategies

1. **Optimized Resource Allocation:** Engage funders and other qualified advisors to identify, develop, and sustain a portfolio of efficiency-enabling initiatives and activities that are consistent with the alliance's purpose.
2. **Prioritization Standards:** Establish Board-determined policies to assure equitable allocation and appropriate prioritization of efforts.

The alliance has established a framework of collaboration, portfolio management processes, and internal staff organization that all work in combination to support this goal and related strategies.

STRATEGY 6: OPTIMIZED RESOURCE ALLOCATION

Description: The Northwest has a rich history of successful collaboration in energy efficiency. Collaboration continues to be a central part of how the alliance advances regional market transformation.

NEEA takes a Complementary Approach[14] in its work, supporting utilities' local program activities which, in turn, support regional work. NEEA recognizes the importance of the utility/customer relationships, and focuses on efforts that reduce and/or remove market barriers, primarily upstream and midstream and on readiness of market transforming energy efficiency for best overall value and sustained market change.

Objectives

1. Comply with processes and policies outlined in the Activities, Processes and Policies section.
2. Solicit feedback and continuously improve processes in consultation and collaboration with NEEA's Board governance process.

Success Metrics

1. Full compliance with processes and policies as outlined to support NEEA's Complementary Approach.
2. Process updates identified and or implemented that best reflect feedback solicited for continuous improvement of the Complementary Approach.

Activities, Process and Policies

1. **Advisory Committees and Workgroups**
NEEA facilitates a set of advisory committees and working groups focused on specific functions, industry sectors or programs to develop and sustain its market transformation portfolio. Working closely with the stakeholder and funder staff on each of these committees, NEEA staff solicits input on the market transformation theory and design associated with each initiative early in the process, to collaboratively design, plan and coordinate the market transformation strategy and implementation activities. This ongoing collaboration helps the alliance better leverage resources, add complementary value and avoid redundancies or conflicts between local and regional efforts.

14. As defined in the Key Terms: The alliance supports utilities' local program activities and, in turn, local program activities support regional work. NEEA recognizes the importance of the utility/customer relationships, and focuses on efforts that reduce and/or remove market barriers, primarily upstream and midstream and on readiness of market transforming Energy Efficiency for best overall value and sustained market change.

Between 2020-2024 the alliance will focus on ways to streamline the advisory committee and workgroup process while focusing regional collaboration opportunities on areas that maximize alliance goals and address critical decision-making topics. One such topic is marketing and how those activities are developed and coordinated. The Guiding Principles for Downstream Marketing Activities, outlined in Appendix 9, describe how the alliance will coordinate and fund execution of regional marketing campaigns directed at end-use customers.

2. Funder Coordination

The alliance provides detailed business case documentation for each program to support ongoing collaboration with Regional Portfolio Advisory Committee (RPAC), Natural Gas Advisory Committee (NGAC) and other advisory committee members. This business case documentation helps ensure the alliance invests in and operates programs with long-term goals that support funder goals and efforts.

Key components of the business case include: progress and findings to date; planned activities for the next stage; investment rationale and proposed budget, including estimated energy savings; market transformation theory, including market drivers, barriers and intervention strategies; a Funder Coordination Plan and detailed roles and responsibilities to clarify expectations for funders and for NEEA staff regarding the execution of and coordination on key program activities.

In addition to this process, there is a formal intervention process (i.e. the challenge flag), which allows funders to request changes and improvements if a funder believes a program is heading in a direction contrary to that which was agreed upon.

3. Standard Rules of Engagement

Across all its work, NEEA staff acts in accordance with the following rules of engagement:

a. NEEA will develop a local/regional Funder Coordination Plan and clearly defined roles and responsibilities in collaboration with funders as part of the program business case prior to each milestone decision;

b. NEEA will not engage with market actors in a funding utilities' territory without approval as detailed in the approved program business case;

c. NEEA will not engage with or market directly to utility customers unless the activities are approved as part of the program business case; and

d. NEEA will ask local utilities to work with NEEA staff to identify potential areas of overlap with local market actors early in initiative planning/design to avoid conflict/surprises.

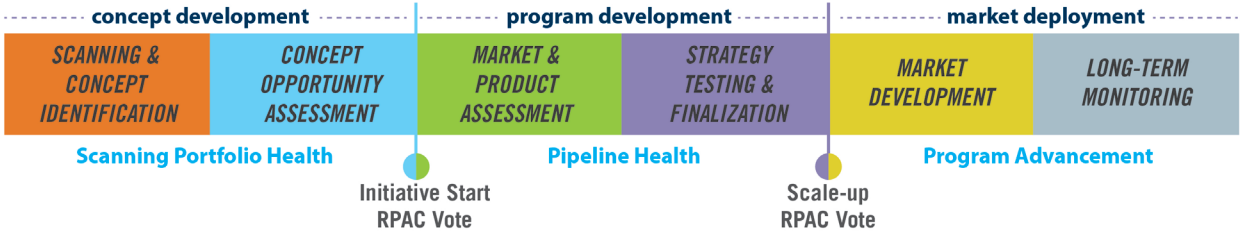
NEEA's overall objective is to facilitate a high level of input and consensus, without increasing complexity or time needed to meet market transformation goals. NEEA staff is committed to continuous improvement and will seek to: streamline processes; use and exercise sound project/program management practices; and adapt as conditions change moving forward.

4. Initiative Lifecycle (ILC)

NEEA has established a portfolio management system which provides a clear framework for decision-making on market transformation program investments. Through NGAC and RPAC, 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.

Each program within the alliance's market transformation portfolio goes through a consistent stage-gate development process called the Initiative Lifecycle, illustrated below in Figure 12.

Figure 12: Alliance Initiative Lifecycle



At two stages of this Initiative Lifecycle, a formal vote by the RPAC or NGAC is taken for any market transformation program to advance. These two key decision points are: 1) prior to an initiative being adopted into the alliance market transformation program portfolio (i.e., Initiative Start); and 2) prior to an initiative being approved to scale-up its market activities (i.e., Scale-up Approval).

5. **Portfolio Management Practices:** NEEA staff manages the portfolio to a set of portfolio metrics, developed by RPAC, that are used to assess the health of the overall electric program portfolio, including: short- and long-term savings; long-term equity factors; and short-term risk factors (detailed below). The purpose of these metrics is to provide visibility into the nature of the regional investment portfolio and guide investment decisions. The NGAC manages portfolio-level decisions for the natural gas market transformation portfolio, and has input into dual-fuel program milestones.

Within the market transformation portfolio, NEEA staff evaluates five risk factors for each of its programs:

a. *Unproven market:* If engaging in an unfamiliar market, may have limited established relationships or information.

b. *Unproven technology:* If working with technology that has not been proven in other markets or applications, will technology be a big disruptor to behavior expectations.

c. *Late life savings:* Will the market transformation be a long, slow ramp and so the majority of savings potential is in the outer years.

d. *Measurability:* Will the data access or savings measurability be a challenge or straightforward.

e. *Cost-effectiveness:* If there is a clear path to cost-effectiveness or is there risk, large barriers such as price, or future growth that might affect cost effectiveness.

Staff assess each program against these five risk factors and assign a risk score for each factor. Each program and the entire portfolio, is aggregated based on these five factors. These factors are reassessed and re-scored with each initiative milestone to reflect program progress on risk mitigation and identify any persistent concerns within these five factors.

STRATEGY 7: PRIORITIZATION STANDARDS

Description: NEEA acts as a careful steward of utility customer funds and recognizes that it is ultimately entrusted with delivering value to those customers on behalf of the utility. As such, NEEA adheres to carefully crafted Board-determined policies to assure equitable allocation and appropriate prioritization of resources and efforts.

Objectives

1. Adhere to NEEA Board governance structure and policies.
2. Deliver an annual Operations Plan to NEEA's Board for approval that aligns with the approved 2020–2024 Business and Strategic Plans and outlines material deviations.
3. Track and manage major organizational risks.

Success Metrics

1. Board satisfaction with communication and engagement plans relating to operations planning, fiscal position and risk/response plans.
2. Board satisfaction with governance structure; policies are clear, accessible and adhered to.
3. NEEA Scorecard metrics within acceptable range, and risk mitigation plans in place for high risk areas.

Activities, Process and Policies

1. **Board of Directors Governance**
   The alliance regularly engages its Board and other qualified advisors to identify, develop, and sustain a portfolio of efficiency-enabling initiatives that support funders' needs and are consistent with NEEA's purpose.

   NEEA is governed by a Board of Directors, comprised of energy experts from Northwest utilities, public interest groups, government and other organizations. The Board and Board committees provide overall guidance for the organization and oversee NEEA's organizational direction, budget, and progress. At the beginning of each five-year business cycle, the Board leads the process of identifying the starting portfolio of programs and activities. NEEA staff will report variances or updates on progress against the five-year business plan in each annual Operations Plan for Board review and approval.

2. **Operations Planning**
   Within its own operations, NEEA is committed to careful stewardship of the organizational resources it deploys to achieve regional energy efficiency goals cost-effectively. The organization maintains a high level of rigor in analytical processes including: portfolio management; development, delivery and evaluation of programs; contractor management; and budget and expenditure controls. Staff provide visibility to organizational assets and results to ensure that an investment in the alliance is in the best interest of the region. NEEA conducts an annual financial audit and the Executive Director presents a quarterly scorecard of portfolio performance based upon success metrics identified in the Business Plan.

   NEEA's Board of Directors approves the annual Operations Plan and budget, which outlines key organizational and program strategies, performance metrics and milestones and provides input to management systems to ensure delivery of the annual goals and objectives.

3. **Organizational Risk Management Policies**
   The alliance ensures that external and internal risks to the organization and business are reviewed, updated and communicated regularly. Risk management practices are integrated throughout the organizational structure and quarterly risk review and reporting processes are in place to ensure mitigation strategies progress appropriately. Examples of existing risk management processes and policies include:

   a. An annual financial audit by a third party;

   b. Commercial insurance coverage including general liability and umbrella coverage, management liability package, property, workers' compensation, cyber liability, etc;

   c. Quarterly review of defined organizational risks by designated risk owners. The executive team reviews summary information of mitigations that are outside of established tolerance and responds appropriately; and

   d. Legal and contractual risk and due diligence practices and guidelines are in place for potential higher risk contracts and activities.

4. **Organizational Efficiency**
   As part of its stewardship practices, NEEA actively looks to create efficiencies within its work to save time and costs, while achieving expected results.

   The Product Groups approach outlined in this Business Plan is an example of how the alliance has maximized efficiencies in the way it delivers value to the region by looking at leverage points across sectors and product categories. Platforms, which leverage resources, data and strategic partnerships across an entire sector or set of programs like with the Retail Platform or the Distributor Platform, also provide efficiencies. And, through creating an internal Market Intelligence function, the alliance provides valuable services and financial savings each year by providing and analyzing stock assessment-related data, scraping existing data from websites and funneling to programs via platforms, as well as supporting more targeted and efficient outreach throughout the alliance's market research and evaluation efforts. This analytical work is many times repurposed across multiple programs, maximizing its value to the region.

VALUE METRICS: MARKET PROGRESS AND ENERGY SAVINGS

Value metrics measure a portion of the value that the alliance will deliver to the region as a result of the work outlined in the 2020-2024 Business Plan. The proposed scorecards in Figures 13-16 include metrics that are a balanced reflection of the progress and achievements from the Business Plan's Transformation activities. The scorecard also includes metrics NEEA will be validating and monitoring to ensure efficient and effective portfolio execution and operations.

In addition to the organizational value metrics, success metrics are used by NEEA staff to track progress toward market or business objectives and help the alliance prioritize activities at an initiative level for each annual operations plan. These success metrics are listed throughout the seven strategies in the business plan and will be tracked on a quarterly and annual basis.

The metrics highlighted in Figures 13-14 are designed to focus on business and organizational management and achievement at the regional level. Additional energy savings detail that is estimated and reported at the funder level will be managed and reported separately, as designed and required by each individual funder. As a result, metrics such as Net Market Effects (on the Market baseline) and Remaining Savings (on the Power Plan reporting baseline) will be not be included in the scorecard in Figure 13.

Funding Cycle Energy Savings and Other Targets and Metrics

1. **5-year savings (electric):**115-152 aMW of Co-Created Savings and 360-500 aMW of Total Regional electric energy savings within the 2020-2024 funding cycle.

2. **10-year savings (electric):** 210-300 aMW of Co-Created Savings and 650-930 aMW of Total Regional Savings between 2020-2029. This includes savings from previous and current investment funding.

3. **5-year savings (gas):** 11-18 million Therms of Total Regional Savings between 2020-2024.

4. **10-year savings (gas):** 14-34 million Therms of Total Regional Savings between 2020-2029.

5. **5-year (electric) Capacity savings:** 155-278 MWp of total 5-year regional peak capacity electric savings across summer and winter.

6. **5-year (electric) Carbon Reduction:** 419,000-554,000 Tons of avoided CO_2[15]

15. Peak Capacity Savings and Avoided Carbon Emissions are tracked to identify additional value derived from energy efficiency work, but have no associated goal or target.

Figure 13: Market Transformation Development Metrics Scorecard

These metrics measure the sustainability of the alliance's energy efficiency portfolio and market transformation efforts that lead to long-term energy savings delivery to the region.

NEEA FUNDING CYCLE TARGETS MARKET TRANSFORMATION DEVELOPMENT METRICS			
CATEGORY	DESCRIPTION	FUEL REPORTING	
		Electric	Natural Gas
Portfolio Advancement	Total energy savings potential (20-year regional technical potential) of *new* emerging technologies advanced into the alliance's development portfolio (to pass Initiative Start milestone) over the 5-year business cycle.	5-year Target 600 aMW	*Report Only* Therms
Market Advancement	Total energy savings potential (20-year total regional market potential) of emerging technologies readied for full market development (to pass Scale Up milestone) over the 5-year business cycle.	5-year Target 175 aMW	*Report Only* Therms
Energy Savings[16]	Estimated Total Regional and Co-Created Savings for the portfolio for a 5-year horizon.	5-year Targets: 115-152 Co-Created aMW 360-500 Total Regional aMW	5-year Target: 11-18 million Total Regional Therms[17]
Long-term Market Availability	Total energy savings potential that the alliance has enabled in the region (This metric is the total 20-year forecast energy savings estimate of all programs in Market Development and Long-Term Monitoring and Tracking phases).	5-year Target >600 aMW	*Report Only* Therms

16. Energy savings is a lagging indicator and realization of the sustained market change resulting from market transformation efforts. Savings represent all investment cycles. Energy savings resulting from this investment cycle will continue beyond the 5-year reporting horizon. NEEA will provide those longer-term savings in its reporting.

17. Total regional savings are all savings occurring from the pre-intervention starting point of the market. Estimates will be refined continuously as initiatives mature. Co-created savings will be determined for these programs in the 2020-2024 Business Plan. The natural gas savings NEEA reports will be reflective of only natural gas funder territories.

Figure 14: Operational Metrics Scorecard

Operational metrics monitors internal business operations and effectiveness in delivering Market Transformation Development metrics.

NEEA OPERATIONAL METRICS INDICATORS OF OPERATIONAL EFFECTIVENESS AND HEALTH			
CATEGORY	DESCRIPTION	FUEL REPORTING	
		Electric	Natural Gas
Total Budget Management	Total annual alliance investment expenditures	Target (set annually)	Target (set annually)
Administrative Budget Management	Administrative expenses as percentage of total expenditures	Target % of total <18%	n/a
Employee Retention	Annual employee retention rate	Target % of total ≥88%	
Benefit – Cost Ratio	The portfolio-level measurement of the 20-year value of the regional investment in market transformation from a total resource cost perspective.	Target ≥1	Target ≥1
Portfolio Investment Levelized Cost	The portfolio-level measurement of the 20-year value of the regional investment in market transformation, Total Resource Cost perspective.	Report Only Cents per kWh	Report Only Cents per Therm

Other Metrics

Figure 15: Validation Metrics

Validation of achievements that indicate success and forward progress in Market Transformation efforts.

NEEA VALIDATION METRICS INDICATORS OF MARKET TRANSFORMATION HEALTH AND VALUE CREATION			
CATEGORY	DESCRIPTION	FUEL REPORTING	
		Electric	Natural Gas
Codes and Standards Engagement for Long-term Energy Savings	Estimated Total Regional Savings and related % of regional load that will be served with new test procedures, specifications, and/or locked in with a Federal or State building code or manufacturing standard over a 20-year planning horizon.	Forecast and Report aMW, % total MW load	*Report Only* Therms n/a
Private Sector Co-Investment	Estimated dollar investment in advancing regional market transformation made by market actors (i.e. manufacturers, trade allies, retailers).	Report only $USD	Report only $USD

Figure 16: Additional Benefits

Reports additional benefits to the region that are derived from the alliance's energy efficiency efforts.

NEEA ADDITIONAL BENEFITS ADDITIONAL VALUE DELIVERED FOR WHICH NEEA WILL FORECAST AND REPORT ONLY			
CATEGORY	DESCRIPTION	FUEL REPORTING	
		Electric	Natural Gas
Avoided Carbon Emissions	Annual achieved and 5-year estimated regional avoided carbon emissions associated with the total Co-Created savings forecast.	Forecast and Report Tons CO2	Forecast and Report Tons CO2
Capacity Savings[18]	Annual achieved 5- and 10-year regional capacity savings as a result of the total Co-Created savings.	Forecast and Report MWp	N/A

18. NEEA measures peak capacity savings consistent with the Northwest Power and Conservation Council methodology as reduction in regional power system peak loads. Local utility system capacity savings will likely vary.

Target: NEEA staff will set an explicit target for this value metric at the start of the Business Plan (or at the start of the year for annual budget management).

Forecast: For this cycle, NEEA staff will establish a forecast of this metric at the start of the cycle, and update the forecasted value as the cycle progresses.

Report Only: Represents low ability to assess this value at this time. NEEA staff will report on the value created for this metric through the business cycle.

Additional Value Metrics Work

During this Business Planning period, NEEA staff will continue to work with the Board of Directors on value metrics that best reflect regional work in market transformation. Lastly, NEEA staff recognize that there is additional value delivered at a Product Group level that does not aggregate clearly to either a portfolio or organizational level. For example, NEEA works in the supply chain in areas such as securing manufacturer commitments and developing new capabilities of trade allies. Measurement of these activities demonstrates value at each Product Group level rather than an aggregated value across the portfolio of investments. NEEA staff will manage such metrics through annual operations planning activities and reporting to ensure successful delivery on the associated Business Plan activities for 2020–2024.

OPERATIONS AND BUDGET

Administration

Business Administration focuses on the people, processes, and technology required by NEEA staff to effectively execute on the Business Plan goals. NEEA operates based on the strength of the human capital of the alliance–both NEEA staff and staff at funding and stakeholder organizations that collaborate to deliver on regional results. Having the right people, in the right place, at the right time allows the alliance to maximize results and be nimble with regional resources. Efficient, streamlined, and compliant processes allow NEEA as an organization to operate with proficiency and focus efforts on market transformation work. Technology right sized to needs enables business value with increased productivity, collaboration flexibility, quicker decision making, and business reliability. Activities within the Business Administration function include:

1. Information Technology
2. Finance and Accounting
3. Contracts
4. Human Resources
5. Legal and Risk Management
6. Facilities Management

All parts of the organization work cross-functionally to drive and support market transformation efforts in service to the region.

Budget

For the past 21 years, both public and investor-owned utilities in the Northwest have funded the alliance. Although the details have varied slightly over this time, the basic approach has been proportional funding based on each participant's share of the overall regional power system. The philosophy behind this approach is that all utilities receive long-term benefits–both from local energy savings and from the regional benefit of reduced demand on the power system.

In addition to the base funding provided by NEEA's funders, there may be additional activities or opportunities to advance the alliance's purpose that emerge throughout the course of the business plan from other sources of funding. NEEA has established business processes to segregate and account for additional funding and will ensure additional, special projects are reviewed by the Board through NEEA's New Strategic Opportunities Screening and Review Guidelines.

This business plan outlines a 5-year budget broken out by strategies outlined in NEEA's 2020–2024 Strategic Plan. The proportion of funding attributed to each year will be reviewed and approved as part of NEEA's annual operations planning process. A sample budget for 2020, the first year of the cycle, is provided.

Figure 17: Total 5-Year Budget by Primary Strategy ($ Thousands)

PRIMARY STRATEGIES (DIRECT COSTS AND SALARY & BENEFITS)	ELECTRIC	NATURAL GAS	EULR[19]	TOTAL	% OF BUDGET
Emerging Technology **Routinely scan for, assess, and report on the potential for newly identified efficiency products, services, and practices and test the field performance of the most promising opportunities.** Includes scanning and product management.	$14,516	$1,401		$15,917	8.5%
Effective Portfolio Execution[20] **Implement the prioritized portfolio of initiatives, routinely evaluate progress, and adapt as necessary to achieve accelerated and sustained market adoption.** Includes existing and new programs, including program implementation, marketing, planning, market research, evaluation, market intelligence, as well as codes and standards activities directly associated with specific programs.	$89,642	$12,001		$101,643	54.1%
Codes & Standards **Influence development and support successful implementation of building codes and equipment efficiency standards and test methods to materially improve efficiency outcomes.** Includes work that crosses multiple programs.	$16,455	$363		$16,818	9%
Market Intelligence **Research, analyze and provide actionable insight to support identification and pursuit of efficiency opportunities and results reporting.** Includes market research, evaluation, planning and market intelligence work that crosses multiple programs.	$8,378	$1,186	$8,884	$18,448	9.8%

19. End Use Load Research is a special project.
20. All marketing costs are in the Business Plan budget. The Guiding Principles for Downstream Marketing Activities, outlined in Appendix 9, will determine how the alliance will coordinate and implement execution options for implementing and funding regional marketing campaigns directed at end-use customers.

Figure 17: Total 5-Year Budget by Primary Strategy ($ Thousands) - Continued

PRIMARY STRATEGIES (DIRECT COSTS AND SALARY & BENEFITS)	ELECTRIC	NATURAL GAS	EULR[19]	TOTAL	% OF BUDGET
Convene and Collaborate (Shared Services) **Selectively support dialogue and coordinate activities among stakeholders interested in accelerating efficiency through market transformation in the Northwest.** Includes facilitation associated with the Stakeholder Relations and Corporate Communications functions.	$9,740			$9,740	5.2%
Administration (Shared Services) **The people, processes, and technology to support effective execution to the Business Plan.** Includes IT, contracting, finance, accounting, legal and human resources.	$24,871	$300	$72	$25,243	13.4%
Allocation of Shared Services[21]	(4,252)	$3,677	$575		
Sub-Total Shared Services	$30,359	$3,977	$647	$34,983	18.6%
SUB-TOTAL NEEA CORE ACTIVITIES	**$159,350**	**$18,928**	**$9,531**	**$187,809**	**100%**
Special Projects[22]	TBD	TBD		TBD	
TOTAL ALL NEEA ACTIVITIES	**$159,350**	**$18,928**	**$9,531**	**$187,809**	**100%**

21. All of the Shared Services costs are incurred within the electric budget with End Use Load Research and Natural Gas reimbursing Electric for its allocation of Shared Services staff/labor, building space usage and supplies.
22. Special Projects approved for the alliance to pursue as part of this Business Plan include investment in a Multi-Family Dwelling Stock Assessment, Strategic Energy Management and Industrial Technical Training Enabling Infrastructure. See Electric Portfolio section and the Natural Gas portfolio section for more information. Additional opportunities described in this plan for the Board to consider include "Accelerating and Increasing Flexible Demand Resources in Baseline Efficient Products" and "Integrated Energy Storage in Equipment and Buildings." See the Business Opportunities Beyond the Plan: Special projects section for more information on these opportunities.

Figure 18: 2020 Budget by Primary Strategy and Product Groups ($ Thousands)

PRIMARY STRATEGIES	EXPENSE TYPE	ELECTRIC	NATURAL GAS	EULR	TOTAL	% OF BUDGET
Emerging Technology	Labor and G&A	$1,426	$10		$1,436	3.7%
Emerging Technology	Direct	$1,452	$270		$1,722	4.4%
Effective Portfolio Execution	Labor and G&A	$5,248	$757		$6,005	15.4%
Building Envelope	Direct	$291			$291	0.8%
Consumer Products	Direct	$3,333			$3,333	8.6%
HVAC	Direct	$1,890	$475		$2,365	6.1%
Lighting	Direct	$1,500			$1,500	3.8%
Motor-Driven Systems	Direct	$1,151			$1,151	2.9%
New Construction	Direct	$634	$485		$1,119	2.9%
Water Heating	Direct	$2,717	$925		$3,642	9.4%
Enabling Infrastructure	Direct	$1,318			$1,318	3.4%
LTM&T **Not Assigned to a Program**	Direct	$375			$375	1.0%
Codes & Standards	Labor and G&A	$924	$31		$955	2.4%
Codes & Standards	Direct	$2,380	$40		$2,420	6.2%

Figure 18: 2020 Budget by Primary Strategy and Product Groups ($ Thousands) - Continued

PRIMARY STRATEGIES	EXPENSE TYPE	ELECTRIC	NATURAL GAS	EULR	TOTAL	% OF BUDGET
Market Intelligence	Labor and G&A	$986	$84	$268	$1,338	3.4%
Market Intelligence	Direct	$170	$144	$2,970	$3,284	8.4%
SUB-TOTAL CORE PROGRAM ACTIVITIES		**$25,792**	**$3,221**	**$3,238**	**$32,251**	**82.9%**
Convene and Collaborate (Shared Services)	Labor and G&A	$1,591			$1,591	4.1%
Convene and Collaborate (Shared Services)	Direct	$298			$298	0.8%
Administration (Shared Services)	Labor	$2,578			$2,578	6.6%
Administration (Shared Services)	Direct	$2,116	$60	$14	$2,190	5.6%
Allocation of Shared Services		$(850)	$735	$115		
Sub-Total Shared Services		$5,733	$795	$129	$6,657	17.1%
TOTAL CORE ACTIVITIES		**$31,526**	**$4,016**	**$3,367**	**$38,908**	**100%**
Special Projects		TBD	TBD		TBD	
TOTAL ALL ACTIVITIES		**$31,526**	**$4,016**	**$3,367**	**$38,908**	**100%**

Figure 19: 2020 Electric Effective Portfolio Execution Budget by Sector ($ Thousands)

	EXPENSE TYPE	2020 BUDGET	% OF BUDGET
Effective Portfolio Execution	Labor and G&A	$5,248	28%
Residential	Direct	$7,579	41%
Commercial	Direct	$2,735	15%
Industrial & Agriculture	Direct	$1,201	7%
Enabling Infrastructure	Direct	$1,318	7%
LTM&T Not Assigned to a Program	Direct	$375	2%
TOTAL		**$18,455**	**100%**

Figure 20: 2020 Functional Expenses ($ Thousands)

	ELECTRIC	NATURAL GAS	EULR	TOTAL
Salary and Benefits	$11,433	$882	$268	$12,583
G&A				
Professional Services	$817	$10	-	$827
Equipment & Software	$414	-	-	$414
Travel & Professional Development	$712	$50	$14	$776
Corporate Communications	$298	-	-	$298
Depreciation	$274	-	-	$274
Facilities & Other	$168	$736	$115	$1,019
Project Expenses	$17,409	$2,339	$2,970	$22,718
TOTAL FUNCTIONAL EXPENSES	**$31,525**	**$4,017**	**$3,367**	**$38,909**

Risk and Challenges

NEEA's success depends on several factors that may fluctuate within a rapidly-changing environment. There are significant risks inherent in these factors, which could impact NEEA's ability to achieve its strategic goals and fulfill its purpose.

Risks that NEEA has plans to mitigate:

Funding: The loss of one funder can create a domino effect resulting in an organization that does not have the leverage required for market transformation. Loss of funder(s) can also create inequity and issues of free ridership across the region. Funding could be in jeopardy if:

1. NEEA does not achieve its goals;
2. NEEA fails to deliver on its commitments cost-effectively;
3. NEEA is perceived by funders as not providing additional value; and/or,
4. NEEA does not equitably distribute benefits across the region (i.e., urban/rural).

NEEA mitigates this risk by clearly defining and delivering value to funders and by maintaining open, meaningful channels of communication to resolve issues and maximize the alliance's impact.

Different Approaches to Market Transformation: Other parts of the country, including California, Illinois and New York, are actively investigating market transformation. Different approaches by large players in these states could create market confusion and lack of effective market influence for the Northwest.

NEEA mitigates this risk by establishing and maintaining relationships with key players in other geographies to influence and collaborate on market transformation programs.

Risks outside of NEEA's control that cannot be easily mitigated:

There are many ongoing risk factors in the market that are beyond NEEA's sphere of influence, including pressure for utilities to limit rate increases, combined with low load growth and potentially declining avoided costs. Other such risks include:

1. Regulatory or governing body decisions that end or curtail investments in efficiency;
2. Events or conditions that lead to a significant contraction of the economy;
3. Federal government that is less active, or reduces funding for federal standards; and/or
4. Significant changes or disintermediation that shift energy efficiency away from utilities.

NEEA regularly monitors activity and developments in the industry to identify potential impacts, and will work through its Board of Directors on specific mitigation, as the need arises. Additionally, NEEA staff uses these analyses to determine proactive mitigation strategies as part of its annual Operations Plan to ensure the alliance has options ready to address market shifts.

BUSINESS OPPORTUNITIES BEYOND THE PLAN: SPECIAL PROJECTS

In the process of developing this Business Plan there were some opportunities not pursued; unfunded by the full regional alliance but not without value to some. And, subsets of regional parties as well as extra-regional entities have expressed interest in additional opportunities beyond those identified in the core plan. In the current 2015-2019 business cycle, several of these types of activities are already funded separately from the current Business Plan, the End Use Load Research (EULR) project is such an example.

Special projects are those, like EULR, that exist outside the core-funded market transformation activities in the Business Plan. Special projects must advance the purpose of the organization and adhere to the boundaries in the Strategic Plan. Three special projects: Commercial and Industrial Strategic Energy Management (C+I SEM), Industrial Technical Training (ITT) and the Multi-family Building Stock Assessment (MFBSA) are considered complementary to the core-funded activities in the plan and were developed with prospective budgets that are detailed in this Business Plan. The following two prospective special projects, focused on demand management - an area outside of core-funding, will need further discussions with interested parties to better understand prospective scope and level of effort required.

New Special Project Opportunities in Demand Management

Section 2 of the Emerging Technology Boundary Condition in the 2020-2024 Strategcic Plan details areas of opportunity the alliance can explore in the 2020-2024 Business Plan where energy efficiency isn't the only driving benefit. According to the Strategic Plan Boundary Conditions, these opportunities fall under the category of special projects since the focus of the work may extend beyond energy efficiency. NEEA has outlined two such opportunities and the potential role the alliance could serve with each. These opportunities are available for interested parties and will be considered and may be funded separately from core funded activities in the Business Plan.

As an example, for the past two decades, the alliance has focused its work on accelerating adoption of energy efficiency in support of the region's needs for energy resources. But the needs of the Northwest power system are changing, and capacity is now more of a near-term need than energy in many areas. The 7th Power Plan included a goal of acquiring 600 MW of demand response resources to help the Northwest meet its need for capacity. This goal was limited by availability of traditional demand response programs. Since the 7th Plan, new advancements in technology have the potential to significantly increase the size and availability of these resources, and flexible demand and energy efficiency are both benefiting from advances in communication, controls and data collection technologies. As it has in energy efficiency, the alliance could play a significant role in helping the region accelerate adoption of new technologies in end-use devices that would enable a more flexible, efficient operation of the electric system. Since the technologies and interventions are largely common, the alliance could provide this value for significantly less cost than multiple, independent efforts.

Assumptions Driving New Special Project Opportunities in Demand Management

1. **Capacity is an increasingly important value:** Capacity to support both regional and local electric system reliability is now becoming a significant and potentially larger need than energy. Considering the near future, this need will likely increase as large amounts of traditional generating resources are expected to be retired from the system. While energy efficiency provides a significant, fixed capacity benefit to the system, the need for additional capacity from dispatchable demand that can respond to the needs of the electric system is becoming more apparent.
2. **Increasing need for flexibility in demand:** Increasing amounts of variable-output resources are making it harder for system operators to balance supply and demand. Flexibility in timing and use of energy to accommodate the variability of energy production will be increasingly important as more variable output resources are added to the grid. Energy storage on the customer side of the meter that can efficiently and flexibly support variable energy supply will be an important component of a more flexible electric system.
3. **Accelerating technology advancement in sensors, controls and communications is creating new opportunities for aggregated flexible demand resources behind the meter:** Accelerating developments in technology continue to lower the cost and increase the efficiency of sensors, controls and communications. These developments support the ability to aggregate and control a multitude of smaller end-use loads into significant flexible capacity resources.

4. **Manufacturers are using sensors and controls to establish proprietary relationships with their customers:** Google, Amazon, and Apple's home management systems have the potential to provide valuable information on how home owners use energy and unique methods to lower or shift energy use. Utilities may be able to meet their capacity and storage needs using services provided by these and many other companies, but the costs will likely be higher and the customer experience will be difficult to manage. An opportunity exists while standards are being developed to support open approaches that reduce complexity and increase value to the overall market.

Role of Market Transformation: Market transformation principles and practices can be applied to accelerate the adoption of new technologies that will enable increased flexibility in electricity demand on the customer side of the meter. If successful, the application of market transformation to these opportunities should accelerate adoption, reduce societal cost, and increase capacity for the system.

Role of NEEA: NEEA's core competencies in market transformation and existing partnerships with manufacturers, distributors and decision makers provide a highly-leveraged opportunity to accelerate adoption of new technologies and practices that will support a more flexible system. By leveraging existing energy efficiency market transformation work, NEEA can help the region capture these flexible demand opportunities at the lowest possible cost.

SPECIAL PROJECT NEW OPPORTUNITY 1: ACCELERATING AND INCREASING FLEXIBLE DEMAND RESOURCES IN BASELINE EFFICIENT PRODUCTS

As the alliance works to transform markets for energy-efficient products, services and practices, there will still be significant market share and sales of products that are not efficient. These areas represent a lost opportunity for both energy efficiency and flexible demand. For some of these products, the incremental effort to get a flexible, demand-enabled device is much lower than for a highly efficient product. For example, HPWHs are still only 10% of regional sales, meaning that 90% of purchases are neither efficient nor enabled for flexible demand. These electric resistance water heaters could include demand management controls at the time of manufacture for significantly less incremental cost than a HPWH. Market transformation practices could be used to accelerate adoption of demand management capability in all products sold into the region.

Barriers to Adoption

1. Lack of market demand: Unlike energy efficiency, manufacturers do not perceive any consumer demand for adding these features and have little or no motivation to spend additional resources to make them capable.
2. Lack of agreement on standards and specifications: Manufacturers do not perceive that the utility industry has aligned on a common specification for communications protocols or command structures. They are reluctant to make changes in their products if they feel that they cannot sell these products to a large enough market to make it worth the effort.

Role for NEEA

1. NEEA can serve as an aggregator of regional utility demand for these products.
2. NEEA can leverage its existing strategic partnerships with manufacturers, codes and standards organizations and supply chain market to standardize and accelerate the adoption of flexible, demand-enabled features into baseline-efficient products.

Funding Model

Support for accelerating the adoption of flexible, demand-enabled technologies would be provided through special funding models.

Example: Flexible Demand Electric Resistance Water Heating. This proposed program would influence electric water heaters (including conventional electric resistance water heaters) to include controls and communications capability that enables full participation as flexible demand resources. That includes the ability to shed load or to store excess renewable energy as needed to optimize grid operations without affecting consumer experience. This capability, if embedded as a standard feature in all water heaters, would build a 250 MW flexible, demand-enabled resource for the region through the natural replacements of water heaters that fail every year.

SPECIAL PROJECT NEW OPPORTUNITY 2: INTEGRATED ENERGY STORAGE IN EQUIPMENT AND BUILDINGS

As the need for more flexibility in the electric system grows, additional energy storage becomes necessary with larger shifts in timing of energy usage from the system. There are significant opportunities to incorporate incremental energy storage components into both equipment and buildings. However, these efforts come at a cost in energy use–due to losses between the charging and discharging cycles–that doesn't reflect as energy efficiency for the end-customer.

Barriers to Adoption

1. Lack of market demand: Unlike energy efficiency, manufacturers do not perceive any consumer demand for adding these features and have little or no motivation to spend additional resources to make them capable.
2. Lack of agreement on standards and specifications: Manufacturers perceive that the utility industry has not aligned on a common specification for communications protocols or command structures. They are reluctant to make changes in their products without being able to sell these products to a large enough market to make it worth the effort.

Role for NEEA

1. NEEA can aggregate regional utility interest in these features and work with manufacturers to make these changes that will enable devices to be capable of being exercised as storage resources.
2. NEEA can work with standard-setting organizations, utilities and manufacturers to move toward common technical specifications that the industry can adopt, resulting in economies of scale.

Funding Model

Support for acceleration of integrated energy storage would be provided through special funding models.

Examples:

1. **Enhanced Thermal Storage in Buildings:** By far one of the cheapest forms of integrated energy storage is using hot or cold-water tanks that can then serve heating or cooling needs. These technologies are not new, and costs for large-scale storage are relatively inexpensive. If these tanks are incorporated into the design or specifications at the time of manufacture or new construction for buildings, they can be even less expensive.
2. **Electric Storage:** With the dramatic reduction in the cost of batteries, it is now possible to integrate some form of electric energy storage into systems and buildings in ways that increase power system flexibility as well as resiliency. Many buildings already require battery back-up for emergency lighting and critical services. These systems could be expanded to cover more end-uses, and be connected as grid resources to support flexible capacity needs for the electric system.

APPENDICES

APPENDIX 1:
ELECTRIC PROGRAMS:
PRODUCT GROUPS

BUILDING ENVELOPE

Market Description: Includes the supply chain that manufactures, distributes and sells the physical separator between the interior and exterior of a building (a.k.a. the building envelope), which includes walls, fenestration and roofs and end-consumers who purchase them. NEEA's current focus is on window products, such as secondary glazing systems (SGS), low-e storm windows (LES), shades and blinds within the commercial sector.

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. New product standards and labels for window attachment products will continue to create opportunity for differentiation and awareness of more efficient product options in the market.
2. National efforts for window attachment product certification and labeling will help address market barriers of product availability, differentiation, and awareness for the region.
3. Future opportunities for other window attachment products, including films and shades, exist.

Long-Term Market Transformation Objectives

1. Increase availability of certified and labeled window attachment products.
2. Drive awareness and sales of high-performing, energy-efficient window attachment products, initially focusing on SGS and LES.
3. Create market transformation opportunities for other window attachment products, such as films and shades.

Success Metrics

1. Increased adoption rates of labeled window attachment products.
2. Greater market insights to support program strategy and utility customer engagement.
3. Increased measures and products to support funder program opportunities.

Market Engagement and Activities

1. Engage with manufacturers and distributors to shift Northwest sales mix toward more efficient products.
2. Partner with industry associations, such as Attachments Energy Rating Council (AERC), on product labeling and broad-based energy efficiency education for distributors, installers and customers.
3. Engage others in large markets, such as Northeast and California utilities, to support AERC and increase product availability to reduce costs for the benefit of the Northwest.
4. Leverage Distributor Platform and Retail Platform to access midstream channel distribution of labeled products, simplify participation and analyze full category sales data.
5. Engage with U.S. DOE to increase federal standards over time.

Building Envelope Product Portfolio

PRIOR INVESTMENTS BEING LEVERAGED	CURRENT PROGRAMS	EXAMPLES OF EMERGING OPPORTUNITIES
N/A	Window Attachments: secondary glazing systems, low-e storm windows	Other window attachments including cellular shades, blinds, and surface applied films. High performance primary windows using alternative internal glazing (thin glass / suspended films) to maintain high performance without added weight and size. Dynamic glazing that adjusts to varying solar conditions while preserving visibility. Lower cost high performance wall systems for new construction or retrofit applications.

Why NEEA?

1. NEEA has established relationships with codes and standards bodies, industry associations and manufacturers that can influence national efforts and labeling and increase product availability and market adoption in the Northwest.
2. The market for energy-efficient window attachments is still nascent in the Northwest, and awareness of window attachment products as an alternative to primary window replacement is very low. A region-wide effort, supported by new product certification and labeling, can help cost-effectively reach this market.

Prior Alliance Accomplishments to Build Upon

1. Building on prior initiative and scanning work, NEEA identified a market transformation opportunity for high-performing, energy-efficient window attachments as an alternative to higher cost, primary window replacement. NEEA is developing a Window Attachments program, focused initially on SGS and LES windows. Currently, these products have low market adoption in the region due to low awareness, lack of product differentiation, and limited product availability.
2. Since 2017, NEEA has partnered with AERC, as well as the EPA and Lawrence Berkeley National Lab, to develop new certification and labeling procedures and supply the market with new product labels. AERC and ENERGY STAR labels exist for low-e storm windows and labels are in progress for secondary glazing systems. NEEA also supports AERC to recruit manufacturers to label their products.

CONSUMER PRODUCTS

Market Description: Includes the entire supply chain, including manufacturers, distributors, retailers—physical and online—contractors and installers that deliver consumer goods and services in high volume as well as end consumers who purchase them.

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. This market will continue to represent 361 aMW of technical potential.[23]
2. Faster commercialization of energy-efficient consumer products will be required to continue to drive purchases that currently result in 80 million individual products sold through this channel, representing annual energy consumption of roughly 500 aMW.
3. New standards and labels will result in increased federal standards sometime between 2025-2030. These include clothes dryers, clothes washers, refrigerators, freezers and room air conditioners.
4. Consumers will continue to have easy access to vast amounts of online product information, resulting in more people deciding what to purchase before (or if) they ever enter a store. This presents an opportunity and imperative to educate and influence consumers online.

The online channel is allowing market actors in the retail channel who currently compete in the traditional products-only model to expand into installation and services businesses (i.e. Amazon Professional Services, HomeAdvisor.com, etc.). This shift will bring price transparency and increase competition with the distribution channel. This will allow the alliance to leverage its supply chain engagement and training expertise to influence these new market actors.

Long-Term Market Transformation Objectives

1. Improve U.S. DOE or EPA test protocols so that they accurately reflect real-world conditions and energy savings.
2. Influence on ENERGY STAR specifications or federal standard updates.

Success Metrics

1. Increases or improvements to federal standards or ENERGY STAR specifications.
2. Energy savings based on increased market share of efficient products.

Market Engagement and Activities

1. Work with national retailers (physical and online) to capture sales data that helps the alliance understand the market and leverage retailers' position in market to influence manufacturers and consumers for the benefit of regional and local programs.
2. Partner with industry associations such as the Consumer Technology Association (CTA) and the Association of Home Appliance Manufacturers (AHAM) to understand market barriers to increasing energy-efficiency potential of consumer products.
3. Increase market influence with scale by partnering with extra-regional energy efficiency sponsors in California, Canada, and other program sponsors across the U.S.
4. Provide the EPA and U.S. DOE with data-driven recommendations on voluntary specifications, federal standards and testing procedures for consumer products.

23. According to the Northwest Power and Conservation Council's 7th Power Plan.

Consumer Products Product Portfolio

PRIOR INVESTMENTS BEING LEVERAGED	CURRENT PROGRAMS	EXAMPLES OF EMERGING OPPORTUNITIES
Clothes Washers	Retail Product Portfolio (RPP)	Opportunities for efficiency improvements in top-loading clothes washers (laundry) may be explored as part of RPP, or in conjunction with the alliance's Super-Efficient Dryers initiative.
TVs	Super-Efficient Dryers	4k TVs offer an opportunity to re-engage with the TV market.
Dishwashers		Smart T-Stats offer an opportunity for regional alignment and leverage.
Refrigerators		Connected Home will be monitored closely.
		Electric vehicle charging equipment in buildings is a growing market with substantial efficiency and flexible demand savings.

Why NEEA?

1. NEEA has strong relationships with retailers and manufacturers at the national level, allowing the alliance to leverage its regional scale to bring additional, cost-effective value to the Northwest.
2. The Retail Product Portfolio brings full-category sales data that supports the federal standards process, increasing the data resolution and increasing the speed of availability.
3. NEEA brings the expertise and market relationships required to support and influence these government organizations to ensure Northwest consumers benefit from standard updates.

Prior Alliance Accomplishments to Build Upon

1. NEEA worked with ENERGY STAR to drive higher specifications and encouraged state and federal energy standards for energy-efficient televisions, while increasing the availability of energy-efficient TV's on retail shelves. From 2010-2014, this effort resulted in savings of 42.7 aMW beyond what would have occurred naturally in the market without intervention.
2. The Retail Platform launched in 2014 and has resulted in deeper relationships with strategic national retailers and extra-regional partners, and provided access to full category sales data to help inform program opportunities for the alliance. It has also given the region greater influence on the ENERGY STAR specification process.
3. The Super-Efficient Dryer initiative has been successful in supporting the introduction of super-efficient dryer technology into the U.S. market from multiple manufacturers.

HVAC

Market Description: Includes the supply chain that manufactures, distributes, specifies, designs and installs commercial and residential HVAC products and end consumers who purchase them.

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. The HVAC market is not currently optimized around cost and resiliency.
2. There is substantial opportunity to support an integrated approach to the HVAC market that includes efficiency, intelligence, and use of refrigerants in its value proposition and market transformation goals.
3. Savings opportunities exist from market adoption of smart thermostats, multi-head ductless heat pumps (DHPs), sophisticated controls and other technology developments.

Long-Term Market Transformation Objectives

1. Transform the market so that unitary, inverter-driven, variable speed heat pumps (VSHP) are the affordable product of choice to replace electric forced-air-furnaces in single-family site-built and manufactured homes.
2. Increase skill level of Northwest specifiers and installers in identifying, designing, sizing and configuring the most efficient HVAC system for each application.
3. Transform the market so that Very High Efficiency Dedicated Outside Air Systems (VHE DOAS) are common practice in applicable existing and new small to medium-sized commercial buildings.
4. Influence the voluntary market to require VHE DOAS in International Energy Conservation Code (IECC), ID, MT, OR and WA commercial building code.

Success Metrics

1. Increased adoption of 1:1 displacement in zonally heated single-family homes.
2. Increased conversions of single-family ducted electric furnaces to heat pump air handlers.
3. Heat pump technology represents the majority of HVAC market share.
4. Increased awareness, acceptance, adoption and technology expertise by HVAC supply chain, including contractors, design build firms and engineering firms.
5. Increased VHE DOAS in conversions of existing and specified into new commercial buildings.
6. New program opportunities for the region.

Market Engagement and Activities

1. Engage with manufacturers to test and rate all heat pumps to the new procedure, encourage additional high efficiency heat recovery ventilation (HRV) product lines for VHE DOAS, develop supply chain trainings to identify the highest-efficiency application for their technologies and improve control settings.
2. Partner with distributors to increase stocking, training and support for high efficiency HVAC technologies.
3. Engage with code and standard bodies to advance adoption of new testing and rating procedure and adopt increased efficiency requirements.

HVAC Product Portfolio

PRIOR INVESTMENTS BEING LEVERAGED	CURRENT PROGRAMS	EXAMPLES OF EMERGING OPPORTUNITIES
	Ductless Heat Pumps	Variable capacity low temperature heat pump technology common in ductless heat pumps is moving to central HVAC systems. Natural refrigerants are emerging and offer increased low temperature performance and greater efficiency.
	High-Performance HVAC (including VHE DOAS)	Advances in heat recovery systems are resulting in innovation in HVAC design for systems that separate heating / cooling from ventilation including VRF and hydronic systems.

Why NEEA?

1. The alliance has developed deep relationships with some of the largest HVAC manufacturers in the world and has opportunity to leverage these relationships to bring even greater benefit to the Northwest.
2. The alliance continues to foster innovative, new HVAC technologies in the Northwest. Ductless Heat Pumps have seen tremendous market growth over the last decade due to successful market interventions, and NEEA has been instrumental in bringing the components of Very High Efficiency Dedicated Outside Air Systems (VHE DOAS) to market and piloting the technology.
3. As new technologies and applications are adopted by the market, NEEA can provide a regional quality assurance feedback loop (trainings, specifications and best practices development, etc.) among manufacturers, installers, utility program managers and homeowners to support efficient, energy saving results and positive customer experience to transform the market.

Prior Alliance Accomplishments to Build Upon

1. The region has influenced more than 100,000 ductless heat pumps installed in the Northwest.
2. More than 1,500 DHP installers have been oriented in the DHP program.
3. The alliance has worked with distributors in the Northwest to invest in opening regional, hands-on training centers to focus on the DHP installation process.
4. The alliance supported the launch of the first high efficiency HRV product line to North America was launched, and flagship VHE DOAS pilot projects in the Northwest were brought to market.
5. DOAS was incorporated in WA code for targeted building types which will lay the groundwork for VHE DOAS in later cycles.

LIGHTING

Market Description: Includes the supply chain that manufactures, distributes, specifies, designs and installs lighting products, including lamps, ballasts, controls and fixtures as well as the end consumers who purchase these products.

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. The region is generating significant lighting savings due to prior investment in CFL and reduced wattage fluorescent products, current LED incentive programs and the popularity of LEDs. However, upgrades to LEDs will only capture part of the available energy savings.
2. Over a quarter of the potential savings will not be realized unless the region aggressively decreases hours of use with controls and increases luminaire efficacy.

   Less than 25% of the region's lighting load employs automated controls – less than 1% are advanced controls. Despite efforts to date, the region continues to see slow adoption of advanced controls. U.S. DOE forecasts that it is technically feasible to double average luminaire efficacy in the coming 10 years.
3. The ability to cost effectively influence LEDs and controls is limited due to the high cost of controls and a rising baseline, combined with falling prices of LED replacement lamps.
   a. A primary objective of the Luminaire Level Lighting Control (LLLC) initiative is to bring down control costs so that programs can more effectively drive LLLC adoption.
   b. There is an opportunity to leverage the Distributor Platform as a low-cost method of influencing LED efficacy and quality, while continuing to capture savings for the region and freeing up program time and budget for customer engagement on more comprehensive projects.

Long-Term Market Transformation Objectives

1. Transform the market so that controls are a standard fixture feature for little to no additional cost.
2. Identify market transformation opportunities for advanced lighting control systems in space types not well suited for LLLC – retail is an especially significant opportunity. Also, identify efficiency opportunities for control systems that encompass lighting plus other building systems.
3. Identify market transformation opportunities to drive the market toward higher efficacy light sources. The Distributor Platform, as an existing mechanism for influencing distributor sales practices and tracking progress via sales data, offers a crucial market lever for this goal.

Success Metrics

1. Increased adoption of LLLC.
2. Increased average luminaire efficacy.
3. Growing pool of trade allies who can support design and installation of advanced lighting control systems.
4. Greater market insights to support program strategy and utility customer engagement.
5. New program opportunities for the region.

Market Engagement and Activities

1. Engage with manufacturers to increase availability of more luminaire and fixture types that meet LLLC specifications.
2. Partner with efficiency organizations, such as the Department of Energy and Design Lights Consortium, to increase availability of high efficacy, high quality lighting.
3. Leverage the Distributor Platform to continue market engagement and data collection at low cost, which will allow the region to encourage greater efficacy, accurately track sales to understand market progress and inform future program strategy and interventions.
4. Engage with code and standard bodies to advance codes–requiring lower lighting power density and promoting efficacy.

Lighting Product Portfolio

PRIOR INVESTMENTS BEING LEVERAGED	CURRENT PROGRAMS	EXAMPLES OF EMERGING OPPORTUNITIES
Residential Lighting	Luminaire Level Lighting Controls	Advanced controls applications for space types not served well by LLLC and for multiple systems (lighting + HVAC, plug load, etc.)
Reduced Wattage Lamp Replacement		Leverage the Distributor Platform as low cost, far reaching mechanism to promote efficacy and quality improvement in commodity lighting products.
		Post Energy Independence and Securities Act (EISA) residential lighting opportunities.

Why NEEA?

1. New lighting controls technologies will continue to emerge at a rapid pace. Thanks to national manufacturer and regional distributor relationships and influence, NEEA is in a unique position to monitor and influence emerging products that bring greatest value to the Northwest. An especially important role is engaging nationally to work toward ubiquitous adoption of leading controls technologies, which will drive cost effectiveness of controls.
2. Lighting efficacy is likely to offer small per-lamp savings, but significant savings when aggregated across the region over time. NEEA has a unique opportunity to engage in codes and standards processes, and leverage regional Distributor Platform relationships and data to provide cost-effective mechanisms to influence the market and capture these savings.

Prior Alliance Accomplishments to Build Upon

1. The LLLC initiative laid the groundwork for regional adoption and customer engagement, playing a key role in developing a specification, qualified product list and deemed savings for an integrated lighting controls product.
2. Alliance NXT Level and LLLC trainings are addressing key advanced control adoption barriers by raising awareness and skill level of the region's trade allies.
3. Reduced Wattage Lamp Replacement (RWLR) drove efficacy of fluorescents and established the Distributor Platform, which can be leveraged to continue to drive efficacy of LED lamps and luminaires.
4. NEEA facilitated engagement with code developers, the Design Lights Consortium and Consortium for Energy Efficiency (CEE), all of which continue to raise the bar for luminaire quality and efficacy.

MOTOR-DRIVEN PRODUCTS

Market Description: Includes the supply chain that manufactures, distributes, specifies, designs and installs a variety of motor-driven products such as pumps, fans, compressed air systems and high-performance motors, as well as the decision-makers who influence the purchase of these products.

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. Decisions on which product to select, especially with small motor-driven products, are not always given a lot of thought or engineering support. Shifting those pump decisions toward the most efficient options as a default choice can save significant energy.
2. New voluntary standards and labels will result in an increased federal standard sometime between 2025-2030.
   a. NEEA's motor-driven products work begins with circulator pumps and pumps 50 horsepower and below, but significant future opportunities exist with fans and compressors.
   b. The Hydraulic Institutes's Energy Rating Label enables pump decision makers to quickly identify energy efficiency differences between models.

Long-Term Market Transformation Objectives

1. Increase awareness, stocking and sales of various 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. DOE rulemakings on Pumps, Fans, Compressed Air, and Motors.

Success Metrics

1. Adoption rates of labeled, packaged pumps (includes motor, pump and control system sold together)and other motor driven products.
2. New program opportunities for the region.
3. Continuous review and improvement of U.S. DOE standards.
4. Market practices rely on Extended Motor Products (XMP) labeling to identify, specify and select products.

Market Engagement and Activities

1. Engage with manufacturers and distributors to shift Northwest sales mix of motor-driven products toward energy efficiency.
2. Partner with industry associations such as Hydraulic Institute (HI), Air Movement & Controls Association (AMCA), Compressed Air and Gas Institute (CAGI), and National Electrical Manufacturers Association (NEMA) on energy labeling programs and broad-based energy efficiency education for customers, installers, sales staff, and equipment specifiers.
3. Leverage the Distributor Platform to engage with distributors as well as access and analyze-full category sales data. This will help the region identify additional barriers and opportunities.
4. Engage with the Department of Energy to increase federal standards over time.
5. Partner with others in large markets like California, National Grid, Xcel Energy and others to promote and influence XMP products and labels to increase product availability and reduce costs for the benefit of the Northwest.

Motor-Driven Products Product Portfolio

PRIOR INVESTMENTS BEING LEVERAGED	CURRENT PROGRAMS	EXAMPLES OF EMERGING OPPORTUNITIES
Drive Power	Extended Motor Products: Pumps and circulator pumps up to 50 hp	Other variable control motor driven products including industrial fans / blowers and air compressors. New larger, cheaper and more efficient brushless Motors are coming to market thanks to electric vehicles. Application of pumps and controls for pivot systems could lower system pressures and save water loss and energy.

Why NEEA?

1. NEEA has strong relationships with trade associations across manufacturers and distribution channels, and can leverage the existing Distributor Platform infrastructure (see Midstream Channel Platform section), relationships and experience.
2. NEEA's relationships with distributors and access to aggregated distributor sales data provide unique market-level insights and inform standards development.
3. Motor-driven products are sold in high volume in the Northwest each year. Yet, only a fraction of these transactions are for the most efficient products. Focusing upstream and midstream to influence the sales of pumps, fans and other motor-driven products is a cost-effective way for the region to capture this opportunity.

Prior Alliance Accomplishments to Build Upon

1. The U.S. DOE Rulemaking, covering 1 to 200 horsepower clean-water pumps, takes effect in 2020 and increases efficiency of pumps and packaged pumps at the lowest level of performance.
2. The Hydraulic Institute, in collaboration with NEEA, developed the Pump Energy Rating label, test methodology, independent lab certification process, online database and energy performance calculation engine.
3. The U.S. DOE Rulemaking for circulator pumps and fans is in progress, but not yet enacted.
4. The Pump Efficiency Index (PEI) was developed collaboratively by the U.S. DOE, Hydraulic Institute, NEEA and industry.

NEW CONSTRUCTION

Market Description: Includes the supply chain that designs, builds, verifies and sells residential single-family site built new homes, commercial new construction and new manufactured homes built to the NEEM 2.0 specification, as well as the end consumers, of these products.

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. Greater insight is needed into what measures will be incorporated into code to inform utility and regional efficiency programs.
2. The market, utility incentive programs and those developing, adopting and implementing code are not always aligned on long-term code goals.
3. Voluntary market adoption of efficient new construction practices leads code changes.

Long-Term Market Transformation Objectives

1. Increase commercial and residential new construction code requirements to maximize energy efficiency opportunities in new buildings.
2. Increase market adoption of energy-efficient products and practices to inform and enable code advancements.

Success Metric

1. Increase in adoption of alliance-supported code proposals.

Market Engagement and Activities

1. Partner with residential and commercial certification programs, Integrated Design Labs, and other industry associations to align technical specifications and increase the adoption of technology, practices and future code measures.
2. Leverage local policies and regional and national trends toward "Net Zero Ready" to create greater alignment between code, utility programs and market practice.
3. Partner with national code stakeholders to influence International Energy Conservation Code (IECC).

New Construction Product Portfolio

PRIOR INVESTMENTS BEING LEVERAGED	CURRENT PROGRAMS	EXAMPLES OF EMERGING OPPORTUNITIES
Efficient Homes Initiative (Northwest ENERGY STAR Homes)	Next Step Homes Manufactured Homes	Integration with alliance residential and commercial programs (Ductless Heat Pump, Heat Pump Water Heater, High Performance HVAC, etc.)

Why NEEA?

1. NEEA actively supports code development and adoption in all four states and has existing relationships with utilities and key code stakeholders that can be leveraged to create alignment on long-term goals.
2. NEEA's code work in all four Northwest states in addition to IECC can inform state code road maps, long-term goals, and utility program planning.

Prior Alliance Accomplishments to Build Upon

1. NEEA has collaborated widely with the region to develop and support energy code proposals in individual states. The adoption of new codes in all four states reflects regional progress in building better buildings and acknowledges steady improvement in building and system technologies.
2. 20.12 aMW and 20.35 Therm savings from 2010-2016 (including code savings).
3. NEEA-developed energy modeling systems which enabled whole home utility incentives.
4. RTF approval of an upper-tier new manufactured home specification (NEEM 2.0).
5. An established code collaborative in all four states to plan for upcoming code cycles and increased coordination with the market, utilities and code stakeholders.
6. BetterBricks and BetterBuiltNW regional resources providing tools to support integrated design and above-code building strategies.
7. Established partnerships with Integrated Design Labs in all Northwest states.

WATER HEATING

Market Description: Includes all tank type electric water heaters, including the supply chain that manufactures, distributes (wholesale and retail), specifies, designs and installs commercial water heaters and end consumers who purchases these products.

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. The 7th Power Plan potential identifies 600 aMW of 20-year savings potential for water heating.
2. NAECA Standard revision set for 2025 which will influence all water heater efficiency requirements.

Long-Term Market Transformation Objectives

1. Support the adoption and integration of the Consumer Technology Association communication protocol CTA 2045 as standard practice across all heat pump water heaters supplied to the Northwest.
2. Contribute to a 2023 federal standard requiring all electric water heaters be heat pump water heaters.

Success Metrics

1. More national utilities offer HPWH programs, which will increase supply chain support and reduce technology and product costs, ensuring greater product availability for Northwest customers and reducing costs for end-customers and Northwest utilities.
2. Sustainable communities promote HPWH technology.
3. All HPWH are CTA 2045 demand response ready.
4. ENERGY STAR aligns with Advanced Water Heater Specification (AWHS).
5. New program opportunities for the region are created.

Market Engagement and Activities

1. Engage with national and global manufacturers to reduce costs, increase efficiency, increase awareness of HPWH product, and support Northwest consumer needs such as performance in the Northwest climate zones.
2. Partner with industry associations to support adoption of the Advanced Water Heater Specification (AWHS).
3. Leverage the alliance's consumer and lab research to increase HPWH sales nationally, increasing supply chain support and reducing technology and product costs. This will ensure greater product availability and reduced costs for Northwest customers.
4. Engage with U.S. DOE to improve test procedures and support National Appliance Energy Conservation Act (NAECA) updates.
5. Work with manufacturers and standards organizations to develop appropriate standards for flexible demand management and integrate into energy-efficient HPWHs as a standard feature.

Water Heating Product Portfolio

PRIOR INVESTMENTS BEING LEVERAGED	CURRENT PROGRAMS	EXAMPLES OF EMERGING OPPORTUNITIES
	HPWH	Commercial Water Heating offers an additional manufacturer leverage point and regional savings opportunity.
	Split System HPWH	Leverage existing manufacturer relationships to enable out-of-the-box demand response / load shifting / storage capabilities in water heating equipment.

Why NEEA?

1. The alliance has developed deep relationships with the three largest water heater manufacturers in the U.S. and has the opportunity to leverage these relationships to bring even greater benefit to the Northwest.
2. NEEA is positioned to build awareness of efficient water heating technologies across the region, building consumer demand to accelerate adoption.
3. Water heating distributors have locations spread across NEEA's entire region. NEEA has built relationships at the corporate level of these companies that can be leveraged for the benefit of the alliance and their consumers.

Prior Alliance Accomplishments to Build Upon

1. More than 30,000 residential electric heat pump water heaters sold in the region.
2. National Appliance and Energy Conservation Act (NAECA) requiring all >55 gallon electric water heaters to use heat pump water heater technology.
3. The introduction of Tier 3 HPWH by the three largest water heater manufacturers.
4. The adoption by national partners, such as CEE, of the alliance's Advanced Water Heater Specification (AWHS).

APPENDIX 2:
NATURAL GAS PROGRAMS

NEW CONSTRUCTION

Market Description: Includes the supply chain that designs, builds, verifies and sells residential single-family site built new homes. This program leverages the work and resources of the alliance's established, electric Next Step Homes program.

Initiative: Next Step Homes

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. Greater insight is needed into what measures will be incorporated into code to inform utility and regional efficiency programs.
2. The market, utility incentive programs and those developing, adopting and implementing code are not always aligned on long-term code goals.
3. Voluntary market adoption of efficient new construction practices leads code changes.

Long-Term Market Transformation Objectives

1. Enable advancement of residential new construction code requirements to maximize energy efficiency opportunities in new buildings.
2. Engage developers and builders to incorporate advanced energy-efficient products and practices in new residential buildings.
3. Increase market adoption of energy-efficient products and practices to inform and enable code advancements.

Success Metrics

1. Increased adoption of alliance-supported code proposals.
2. New utility programs align with code road map.
3. Increased utility/market actor participation in code collaborative meetings and activities.
4. Increased market share of above code specifications and certification program participation.

Market Engagement and Activities

1. Engage with residential home builders, home energy raters, and code stakeholders to refine the value proposition for energy-efficient new construction buildings.
2. Partner with residential and commercial certification programs, Integrated Design Labs, and other industry associations to align technical specifications and increase the adoption of technology, practices and future code measures.
3. Leverage local policies and regional and national trends toward net zero building practices to create greater alignment between code, utility programs and market practice in a way that is inclusive of natural gas.
4. Engage with HUD and key code stakeholders to support code increases for manufactured homes over time.
5. Partner with national code stakeholders to influence International Energy Conservation Code (IECC) and HUD requirements and implementation.

Why NEEA?

1. NEEA actively supports code development and adoption in all four Northwest states and has existing relationships with utilities and key code stakeholders, such as the Washington Department of Commerce and the Oregon Department of Energy, that can be leveraged to create alignment on long-term goals.
2. NEEA's code work with the Northwest states and IECC can inform state code road maps, long-term goals and utility program planning.

Prior Alliance Accomplishments to Build Upon

1. NEEA has collaborated widely with the region to develop and support energy code proposals in individual states. The adoption of new codes in the Northwest reflects regional progress in building better buildings and acknowledges steady improvement in building and system technologies.
2. Savings of 20.12 aMW and 20.35 million of annual therms from 2010-2016 (including code savings).
3. NEEA-developed platforms which utilize energy modeling to enable whole home utility programs and incentives.
4. An established code collaborative in each state to plan for upcoming code cycles and increased coordination with the market, utilities, and code stakeholders.
5. BetterBricks and BetterBuiltNW regional resources providing tools to support integrated design and above code building strategies.
6. Established partnerships with Integrated Design Labs.

WATER HEATING

Market Description: Includes the supply chain that manufactures, distributes (wholesale and retail), specifies, designs and installs residential gas-fired water heaters and the consumers who purchase these products.

Program: Efficient Gas Water Heaters (GHPWH)

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. The 2015-2019 Natural Gas Business Plan indicated a significant market for this product in the Northwest (1.7 million customers) and a high long-term savings potential (over 100 million annual Therms) in the Northwest during a 20-year period.
2. There has been minimal innovation around gas water heating technology, especially when viewed in comparison to electric water heating.
3. Near-term savings may be possible by increasing adoption of currently available or newly developed efficient gas water heating products.
4. Gas heat pump water heaters (GHPWH), with the potential to be twice as efficient as baseline products, are under development with broad product commercialization estimated for 2020–2025.
5. Opportunities to influence federal standards are expected in 2030.

Market Transformation Objectives

1. Transform the residential gas water heating market; ultimately making gas heat pump water heaters the standard in gas water heating appliances.
2. Influence federal manufacturing standards for residential storage gas water heaters to require a Uniform Energy Factor >1 for units larger than 35 gallons by 2030.

Success Metrics

1. Launch of commercialized GHPWH.
2. Multiple GHPWH products on market.
3. Regional and national utility programs supporting EGWH, increasing supply chain support and reducing technology and product costs, which will help ensure greater product availability for Northwest customers and reduce costs for end-customers and Northwest utilities.

Market Engagement and Activities

1. Collaborate with the supply chain to accelerate adoption of currently available EGWH.
2. Engage with national and global manufacturers driving development, commercialization and launch of GHPWH while also supporting Northwest needs such as performance in Northwest climate zones, informed and capable installer base and locally stocked product.
3. Advance lab and field testing to validate product performance, durability and customer acceptance while providing regular updates on objectives, milestone achievement and co-funding participation.
4. Partner with market actors, U.S. DOE, Consortium for Energy Efficiency, utilities and other energy efficency organizations to support adoption of the Advanced Water Heater Specification (AWHS) and/or improved test procedures associated to GHPWH.
5. Leverage the alliance's consumer and lab research to increase EGWH sales nationally, increase supply chain support and reduce technology and product costs. This will ensure greater product availability and reduced costs for Northwest customers.

Why NEEA?

1. NEEA can leverage its existing relationships with utilities, manufacturers and the water heating supply chain developed through the electric heat pump water heating program.
2. Institutional experience related to ductless heat pumps and heat pump water heaters will ensure lessons learned on prior efforts translate to accelerated barrier removal and increased likelihood of locking in savings through local codes and federal standards.
3. Utility partners will benefit from decreased risk by pooling funding at the regional scale, leveraging NEEA's risk management assessment process, and collaborating with extra-regional utilities to ensure national uptake and thorough testing of new products prior to launch.

Prior Alliance Accomplishments to Build Upon

1. More than 30,000 residential electric heat pump water heaters sold in the region driven by the alliance's efforts to remove barriers, increase adoption and bolster utility programs.
2. The adoption by national partners, such as CEE, of the alliance's Advanced Water Heater Specification (AWHS).
3. Successful lab and field testing of GHPWH technology, demonstrating performance capabilities and refining product design to address issues.
4. Collaboration with all major water heater manufacturers to boost interest in GHPWH exploration and development.
5. Characterized market to identify trends, barriers, opportunities and key market actors by completing the updated (gas and electric) water heater market characterization.

HVAC

Market Description: Includes the supply chain that manufactures, distributes, specifies, designs and installs commercial HVAC products and end consumers who purchase them.

Program: Condensing Rooftop Units

Market Conditions and Assumptions Driving the Market Transformation Opportunity

1. The HVAC market is not currently optimized around cost and resiliency.
2. Condensing rooftop units (RTUs) have been in the market since 2014, but only small manufacturers offer products and sales are very low-estimated at less than 1% of the total RTU market.
3. Almost all current product offerings are custom-built units, making them inherently more expensive and resulting in longer lead times.
4. Lack of sales and investment are due to low natural gas prices, the absence of regulatory drivers, lack of market pressure to expand product lines and lack of awareness throughout the supply chain.
5. The HVAC supply chain lacks tools and education necessary to calculate projected paybacks for condensing RTUs and installation nuances.
6. Commercial warm air furnace (CWAF) manufacturers have begun developing and offering condensing heating modules for inclusion in small and large HVAC manufacturers packaged RTU product lines, opening up the potential for additional product market entry.
7. An apparent practice of utilizing conventional RTUs (meant for up to 35% outside air) in high-OA (up to 100%) applications may offer a market entry point for cost-effective condensing product lines in mild climates, like much of the Northwest.

Long-Term Market Transformation Objectives

1. Transform the market so that Northwest commercial building owners and managers install Condensing RTUs as standard practice in applicable existing and new small to medium-sized commercial buildings.
2. Increase Northwest specifiers' and installers' skill in designing, sizing and configuring Condensing RTUs for applicable commercial buildings.
3. Influence a federal requirement of at least 90% efficiency for commercial warm air furnaces.
4. Influence the development of a readily-available Condensing RTU with cost, weight and reliability in line with a conventional RTU.

Success Metrics

1. Increased number of manufacturers offer condensing RTU products.
2. Increased market share of condensing RTUs.
3. Increased awareness, acceptance, adoption and technology expertise by HVAC supply chain, including contractors, design build firms and engineering firms.
4. Increased condensing RTUs installed in existing buildings and specified into new buildings.
5. New efficiency program opportunities for the region.

Market Engagement and Activities

1. Engage with manufacturers to refine existing condensing products or develop new condensing products that will be comparable in cost, weight and reliability to conventional RTUs.
2. Partner with HVAC supply chain to increase training and awareness of the condensing RTU value proposition.
3. Engage with code and standard bodies to advance adoption of improved testing procedures, adopt increased efficiency requirements and streamline understanding of condensate management requirements.

Why NEEA?

1. The alliance has developed deep relationships with some of the largest HVAC manufacturers in the world, and has the opportunity to leverage these relationships to bring even greater benefit to the Northwest.
2. The alliance continues to foster innovative, new HVAC technologies in the Northwest. Ductless Heat Pumps have seen tremendous market growth over the last decade due to successful market interventions and NEEA has been instrumental in bringing the components of Very High Efficiency Dedicated Outside Air Systems (VHE DOAS) to market and piloting the technology.
3. As condensing RTUs are adopted by the market, NEEA can provide a regional quality assurance feedback loop (trainings, specifications & best practices development, etc.) among manufacturers, installers and utility program managers to support efficient, energy saving results and positive customer experiences to transform the market.

Prior Alliance Accomplishments to Build Upon

1. The region has influenced more than 100,000 ductless heat pumps (DHPs) installed in the Northwest.
2. More than 1,500 DHP installers were oriented in the DHP program.
3. The alliance has worked with distributors in the Northwest to invest in opening regional, hands-on training centers to focus on the DHP installation process.
4. The first high efficiency heat recovery ventilator product line to North America was launched, and flagship VHE DOAS pilot projects in the Northwest were brought to market.
5. DOAS was incorporated in WA code for targeted building types which will lay the groundwork for VHE DOAS in later cycles.

APPENDIX 3:
ALLIANCE MARKETING

Description

NEEA accelerates market transformation by providing a clear understanding of upstream, midstream, and downstream target audiences and the best ways to influence them. Marketing directly addresses key market barriers prevalent across the portfolio including lack of awareness, differentiation of energy-efficient products, understanding of product benefits, and supply chain support and investment. The energy savings estimates provided in the business plan assume downstream end-use customer regional marketing interventions remain as a part of NEEA's core market transformation activities to influence broad regional audiences and achieve market transformation goals. There is risk to the speed and level of energy savings if the alliance is unable to address regional market barriers through end-use customer marketing interventions.

NEEA's marketing strategies and activities are created and executed in close collaboration with Northwest utilities, extra-regional efficiency organizations and national partners. They are targeted at specific audiences and surgical in their approach, rather than broad and general Whenever possible, the alliance leverages existing resources and tools in the market, such as the Environmental Protection Agency's ENERGY STAR program and organizations such as Seattle 2030 and the Building Owner and Managers Association (BOMA) to optimize regional market transformation efforts and to help establish an infrastructure that sustains energy-efficient practices even after NEEA's intervention.

Market Conditions and Assumptions Driving Cross-Product Leverage

Through economies of scale enabled by pooling resources across the region, the alliance attracts and influences national and international organizations such as manufacturers and industry associations. Marketing is a key support function that NEEA provides its partners to increase the adoption of their energy-efficient products and practices. Key assumptions driving the regional marketing strategy include:

1. Effective market transformation requires influencing both the supply chain, the decision makers and end users of the technologies and practices.
2. Marketing efforts - when done in concert with manufacturers, distributors, funders and others to drive quicker adoption of products in the market are a primary value and influence point of the alliance with the supply chain as well as national and regional organizations.
3. Marketing strategies and tactics are more efficient when developed and deployed at scale.
4. Websites and other digital communications are a vital part of market transformation efforts. The proliferation of mobile devices and an established reliance on web searches for information across all markets provides an opportunity to educate and inform target audiences through websites and other digital media. Digital channels have become so ingrained in day-to-day business practices and consumer behavior that the absence of a digital strategy severely limits the impact of transformation efforts.

Websites provide an easy repository of resources for upstream and midstream actors, including fact sheets, video tutorials and infographics, which they can tailor and share with their customers.

Objective

Drive the adoption of the practices and technologies that NEEA supports through:

1. Awareness building and education.
2. Partnerships with manufacturers, national/regional organizations.
3. Uniform messaging and promotion to target audiences in the Northwest region.

Success Metrics

All marketing activities and campaigns are measured against established targets. Examples of key progress indicators include:

1. Website traffic and engagement.
2. Newsletter opens and clicks.
3. Case study placement with market partners or in publications.
4. Campaign specific metrics such as impressions, clicks or downloads.
5. Number of attendees at promoted trainings.
6. Number of events where materials are distributed.

Key Activities to Provide Value to the Region

Marketing activities are leveraged over the life of a program at different times, depending on the program strategy and barrier being addressed. These activities are implemented in close collaboration with funder staff as part of NEEA's funder coordination plans and Complementary Approach philosophy.

Alliance marketing activities include:

1. Develop and execute downstream end-use customer awareness and education building campaigns that showcase Northwest commitment to market partners and drive market acceptance.
   - **a.** Coordinate and influence promotional opportunities with national/regional partners (e.g. ENERGY STAR, manufacturers, regional corporate buying groups).
   - **b.** Influence marketing plans and activities of supply side partners to incorporate the Northwest message in the promotion of their products, services, or practices in the Northwest.
   - **c.** Conduct market research and strategy/message testing to understand target audiences.
   - **d.** Develop and manage strategic market partnerships with key market actors (e.g., BOMA, green building organizations, Northwest Energy Efficiency Council).
   - **e.** Develop and maintain websites and other digital tools that inform and educate the supply and demand-side audiences.
   - **f.** Create and maintain market-facing brands to support the promotion of energy-efficient technologies.
   - **g.** Plan and implement targeted, region-wide marketing campaigns to ensure engagement and support from the supply chain and address market awareness barriers.

2. Create resources to help market partners and funders drive market acceptance.

   a. Create training materials/collateral to increase awareness and adoption (i.e., sales sheets, product brochures, training material).

   b. Influence and develop retail signage incorporating initiative messaging (e.g., Home Depot/Ductless Heat Pump signage).

   c. Influence/coordinate POP (Point of Purchase) placement (e.g., Heat Pump Water Heater signage).

   d. Develop technical resources for manufacturer partners leveraging Northwest experience with products to influence adoption, installations, etc.

   e. Use market research/intelligence to create infographics and other materials that can disseminate complex information or datasets in a digestible manner.

   f. Create training and sales materials for both supply and demand-side audiences.

   g. Create templates, tools and materials that include a regional message to accelerate market adoption.

   h. Develop case studies to showcase real life installation and use of the products, practices or services NEEA supports.

   i. Create templates for utilities to use to support NEEA programs with their customers.

   j. Create and support marketing material for market partners.

Calls to Action in Alliance Marketing

Downstream marketing tactics are designed to provide audiences with enough information to motivate them to learn more. A call to action directs a targeted audience to a website that provides product or technology information and additional resources and tools. Some marketing activities direct the audience to an upstream or midstream partner website.

Other activities direct the audience to an alliance website. In addition to providing information about the technology or product, alliance websites drive visitors to utility websites for incentive information and some websites provide information about qualified installers and retailers that carry products or direct consumers to utility websites that provide this more detailed information. Because downstream marketing tactics can only deliver limited information, the call to action is necessary to direct the audience to a website with more detail – to accomplish the intended tactical purpose of raising awareness and educating the consumer about the new product or technology. The call to action directs traffic to one place, which is also critical for measuring the effectiveness of the tactic.

See Appendix 9 for the alliance's Guiding Principles for Downstream Marketing Activities.

APPENDIX 4:
NEEA BRANDING PLAN

Per the 2020-2024 Strategic Plan's Effective Portfolio boundary condition, the alliance focuses on:

Efforts that reduce and/or remove market barriers, primarily upstream and midstream, and on readiness of market transforming energy efficiency for best overall value and sustained market change.

NEEA's Unique Role and Supply Chain Audiences

To accelerate the adoption of energy-efficient products and practices, the alliance partners with and influences a variety of audiences. The audiences vary by program and lifecycle stage and include upstream, midstream and downstream audiences (see glossary of Key Terms for definitions of these audiences). In all cases, marketing is a key tool that helps deliver on:

1. Sales commitments to upstream actors, which is the rationale for their collaboration with the alliance; and,
2. Savings commitments to funders, which is the rationale for their investments in the alliance.

How these upstream and midstream barriers are addressed varies, depending on the stage in the product lifecycle.

When a product is new to market and its availability and utility incentives are limited, the alliance focuses on influencing upstream and midstream audiences. In this stage, the alliance's emphasis is on ensuring a viable product that meets an efficient specification is in the market and engaging the supply chain and providing education and awareness to the market. This step is necessary to ensure these audiences know the appropriate use cases for the product, make the product available and understand how to sell and install it.

Many times, midstream and upstream actors request assistance influencing downstream audiences. Early adopters validate product effectiveness, demonstrate the market demand to the supply chain and act as case studies, testimonials or other leverage points for awareness and education of downstream audiences about the product benefits.

Once one or more products are introduced in the market, the alliance works to ensure these products gain enough traction to keep the entire supply chain engaged. As funder incentives become more widely available, alliance efforts focus on accelerating increased adoption to address lack of awareness and education barriers. This is done by coordinating and aligning activities across upstream, midstream, funder and partner programs, as well as implementing direct-to-market support and providing information to downstream audiences as necessary to meet regional and upstream adoption targets.

Branding Approach

NEEA Brand

NEEA maintains a corporate brand that exists to consistently represent the impact and efforts of the diverse alliance of Northwest utilities and energy efficiency organizations working together to drive market transformation.

The goals of NEEA's corporate brand are to support alliance market transformation goals by ensuring that funders, stakeholders and the market are aware of and understand the opportunity associated with alliance initiatives. NEEA does this by establishing credibility and engagement with funders, stakeholders and the market by:

1. Communicating the alliance's work by accurately representing its opportunity, market progress and collective impact; and,
2. Telling a compelling story of the value that the alliance creates throughout the Northwest.

NEEA's corporate brand is most commonly used with utilities, efficiency organizations and other entities who have long-term relationships with the alliance across programs and sectors. NEEA produces documents such as annual reports and newsletters to inform utilities, efficiency organizations, and other regional and national partners of market transformation progress and opportunities for collaboration.

The NEEA brand is used primarily with upstream audiences to ensure the alliance has a relationship with manufacturers across multiple programs and/or sectors. For example, GE manufactures both consumer products and commercial lighting products. The alliance works with GE across a variety of programs currently, and is likely to do so in the future. Using a partner (i.e. ENERGY STAR) or product-specific market-facing brand (i.e. Hot Water Solutions) with GE would cause confusion and potentially hinder the relationship.

NEEA's corporate brand strategy is a business-to-business one, meaning that the alliance will not build an end-use customer-facing corporate brand.

Usage of the NEEA Brand by Audience

Upstream: The NEEA brand is used to communicate with manufacturers across programs and sectors. Usage includes name, logo and, whenever possible, NEEA's "lock-up" which is its logo combined with funding utility logos on presentations and other materials used in conversations with manufacturers.

Midstream: The alliance typically utilizes partner or market-facing brands with midstream audiences to limit the use of the NEEA brand in the market and to encourage co-branding opportunities with funders and partners. However, when the alliance is working with larger distributors or other entities with a national presence, relationships often cross programs and sectors making the NEEA brand a less confusing option.

Downstream: Downstream marketing efforts are conducted using partner brands or market-facing brands whenever possible to avoid competing with funders' end-use customer relationships. The only time the NEEA brand is used with downstream audiences is when there is no market-facing or partner brand and there is limited need for some sort of attribution to a NEEA staff member or program. Examples include a press release in partnership with a manufacturer about a new product launch before utilities are supporting the product or an article that quotes a NEEA staff member and calls out their place of work. In these instances, NEEA staff always coordinate with funders through alliance workgroups to offer them the opportunity to be the entity of the quote or part of the press release. Often, funders do not want to be associated with press releases or new articles on early-stage products if they don't have a program, deem the product too early to associate with their brand with, or want to avoid the appearance of being associated with a specific manufacturer or product.

Market Partner Brands

When it is possible and beneficial, the alliance leverages established market partner brands to influence, educate and inform audiences about a product. For example, the alliance's Super-Efficient Dryers program worked with ENERGY STAR to create the ENERGY STAR Most Efficient rating for heat pump dryers. This labeling is used in retail to differentiate these products from less efficient dryers.

Usage of Market Partner Brands by Audience

Upstream: Communications using market partner brands are targeted to midstream and downstream market actors, not to manufacturers, however manufacturers are aware of them because their products are being promoted.

Midstream: Communications to midstream actors many times leverage market partners brands. An examples includes using the ENERGY STAR brand with retailers and installers.

Downstream: The alliance works with national manufacturers like LG, Whirlpool and other partners to develop and implement media campaigns on their behalf leveraging manufacturer brands.

Market-Facing Brands

Whenever possible, NEEA attempts to leverage market partner brands to influence downstream audiences. Because the NEEA corporate brand is not used with downstream audiences and when a market partner brand is not available to use, different product-specific brands are created for specific programs (i.e. Hot Water Solutions). Co-branding with market partners or utilities is pursued whenever possible and customizable templates are created and disseminated to encourage uniform messaging to downstream audiences. Using these market-facing brands for these activities serves three purposes:

1. It provides an unbiased, third-party entity to educate and inform midstream and downstream audiences and enables co-branding by market partners and utilities when they choose;
2. It prevents the NEEA brand from being a consumer-facing brand which creates competition with funders' brands and their communications to their end-use customers;
3. It creates a standalone product-oriented, efficiency focused—rather than entity focused—brand that is not associated with any utility unless that utility desires the association.

Hot Water Solutions is an example of a market-facing brand that is used in trainings with water heater installers and has a website that is used to educate downstream audiences. It holds information about water heater product benefits, and provides access to utility rebates and resources and lists of trained installers.

Usage of Market Facing Brands by Audience

Upstream: Communications using market-facing brands are targeted to midstream and downstream market actors but manufacturers are aware of them because their products are being promoted.

Midstream: Communications that leverage market-facing brands to midstream audiences include, but are not limited to, trainings for the supply chain, listings of trained installers on program websites, distribution of customizable templates and other email communications.

Downstream: Communications that leverage market-facing brands to downstream audiences include, but are not limited to, customer-facing websites and communications to build awareness, educate and drive traffic to funder and supply chain partners incentives and offers.

Figure 1: NEEA's branding approach for Heat Pump Water Heaters (HPWH) and Next Step Homes (NSH) programs

	HPWH	NSH
Brand used with Manufacturers	NEEA	NEEA
Brand used with Installers / Retailers / Builders / Raters	Hot Water Solutions	BetterBuiltNW
Brand used with End-Use Customers	Hot Water Solutions	Market Partner Brands of Various Green Building Programs such as Earth Advantage and Built Green

Marketing Coordination Process

NEEA's marketing strategies and activities are created and executed in close collaboration with Northwest utilities, extra-regional efficiency organizations and national partners. See Appendix 9 for the alliance's Guiding Principles for Downstream Marketing Activities.

APPENDIX 5:
ENABLING
INFRASTRUCTURE

MIDSTREAM CHANNEL PLATFORMS

Distributor Platform

Description: This platform is comprised of key market relationships, ongoing data collection activities and repeatable program processes developed through the Reduced Wattage Lamp Replacement program. The platform supports multiple programs across different Product Groups, including Lighting, Motor-Driven Systems and Water Heaters.

Market Conditions and Assumptions Driving Cross-Product Leverage

1. There are products that may be challenging for traditional programs to influence cost-effectively.
2. Sales of efficient products can be influenced and tracked via regional distributor relationships and market sales data gathered through the platform.
3. Sales data derived from the platform allows savings tracking for alliance programs and enables market insights that can be leveraged to inform NEEA, funder and distributor decision making.
4. The regional sales data that is derived from the platform can be utilized by codes and standards work to support the public comment process at the national level.

Objectives

1. Leverage the relationships, interventions and data capabilities of the distributor platform to achieve cost-effective savings and new utility customer engagement opportunities across multiple product categories.
2. Foster mutually beneficial relationships between distributors and the alliance that:
   a. Motivate distributors to stock and sell targeted energy-efficient products; and,
   b. Incentivize and facilitate secure delivery of branch-level sales data for targeted product categories.

Success Metrics

1. NEEA and funder program utilization of the platform.
2. Total market share represented by distributors enrolled in the platform.
3. Number of product categories for which NEEA collects sales data.
4. Increasing market share of efficient products.
5. Codes and standards influenced by distributor platform data.

Key Activities that Provide Value to the Region

1. Enables greater market transformation by influencing stocking and sales.
2. Ensures access to market data and insights that can inform program strategies.
3. 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 incentive programs).
4. Increases Funder program impact by engaging distributors via the Platform to enhance results of downstream programs.
5. Creates new Funder and regional midstream engagement opportunities that complement and offer new pathways for the region's programs.

Retail Platform

Description: Since the High-Efficiency TVs program that launched in 2009, NEEA has been carefully building and cultivating strategic partnerships with national retailers and the manufacturers that sell through them. These efforts have gradually become more formalized and are now fully integrated into the Retail Platform that was launched in 2014 to support the region's Retail Product Portfolio (RPP) initiative. While primarily supporting RPP, the Retail Platform is designed to support virtually any energy-efficient Consumer Product flowing through the retail channel.

To date, the platform has resulted in deeper relationships with strategic national retailers and extra-regional partners, has provided access to full category sales data and has given the region greater influence on the ENERGY STAR specification process. For retailers, the platform significantly reduces their costs associated with the administration of efficiency programs by creating a consistent process for sharing data and transferring incentive payments.

Market Conditions and Assumptions Driving Cross-Product Leverage

1. There are products that may be challenging for traditional programs to influence cost effectively.
2. Major national retail (physical and online) is a key distribution channel. The Retail Platform will support regional midstream efforts across any product category sold by retail partners including residential and small commercial HVAC, lighting, water heating, consumer products, and windows.
3. To satisfy consumers, retailers are required to stay abreast of technological and market changes across all the product categories they merchandise. Retail partnerships will become more valuable as the speed of product commercialization continues.
4. The regional sales data that is derived from the platform will inform alliance intervention strategies and funder program strategies, provide market insights and can be utilized by codes and standards work to support public comment process at the national level.

Objectives

1. Add additional products and retailers to the platform as needed to accelerate market transformation of consumer products.
2. Leverage the platform to support funders' local midstream efforts as requested.

Success Metrics

1. Increase alliance program use of the Retail Platform.
2. Formalize the use of knowledge gained through analysis of the data continued in the portal.

Key Activities that Provide Value to the Region

The Retail Platform is a critical infrastructure to engage national retailers to enable greater volume of efficient products and expand regional data collection and analytics. This work creates efficiencies and provide an essential foundation that any local or regional program can take advantage of at a lower risk and cost than if done on their own.

MARKET RESOURCES

Integrated Design Labs

Description: The mission of the Integrated Design Labs (Labs) is to transform the design, construction, and operations of commercial, institutional, and residential buildings to advance energy-efficient, high-performance and healthy buildings to the Northwest. Integrated Design Labs exist at Universities of Idaho, Oregon and Washington, and at Montana and Washington State Universities. The Labs are a critical partner to alliance programs, accelerating market transformation through research, technical assistance and education that are used by alliance programs and market partners.

Market Conditions and Assumptions Driving Cross-Product Leverage

1. The Labs are a critical source of and testing ground for emerging technologies and practices.
2. The Labs can be leveraged to support local and regional efficiency programs through case studies, training, testing, evaluating new technologies and building awareness of new programs or technologies within the design community.
3. 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.

Objectives

1. Influence new construction and renovation projects to cost-effectively achieve exceptional energy performance targets and serve as a model for future buildings and practices.
2. Drawing on their expertise, tools and relationships, the Labs deliver valuable energy efficiency resources that serve multiple product initiatives as well as funders and their customers.

Success Metrics

1. Buildings (number, square footage and type) and individuals influenced through technical assistance, other firm engagement and educational programs.
2. Alliance initiative and utility program engagement of Labs (number and scope of engagements).

Key Activities to Provide Value to the Region

The Integrated Design Lab Network bolsters NEEA's capacity to deliver market transformation in a manner specifically tailored to diverse regional needs in multiple ways:

1. Bring solutions to rapidly emerging challenges, feeding the emerging technology pipeline.
2. Develop and advance tools, methods and technologies to accelerate energy-efficient buildings through research and project-based education.
3. Quantify and verify energy savings from new technologies and practices.
4. Deliver educational programs and experiences that form the next generation of leaders in the building industry.
5. Create leads and opportunities at very early phases of project development, when efficiency can most effectively be influenced.

BetterBricks

Description: BetterBricks is a resource that supports the alliance's commercial and industrial programs by raising market awareness and capability for energy efficiency technologies and decision making. The brand was launched in 1999 and became a trusted resource for building professionals. In an online survey of 272 building professionals across the region, 95% were familiar with the BetterBricks brand. The target audiences for this work include building owners, property managers, building facilities staff, architects, designers, engineers and contractors. The BetterBricks resource is supported by two main components:

1. The BetterBricks website, which provides information, tools and resources about efficient buildings.
2. Market relationships with organizations such as Northwest Energy Efficiency Council (NEEC), Building Operators and Managers Association (BOMA), International Facility Management Association (IFMA), Seattle 2030, Lloyd Eco-district, American Institute of Architects (AIA), American Society of Heating, Refrigeration and Air-conditioning (ASHRAE), New Buildings Institute (NBI), Better Buildings, and building-specific management organizations (Oregon School Facilities Management Association (OFSMA), and Washington State Society for Healthcare Engineering (WSSHE), etc.)

Leveraging the BetterBricks brand to promote the alliance's commercial programs allows for a uniform market presence with trade organizations and building side audiences across the region without having to create separate market-facing brands to promote new products as they enter the alliance's portfolio.

Market Conditions and Assumptions Driving Cross-Product Leverage

1. Target audiences in commercial buildings are overwhelmed by the number of available resources. They are seeking a non-biased, third party resource to help them find the best solutions for their buildings.
2. The BetterBricks brand has a high level of awareness in market and is a trusted resource about efficiency in buildings.

Objectives

1. Position BetterBricks as a trusted resource for professionals who own, operate, and manage commercial buildings to learn about energy efficiency best practices and technologies.
2. Facilitate broader adoption of energy-efficient products and practices and higher utilization of utility programs and incentives for commercial buildings.

Success Metrics

1. Web traffic, resource downloads, newsletter engagement and survey feedback.
2. Program evaluations are used to measure specific market progress indicators for programs that leverage BetterBricks.

Key Activities that Provide Value to the Region

1. Provide resources and information that are relevant to market actors across building types via BetterBricks, making it an efficient way to inform and educate commercial building audiences about the technologies and practices in the alliance portfolio.
2. Drive target audiences to utilities and efficiency organizations for more information about incentives and programs.
3. Educate and inform the commercial real estate audience about the technologies and practices in the alliance portfolio and the local utilty programs that incentivize them through the CREHub tool on BetterBricks.
4. Educate and inform the members of industry associations that are partners of BetterBricks about the technologies and practices in the alliance portfolio and relevant utility and energy efficiency organization programs.

Special Project C&I SEM (Commercial and Industrial Strategic Energy Management)

Description: Strategic Energy Management (SEM) is recognized as a pathway to deeper energy efficiency within commercial and industrial programs and is a foundation for deeper and more enduring customer relationships. Existing SEM infrastructure is the result of several years of regional investment and collaboration. The previous cycle's 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.

Market Conditions and Assumptions Driving Cross-Product Leverage

1. Needs vary by customer and utility, but all SEM practitioners face common challenges.
2. Robust collaboration between SEM programs, convened by NEEA since 2011, improves the efficiency and effectiveness of SEM programs through shared inquiry, innovation and knowledge transfer.
3. The SEM Hub and SEM Collaborative enable the targeted application of technology and problem solving to the challenges facing SEM practitioners and participants.

Objectives

1. Increase commercial and industrial customers' perceived value in SEM as a strategy for meeting their sustainability and energy performance goals.
2. Enable greater development and use of high-value SEM tools and resources by regional stakeholders to launch, grow and sustain regional SEM programs.
3. Enable the region to leverage the SEM Hub Energy Management Assessment (EMA) tool to measure baseline SEM practices and identify targeted savings opportunities.
4. Build regional and national consensus on SEM as a best practice or de facto standard.

Success Metrics

1. Further adoption of SEM in the Northwest region.
2. Increased number of NEEA funders using SEM Hub tools and resources to enhance their SEM program implementation and customer engagement.
3. Increased participation in the Northwest SEM Collaborative and hosted events.

Key Activities to Provide Value to the Region

1. Provide a resource for sponsoring utilities in promoting and utilizing SEM as a fundamental customer engagement tool through the SEM Hub (SEMHub.com). Customized portals can be used directly for SEM program implementation.
2. Convene the community of SEM practitioners around shared challenges and solutions to enhance the efficiency and effectiveness of SEM programs.
3. Identify new opportunities for SEM infrastructure, such as:
   a. Small-medium company SEM
   b. Supporting the nascent North American SEM Collaborative
   c. Creating new white-label online tools for SEM savings tracking
   d. Supporting next generation manufacturing clusters and energy efficiency opportunities within the American Jobs Project.

TRAINING

Top Tier Trade Ally Training

Description: The Top Tier Trade Ally Training infrastructure builds lighting trade ally skills to support the delivery of energy-efficient commercial and industrial lighting retrofit projects. Investment in establishing the NXT Level training and designation during the 2015-2019 business cycle has created the foundation for advanced training infrastructure that will enable the region to meet evolving training needs of commercial and industrial lighting trade allies. As the NXT Level base grows, NEEA will seek market partners to sustain market delivery and regional support.

Market Conditions and Assumptions Driving Cross-Product Leverage

1. Trained trade allies are an ongoing need for the region's programs, and are seen as critical to program success and end-customer satisfaction.
2. NEEA's NXT Level training for utility lighting trade allies will continue to engage market partners to help it grow and continue to serve the comprehensive retrofit training needs of the region.
3. Coordination with local utility programs to incorporate advanced training and designation into program design builds demand for allies that can demonstrate advanced skills.

Objectives

1. Trained trade allies effectively specify, design, sell and install the most efficient technology, in support of alliance initiatives and funder program goals.
2. NXT Level training and designations continue to grow and support alliance programs.

Success Metrics

1. Trends in trade ally specification, design and sales of comprehensive retrofits and technologies being promoted by initiatives and programs.
2. Increased adoption of NXT Level Training, and support in the region and by market partners to sustain the offering over time.

Key Activities to Provide Value to the Region

1. Ensure training designations offer funder programs opportunities to direct customers to qualified trade allies and extend exclusive benefits to qualified allies, such as award eligibility or fast-track program applications.
2. Support regionally consistent training that offers economies of scale and consistency for trade allies and customers, especially those who span multiple funder territories.
3. Raise trade ally skill level and break down barriers for customers to initiate comprehensive projects.
4. Transition training to the market to deliver cost savings and enable the market to sustain the training over time.
5. Leverage NEEA's learning management system for small-scale training needs on specific topics (i.e. Lighting Basics an online training for lighting contractors available through the Northwest Lighting Network website).

Industrial Technical Training (Special Project)

Description: Industrial Technical Training infrastructure provides coordinated technical training on key industrial energy efficiency concepts to support industrial energy efficiency programs and build market capacity to implement industrial energy efficiency projects. Utility co-sponsors help select, plan and promote trainings in a coordinated regional approach. This long-standing NEEA service offering educates people who directly impact the largest energy loads in the Northwest – operators, engineers, consultants and utility staff.

Market Conditions and Assumptions Driving Cross-Product Leverage

1. There is a lack of awareness of industrial energy efficiency among facility owners and managers, and technical capacity among industrial end users to implement actions that will reduce energy intensity.
2. Industrial Technical Training will continue to engage market partners to help it continue to serve the training needs of the region.

Objectives

1. Build industrial energy efficiency awareness and technical capacity among the region's industrial end-users.
2. Achieve economies of scale for providing industrial energy efficiency training in support of alliance programs.

Success Metrics

Number of trainings and trainees, as targeted in annual training coordination plans.

Key Activities to Provide Value to the Region

1. Develop and implement annual training coordination plans with sponsors.
2. Coordinate delivery of training to avoid duplication of effort among utilities and market partners.

APPENDIX 6:
ENERGY SAVINGS, AVOIDED CARBON EMISSIONS AND PEAK CAPACITY VALUE

Energy Savings

Energy savings are an output resulting from changes in markets that the alliance is working to transform or has transformed through collaborative local and regional efforts.

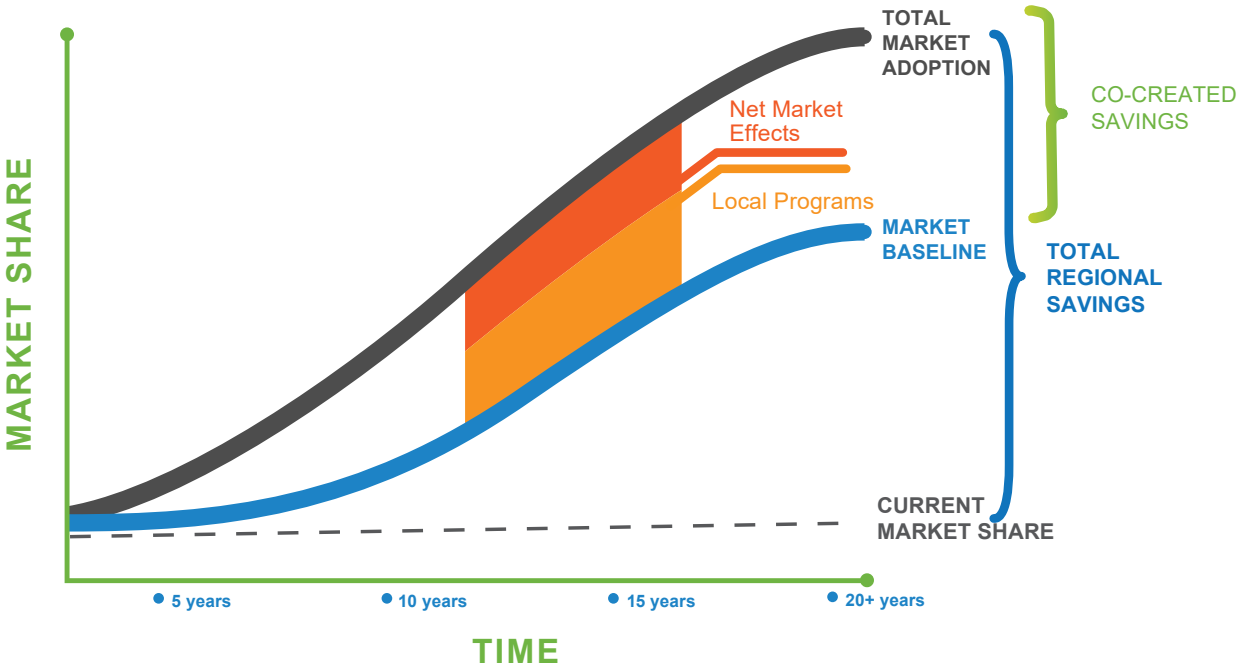
The best way to measure the results of alliance efforts is the collective achievement of market adoption and the resulting energy savings in the market above what would have occurred otherwise, also known as the market baseline.

As new investment programs move through the development lifecycle, the forecasted energy savings potential is estimated. The development process of moving a program from the early phase of product assessment to full scale market development can take 3-5 years or longer, with energy savings ramping over several subsequent years. A portion of funding from this Business Plan will be used to seed these early program investments and the associated energy savings may not be recognized until future funding cycles.

Definitions of Alliance Energy Savings

- **Total Regional Savings:** Energy savings associated with all market changes. Total Regional Savings represents the trackable adoption in the market for the efficient product or service. This only captures first-year savings.
- **Baseline Savings:** Energy savings from market growth and change that would naturally occur without any market intervention on behalf of efficiency including any utility, NEEA, Bonneville Power Administration and Energy Trust of Oregon funded intervention.
- **Local Programs:** These are savings counted through the Bonneville Power Administration, the Energy Trust of Oregon and local utilities. NEEA estimates and forecasts these values by surveying these stakeholders about their local programs on an annual basis.
- **Net Market Effects:** Savings associated with market change that are not counted as Baseline or Local Programs. It is a derived calculation of all other changes in the market that are not counted through baseline or local programs, but that the alliance is able to track through its ability to estimate Total Regional Savings.
- **Co-Created Savings:** All energy savings above baseline that occur in the market due to the combined efforts of utilities, the alliance and other actors.

Figure 1: Alliance Energy Savings (aMW)

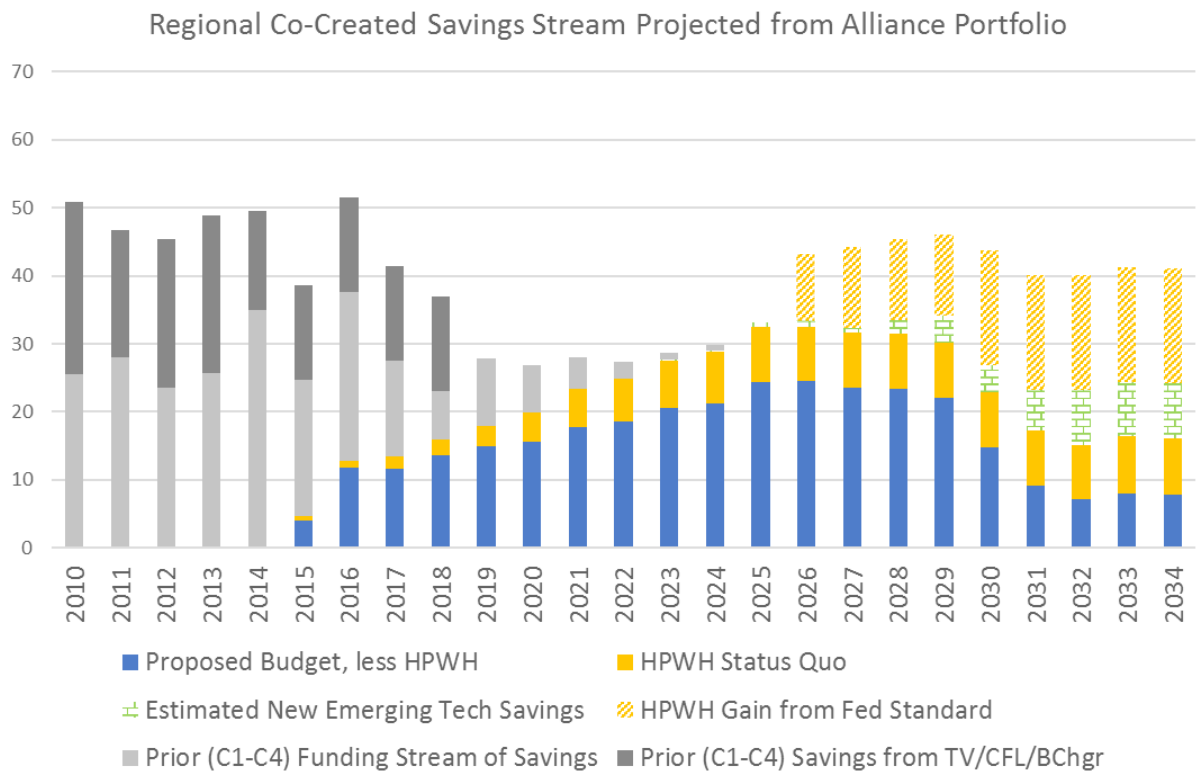


Electric Energy Savings Trends

Savings forecasting for the newest programs is based on early data and preliminary estimates, and comes with significant uncertainty. Savings in the near-term (2020-2024) are driven primarily by three programs: Ductless Heat Pumps, Heat Pump Water Heaters and Retail Product Portfolio. Risk in any of these programs will have a significant impact on the savings potential of the portfolio. Risk mitigation for the long-term (beyond 2024) is found through strong investment in new emerging technology opportunities and advancement of new programs. The long-term savings has only a minimal placeholder for emerging technologies yet to be identified in the 2020-2024 Business Plan.

A periodic dip is forecasted in the co-created savings stream during this Business Plan due to previous investments phasing out and new programs phasing in at a slower rate, as well as the impact on the pipeline of the removal of three initiatives from the portfolio at the start of the 2015-2019 Business Plan. The forecast increases again after 2025 in large part due an expected federal standard on electric water heaters mandating heat pump levels of performance. These energy savings estimates are based on the current Business Plan and are illustrated in Figure 2.

Figure 2: Co-Created Electric Energy Savings Trends (aMW)



Co-Created Electric Savings Trends

1. The forecast in figure 2 reflects a summation of: 1) moderate to high certainty savings estimates from more mature programs in the portfolio; 2) moderate to low certainty savings estimates for less mature programs; and 3) preliminary savings estimates for new programs recently added.
2. Range estimates are provided to best reflect the certainty bands for the investment portfolio in this plan.
3. The heat pump water heater program is pursuing a federal standard that has the potential for large future savings beginning in 2026. Due to the considerable variability in timing and magnitude, the savings associated with achieving this federal standard are called out separately. New information introduced regarding risk of the heat pump water heater federal standard, which is more likely to be in the 2028 time horizon.

Energy Savings Projections

Figures 3 and 4 show the estimated range of energy efficiency savings potential of the alliance's electric portfolio. The savings as a result of alliance efforts is forecasted to be lower in the 2020-2024 business cycle than seen in previous cycles. This is the effect of large programs in residential products and standards reaching baseline expectations and three market transformation initiatives removed from the portfolio in 2014.

These forecasts contain the reassignment of programs that are 2015-2019 current investment into what will be considered in the previous investment category in the 2020-2024 Business Plan (Ductless Heat Pump, Residential Codes and Reduced Wattage Lamp Replacements).

Figure 5 illustrates the forecasted therm savings for the 2020-2024 Business Plan. These savings are forecasted at the Total Regional Savings level versus Co-Created because baselines haven't been completed on the natural gas portfolio work.

Figure 3: Co-Created Alliance Electric Savings (aMW)

	2015-2019 SAVINGS RANGE	2020-2024 SAVINGS RANGE	2020-2029 SAVINGS RANGE
Previously Funded Investments	120-130	75-90	100-125
Current Investments	60-65	40-62	110-175
All Investments	180-195	115-152	210-300

Figure 4: Total Regional Alliance Electric Savings (aMW)

	2015-2019 SAVINGS RANGE	2020-2024 SAVINGS RANGE	2020-2029 SAVINGS RANGE
Previously Funded Investments	510-525	300-400	500-700
Current Investments	140-150	60-100	150-230
All Investments	650-670	360-500	650-930

Figure 5: Draft 3 Total Regional Alliance Natural Gas Energy Savings (Annual Therms[23])

NATURAL GAS SAVINGS	2015-2019 TOTAL REGIONAL SAVINGS RANGE	2020-2024 TOTAL REGIONAL SAVINGS[24]	2020-29 TOTAL REGIONAL SAVINGS
Total	TBD	11M – 18M	14M – 34M

Annual Therms: Only first-year savings from a new efficient measure are accounted for.

5-Year Projection Assumptions:

1. Forecast reflects best available information as of July 2018. NEEA updates business progress and reflective savings forecast every September and April.
2. All initiatives in the current portfolio as of July 2018 are expected to continue to deliver savings for the region and are forecast as such.
3. Previous Investments represent savings from new installations in the market above baseline. Majority of savings are from Residential CFL and TVs, which are nearing baseline and will no longer produce new savings for the region after 2018.
4. The alliance has added 3 new electric initiatives that are still in early stages of development and savings forecast potential in preliminary stages of development: Window Attachments, Commercial HVAC (Dedicated Outdoor Air System) and Extended Motor Product Label. This forecasts adds risk in the savings profile for new programs in development based on budget reallocations that are unfavorable to New Construction and Building Envelope Product Groups.
5. The alliance has confirmed two gas initiatives to continue – Condensing Rooftop Units and Efficient Gas Water Heating – and will be pursuing a new opportunity within the Residential New Construction Product Group Category.
6. Near-term (2020-2024) savings forecasts in the electric portfolio are primarily generated by two programs that are in development: Retail Product Portfolio and Heat Pump Water Heaters.
7. The chart above assumes Electric Heat Pump Water Heater can reach a small tank federal standard by 2025. There is risk in achieving this date, and a significant portion of savings will be delayed if the standard date is moved out.
8. Long-term (2025-2029 and 2030-2034) savings viability is highly dependent upon investment to ramp up new initiatives in the market; this will diversify the portfolio, alleviate current risk in the electric portfolio where there is high dependence on two programs, as well as ensure future stream of savings for the region.
9. The energy savings estimates provided in the business plan assume downstream end-use customer regional marketing interventions remain as a standard part of NEEA's core market transformation activities to influence broad regional audiences and achieve market transformation goals. There is risk to the speed and level of energy savings if the alliance is unable to address regional market barriers through downstream marketing interventions.

10-Year Projection Assumptions:

The alliance works in the market for sustained change which is best reflected in a longer time horizon. The 10-year energy savings estimates resulting from the alliance's investment in the portfolio include large Variability Factors reflected in ranges, including:

1. Risks (delay in approval and/or consumer adoption) in new Small Tank Fed Standard for Electric Heat Pump Water Heaters – updated to reflect a 2028 standard.
2. Risks in speed of adoption and long-term potential of new programs currently in development (e.g., Luminaire Level Lighting Controls, Retail Product Portfolio, Rooftop Unit programs in both Electric and Natural Gas portfolio).

23. Annual Therms: Only first-year savings from a new efficient measure are accounted for.

24. Total regional savings are all savings occurring from the pre-intervention starting point of the market. Estimates will be refined continuously as initiatives mature. Co-created savings will be determined for these programs in the 2020-2024 funding cycle.

Regional Peak Capacity and Avoided Carbon Emissions (Electric Only)

NEEA is able to now estimate additional value derived as a result of its total efforts and resulting electric savings in the market in the form of Regional Peak Capacity savings and Avoided Carbon Emissions. The alliance has worked with the Northwest Power and Conservation Council (NWPCC) to align on a methodology for estimating carbon savings for electric energy savings. The alliance will conduct similar activities with the NWPCC to align on a similar methodology for natural gas savings starting in the 2020–2024 cycle.

Figure 6: 2020–2024 Business Plan Total Regional Value

	LOW FORECAST	HIGH FORECAST	
Summer	155	205	MW peak reduction
Winter	210	278	MW peak reduction
Carbon	419,000	554,000	Tons of CO2 avoided

APPENDIX 7:
PRODUCT TAXONOMY

A product taxonomy provides a common classification scheme by energy system and sub-system. The taxonomy is based on prior work in the Northwest (Northwest Power and Conservation Council, 2016; E3T Program). Each Product in the Database can be assigned one or more energy systems and subsystems for classification purposes. The taxonomy enables users to quickly determine emerging natural gas and electric technology activities in specific application areas, for example, HVAC/Heat Pumps, or Lighting/Sensors & Controls. See Table 1 below for a complete description of the product taxonomy.

Figure 1. Regional Emerging Technology Advisory Committee (RETAC) 2.0 Product Taxonomy

ENERGY SYSTEM	SUBSYSTEM
Building Envelope	Walls, Roof, Floors
	Windows and Skylights
Electronics	Information Technology, Other Devices
	Commissioning, Sensors and Controls
HVAC	Air and Fluid Distribution, Heat Pumps
	Heat Recovery, Other HVAC systems
	Rooftop Units and Air Handling Units
	Sensors and Controls, Commissioning
Irrigation	Irrigation Systems, Commissioning
Lighting	Sensors and Controls, Design
	Fixtures: Indoor, Outdoor
	Lamps and Ballasts, Commissioning
Motors and Drives	Drives, Motors
Whole Building/Meter Level	Design, Assessments, Commission
	Energy Management, Behavior
Power Systems	Backup Power, Building Power Distribution
	Metering, Power Generation, Transformers
Process Loads and Appliances	Commercial and Residential Appliances
	Industrial Processes, Municipal Processes
Refrigeration	Sensors and Controls, Refrigeration Systems
	Refrigerated Cases, Waste Heat Recovery
	Commissioning
Transportation	Electric Vehicles
	Electric Vehicle Supply Equipment
	Elevators and Escalators, Block Heaters
Water Heating	Heat Recovery, Water Heaters
	Water Conservation, Sensors and Controls

APPENDIX 8:
PRODUCT READINESS

The Northwest Power and Conservation Act (Pacific Northwest Electric Power Planning and Conservation Act, 1980) establishes the foundation for energy efficiency measure (or "product") readiness in the Northwest, identifying reliability, availability and cost-effectiveness as key requirements for consideration as a savings measure. Following this lead, the newly created RETAC 2.0 readiness framework comprises three readiness components: 1) Product Performance; 2) Market/Commercial; and 3) Program. See Figure below for an overview of the entire readiness framework. The three readiness components are designed to operate independently, such that a given energy efficiency opportunity may rate very high on market/commercial readiness, but very low on product performance and program readiness, for example. The initial release of the readiness framework does not include technology readiness[25] because of the focus on commercially available products, although this could be easily added to the framework in the future.

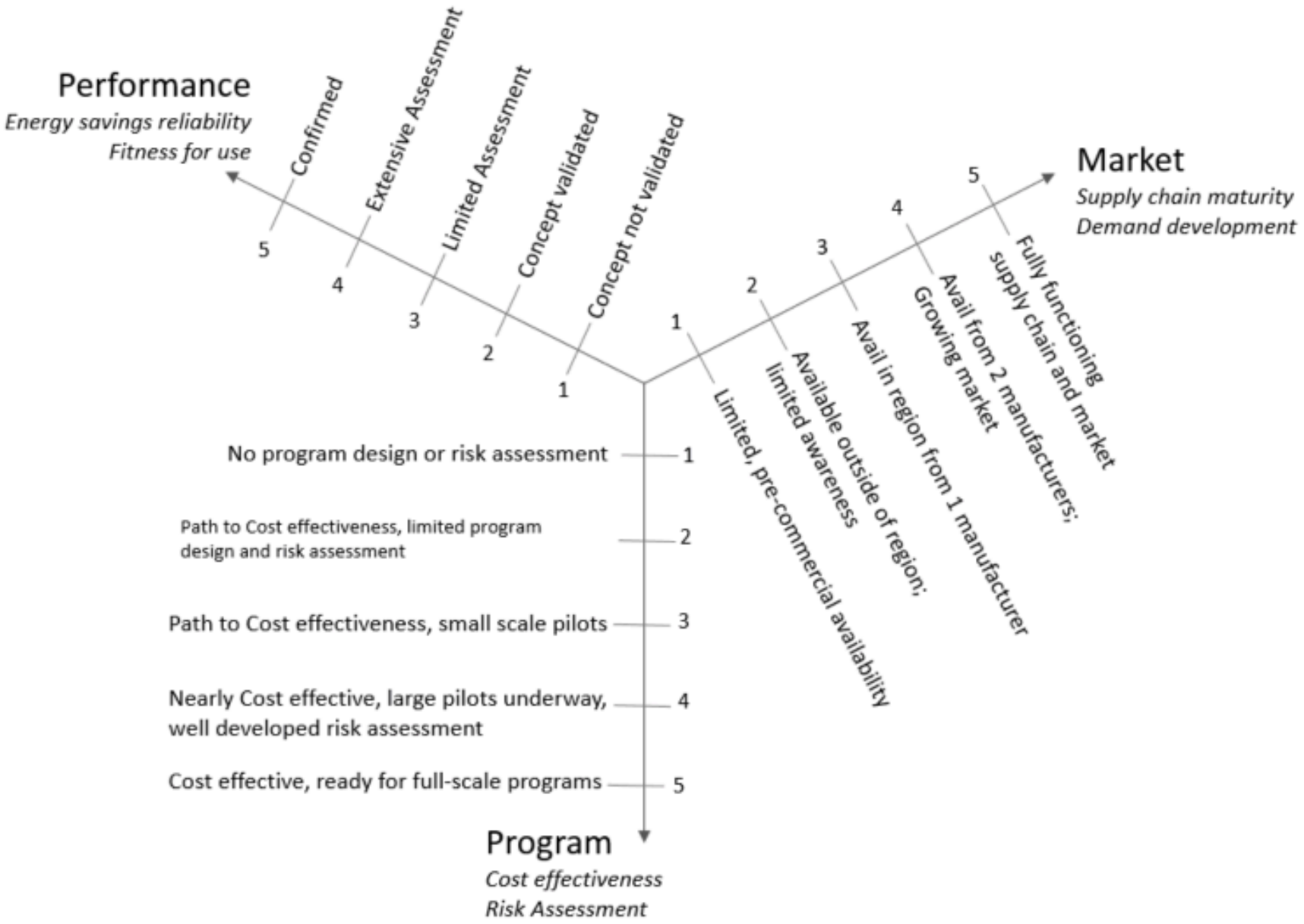
The Product Performance readiness component, based on a previously established 6-level metric (Energy Efficiency Emerging Technology Program), focuses on energy savings reliability across a range of intended applications. The readiness levels cover a spectrum of validation methods including engineering calculations, lab tests, field tests, and endorsement of savings by a regional or national body.

While it may be obvious that market/commercial readiness is distinct from technical readiness, there is no widely-accepted commercial readiness index (CRI). The Australian government has recognized this gap and developed a CRI to support the demonstration and deployment of new renewable energy technology (Australian Renewable Energy Agency, 2014). RETAC 2.0 expands the CRI concept to include both supply chain maturity as well as progress toward overall market transformation via removal of barriers impeding widespread availability and adoption.

The third readiness component, program, tracks progress toward inclusion in energy efficiency programs from utilities and similar organizations. Overall cost-effectiveness, progress in program design, and risk assessments are incorporated into this readiness component.

25. The Technology Readiness Level (TRL) index (U.S DOE, 2015) provides a widely-accepted method to manage the development of new technology across a wide variety of sectors, including energy.

Figure 1: Pipeline Readiness Levels



APPENDIX 9: GUIDING PRINCIPLES FOR DOWNSTREAM MARKETING EXECUTION ACTIVITIES

Problem Statement

Downstream marketing activities are a small subset of the marketing activities undertaken at NEEA, and they are a sensitive subject with funders due to the customer touch.

Objective

These guiding principles address a dual objective: funder concerns around marketing to customers and the ongoing effectiveness of regional Market Transformation work. The intent of this work is to ensure transparency, adequate time for deliberation, coordination in the planning process, and the ability to assess the effectiveness of the alliance's evolving regional downstream marketing work.

Principles for Downstream Marketing Execution Activities

1. An implementation process will achieve the dual objective above.
2. An option for self-delivery and exemption will be provided for funders.
3. Funders will have flexibility regarding the timing of self-delivery.
4. The delivery of marketing activities in participating and self-delivering service territories will include the entire electric and/or gas service territory, including areas with overlapping zip codes.
5. Decisions made should include consideration of the regional result and initiatives' objectives.

These guiding principles represent a compromise by NEEA's Board. They are not intended to set a precedent for reimbursement, self-delivery or exemption. The Board will re-evaluate these guiding principles as part of a mid-cycle assessment in 2022 to determine effectiveness of these principles and identify suggested improvements. Funder documentation of self-delivery work and/or exemption will be essential for this review. RPAC+[26] will develop specific metrics and desired outcomes for this mid-cycle review.

Implementation of Principles

1. **Coordination process for downstream marketing execution**

   a. **ILC Milestones** - As part of the Business Case for Scale-up Approval milestone votes at RPAC, downstream marketing activities will be flagged if they are a strategy for that phase of the program. To the extent downstream marketing is known as a potential intervention following the Initiative Start milestone, it will be flagged in the Business Case.
   Purpose: Information sharing around marketing, decision point for program progress.

   b. **Prior to October each year, or as early as available** - Funders agree to share marketing plans relating to relevant alliance programs. NEEA staff will provide guidance.
   Purpose: Information sharing around marketing, consider opportunities for leverage and coordination.

26. A group consisting of Regional Portfolio Advisory Committee members, funder marketing staff and other electric and natural gas funder staff.

c. Early October each year - As part of the Operations Plan packet, RPAC+ will receive a Marketing calendar with downstream activities for the upcoming calendar year highlighted.

i. Marketing calendar is presented as part of Operations Plan presentation

ii. RPAC+ shares marketing calendar internally with marketing and program staff and discusses proposed downstream activities in advance of Q4 RPAC meeting

Purpose: Information sharing in preparation for decision at Q4 RPAC meeting

d. Q4 RPAC Meeting - Funders will be prepared to discuss their marketing plans and opportunities for regional synergies. Funders will commit to participating, self-delivery, or exemption for downstream marketing activities for the upcoming calendar year.
Purpose: Decision point for activities in the draft Operations Plan marketing calendar, informs the Operations Plan that is approved by the Board.

e. Two months prior to planned campaign- NEEA staff will conduct a webinar for RPAC+ sharing NEEA's planned marketing approach. Funders opting to self-deliver agree to document and share their planned marketing approach within four weeks following this webinar.
Purpose: Information sharing

f. Q2 RPAC Meeting - If changes or additions are made to the current-year Marketing calendar, there is another discussion at the Q2 RPAC meeting and changes will be sent to RPAC+ a month prior to the meeting for internal review/vetting. Funders will commit to participating, self-delivery, or exemption for downstream marketing activities in their territories.Purpose: Decision point for any activities added to marketing calendar

g. Quarterly - Marketing calendar will be included in quarterly marketing newsletter. Newsletter distribution will include marketing contacts, RPAC, gas funders, and sector advisory committee members (other program staff can request to be included).
Purpose: Information sharing

h. Ad hoc -If there are new marketing activities that were not included in the previous semiannual review but have a planned start-date before or within two months following the next scheduled review, a special communication with RPAC+ will be initiated to determine whether a special meeting/webinar is needed, or if the next scheduled review (Q4 or Q2) is sufficient for determining how the activity will be executed.
Purpose: Possible decision point if a special meeting/webinar is needed

2. Option for self-delivery and exemption in downstream marketing execution

a. Funders agree to document their rationale for self-delivery or exemption and, when choosing to self-deliver, share their plans to support the intended outcome of the regional effort.

b. NEEA staff will provide an online template to support funder documentation in a streamlined and efficient manner. Funders agree to document activities executed in the market within approximately 30 days following execution of self-delivered activities. Funders agree to document and share results as they become available.

c. Documentation is recommended in the spirit of sharing, collaboration and learning, and is not intended as scrutiny of Funder decisions.

3. Flexibility around self-delivery timing for downstream marketing execution

a. At the time the Marketing calendar is reviewed with RPAC+ (Q2 and Q4), Funder plans for self-delivery of downstream marketing activities will include an expected execution timeframe and rationale. Funders choosing self-delivery of regional execution agree to conduct activities within a timeframe that will help meet regional objectives in the spirit of this agreement.

b. When a Funder opts for self-delivery of downstream marketing activities, NEEA staff and the funder should attempt to coordinate activities to optimize campaign effectiveness. This coordination should include consideration of timing sensitivity (e.g. seasonality, partnership commitments, etc.

4. **Handling of areas with overlapping zip codes in downstream marketing execution**

   a. Alliance activities will include all electric and/or natural gas zip codes for funders participating in the regional campaign irrespective of self-delivery or exemption elections of other funders with overlapping zip codes. Other coordination arrangements may be considered.

   b. Self-delivery activities may include coverage for overlapping zip codes in addition to any regional campaign activity. Funders opting to self-deliver agree to include all of their electric and/or natural gas service territory zip codes in the activity they undertake to support the regional campaign.

5. **Reimbursement for downstream marketing execution**

   a. Reimbursement for self-delivering funders will be based on the funder share of budgeted costs for each campaign or activity in each Operations Plan and as agreed by funders at each Q2 RPAC meeting for any mid-year changes to marketing activities.

   b. No reimbursements are provided if the campaign or activity is cancelled.

   c. Reimbursement is not provided for exemption.

   d. Reimbursement will be provided on request and computed on an annual basis and will be provided in the form of a bill credit after acceptan ce of the audit report for the preceding year.

KEY TERMS FOR NEEA STRATEGIC AND BUSINESS PLANNING

NEEA's Board of Directors has defined the following set of key terms, in the context of the 2020–2024 Strategic and Business Planning process:

Alliance: Regional Market Transformation collaboration, including staff and activities of all organizations that fund NEEA, as well as the direct efforts and staff of NEEA.

Basic Research: A systematic study, generally the first step in research and development, aimed at gaining more understanding of the fundamental aspects of a concept or a phenomenon, without directed applications toward products. National Labs conduct this type of research.

Business Plan: Builds on the Strategic Plan and serves as a funder prospectus that outlines value delivery activities and resources required to achieve performance metrics. The five-year Business Plan includes performance metrics (i.e. energy savings estimates), and budget guidelines. The Business Plan is reviewed on an annual basis to ensure NEEA is pursing the optimal portfolio and other pursuits consistent with NEEA's Purpose.

Complementary Approach: The alliance supports utilities' local program activities, and in turn local program activities support regional work. NEEA recognizes the importance of the utility/customer relationships, and focuses on efforts that reduce and/or remove market barriers, primarily upstream and midstream and on readiness of market transforming energy efficiency for best overall value and sustained market change.

Core Funding: The amount of income necessary to execute and achieve the results of an approved Business Plan.

Downstream Marketing: Region-wide marketing activities to promote energy efficient products/services/practices in the NEEA portfolio directly to end-use customers, including digital ads, purchased social, billboards and print, broadcast (radio/tv), point of purchase and direct mail where NEEA may use a market-facing brand.

1. "Downstream marketing activities" do not include marketing to midstream and upstream partners—including installer base, distributors, and manufacturers.)
2. Recognizing that direct mail is a sensitive tactic, direct mail will be de-prioritized as a NEEA marketing tactic and will only be conducted under the following conditions:
    i. When there is a special opportunity to support a program. These opportunities will be coordinated with RPAC through the downstream coordination process.
    ii. As part of promotions undertaken in partnership with a manufacturer using the manufacturer brand.

Energy Efficiency or Energy and Capacity Savings: A reduction of energy consumption (MWh) and/or reduction of demand (MW) on the customer side of the meter.

Equity: Balance the portfolio of work to deliver value equitably across the region, recognizing the needs of stakeholders in all four states and in both rural and urban settings. Address and balance the needs of both large and small utilities and other energy efficiency organizations. The balance will include a mix of region-wide and limited geographic opportunities as well as operational differences, such as the rate of market transformation and product adoption across the region.

Exemption: Regional downstream awareness building activities are not executed by either NEEA or by a funder.

Funders: A direct funder or indirect funder of NEEA.

- Direct funder – A utility or public benefits administrator that directly funds NEEA under the terms of the Business Plan.
- Indirect funder - A preference customer of BPA who is not a direct funder to NEEA or is an investor owned utility that funds NEEA through the Energy Trust of Oregon.

Infrastructure: An integrated set of resources that NEEA helps develop to support utilities and the market in building market capability, awareness and demand for energy-efficient products and practices. Infrastructure provides resources that funders and market partners can leverage to address market barriers and support long-term market transformation across multiple markets and programs.

Market Intelligence: The systematic and objective identification, collection, analysis, and dissemination of data, information, and insight for assisting decision making to advance and report progress of energy efficiency and market transformation. This definition covers evaluation, research, and regional studies, as well as the functional area of market intelligence at NEEA.

Market Transformation: The strategic process of intervening in a market to create lasting change in market behavior by removing identified barriers and/or exploiting opportunities to accelerate the adoption of all cost-effective energy efficiency as a matter of standard practice.

Markets: These are actual or virtual places where forces of demand and supply operate, and where buyers and sellers interact (directly or through intermediaries) to trade goods, services or contracts or instruments, for money or barter. The specific markets for which NEEA sees a long-term opportunity to help the region achieve energy efficiency goals through market transformation work and regional leverage are identified in the Business Plan.

Material: A deviation from approved Operations Plan budget is considered "material" if it is outside of the scope of the plan or inconsistent with NEEA's Financial Management Policy.

Montana: As referenced in these Plans, Montana represents NorthWestern Energy and the Western Montana public utilities served by the Bonneville Power Administration.

Northwest Energy Efficiency Alliance (NEEA): The organization and staff employed by the organization to facilitate market transformation activities in service to the region.

Northwest Energy Efficiency Alliance (NEEA) Staff: Those employed by the organization to facilitate market transformation activities in service to the region.

Northwest Region (The Region): The four states: Idaho, Montana, Oregon and Washington and those parts of California, Nevada and Wyoming that receive electric utility services through preference customers of BPA.

Operational Efficiency: The ratio of service realized (work performed) to energy/resources expended.

Operations Plan: The detailed annual plan and budget based on the five-year Business Plan. The Board of Directors approves the annual Operations Plan, which links key strategies to specific initiatives, performance metrics and milestones and provides input to management systems to ensure delivery of the annual goals and objectives.

Portfolio: The grouping of all market transformation investments including scanning energy efficient emerging technologies, concept, product and market testing, market development, evaluation, and long-term market tracking activities.

Primary Research: Techniques of original data collection or research direct from the target respondents. Primary research includes qualitative and quantitative research and can include surveys, focus groups, questionnaires, and interviews. May not have broad applicability.

Prioritization: As in the "prioritized Portfolio of initiatives" – determined by the Board in the Operations Plans and by consensus of the Regional Portfolio Advisory Committee (RPAC), who the Board has chartered to prioritize and advance market transformation programs through the Initiative Lifecycle process, using established portfolio criteria.

RPAC+: Refers to RPAC members, the natural gas direct funders (NW Natural and Cascade Natural Gas Corporation), plus any marketing or program staff considered relevant by funders.

Rules of Engagement:

1. NEEA will jointly develop a local/regional Funder Coordination Plan and clearly defined roles and responsibilities in collaboration with funders as part of the program business case prior to each milestone decision.
2. NEEA will *not* engage with market actors in a funding utilities' territory without approval as detailed in the approved program business case.
3. NEEA will *not* engage with or market directly to utility customers unless the activities are approved as part of the program business case.
4. NEEA will ask local utilities to work with NEEA to identify potential areas of overlap with local market actors early in initiative planning/design to avoid conflict/surprises.

Secondary Research: Involves the summary, collation and/or synthesis of existing research. Secondary research is contrasted with primary research in that primary research involves the generation of data, whereas secondary research uses primary research sources as a source of data for analysis, typically available at a lower cost than primary research. Applicability to NEEA's region and initiatives will vary. Examples include literature reviews, E-Source inquiries and requests to other owners of research.

Self-Delivery: In lieu of NEEA-delivered downstream awareness building activities, funders deliver downstream awareness building activities in coordination with regional activities and in support of regional market transformation efforts.

Special Projects: Projects that are funded and operated separately from the core activities that are regionally funded in the Business Plan. Projects are available for funding by qualified parties as determined by the New Strategic Opportunity Screening and Review Guidelines.

Strategic Plan: The Strategic Plan identifies long-term goals and objectives determined to be in NEEA's best interest to pursue and strategies for reaching each goal or objective. The plan defines NEEA's purpose, core values, business principles, strategic goals and key strategies. The Strategic Plan is a roadmap for achieving NEEA's vision.

Supply Chain: A system of organizations, people, activities, information, and resources involved in making and moving a product or service from supplier to customer.

- **Upstream Channel:** Entities that are typically at least two steps removed from the end-user, decision maker, or consumer; for example, manufacturers, standards bodies, national energy efficiency organizations, code officials, regulatory agencies (e.g. national agencies such as Environmental Protection Agency or U.S. DOE, not utility regulators), distributors, etc.
- **Mid-Stream Channel:** Entities that are typically in direct contact with the end-user, decision maker, or consumer; for example, trade allies or contractors, retailers, architects, engineers, etc.
- **Downstream Channel:** The end-user or end-user's agent, or consumer of a technology or approach.

Voluntary Industry Standard: Equipment specifications that are agreed to by all or a significant share of manufacturers that enable or enhance the level of energy efficiency or reliability (i.e. communication standards to facilitate equipment self-reporting and or control).