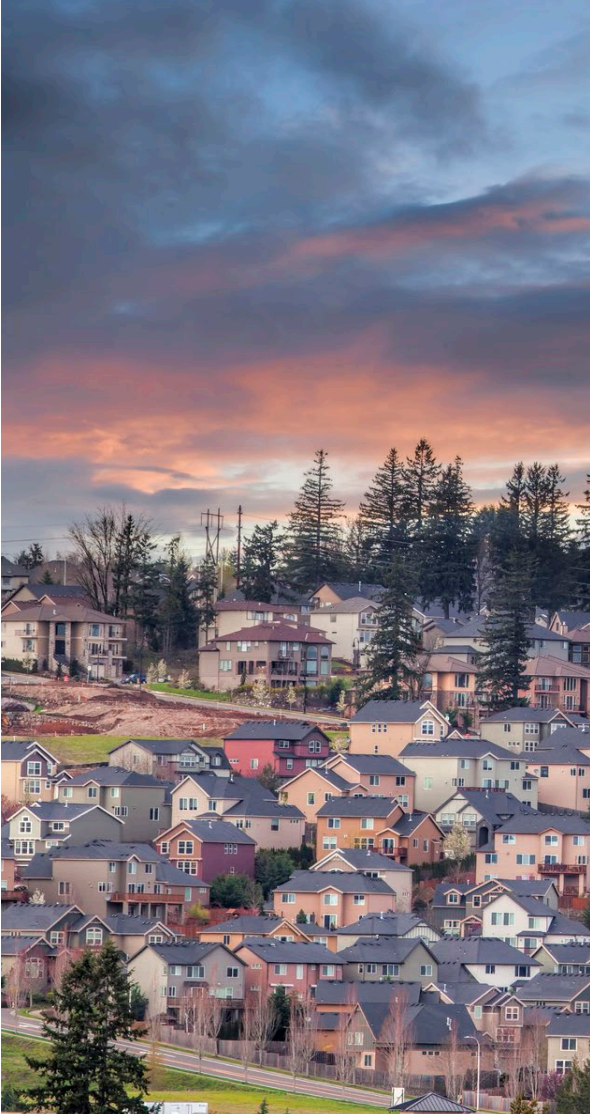


CYCLE 7 (2025–2029)
STRATEGIC & BUSINESS PLANS


LG
LG
DUAL Inverter

Cycle 7

Table of Contents

Executive Summary

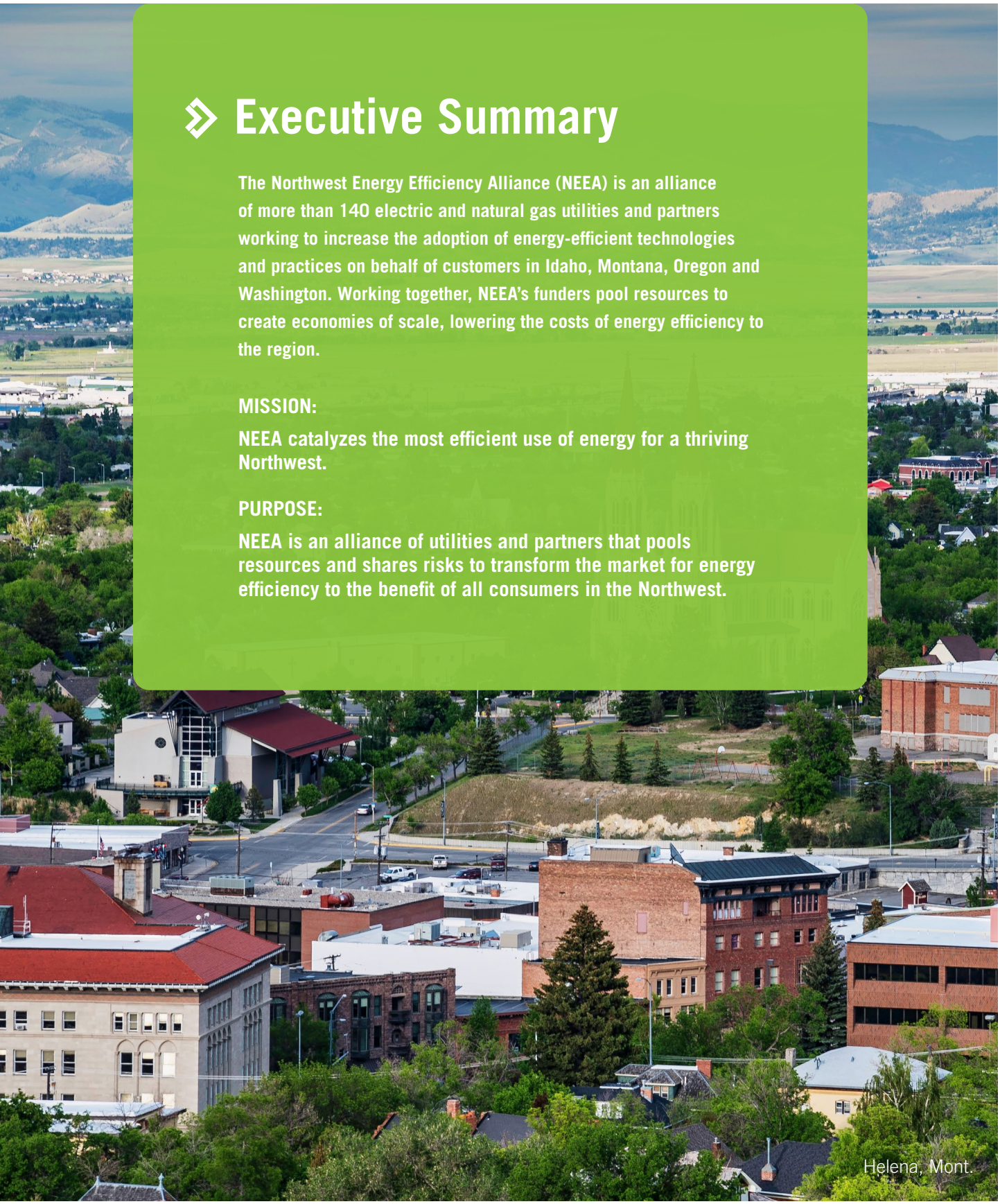
The Northwest Energy Efficiency Alliance (NEEA) is an alliance of more than 140 electric and natural gas utilities and partners working to increase the adoption of energy-efficient technologies and practices on behalf of customers in Idaho, Montana, Oregon and Washington. Working together, NEEA's funders pool resources to create economies of scale, lowering the costs of energy efficiency to the region.

MISSION:

NEEA catalyzes the most efficient use of energy for a thriving Northwest.

PURPOSE:

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



Helena, Mont.

Over the last twenty-five years, NEEA has played a vital role in supporting energy efficiency efforts in the Northwest by creating the market conditions necessary to accelerate and sustain the adoption of energy-efficient products and practices.

In its next business cycle (2025-2029), energy efficiency Market Transformation will remain NEEA's primary focus. NEEA's Board also recognizes the growing value that energy efficiency contributes to the region through peak load reduction, greenhouse gas emissions reduction, and consumer benefits, and has prioritized these secondary co-benefits within NEEA's strategic and business plans.

2025-2029 Strategic Goals

In 2025-2029, NEEA's efforts will be guided by four strategic goals:

1. ***Transform Markets for Energy Efficiency.***
2. ***Accelerate the Adoption of Grid-Enabled End-Use Technologies through Market Transformation.***
3. ***Advance Strategies to Reduce Greenhouse Gas Emissions through Market Transformation.***
4. ***Advance the Equitable Delivery of Energy Efficiency Benefits to Northwest Consumers through Market Transformation.***

Business Plan Focus Areas

To deliver on these goals, NEEA's Board of directors has identified a number of focus areas for the organization in the next business cycle:

- Seeking opportunities to accelerate **near-term market adoption and energy savings** potential while balancing the need to maintain **a continuous pipeline of long-term energy savings** for the region.
- Prioritizing **energy savings at peak demand** to ensure NEEA's energy efficiency Market Transformation activities are delivering the highest value to the region.
- Supporting regional decarbonization efforts through the development and adoption of **highly efficient electric and natural gas technologies.**
- **Addressing the needs of stakeholders in all four states,** in both rural and urban settings and in colder climates, through a mix of region wide and limited geographic activities.
- Implementing strategies to accelerate the **equitable delivery of energy efficiency benefits to all Northwest consumers.**

New or Expanded Work in Cycle 7

In the next business cycle, NEEA's work will be focused in five key work streams: **1) emerging technology, 2) market strategy and execution, 3) codes and standards, 4) analytics, research and evaluation, and 5) convene and collaborate**. All Market Transformation programs in both the electric and natural gas portfolio will be carried forward, as will high-value regional activities such as codes and standards outside of programs, the regional building stock assessments and the Efficiency Exchange conference.

Areas of new or expanded work in Cycle 7, include:

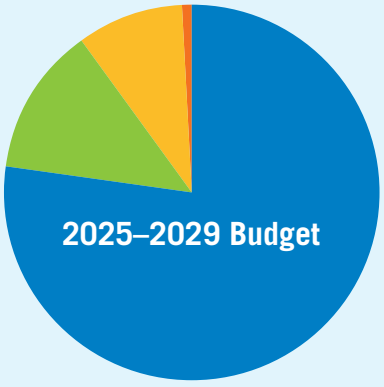
- Increased engagement across most product groups, including up to two new electric Market Transformation initiatives.
- A new focus on finding opportunities in faster-moving, higher-volume markets to accelerate market change leading to near-term savings opportunities.
- Greater emphasis on efficient technologies that save energy during peak load times and incorporating peak load impacts into NEEA's portfolio decision-making criteria.
- More dual-fuel opportunities, leveraging resources and market engagement to support regional decarbonization goals and create value for both the electric and natural gas systems.
- Research to identify customer segments that are not directly benefiting from Market Transformation activities, or are benefiting much later, and strategies to accelerate the equitable distribution of benefits to all Northwest consumers.
- Increased investment in regional stock assessments, including the first Motor Products Stock Assessment since 2000, a Residential Building Stock Assessment that includes multi-family buildings, and another Commercial Building Stock Assessment.
- Base funding for Efficiency Exchange to ensure the event continues to be held each year and remains accessible for energy efficiency professionals from across the Northwest.
- Opportunities for the region to support special projects outside of core business plan funding, including end-use load flexibility and whole building efficiency.

Value Delivery

NEEA measures Market Transformation results by evaluating expected market progress and then quantifying the energy saved in the region through alliance efforts. In the next business cycle, NEEA's activities are expected to deliver **between 190 and 225 aMW of electric energy savings and 6 to 17 million Therms of natural gas savings.** These energy savings and associated value metrics, including greenhouse gas and peak load reduction, are enabled by the alliance's Market Transformation programs and investment in tools, training, resources, data and research to support greater efficiency.

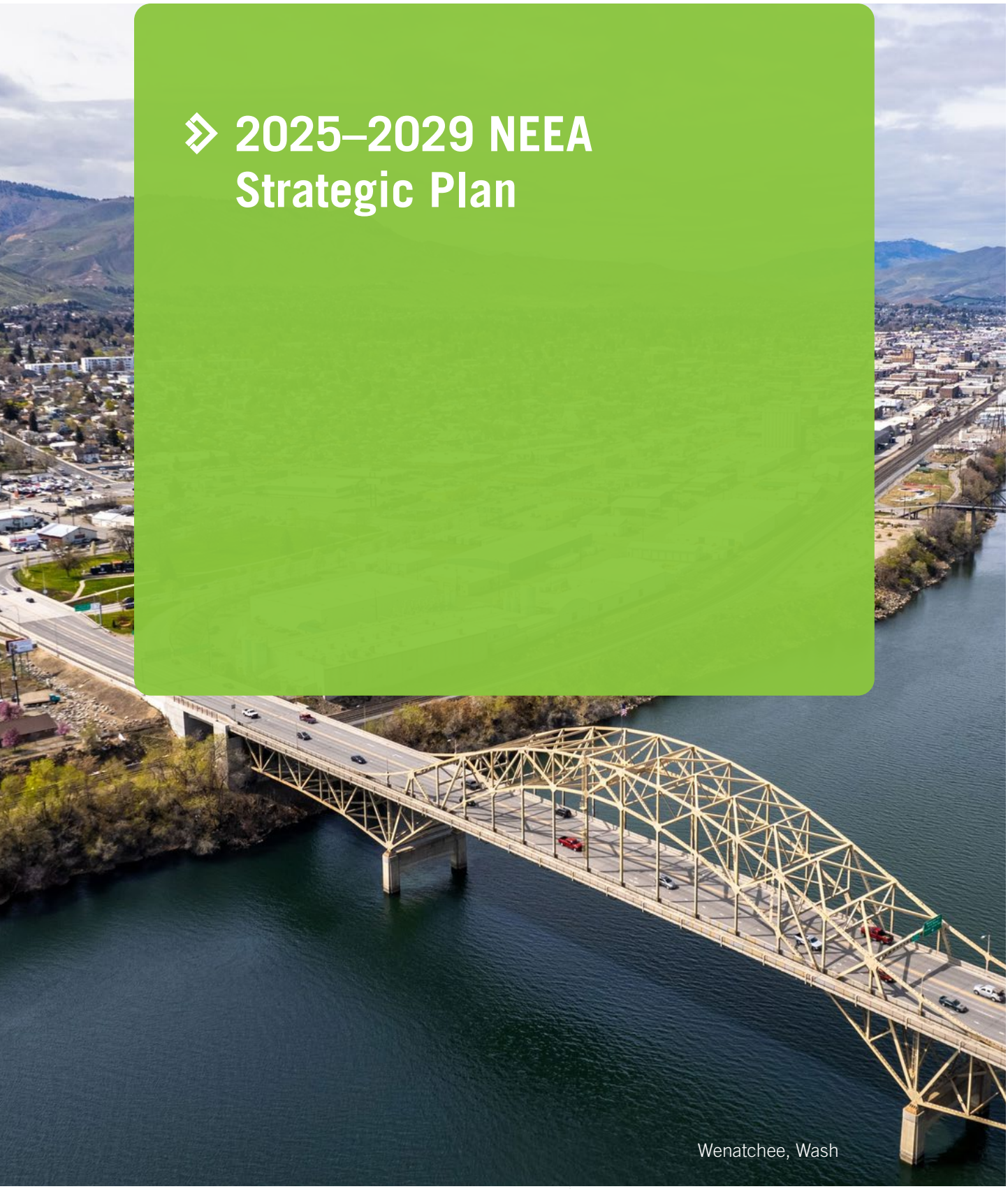
Budget

NEEA's core **2025-2029 budget is $211.8 million for electric funders and $35.3 for natural gas.** Additionally, the business plan includes $2.1 million in contracted expenses for the on-going End Use Load Research special project and about $25 million for additional special projects that emerge throughout the course of the business cycle.



- $211.8 million - Electric portfolio
- $35.3 million - Natural gas portfolio
- $25 million - Special projects (estimate)
- $2.1 million - End Use Load Research

2025–2029 NEEA Strategic Plan



Wenatchee, Wash

Cycle 7

Introduction

The Northwest Energy Efficiency Alliance (NEEA) is an alliance of more than 140 electric and natural gas utilities and energy efficiency organizations working on behalf of Northwest energy consumers to increase the adoption of energy-efficient products services and practices.

NEEA was established more than 25 years ago, when utilities and energy efficiency stakeholders from Idaho, Montana, Oregon, and Washington came together to address the challenges of a changing utility environment by sharing the costs and benefits of transforming markets for energy efficiency.

The Evolving Energy Landscape

Today, the utility environment is once again undergoing a period of intense and rapid change driven by inter-related forces that could potentially redefine the region's energy sector in the next 5-10 years. These drivers include:

- Policies at the federal and state level that are driving decarbonization and equity goals.
- Increased reliance on intermittent renewable resources.
- Changes in the relative value of energy efficiency and shifts in realizing that value.
- Electrification of the transportation and building sectors.
- Divergence in regional energy policy, needs and priorities.
- Impacts of a changing climate on the hydro system, seasonal load, and grid stability.
- Evolutions in customer sophistication and a growing imperative for social equity in all sectors, including energy.

The Growing Value of Energy Efficiency

The Northwest benefits from hydro power as a clean and low-cost energy resource. The region also relies on natural gas and other fossil fuels to deliver energy consistently to meet demand, particularly during the winter months.

As the energy system continues to add more intermittent renewable resources, the Northwest must contend with increased variability and new dimensions of uncertainty in the region's energy supply. This uncertainty will likely be compounded by significant additional electric loads from the transportation and building sectors, and from extreme weather events that test the limits of the energy system and drive efforts for grid integration and load balancing initiatives across the West. Critically, the region must ensure that the burden of this transition in the energy system does not fall on those who can least afford it, and that the benefits are shared equitably.

Northwest utilities have historically valued energy efficiency as an important input to resource planning and as part of their commitment to energy affordability for customers. While energy savings remain the driving goal for regional investment in energy efficiency, for some utilities the co-benefits that can come along with energy efficiency (e.g., load flexibility, resource adequacy, greenhouse gas reduction and equity) are becoming increasingly important. Deployed strategically, energy efficiency can help the region meet its broader energy system and societal goals by:

- Supporting reliable integration of renewable resources into the system.

- Reducing peak demand based on time of day, and seasonal and geographic needs.
- Helping the natural gas system meet decarbonization objectives.
- Supporting load flexibility through efficient products with advanced controls.
- Lowering emissions of greenhouse gases and particulates by reducing the need for peaking resources.
- Contributing to deferred utility investments in transmission and distribution.
- Lowering the energy burden for low-income customers.
- Providing workforce development opportunities.

Strategic Direction

Against the backdrop of these evolving utility and customer needs, NEEA's Board has reaffirmed the continuing importance of energy efficiency to the region and refined NEEA's Mission and Purpose:

MISSION: NEEA catalyzes the most efficient use of energy for a thriving Northwest.

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

Looking ahead to Cycle 7 (2025-2029), NEEA's highest value to the region remains energy efficiency Market Transformation, which NEEA defines as:

"The strategic process of intervening in a market to create lasting change in market behavior by removing identified barriers or exploiting opportunities to accelerate the adoption of energy efficiency as a matter of standard practice."

The Board also recognizes that the value proposition for energy efficiency is growing and, for some utilities and stakeholders, changing. In Cycle 7, NEEA will continue to focus first on market change that leads to energy efficiency. In addition, NEEA will explore evolving efficiency opportunities that align with NEEA's purpose, mission, and core competencies in ways that drive system benefits for electric and natural gas utilities, energy efficiency administrators, businesses and consumers throughout the Northwest.

NEEA's Board has identified four strategic goals for 2025-2029:

1. ***Transform Markets for Energy Efficiency.***
2. ***Accelerate the Adoption of Grid-Enabled End-Use Technologies through Market Transformation.***
3. ***Advance Strategies to Reduce Greenhouse Gas Emissions through Market Transformation.***
4. ***Advance the Equitable Delivery of Energy Efficiency Benefits to Northwest Consumers through Market Transformation.***

All four goal areas are mutually supportive and will overlap in activities. However, NEEA's first goal, Transform Markets for Energy Efficiency, is the foundation upon which NEEA's activities are built.

Cycle 7

Strategic Goals

Goal 1: Transform Markets for Energy Efficiency

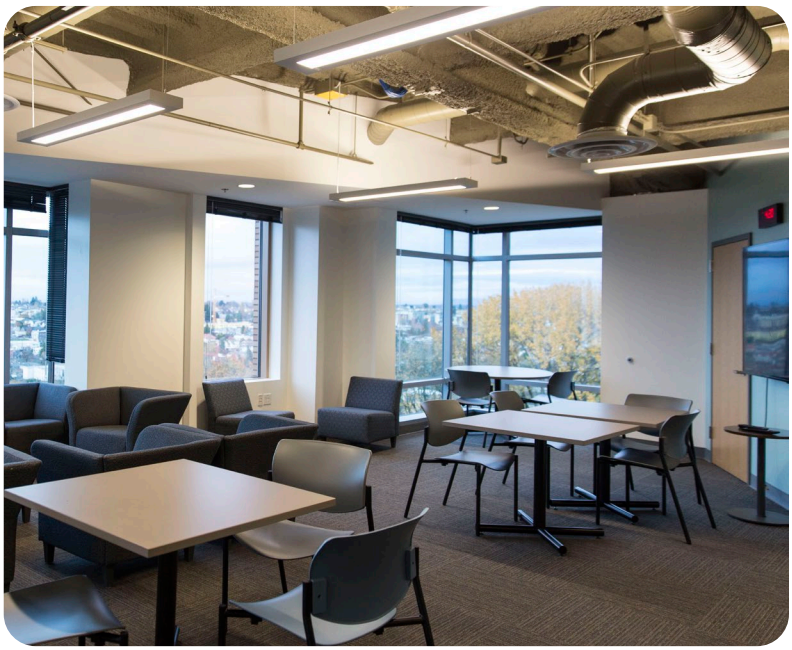
NEEA leverages the collective market power of the region and its more than 25 years of Market Transformation experience to create lasting market change. By identifying market barriers and then strategically intervening to remove them, NEEA's work delivers permanent market change and verified energy savings. As regional priorities continue to evolve over the next business cycle, NEEA will intervene in the market to influence energy-efficient end-use product development in ways that align with those priorities and coordinate activities among stakeholders interested in accelerating efficiency through Market Transformation.

KEY STRATEGIES

1.1 – Pursue energy efficiency Market Transformation through a portfolio of initiatives, emerging technology, and codes and standards development that enable energy efficiency to occur sooner, at lower costs, and in larger amounts than otherwise expected.

1.2 – Leverage end-use energy efficiency as a tool to deliver broader regional benefits such as load flexibility, emissions reductions, resource adequacy, resilience, and equity.

1.3 – Increase Northwest market leverage through collaboration and coordination with energy efficiency and Market Transformation organizations both inside and outside the Northwest.



Pictured: Residential triple-pane window (left) and Luminaire level lighting controls in office building (right).

Goal 2: Accelerate the Adoption of Grid-Enabled End-Use Technologies through Market Transformation

In Cycle 7, NEEA staff will explore opportunities for Market Transformation to support the region's ability to dynamically manage electric loads to maximize the efficient use of energy while advancing efficiency within these products. Specifically, NEEA will prioritize opportunities to 1) leverage existing market relationships and product development expertise to accelerate the integration of features that enable end-use flexibility, and 2) promote standardized protocols that enable products to communicate with other end uses and the grid. These end-use technologies and/or practices must integrate within the broader electric utility system operations. This will require understanding of, and collaboration with, electric utility system operations and systems.

KEY STRATEGIES

2.1 – Support regional load flexibility by enabling electric-grid communications and connectivity of energy-efficient products in NEEA's portfolio.

2.2 – Support regional need for electric load flexibility by undertaking projects that deliver load flexibility benefits in addition, or connected to, energy efficiency benefits (where load flexibility is the primary benefit, this work will be supported outside of NEEA's core funding).

2.3 – Advance industry-wide product standards and protocols that enable grid connectivity (e.g., open standards for in-home consumer products).

Pictured: Rheem heat pump water heater with EcoPort (CTA-2045 port) communications module.

Goal 3: Advance Strategies to Reduce Greenhouse Gas Emissions through Market Transformation

Energy efficiency will play an important role in helping the region achieve its emissions reductions goals. However, diverging policy drivers and decentralized approaches to decarbonizing the electric grid and natural gas system are creating uncertainty within the supply chain. Due to this uncertainty, some manufacturers are hesitant to invest significant dollars in product technologies, while others are investing in technologies that may or may not provide long-term value to a decarbonized system. Market Transformation offers a unique approach to support regional decarbonization goals and reduce market confusion by connecting the market to policy drivers and helping to align product development roadmaps with the anticipated regional needs of the future. NEEA will leverage its core competencies by 1) convening the region to bring multiple parties and perspectives together, 2) identifying and filling regional research and data gaps, and 3) working with market partners to accelerate the development and market adoption of low-carbon technologies and strategies.

KEY STRATEGIES

3.1 – Advance energy efficiency as a strategy for reducing greenhouse gas emissions by providing data and analysis on the greenhouse gas emissions reduction benefits of efficient products, services, and practices.

3.2 – Provide support to anticipate and address the implications of regional decarbonization-related policies, where they exist, in program planning and technology road maps.

3.3 – Support funders in meeting their decarbonization goals, where applicable, by undertaking projects that deliver decarbonization benefits in addition, or connected to, energy efficiency benefits. Where decarbonization is the primary benefit, this work will be funded outside of NEEA's core funding.

3.4 – Track and analyze how emerging electrified loads affect the energy system to inform and guide NEEA portfolio decision-making.

Pictured: Gas condensing rooftop unit, Post Falls, Idaho

Goal 4: Advance the Equitable Delivery of Energy Efficiency Benefits to Northwest Consumers through Market Transformation

NEEA's Market Transformation efforts often focus on bringing innovations to market by targeting early adopters – usually households and businesses with resources to invest in new, efficient technologies. And then when possible, locking in those savings for everyone through more efficient codes and standards. The Diffusion of Innovation theory predicts that as market share of an efficient technology grows it becomes more widely available and more affordable for all. However, it can take several years, if not decades, for everyone to directly experience those benefits. In Cycle 7, NEEA will undertake research to identify which customer segments are not directly benefiting from alliance Market Transformation activities, or benefiting much later. The alliance will also work with stakeholders and the market to identify and implement strategies to accelerate the equitable delivery of energy efficiency benefits to Northwest consumers.

GOAL 4 KEY STRATEGIES

4.1 – Undertake research to understand how diffusion takes place within different consumer segments around the region and opportunities for Market Transformation to accelerate equitable delivery of energy efficiency benefits to Northwest consumers.

4.2 – Identify and implement interventions that address shared regional priorities identified through research efforts.

4.3 – Support funders in meeting their goals by undertaking efforts to better understand or address barriers to efficiency for targeted consumer segments (where priorities are not shared across the region, this work will be funded outside of NEEA's core funding).

Monument, Ore.

Cycle 7

Guiding Principles

NEEA operates under a set of global principles, which will guide decision making and prioritization in the 2025-2029 business cycle.

Principles to Guide Value Delivery

These principles ensure that Northwest utilities and their customers are the primary beneficiaries of NEEA's work and that the value of that work is distributed equitably across the region:

- NEEA's primary customers are its funders – electric and natural gas utilities, Bonneville Power Administration, and the Energy Trust of Oregon – and the customers they serve. When NEEA works outside of the region, those activities will align with Northwest goals and deliver value back to the region.
- NEEA is responsible for delivering value fairly across the region. Though some opportunities may be of higher value to some utilities, in aggregate all funders receive proportionate value from NEEA's Market Transformation activities over the course of the business cycle.
- NEEA strives to benefit all Northwest electric and natural gas customers, including rural markets and markets east of the Cascades.

Principles to Guide Prioritization

These principles ensure that NEEA's activities in Cycle 7 align with regional priorities as identified and agreed upon by NEEA's Board of Directors through the strategic planning process. These principles apply both to work scoped in the Business Plan and new opportunities that arise during the business cycle, including both core and specially funded activities:

- NEEA's priority is delivering energy efficiency through Market Transformation to the region and its funders.
- NEEA's Board recognizes that energy efficiency delivers many dimensions of value to the region, including reducing peak demand, supporting grid resilience and reliability, and contributing to emissions reductions. NEEA may consider these secondary benefits of energy efficiency when prioritizing new opportunities for Cycle 7 core work.
- All of NEEA's work must have some connection to energy efficiency Market Transformation. However, those opportunities that primarily deliver benefits beyond energy efficiency, or do not have sufficient regional interest to be included in core funding, must be specially funded outside of the business plan.

NEEA's process for screening and reviewing new opportunities that arise during the business cycle is described in more detail in Appendix I.

Principles to Guide Implementation

These principles ensure that NEEA's Market Transformation activities are executed in collaboration and coordination with regional funders to ensure effective results:

- NEEA focuses on efforts that leverage market opportunities and/or reduce or remove market barriers to energy efficiency for sustained market change.

- NEEA works in markets that cross state and utility service territory boundaries and throughout the supply chain, engaging primarily with upstream and midstream market actors, to accelerate the market adoption of energy-efficient end-use technologies.
- NEEA pursues opportunities with clear Market Transformation potential that NEEA is uniquely positioned to leverage.
- NEEA seeks opportunities to collaborate with funders and other market actors to leverage resources, add complementary value and avoid duplication of effort.
- NEEA coordinates with utilities and funders, especially when they may be affected by NEEA's downstream research or engagement.
- NEEA does not seek to influence regional policy but tracks policy shifts to understand market impacts and may provide subject matter expertise to inform regional policymaking or research, if requested.
- NEEA will conduct regular third-party independent evaluations of programs to assess influence and market progress, and provide recommendations for adaptive management.

Principles to Guide Resource Allocation

These principles ensure that resources are allocated at the discretion of NEEA's Executive Director with appropriate oversight by NEEA's Board of Directors:

- NEEA's Executive Director is responsible for strategically allocating resources to deliver the highest value to the region.
- On an annual basis, NEEA's Board will approve annual budgets and activities through NEEA's Operations Planning process. In addition to providing annual Board oversight into resourcing decisions, this yearly planning process helps the alliance remain nimble as new opportunities emerge within the five-year business cycle.
- NEEA staff will maintain systems, process, records, and reporting protocols sufficient to demonstrate fiscal responsibility and effective risk management practices in all aspects of operations.
- As part of regular quarterly updates, the Executive Director will provide the Board with a summary of activities pending, in progress and completed under the approved annual Operations Plan.

Boise River, Idaho

2025–2029 NEEA Business Plan

More than 25 years ago, energy efficiency stakeholders from around the region established the Northwest Energy Efficiency Alliance (NEEA) in a coordinated effort to transform markets for energy efficiency. Working together, the alliance permanently removes market barriers to drive market change and accelerate the adoption of energy efficiency in Idaho, Montana, Oregon, and Washington. This collaboration has realized more than 879 average Megawatts (aMW) of co-created electric energy savings and 10 million Therms of natural gas savings through Market Transformation.

Bend, Ore.

Cycle 7

Introduction

NEEA is one of many organizations improving energy efficiency in the Northwest. However, the alliance maximizes return on investment by leveraging its unique regional role to deliver value in ways that complement local energy efficiency efforts. Specifically, NEEA creates a regional impact by:

Aggregating Market Influence

NEEA is the only alliance of both public and private utilities and energy efficiency organizations representing the entire Northwest—over 13 million energy consumers—to national and global market partners. This aggregation of market resources enables NEEA to influence supply chain decision-makers in ways that support regional goals and create permanent market change.

Lowering the Overall Costs of Efficiency

By working together and pooling their resources, NEEA's funders achieve economies of scale with their energy efficiency investment that lowers the overall regional cost of efficiency.

Mitigating Risk across the Region

NEEA's Market Transformation activities complement the efforts of its funders while mitigating individual risk to any one utility or organization.

NEEA leverages its unique role and core competency of Market Transformation to deliver a wide range of regional value on behalf of its funders. In the 2025–2029 business cycle (Cycle 7), those efforts will be guided by four strategic goals.

2025-2029 Strategic Goals

1. ***Transform Markets for Energy Efficiency.***
2. ***Accelerate the Adoption of Grid-Enabled End-Use Technologies through Market Transformation.***
3. ***Advance Strategies to Reduce Greenhouse Gas Emissions through Market Transformation.***
4. ***Advance the Equitable Delivery of Energy Efficiency Benefits to Northwest Consumers through Market Transformation.***

All four goals are interconnected and include overlap in activities. The Cycle 7 Business Plan highlights the rationale for these four goals and the strategies, objectives and associated funding proposed to progress against these goals.

Business Plan Environment

As described in NEEA's 2025–2029 Strategic Plan, the Northwest energy system is undergoing a period of accelerated change driven by a variety of forces, including intense policy pressure, extreme weather events and uncertain economic conditions. In NEEA's next business cycle, energy efficiency will remain critically important as a resource for consumers, businesses, and the region's energy system. At the same time, the value proposition of energy efficiency and the drivers for Market Transformation investment are increasingly diverging across the region. This business plan was created against the backdrop of these dynamics and takes into consideration a number of trends and drivers identified by NEEA's Board of Directors:

Growing Need for Energy Savings

Through its strategic planning process, NEEA's Board affirmed the continuing importance of energy efficiency to the region and recognized new and unprecedented pressures on the energy system and regional utilities. Rising energy costs, resource adequacy challenges and decarbonization policy goals all amplify the need for realizing as much near- and long-term energy efficiency as possible. In Cycle 7, NEEA will seek and prioritize opportunities to accelerate market adoption and increase the likelihood of near-term energy savings. At the same time, NEEA will continue to invest in emerging technologies to maintain a continuous pipeline of future energy efficiency opportunities.

Changing Value of Energy Efficiency

Traditionally, energy efficiency investment has been driven by the need to achieve regulatory targets, deliver customer solutions and as an input for resource planning. Increasingly, energy efficiency is being seen as an important buffer against extreme weather variability, a hedge against market uncertainty and a tool to support peak load reduction and resource adequacy. For some of NEEA's funders, these co-benefits of efficiency are becoming as important as the energy savings themselves. NEEA's Cycle 7 Strategic and Business Plans formalize NEEA's commitment to delivering these secondary benefits of efficiency.

Addressing the Imperative to Equitably Deliver Energy Efficiency Benefits to all Northwest Consumers through Market Transformation

The Diffusion of Innovation theory predicts that, as market share of an efficient technology grows, it will become more affordable and available for all. However, it can take several years, if not decades, for everyone to directly experience those benefits. In Cycle 7, NEEA will undertake research to identify which customer segments are not directly benefiting from alliance Market Transformation activities or are benefiting much later. The alliance will also work with stakeholders and the market to develop and implement strategies to accelerate the equitable delivery of energy efficiency benefits to all Northwest consumers.

Seattle, Wash

[1]Source: NEEA 2022 Annual Report.

NEEA's 2025-2029 Business Plan takes into consideration varying priorities across the region and identifies the need for more data collection and analysis. To address these needs, NEEA will:

- Work with the Board to understand the individual priorities of utilities and states, where they exist, as well as ongoing activities to execute on these priorities.
- Undertake research and outreach to understand which consumer segments are or are not directly benefiting from NEEA's Market Transformation interventions, and why.
- Establish goals and success metrics for the business cycle, as well as a definition of the consumer segments NEEA is targeting.
- Identify ways to accelerate the delivery of Market Transformation benefits across targeted consumer segments.
- Conduct an assessment that outlines potential opportunities to guide the Board in decision-making around further activity, and whether this is core or specially funded.
- Apply incremental, low-cost interventions that address shared regional priorities.

Desired outcomes include greater understanding of the customer segments that aren't directly benefiting from alliance activities or benefiting much later; strategies to accelerate the value delivery to those customers, along with goals and success metrics; Board alignment and approval of proposed activities; and more equitable delivery of benefits to Northwest consumers.

Need to Partner Outside the Northwest to Amplify Market Influence

NEEA is one of several organizations across the country working to accelerate the adoption of energy-efficient products and technologies.

Over the past 25 years, NEEA has built trusted relationships with these key stakeholders by working to complement the work of other organizations without duplicating efforts or causing market confusion. On behalf of the region, NEEA leverages these relationships to influence market dynamics, procure regional data and intelligence, and deliver value to the Northwest. As a growing number of other Market Transformation entities enter the market, NEEA can draw on its national leadership position to align work and priorities and deliver value to Northwest consumers by ensuring their needs and perspectives are represented.

National Partners

There are many organizations outside the Northwest that contribute to creating the market conditions necessary to advance energy efficiency in the region. These groups include retail, manufacturer, and distributor partners as well as many energy efficiency organizations, laboratories, and government agencies without whom this work would not be possible. Traditional collaborators have included American Council for an Energy-Efficient Economy (ACEEE), CSA Group, Consortium for Energy Efficiency (CEE), Department of Energy (DOE), Electric Power Research Institute (EPRI), ENERGY STAR, GTI Energy, Minnesota Center for Energy and Environment, Natural Resources Canada (NRCan) and New York State Energy Research Development Agency (NYSERDA) among others. The alliance also collaborates with utilities outside the Northwest in specific programs and on codes and standards activities.

Certainty of Future Uncertainty

NEEA's five-year business cycle provides the stability and investment predictability required for Market Transformation success. It also involves a degree of uncertainty, as market and industry conditions five to seven years in the future are difficult to predict. NEEA's Market Transformation approach was developed to manage this risk though an adaptive management operating philosophy. Adaptive management ensures NEEA remains nimble and able to pivot to respond to market dynamics or embrace new opportunities throughout the business cycle. NEEA employs a number of Board and stakeholder processes that support adaptive management by directing regional collaboration and coordination and providing Board oversight of annual budgets. These processes are described in more detail in Appendix I.

Inflationary Pressures

Since the most recent business planning process was completed in 2018, the consumer price index has increased by approximately 20 percent.[2] At the time of Cycle 7 business planning, forecasted inflation was expected to add another 8 percent by 2024, resulting in a loss of purchasing power of approximately 28 percent by January 2025. To recover some of its purchasing power, NEEA has factored a conservative estimate for inflation into the Cycle 7 budget (see Operations and Budget for more detail). NEEA recognizes the challenge for its funders to absorb these historic cost increases and has committed to finding efficiencies and leverage points to deliver upon the Cycle 7 Business Plan. If inflation continues to increase during the five years of Cycle 7, additional cost reductions and operational adjustments will be made to remain within the five-year fixed budget.


Butte, MT

[2]Source: U.S. Bureau of Labor Statistics.

NEEA's Market Transformation Approach

NEEA defines Market Transformation as "the strategic process of intervening in a market to create lasting change." By executing intervention strategies directed at overcoming market barriers, NEEA creates the market conditions to accelerate and sustain the adoption of emerging energy efficiency products, services, and practices over the long term. Over the last 25 years, NEEA's approach to implementing and evaluating Market Transformation programs has become a model for organizations across the country. This work is based on the following foundational principles:

Market Transformation is a Strategic Process

Market Transformation is built on the idea that markets are powerful forces for change that can be effectively influenced to accelerate adoption of energy-efficient innovations. It is a purposeful process, grounded in proven theories and more than 25 years of applied experience. NEEA's role as a Market Transformation organization is to leverage these forces to permanently change the structure of a market so that the supply and demand of an energy-efficient product is established, functioning and preferred.

Market Transformation Removes Barriers and Leverages Opportunities

NEEA's Market Transformation approach is distinguished by its deliberate focus on removing market barriers and leveraging market opportunities in competitive markets to create lasting market change. By removing market barriers, new products are made available and supported by strategies to increase awareness among potential buyers. This increased accessibility and awareness of more efficient products or services builds demand in the market, which in turn increases the adoption of the efficient product or service over time, continuing even after direct market interventions have stopped.

Market Transformation Creates Permanent Market Change.

NEEA's success is measured by its ability to remove specific barriers and create permanent change in the market. Technology and innovation have the potential to provide energy savings in the region, but the efficiency cannot be realized and sustained in the market without an accompanying change in the decisions and behavior of both supply- and demand-side market actors. Accordingly, NEEA's interventions must focus on market decision-makers, including:

- Influencing manufacturers to incorporate a different set of technologies or more efficient product features.
- Motivating distributors and retailers to stock a different assortment of products.
- Changing consumer purchasing habits to include more efficient products and services.
- Incorporating energy management into standard business practices.

Greater permanence of market changes, such as codes and standards favoring efficiency, also increases access to efficient options for communities or consumers that are often overlooked.

Market Transformation Workstreams

NEEA achieves Market Transformation through five key workstreams that it has honed over the past two and a half decades: **Emerging Technology, Market Strategy and Execution, Analytics, Research and Evaluation, Codes and Standards, and Convene and Collaborate.** Individually, each workstream has broad value to the region. Together, they deliver permanent market change leading to energy savings.

Emerging Technology

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

Pictured: High-efficiency heat recovery ventilator

Market Strategy and Execution

NEEA manages a diversified portfolio of Market Transformation initiatives to manage risk and volatility in the markets in which it intervenes. For each initiative, NEEA identifies market barriers to efficiency and then strategically intervenes to influence decision-makers throughout the supply chain, thereby removing those barriers. Examples include:

- Motivating distributors and retailers to stock a different assortment of products.
- Developing tools and resources to support contractors to sell, install and maintain efficient products.
- Connecting supply-chain activities with regional efforts to raise consumer awareness about more efficient products and services.

Ultimately, this work ensures that Northwest customers have greater access to efficient products at increasingly affordable prices, and market actors have opportunities for skills training and job creation.

Codes and Standards

Energy codes and equipment standards provide a unique and cost-effective opportunity to lock in energy savings. NEEA works with state-level and national stakeholders, providing data, research and product performance information gathered through NEEA's other workstreams to advance codes and standards that are based on proven technologies and benefit the Northwest. Because they establish universal expectations that must be adopted by the market, codes and standards favoring efficiency are one of the most effective ways to ensure widespread adoption of efficiency measures and provide benefits to all Northwest consumers.

Analytics, Research and Evaluation

On behalf of the region, NEEA identifies, collects, analyzes and disseminates data, information and insight to assist decision-making and advance and report the progress value created by Market Transformation. All of NEEA's Market Transformation programs are regularly evaluated by independent third parties to understand market influence and progress and inform approaches to adaptive management. NEEA's data and analytics expertise drives Market Transformation success and provides the region with insights and information unavailable from other sources to inform NEEA's and the region's energy efficiency efforts. Additionally, NEEA collects market data at a regional stock level to inform market strategies, assess progress and provide validation of data used for reporting energy efficiency value metrics.

Convene and Collaborate

NEEA regularly creates and communicates opportunities for regional energy efficiency stakeholders by convening the region to share information and best practices and align on regional priorities, including advisory and coordinating committees, the Leadership in Energy Efficiency Awards, and the annual Efficiency Exchange conference. These opportunities enable the region to move the market faster and more efficiently than any one organization could do alone.

Efficiency Exchange is the premier networking and learning conference for energy efficiency professionals from across the Northwest. Attendees from public and private utilities, consulting and research firms, government and non-profit organizations come together to learn and connect to help the region more effectively achieve its energy efficiency goals. In Cycle 7, NEEA will continue to host this annual event in partnership with Bonneville Power Administration and the Northwest Power and Conservation Council.

Spokane, WA

Strategic Markets

Through the Cycle 6 business planning process, NEEA identified the potential for growth across multiple cross-sector product groups and then reorganized its natural gas and electric portfolios to align with those opportunities. Working in cross-sector product groups allows NEEA to leverage relationships, data, infrastructure and other assets to support multiple programs and to use resources more flexibly and efficiently. This structure also creates efficiencies for NEEA's work with the supply chain, in which products and delivery channels often cross multiple sectors. In Cycle 7, NEEA will continue to operate in as many as six[3] cross-sector product groups: building envelope, consumer products, HVAC, lighting, motor-driven systems, and water heating. In addition, NEEA will support two infrastructure programs: BetterBricks and Integrated Design Labs.

NEEA Product Groups

The Building Envelope Product Group includes the supply chain that manufactures, distributes and sells the materials that physically separate the interior and exterior of a building, and the end consumers who purchase them. High-Performance Windows is the one program in this Product Group. It is supported by both electric and natural gas funders.

The Consumer Products Product Group includes the supply chain that delivers consumer goods and services in high volume, including manufacturers, distributors, physical and online retailers, contractors and installers, and the end customers who purchase them. The Retail Products Portfolio (RPP) is the one electric program in this Product Group.

The HVAC Product Group includes the supply chain that manufactures, distributes, specifies, designs and installs commercial and residential HVAC products, and the end consumers who purchase them. High-Performance HVAC (HP HVAC) and Advanced Heat Pumps (AHP) are the two electric programs in this Product Group, while Efficient Rooftop Units (Efficient RTUs) is the one natural-gas-funded program.

The Lighting Product Group includes the supply chain that manufactures, distributes, specifies, designs and installs lighting products (e.g., lamps, ballasts, controls and fixtures), and the end consumers who purchase them. Luminaire Level Lighting Controls (LLLC) is the one electric program in this Product Group.

The Motor-driven Systems Product Group includes the supply chain that manufactures, distributes, specifies, designs and installs a variety of motor-driven systems (e.g., pumps, fans, compressed air systems and high-performance motors), and the decision-makers who influence the purchase of these products. Efficient Fans and Extended Motor Products (XMP) are the two electric programs in this Product Group.

The Water Heating Product Group includes the supply chain that manufactures, distributes (wholesale and retail), specifies, designs and installs electric and natural gas water heating systems (commercial and residential), and the end consumers who purchase them. Heat Pump Water Heaters (HPWH) is the one electric program in this Product Group. In Cycle 7, NEEA will leverage the relationships and resources developed through the natural gas Efficient Water Heating program to explore residential and commercial gas heat pump opportunities.

[3]New Construction was a stand-alone product group at the beginning of Cycle 6. Those activities have since been absorbed into the Codes and Standards workstream.

Enabling Infrastructure Programs

Product Groups are supported by enabling infrastructure programs that are leveraged by multiple programs to build relationships, support market engagement, and deliver further leverage for the region. NEEA manages two such infrastructure programs: BetterBricks and the Integrated Design Labs.

BetterBricks is a market engagement platform that provides resources and market knowledge to commercial building stakeholders in an efficient, coordinated and streamlined manner. BetterBricks supports multiple Market Transformation programs in the commercial building sector by supporting market relationships, providing tools and resources, and maintaining communications channels. BetterBricks launched in 1999 and represents a long-standing, trusted resource for building professionals, including building owners, property managers, buildings facilities staff, architects, designers, engineers and contractors.

Integrated Design Labs have a mission to transform the design, construction and operations of commercial, institutional and residential buildings to advance energy-efficient, high-performance and healthy buildings in the Northwest. Integrated Design Labs exist at several prominent universities in the Northwest, including Montana State University, the University of Idaho, the University of Oregon, the University of Washington, and Washington State University. These universities are critical partners to alliance programs by helping accelerate Market Transformation through research, technical assistance and education. Integrated Design Labs activities can be further leveraged to support local and regional efficiency programs in a variety of ways, including through case studies, training, testing and evaluating new technologies, and building awareness of new programs or technologies within the design community.

Happy Valley, Ore

Cycle 7

Electric Portfolio

After several years focused on portfolio diversification, NEEA is entering Cycle 7 with an electric portfolio that is broader and more balanced than the previous cycle. As a result, NEEA has a robust foundation for the future pipeline of energy savings, along with the flexibility to respond to varying market conditions, optimize regional energy savings and address peak capacity management needs.

Table 1 below outlines NEEA's starting electric portfolio for Cycle 7, organized by Product Group and Initiative Lifecycle phase (i.e., degree of maturity). Programs in Market Development will deliver the bulk of NEEA's energy savings in Cycle 7, alongside advancements in residential and commercial codes, and federal and state standards. Earlier stage opportunities – those in Concept or Program Development – will be considered for the portfolio if a viable Market Transformation opportunity is determined and in consultation with the region through NEEA's stakeholder advisory process.

Table 1: Cycle 7 Starting Portfolio of Electric Programs

	Initiative Lifecycle Phase			
Product Group	**Concept Development**	**Program Development**	**Market Development**	**Long-term Monitoring & Tracking**
Building Envelope		• High-Performance Windows (dual fuel)		
Consumer Products			• Retail Products Portfolio	
HVAC	• Next Generation Residential Heat Pumps • Rooftop Units with Heat Pumps		• High-Performance HVAC • Advanced Heat Pumps	• Ductless Heat Pumps • Manufactured Homes
Lighting			• Luminaire Level Lighting Controls	
Motor-Driven Systems	• Expansion to New Pump and Fan Applications • Efficient Motor-Drive Systems	• Efficient Fans	• Extended Motor Products (pumps)	
Water Heating	• Commercial/ Multifamily Central Heat Pump Water Heater • Residential Heat Pump Water Heaters for All Applications		• Heat Pump Water Heaters	

Portfolio Management Approach

NEEA uses a robust portfolio management approach to optimize the overall health and balance of its portfolio and evaluate new opportunities for Market Transformation development. Portfolio health is assessed by tracking indicators of success and identifiable risks that need to be monitored and/or managed. Portfolio balance, on the other hand, is determined by tracking the distribution of Market Transformation potential across a set of dimensions (e.g., time horizon, maturity and confidence level, geography and market type). This portfolio management approach provides visibility for decision-makers to ensure resources are focused on the right places to deliver the most optimized outcomes.

In Cycle 7, NEEA will use the following set of criteria to ensure the portfolio is healthy and provides balanced value delivery across the region:

Energy Savings – Both near- and long-term.

Overall Portfolio Composition – NEEA assesses portfolio dynamics, such as program maturity and market mix, to address areas in which imbalance may introduce risk and require action. These factors inform overall portfolio decision-making to ensure a continuous flow of value to the region, including energy savings for future business cycles.

Distribution of energy savings potential – NEEA tracks program savings potential across the region and works to ensure that the portfolio delivers proportionate value in all four Northwest states. It is NEEA's responsibility to maintain a portfolio that balances benefits fairly across the region.

Risk mitigation – NEEA pays attention to the total overall risk profile of the portfolio to ensure low or calculated exposure of regional funding. Risk is assessed based on a number of criteria, including the measurability of energy savings, anticipated ramp-up speed in the market (i.e., how long the market will take to transform), how much is known about the market and technology, and related costs and benefits of the transformation.

Peak Valuation – New in Cycle 7, NEEA will consider contribution to winter and summer peak as an additional balancing criterion to inform investment decisions and manage to the full spectrum of value potential for the region (for more information, see the Regional Value Delivery section).

Micro Heat Pumps – The Next Generation of Ductless

After years of product development and testing, manufacturers are beginning to sell micro heat pumps designed to heat and cool small spaces like individual rooms. These efficient products are similar in size to window air conditioners but offer both heating and cooling. Unlike ductless systems, they are designed for homeowners to purchase and install themselves, resulting in a much lower price point. In Cycle 7, NEEA will work with manufacturers and energy efficiency organizations to develop test methods and/or specifications for micro heat pumps that ENERGY STAR and DOE could consider for future updates. Staff will also explore the possibility of adding this product category into the upstream Retail Products Portfolio program to increase availability to consumers around the region.

Cycle 7 Key Activities by Workstream

Emerging Technology

NEEA routinely scans for, assesses, and reports on the potential for newly identified efficient products, services and practices. Once these opportunities are identified, NEEA works with manufacturers to encourage products that meet regional needs and truly save energy by conducting lab and field-testing and providing data to the Department of Energy to support test procedures and voluntary specifications. As a regional organization, NEEA focuses on opportunities that have broad benefits across the four Northwest states, including places that have unique barriers and opportunities for efficiency, such as rural markets and colder climates. Emerging technology activities include:

New Opportunity Scanning

NEEA scans the market for emerging energy efficiency opportunities, leveraging existing relationships with manufacturers, technology developers, utilities outside the Northwest, U.S. DOE labs, and other research and development entities. The alliance also welcomes unsolicited proposals through its website neea.org. Over the last 25 years, NEEA's emerging technology scanning process has identified significant energy-saving opportunities for the region, including heat pump water heaters, efficient televisions, and ductless heat pumps.

NEEA's scanning efforts typically include several dozen emerging opportunities across multiple Product Groups. Examples in Cycle 7 may include:

- Improving building efficiency through additional window and envelope measures beyond fenestration.
- Delivering the next level of energy efficiency to Northwest consumers through new or emerging consumer products.
- Increasing market adoption of heat pumps, including at the individual-room level, through approaches specifically tailored to the building stock in the Northwest.
- Delivering capacity, carbon and grid flexibility benefits in combination with HVAC efficiency.
- Optimizing motor-driven systems to maximize system-level efficiency.

For the first time in Cycle 7, NEEA will consider co-benefit metrics[4] (e.g., affordability, accessibility, peak reduction, grid flex and resilience) in its scanning process, providing increased visibility into the full range of value in the pipeline.

Product Management

Once technologies are identified and prioritized, the alliance works to translate those opportunities into a product or measure that can be promoted through Market Transformation and/or utility programs. 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.
- Collaborating with manufacturers.

Gaps in product performance are shared with manufacturers to encourage products that more readily meet Northwest needs. The outcome of this process can either be a new concept readied for NEEA's portfolio, or new product categories or target markets within existing programs.

[4] The Regional Emerging Technology Advisory Committee is currently developing a list of grid benefit metrics that will be tracked for each product in NEEA's pipeline.

Regional Coordination

At the regional level, NEEA tracks ongoing emerging technology activities and identifies gaps in coordination with the Regional Emerging Technology Advisory Committee (RETAC). In Cycle 7, NEEA will continue to coordinate regional emerging technology research with RETAC on a quarterly basis and convene Product Council meetings to disseminate research findings and technology innovations.

Key Assumptions

- Technology innovations offer continuing and significant energy-saving potential; this potential will be amplified in Cycle 7 by anticipated federal and private investment in clean energy technologies.
- Future energy-saving opportunities will derive from increasingly complex systems, rather than discrete product options, which will challenge conventional lab- and field-testing approaches.
- Increasing interest in Market Transformation from outside the Northwest presents new opportunities to increase NEEA's market leverage, while also introducing potential challenges to maintaining the market's focus on Northwest priorities.

Pictured: Outdoor heat pump unit installation.

Cycle 7 Focus Areas

- Maintaining and deepening relationships with standard-setting organizations to develop and validate test protocols so they accurately reflect real-world conditions and energy savings.
- Leveraging and expanding relationships with manufacturers to ensure products meet the unique needs of all Northwest consumers.
- Assessing opportunities for system-level efficiency to unlock energy savings from the optimized interaction of discrete products (e.g., networked lighting and building controls leveraged for HVAC, plug loads and other process loads).
- Scanning for opportunities to deliver capacity, carbon, and grid flexibility benefits in combination with efficiency.

Passing the Test for Heat Pump Efficiency

Heat pumps now dominate the market for electrically conditioned homes, far outpacing electric resistance and electric forced air furnace sales in both new construction and retrofits. With increases in federal and utility incentives, code and legislative activity, and heightened consumer interest, these trends are expected to continue. As heat pump adoption accelerates, NEEA will focus on shifting the market toward more efficient products through accurate testing, rating and labeling of systems. After federal rules established a new energy conservation standard for heat pumps in 2017, NEEA helped to lead the development of a new load-based test procedure (CSA SPE07:23) to better predict real-world performance. In Cycle 7, NEEA will leverage the new test procedure to identify opportunities for product efficiency improvements and ensure clear and accurate differentiation of higher-efficiency products.

Market Strategy and Execution

Once a new energy efficiency opportunity is identified and proven to deliver reliable energy savings, NEEA develops and implements Market Transformation initiatives at a scale designed to accelerate adoption of these new opportunities. For each initiative, NEEA identifies market barriers to adoption and then strategically intervenes to remove those barriers and influence decision-makers throughout the supply chain. Ultimately, this work ensures that 1) Northwest customers have greater access to efficient products at increasingly affordable prices, and 2) market actors have opportunities for skills training and job creation. Market Strategy and Execution activities include market strategy development, program management, market channel development and marketing.

Knocking Down Barriers to Efficiency

Marketing is a key tool in removing barriers and capitalizing on opportunities to accelerate the adoption of energy-efficient products and practices. Marketing addresses a variety of barriers, including supply chain readiness, product availability and consumer awareness. For example, "Boring but Efficient" was a regionwide alliance marketing campaign designed to engage both rural and urban consumers and increase their awareness of heat pump water heaters. Through digital adds targeting consumers across Idaho, Montana, Oregon and Washington, the campaign increased rural awareness of HPWHs in the targeted areas by approximately 20%.

Key Assumptions

- Efficiency opportunities are becoming increasingly integrated and complex, which requires more holistic market interventions and measurement approaches.
- Increasing state and federal policy drivers (e.g., federal infrastructure spending) offer important leverage opportunities for Market Transformation and will require increased coordination and alignment.
- Increasing interest in Market Transformation from outside the Northwest presents new opportunities to increase NEEA's market leverage, while also introducing potential challenges to maintaining the market's focus on Northwest priorities.

Cycle 7 Focus Areas

Maximize near-term market progress and savings potential by:

- Carrying forward current Market Transformation initiatives, while increasing investment in several Product Groups to take advantage of substantial energy efficiency opportunities and potential peak-reduction benefits.
- Amplifying alliance investments by collaborating with regional and national partners to build scale, increase alignment and generate market momentum (e.g., leveraging the growing momentum around heat pumps and indoor air quality to advance HVAC efficiency).
- Strategically expanding engagement in faster-moving, higher-volume markets to accelerate market change leading to near-term savings opportunities (e.g., engaging influential manufacturers, distributors and trade associations to demonstrate product performance of smart pumps and address market barriers to adoption).
- Supporting regional programs through continued investment in critical market infrastructure programs like BetterBricks and the Integrated Design Lab network.

Develop new programs to continue a robust portfolio and a secure energy efficiency pipeline of future savings by:

- Introducing up to two new electric Market Transformation programs and assessing new opportunities with portfolio balancing criteria, including energy savings, peak valuation, portfolio composition and regional distribution of value.
- Evaluating new opportunities on an ongoing basis through NEEA's portfolio management, advisory committee and annual operations planning processes.

Prioritize peak demand savings as a secondary priority to energy efficiency within the portfolio by:

- Advancing energy-efficient technologies that have a secondary ability to modify the demand the 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.
- Providing additive value to existing energy-efficiency-focused Market Transformation efforts by working with market actors to make necessary changes to enable those efficient products to serve as flexible demand resources.

Support sub-regional needs to ensure value is delivered fairly across the region by:

- Addressing the needs of stakeholders in all four states and in both rural and urban settings through a mix of regionwide and limited geographic activities.
- Continuing to identify and support sub-regional needs that align with NEEA's regional Market Transformation objectives. For example, focusing on remaining barriers to heat pump water heater market acceptance and challenging market segments, including those in cold climates.
- Implementing strategies that have a local impact, recognizing that Market Transformation will progress at different rates around the region, depending on economic, geographic, and demographic conditions, as well as the availability of local programs. For example, NEEA may remain engaged in a market that has been slower to transform in one state, while exiting the same market in other parts of the region. Or NEEA may target geographically specific market barriers in a state or location that aren't experienced across the region. These activities are balanced annually through NEEA's annual operations planning process.

Identifying and engaging in incremental market interventions to address shared regional priorities to ensure NEEA's Market Transformation benefits are equitably distributed to Northwest consumers by:

- Undertaking research and outreach to understand which consumer segments are/ are not benefiting from NEEA's Market Transformation interventions and why. Within its portfolio of Market Transformation programs, NEEA will use this research to identify ways to achieve Market Transformation benefits across more consumer segments and apply incremental, low-cost interventions that address shared regional priorities.

Accelerating Market Change and Near-term Savings Potential

Motors use about half of the electricity in the U.S. and account for 30% of the total electric load in the region. Adding smart controls to variable-speed motor-driven systems (e.g., pumps, fans and compressors) represents a significant energy-savings opportunity for the region. To capture these savings, NEEA will expand applications of motor systems within its pump and fan programs in Cycle 7, and potentially add a new program for variable-speed drives to increase energy iency for existing single-speed pumps, motors and fans.

Codes and Standards

Energy codes and equipment standards provide a unique and cost-effective opportunity to lock in energy savings. NEEA works with state-level and national stakeholders, bringing together data, research and product performance information gathered through NEEA's other workstreams, including the development of voluntary specifications, and then leveraging that work to advance codes and standards based on proven technologies that benefit the Northwest. Because they establish universal expectations that must be adopted by the market, codes and standards favoring efficiency are one the most effective ways to ensure widespread adoption of efficiency measures and provide benefits to all Northwest consumers.

Codes

Customized to meet the unique needs and processes followed by each state, NEEA's holistic support of regional and national code stakeholders includes:

- Developing energy code proposals within states and for the International Code Council.
- Analyzing proposals for state benefits.
- Supporting code implementation through training, education and technical assistance in each state.
- Measuring compliance and market challenges.
- Working to remove barriers to implementation.

Standards

Appliance and equipment standards specify the minimum energy efficiency levels of specific products, including major home appliances (e.g., clothes washers and water heaters), commercial and industrial equipment, and HVAC equipment (e.g., gas furnaces). Equipment standards are set by the U.S. DOE through a public rulemaking process. These standards cover products that consume nearly 90 percent of residential energy, 60 percent of commercial energy and 30 percent of industrial energy. Members of NEEA staff serve as technical experts in the U.S. DOE's rulemaking process, including by:

- Developing and validating updated test methods that better align with real-world conditions in the Northwest.
- Collecting performance and adoption data for products sold in the region.
- Sharing data, analysis and suggestions as part of the public process for updating standards.
- Helping the market prepare for updated standards.

This work is done in close coordination with NEEA's Market Transformation programs and other efficiency organizations around the country.

New Construction

NEEA will continue to monitor and engage the new construction industry to ready the market and to validate viable technologies for code proposals.

Coordination

NEEA will continue to coordinate with efficiency organizations within and outside the region to ensure alignment on priority products and code improvement proposals.

Key Assumptions

- Codes and standards will continue to be one the most effective ways to ensure widespread adoption of efficiency measures and provide significant benefits to consumers.

- Diverging federal and state decarbonization policies are creating different environments for efficiency in codes and new construction throughout the region. NEEA will continue to prepare the market for increases in codes and standards.

Cycle 7 Focus Areas

- Leveraging data collected through Market Transformation programs and market research to encourage the development of effective codes and standards.
- Influencing the development and support of successful implementation of building energy codes in each of the four Northwest states.
- Informing development of voluntary specifications, and then leveraging those specifications to influence development of federal standards.
- Coordinating with standard-setting organizations, utilities and manufacturers to move toward common specifications for demand-response communications protocols or command structures for technologies within NEEA's energy efficiency portfolio.

Influencing Energy Codes

Advancing building energy codes is one of the most impactful ways to permanently lock-in energy savings. However, the process can be time-consuming and requires a great deal of subject matter expertise, which NEEA provides. For example, NEEA submitted 25 residential and 51 commercial code change proposals as part of the public process for the 2021 Washington State Energy Code (which took effect in 2023). Staff also participated in both the commercial and residential technical advisory group that reviewed and voted on all proposals. An independent analysis of the completed code indicated that the residential 2021 WSEC will be 30% more efficient than 2018 WSEC, and the commercial 2021 WSEC will increase efficiency by 24%.

Lewiston, Idaho

Analytics, Research and Evaluation

On behalf of the region, NEEA identifies, collects, analyzes and disseminates data, information and insight to assist decision-making and advance and report the progress value created by Market Transformation. All of NEEA's Market Transformation programs are regularly evaluated by independent third parties to understand market influence and progress and inform approaches to adaptive management. NEEA's data and analytics expertise drives Market Transformation success and provides the region with insights and information unavailable from other sources to inform NEEA's and the region's energy efficiency efforts. Additionally, NEEA collects market data at a regional stock level to inform market strategies, assess progress and provide validation of data used for reporting energy efficiency value metrics.

Key Assumptions

- As the number and complexity of programs increases in Cycle 7, the need for ARE will grow commensurately.
- Regional studies will become more expensive to implement as recruiting and the in-situ collection of data becomes more difficult and complex.
- As building systems become more complex and integrated systems become harder to measure, more frequent and targeted data-gathering efforts will need to supplement large-scale regional studies and sales data.
- The depth and number of codes requiring evaluation will increase in complexity.

Focus Areas by Function

Market Research and Evaluation

To measure market progress and influence over more than 25 years, NEEA has developed and continually refined an approach to evaluating Market Transformation that is grounded in best practices. NEEA conducts its evaluation and market research activities in a transparent manner, with all evaluations available to the public on neea.org. Methodologies are reviewed with the Cost Effectiveness and Evaluation Advisory Committee. Key Cycle 7 activities include:

- Regular, independent, third-party evaluations of market progress of programs and influence, as well as identification of areas for adaptive management.
- Market characterization efforts to inform program opportunity and/or strategy.
- Independent baseline estimates of market conditions and insight to inform baseline forecasts of the adoption of energy-efficient products, services and practices.
- Regular review of pivotal assumptions used in cost-benefit analyses and energy-savings reporting.
- Regional research to support shared goals include:
    - Mid-cycle review of learnings gleaned from research and data-gathering to understand how Market Transformation can better deliver equitable energy efficiency opportunities across the region.
    - Small-scale inventory of ongoing efforts across the region to identify and support communities that have a high energy burden, or who may not have traditionally benefited from efficiency programs.

Data Planning & Market Analysis

NEEA's Data, Planning and Market Analysis team is responsible for the full lifecycle of data-driven decision-making and management at NEEA. This work includes:

- Creating data strategies.
- Acquiring and managing datasets.
- Deriving analysis and insights that guide Market Transformation.
- Forecasting and tracking of key performance metrics, such as energy savings, capacity reductions and cost effectiveness values.

Specific key activities and deliverables of the team include:

- Translating program strategies into quantitative market models that enable forecasting and tracking of energy savings and the adoption of energy-efficient technologies, practices and/or behaviors.
- Developing naturally occurring baseline market adoption forecasts of energy efficiency practices and technologies to assess and report the incremental impacts of Market Transformation.
- Analyzing technology reports and market studies to develop unit-energy-savings values that represent market applications and factors (such as climate zone) across the region.
- Analyzing market data to inform program strategies by understanding trends in various market segments.
- Leading market data collection activities, including the collection of utility program data, to enable market tracking and calculation of energy-savings results.
- Reporting energy savings results to NEEA funders to support their individual regulatory reporting needs. This includes detailed documentation of all data sources, analysis methods and key assumptions for each measure in the portfolio to support market tracking and reporting.
- Collaborating with the Northwest Power and Conservation Council and Regional Technical Forum with data and insights to inform measure development, market-level efficiency mix assessments and reporting against the Power Plan.
- Continuing to build understanding to develop methods to inform peak valuation at a local level across the region.

NEEA recognizes that the data accessible through strong market relationships is critical to the success of many facets of NEEA. This data is often sensitive or confidential, so NEEA follows strict data security requirements to ensure all data provided by funders and market partners is securely housed and managed.

Pictured: Triple-pane window installation

Regional Stock Assessments

NEEA's stock assessments, conducted roughly every five years, support the region's diverse building characteristic and energy consumption data needs. Building characteristic information is collected on site by trained engineers to ensure accuracy. The data gathered is used to uncover, measure, track and plan for new opportunities in NEEA's Market Transformation portfolio and utility energy efficiency programs. It is also a key source of information for the Power Council's five-year Power Plan and the Regional Technical Forum's energy efficiency measures. In addition, the data is used by electric and natural gas utilities to inform their conservation potential assessments and integrated resource plans.

NEEA is planning the following stock assessment studies for Cycle 7:

- **Residential Building Stock Assessment (RBSA)**
  This study will collect building-characteristic and energy-consumption data for a representative sample of single-family buildings and multifamily tenant units in the region. It will be designed to provide analytical results by state and climate zone and may include an optional oversampling of key demographic groups to support the region's efforts to understand which consumer segments are, or are not, directly benefiting from NEEA's Market Transformation interventions and why.

- **Commercial Building Stock Assessment (CBSA)**
  This study will collect building characteristic and energy consumption data for a representative sample of commercial buildings in the region. Mid- and high-rise multifamily buildings will be included in this study to complement the tenant-unit data collected in the RBSA with multifamily building-level data. The budget for this work includes the completion of the CBSA scheduled to begin in 2023 and finish in 2026, in addition to a second CBSA scheduled to begin in 2028 and finish in Cycle 8.

- **Motor-driven Systems Stock Assessment (MDSSA)**
  This study will collect motor characteristic data on stand-alone motor-driven equipment in a representative sample of commercial and industrial facilities. This data has not been collected in the region since 2000.

Key Assumptions

Existing residential electric end-use data is three decades old and increasingly inaccurate, while very little commercial electricity end-use data exists at all. Once collected, EULR data can play a unique role in:

- Helping to design and deliver improved energy efficiency programs to electricity customers.
- Designing programs to reduce electricity use at times of peak demand.
- Improving electricity demand forecasting.
- Increasing the accuracy of electric utility price-setting and financial planning.
- Tailoring utility investments in electric generation, transmission and distribution assets.

Key Cycle 7 Activities

- Maintaining customized metering equipment, communications equipment and sensors to meter key end-uses by circuit in 400 homes and 70 commercial buildings across the Northwest.
- Performing quality assurance and quality control of the data transmitted by cellular connections.
- Delivering secure one-minute end-use data to funders through the cloud and 15-minute data to the public through the NEEA website.
- Analyzing the data for insights on energy efficiency program design, demand response,

load forecasting, integrated resource planning, as well as additional utility operational concerns, including generation, transmission, distribution and energy storage.

Specially Funded Project: End-Use Load Research

The Northwest End-Use Load Research (EULR) project is a regional research project designed to measure accurate load profiles for electric end-use equipment in homes and businesses. Specially funded by a subset of NEEA funders and interested stakeholders, the project is continuously collecting energy use data in 1- and 15-minute intervals. Detailed energy information of this scope and accuracy has not been collected since the End-Use Load and Consumer Assessment Program (ELCAP), which was completed in 1990.

Recognizing the need for up-to-date energy use data, the alliance brought together a working group of utilities and energy efficiency organizations in 2016 to launch the EULR project, which is managed by NEEA's Analytics, Research and Evaluation team. Although Covid presented challenges to the project and significantly delayed metering installations, all metering installations for 400 homes and 70 commercial buildings will be completed by May 2023. Monitoring is scheduled to continue for two more years, wrapping up by mid-way through the business cycle.

Convene and Collaborate

NEEA regularly creates and communicates opportunities for regional energy efficiency stakeholders to share information and best practices and align on regional priorities. These activities enable the region to move the market faster and more efficiently than any one organization could do alone.

Key Assumptions

- Regional collaboration not only brings value to funders and stakeholders, but it is also required to drive Market Transformation success. NEEA will continue to facilitate this collaboration through formal and informal channels including workgroups, advisory committees and board committees.

- Diverging funder needs, combined with the pace of change for the regional energy system, is increasing the need for NEEA to stay closer and more connected with its funders and stakeholders.

- There is a growing need for regional collaboration between natural gas and electric utilities to address shared goals and challenges. As a dual-fuel organization representing the entire region, NEEA is uniquely positioned to facilitate this need.

- Market partners and supply chain actors must understand the alliance and the value it brings them for successful execution of market transformation programs.

- Interest in Market Transformation outside the Northwest and increased federal funding for energy efficiency will result in a greater need for NEEA to coordinate with national and state-level energy efficiency stakeholders.

Cycle 7 Focus Areas

Facilitation of Board of Director, Committee, and workgroup meetings that:

- Foster regional input and conversations that drive the alliance's work in ways that complement funder and NEEA programs.
- Support collaboration between market actors, researchers, funders and industry leaders to understand technology and market trends, opportunities and barriers, as well as to advance energy efficiency opportunities.

Funder account management that:

- Understands and convenes discussion on funder and regional perspectives on alliance initiatives.
- Ensures funder perspectives are represented throughout every stage of the Initiative Lifecycle Process.
- Empowers funders with the information and resources needed to collaborate effectively in alliance work.

Corporate Communications efforts that:

- Increase supply-chain understanding of NEEA's value proposition to the market through NEEA's corporate website, program communications materials and other strategic communications.
- Support Market Transformation programs through recognition and celebration of market partner successes and participation in alliance programs.

Corporate Strategy efforts that:

- Chart the strategic direction for NEEA, in coordination with NEEA's Board of Directors.
- Align the organization around corporate goals.
- Lead enterprise-wide planning initiatives, including NEEA's five-year Strategic and Business Plans, as well as its annual operations planning process.
- Track and communicate developments in regional and national energy policy.

Regional events, including:

- The annual Efficiency Exchange conference that provides a forum for knowledge-sharing and networking to help regional energy efficiency professionals achieve their goals. In Cycle 7, NEEA will continue to host this annual event in partnership with Bonneville Power Administration and the Northwest Power and Conservation Council.
- The Leadership in Energy Efficiency Awards that recognize excellence in energy efficiency innovation and collaboration.

Natural Gas Portfolio

In 2015, the alliance began its first regional natural gas Market Transformation effort. At the time, NEEA adopted a strategy that focused on implementing a small portfolio of initiatives, which was designed to allow the region to gain experience working on natural gas Market Transformation and minimize major organizational changes. These efforts have built solid foundation for energy efficiency Market Transformation by demonstrating significant progress in product development and market characterization and forging critical relationships within the region and with extra-regional partners.

Natural gas energy efficiency work in the region is currently undergoing a time of high uncertainty driven by:

- Policy and code changes that limit the market for natural gas products.
- Delayed commercialization timelines for highly efficient residential gas heat pump products.
- An emerging interest in dual-fuel heat pump technologies that provide both opportunity and measurement challenges for the region's utilities.

To hedge against this uncertainty and reduce risk for natural gas funders, NEEA's Cycle 7 Business Plan presents a natural gas portfolio that is both diverse and flexible. It is designed to maximize the likelihood of success by advancing multiple product areas at once and allow NEEA to pursue the most promising areas that unfold during the cycle.

Alliance Natural Gas Value Proposition

Natural gas Market Transformation initiatives contribute to affordable and reliable energy solutions that support regional resource adequacy and decarbonization goals. NEEA's natural gas activities deliver value to the region by:

- Promoting the adoption of highly efficient gas technologies (e.g., gas heat pumps) that support decarbonization efforts.
- Advancing dual-fuel technologies (e.g., rooftop HVAC) to increase natural gas efficiency while serving as a peaking resource and providing support for resource adequacy challenges on the electric grid.
- Developing efficiency solutions for end-uses and market segments that are least likely or slower to electrify.
- Advancing efficient envelope measures that deliver energy savings across all fuel choices.
- Convening regional stakeholders who work with both gas and electric products (i.e., utilities and market actors) to collaborate and address shared goals.
- Leveraging co-investments from outside the region.

Portfolio Overview

NEEA began Cycle 6 (2020–2024) with a nascent natural gas portfolio primarily focused on emerging technology work and early program development (energy savings were primarily derived from advances in energy codes). As a result of NEEA's efforts to identify commercialized technologies and advance new programs into the pipeline, the alliance enters Cycle 7 with a greater understanding of both where the opportunities for natural gas efficiency lie, and the best strategies to engage and invest in the market.

In Cycle 7, NEEA's gas portfolio will be managed with two related goals: 1) maximize near-to-medium term energy savings, and 2) maintain the flexibility to strategically advance products with the highest likelihood for achieving significant savings. NEEA's Market Transformation efforts will be concentrated in three focus areas: gas heat pumps, dual-fuel and fuel-neutral products, and gas equipment.

Gas Heat Pumps

Gas heat pumps offer enormous regional energy savings potential for both space and water heating equipment, with the potential to improve efficiency by up to 50% over existing equipment. In Cycle 7, NEEA's gas heat pump work will build on investments made during the previous two business cycles (e.g., in water heating and combi systems) and expand into new technology categories, including residential and commercial heat pumps. This work will be highly leveraged with investment from partners from outside the region to reduce costs and mitigate risk to alliance funders.

Dual-fuel and Fuel-neutral Products

In Cycle 7, NEEA will advance technologies that contribute to both electric and natural gas energy savings or use both gas and electric fuels, for example high-performance windows or dual-fuel HVAC. These products and systems have significant non-energy benefits that potentially include decarbonization and winter-peak reduction.

Table 2: Cycle 7 Starting Portfolio of Natural Gas Programs

	Initiative Lifecycle Phase			
Product Group	**Concept Development**	**Program Development**	**Market Development**	**Long-term Monitoring & Tracking**
Building Envelope		• High-Performance Windows (dual fuel)		
Consumer Products	• Efficient Commercial Gas Dryers • Hearths			
HVAC	• Residential Gas Heat Pumps • Rooftop Units with Heat Pumps (dual-fuel)	• Commercial Gas Heat Pumps* • Dual-fuel HVAC*	• Efficient Rooftop Units	
Water Heating	• Residential Gas Heat Pump Water Heaters	• Commercial Gas Heat Pumps*		

** Pending advancement decisions expected in Cycle 6.*

Gas Equipment

This category of work includes the current Efficient Rooftop Unit program, as well as potential new programs advancing efficient gas technologies that do not include gas heat pumps or use both electric and gas as fuels (e.g., commercial dryers or hearths). NEEA's efforts will be directed toward products that have the highest market potential; impacts of electrification policies and market drivers will be taken into consideration.

Cycle 7 Key Activities by Workstream

Emerging Technology

NEEA routinely scans the market for emerging energy-efficient products and practices. Once these opportunities are identified, NEEA works with manufacturers to support the development of products that meet Northwest needs and save energy. This often involves conducting lab- and field-testing and providing data to the U.S. DOE to support test procedures and voluntary specifications. As a regional organization, NEEA focuses on opportunities that have broad benefits across the four Northwest states, including areas that have unique barriers and opportunities for efficiency, such as rural markets and colder climates. By working together and aggregating investment, NEEA's funders and stakeholders share both the cost and the risks associated with this technology development.

Key activities in Cycle 7 include:

New Opportunity Scanning

NEEA scans the market for emerging energy efficiency opportunities, leveraging existing relationships with manufacturers, technology developers, U.S. DOE labs and other research and development entities. In Cycle 7, NEEA's scanning efforts will focus on technologies that are commercially available or will be available within the business cycle and can contribute toward near-term energy savings. These efforts will be supported by NEEA's continued participation in the GTI Energy's Emerging Technology Program.

Product Management

Once technologies are identified and prioritized, the alliance works to translate them into a product or measure that can be promoted through alliance and/or utility programs and activities, tracked in the market, evaluated for energy savings and leveraged to meet the region's goals.

Gaps in product performance are shared with manufacturers to encourage product updates resulting in products that more readily meet Northwest needs. Ongoing product management efforts include:

- 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.
- Collaborating with manufacturers.

The outcome of this process can either be new concepts readied for NEEA's portfolio, or the definition of new product categories or target markets within existing programs.

Regional Coordination

NEEA tracks regional emerging technology activities and gaps in coordination with the Regional Emerging Technology Advisory Committee (RETAC). In Cycle 7, NEEA will continue to coordinate regional emerging technology research with RETAC on a quarterly basis and convene Product Council meetings to disseminate research findings and technology innovations.

Key Assumptions

- Emerging technology scanning will primarily focus on available or soon-to-be available technologies that would come to market within Cycle 7, rather than opportunities with a longer time horizon for commercialization.
- Significant co-funding from extra-regional partners will continue be leveraged in Cycle 7 to accelerate natural gas efficiency.

Cycle 7 Focus Areas

- Scanning the market for additional window and envelope measures beyond fenestration.
- Coordinating with GTI Energy's Emerging Technology Program to identify technologies with potential for the Northwest market (both utility and Market Transformation programs).
- Partnering with technology providers and manufacturers on emerging gas heat pump products for space and water heating (both residential and commercial applications).
- Scanning for opportunities to deliver decarbonization benefits in combination with efficiency.
- Developing dual-fuel heating products and program approaches that provide grid flexibility, resiliency, and energy savings.

Market Strategy and Execution

Once a new energy efficiency opportunity is identified and proven to deliver reliable energy savings, NEEA develops and implements Market Transformation initiatives at a scale designed to accelerate adoption. For each initiative, NEEA identifies market barriers to adoption and then strategically intervenes to remove those barriers and influence decision-makers throughout the supply chain. Ultimately, this work ensures that 1) Northwest customers have greater access to efficient products at increasingly affordable prices, and 2) market actors have opportunities for skills training and job creation. Market Strategy and Execution activities include market strategy development, program management, market channel development and marketing.

In Cycle 7, NEEA will adaptively manage the natural gas portfolio, balancing incremental progress in all three focus areas (i.e., gas heat pumps, dual-fuel and fuel-neutral technologies, and gas equipment) with accelerated Market Transformation concentrated in just one or two areas. Priority for these opportunities will be determined by market conditions and technology development timelines.

Key Assumptions

- State policy will continue to support investment in natural gas efficiency efforts.
- NEEA will partner extra-regionally to accelerate natural gas Market Transformation where possible. For example, NEEA is partnering with Market Transformation Administrators outside the region to align efforts on dual-fuel-efficient rooftop units. These collective efforts will accelerate the value delivery to the Northwest while reducing costs through economies of scale.

- Electric and natural gas funders will continue to share the cost of fuel-neutral initiatives and regional research.
- Portfolio trade-offs will be required to pursue multiple opportunities should they arise simultaneously during the business cycle.

Cycle 7 Focus Areas

NEEA's overarching objective for its natural gas portfolio is to remain flexible and adaptable in an evolving natural gas market. How NEEA balances investment decisions between the three focus areas (gas heat pumps, dual-fuel and fuel-neutral products, and gas equipment) will be determined by market conditions and made in coordination with NEEA's Natural Gas Advisory Committee and the Natural Gas Committee of the NEEA Board.

Gas Heat Pumps

Since 2015, NEEA's gas heat pump efforts have focused on water heaters and combination space- and water-heating systems driven by a gas heat pump. This work supported the creation of the North American Gas Heat Pump Collaborative, which is composed of gas utilities from across the country working together to swiftly advance the market introduction and adoption of gas heat pump technology. NEEA's participation in the Collaborative leverages Northwest investment in heat pumps to move the market further and faster than the region could do alone.

In Cycle 7, NEEA will leverage regional investments made during previous business cycles to accelerate the commercialization of gas heat pumps and scale their adoption. To increase the likelihood for near-term energy savings, NEEA will expand its focus beyond residential water heating to all gas heat pump types and applications, including residential and commercial HVAC and commercial water heating.

Dual-fuel and Fuel-Neutral Products

Utilities and other stakeholders in the region have highlighted the strategic importance of fuel-neutral and dual-fuel solutions that deliver efficiency to both the gas and electric systems, and potentially support load balancing. These solutions support key energy system challenges by mitigating or slowing electric system peak load growth, improving energy system efficiency, reducing greenhouse gas emissions and providing options for customers.

Gas Equipment

Highly efficient natural gas equipment has the potential to deliver a consistent stream of energy savings across a diverse set of applications and sectors. Gas product efficiency can also help address gas system capacity issues, contribute to carbon emissions reduction goals and enhance system flexibility. This focus area includes NEEA's current Efficient Rooftop Unit program and potential new programs, such as commercial dryers or hearths. NEEA's efforts will be directed toward products that have the highest market potential; impacts of electrification policies and market drivers will be taken into consideration.

Pictured: Gas rooftop unit

Codes and Standards

Typically, energy codes and equipment standards provide a unique and cost-effective opportunity to lock in energy savings. NEEA works with state-level and national stakeholders, bringing together data, research and product performance information gathered through NEEA's other workstreams to advance codes and standards based on proven technologies that benefit the Northwest. Because they establish universal expectations that must be adopted by the market, codes and standards favoring efficiency are one the most effective ways to ensure widespread adoption of efficiency measures and provide benefits to all Northwest consumers.

Although natural gas efficiency has benefited from increased code stringency over the years, decarbonization policies are driving changes that limit the efficiency opportunity for natural gas in codes and new construction. NEEA's work in the next business cycle focuses on the remaining gas efficiency opportunities in code, along with providing market support to help the building industry implement code effectively.

Key Assumptions

- Diverging federal and state decarbonization policies are creating different environments for efficiency in codes and new construction in the region.
- External policy drivers may limit opportunities for gas efficiency in new construction.
- Measuring code compliance will continue to be important in preparing the market, especially as states and municipalities adopt new decarbonization policies.
- New construction engagement work will be funded by both gas and electric funders.

Cycle 7 Focus Areas

- Providing information about efficient natural gas products and systems to code officials during codes development cycles.
- Training and educating market actors on efficient options to meet new code requirements.
- Informing further code development by collecting information about the ways builders are responding to new codes.

Analytics, Research and Evaluation

On behalf of the region, NEEA identifies, collects, analyzes and disseminates data, information and insight to assist decision-making and advance and report the progress value created by Market Transformation. All of NEEA's Market Transformation programs are regularly evaluated by independent third parties to understand market influence and progress and inform approaches to adaptive management. NEEA's data and analytics expertise drives Market Transformation success and provides the region with insights and information unavailable from other sources to inform NEEA's and the region's energy efficiency efforts. Additionally, NEEA collects market data at a regional stock level to inform market strategies, assess progress and provide validation of data used for reporting energy efficiency value metrics.

Key Assumptions

- Stock assessments will be funded by the electric and gas portfolios proportional to their contribution to overall NEEA funding.
- Significant co-funding from market partners will be leveraged in Cycle 7, similar to Cycle 6.
- Market research and evaluation resources will be needed to support a more mature natural gas portfolio in Cycle 7.

Cycle 7 Focus Areas

NEEA's Natural Gas portfolio is co-funding the following stock assessment studies for Cycle 7:

Residential Building Stock Assessment (RBSA)

This study will collect building-characteristic and energy-consumption data for a representative sample of single-family buildings and multifamily tenant units in the region. It will be designed to provide analytical results by state and climate zone and may include an optional oversampling of key demographic groups to support the region's efforts to understand which consumer segments are, or are not, directly benefiting from NEEA's Market Transformation interventions and why.

Commercial Building Stock Assessment (CBSA)

This study will collect building characteristic and energy consumption data for a representative sample of commercial buildings in the region. Mid- and high-rise multifamily buildings will be included in this study to complement the tenant-unit data collected in the RBSA with multifamily building-level data. The budget for this work includes the completion of the CBSA scheduled to begin in 2023 and finish in 2026, in addition to a second CBSA scheduled to begin in 2028 and finish in Cycle 8.

Convene and Collaborate

NEEA regularly creates and communicates opportunities for regional energy efficiency stakeholders to share information and best practices and align on regional priorities. Including advisory and coordinating committees, the Leadership in Energy Efficiency Awards, and the annual Efficiency Exchange conference, these opportunities enable the region to move the market faster and more efficiently than any one organization could do alone.

Key Assumptions

- Regional collaboration not only brings value to funders and stakeholders, but it is also required to drive Market Transformation success. NEEA will continue to facilitate this collaboration through formal and informal channels including workgroups, advisory committees, and Board committees.
- Diverging funder needs combined with the pace of change for the regional energy system is increasing the need for NEEA to stay closer and more connected with its funders and stakeholders.
- Market partners and supply chain actors must understand the alliance and the value it brings them for successful execution of market transformation programs.
- There is a growing need for regional collaboration between natural gas and electric utilities to address shared goals and challenges. As a dual-fuel organization representing the entire region, NEEA is uniquely positioned to facilitate this need.
- Interest in Market Transformation outside the Northwest and increased federal funding for energy efficiency will result in a greater need for NEEA to coordinate with national and state-level energy efficiency stakeholders.

Red Lodge, Mont.

Cycle 7

Alliance Value Delivery

Value Metrics

NEEA measures Market Transformation results by quantifying the energy saved in the region as a result of alliance efforts to shift markets toward higher and faster adoption of efficient technologies. These energy savings and associated value metrics, including greenhouse-gas and peak-load reduction, are enabled by the alliance's Market Transformation programs, codes and standards work, and investment in tools, training, resources, data and research to support greater efficiency.

In Cycle 7, NEEA will estimate, track and report five- and ten-year energy savings, along with associated avoided carbon and peak benefits. The value metrics estimated in Table 3 are intentionally conservative and allow for the possibility that the business plan isn't fully funded in Cycle 7. If full funding is realized, NEEA estimates that the business plan will deliver between 195-225 aMW of energy savings and peak values in the range of 410-475 MW (winter peak) and 350-400 MW (summer peak).

Due to the long-term nature of Market Transformation, the value that NEEA delivers in Cycle 7 will partially result from NEEA's efforts to create the market conditions for greater energy efficiency over the past two or three business cycles. Likewise, regional Market Transformation investments made in Cycle 7 will create the market conditions for energy savings continuity in Cycles 8, 9 and 10 (2025–2039). About 50% of NEEA's estimated energy savings in Cycle 7 will derive from previously funded investments, with the remaining 50% deriving from current investments (see Appendix IV for details).

On an annual basis, NEEA will also track and report organizational metrics that ensure effective and efficient operations, including budget management, employee engagement and benefit-cost ratio of NEEA's Market Transformation

Table 3: Cycle 7 Scorecard

Market Transformation Metrics	**Electric Estimate**	**Natural Gas Estimate**
5-year (2025–2029) Co-Created Energy Savings	190–225 aMW	6–17 MM Therms
10-year (2025–2034) Co-Created Energy Savings	365–470 aMW	10–51 MM Therms
5-year Carbon Reduction (thousand tons)	780–900	70–200
5-year Winter Peak Load Savings[5] (MW)	390–475	N/A
5-year Summer Peak Load Savings[6] (MW)	340–400	N/A
Operational Metrics	**Electric Target**	**Natural Gas Target**
Total Annual Budget ($)	Set Annually	Set Annually
Administrative Expenses (% of total annual budget)	< 18%	N/A
Portfolio Benefit-Cost Ratio	≥ 1	≥ 1
Employee Engagement	At industry benchmark or above	

[5] *Based on winter peak hours, 6:00 p.m. weekdays in December, January and February.*

[6] *Based on summer peak hours, 6:00 p.m. weekdays in July and August.*

portfolio. Prior to entering market development, the benefit-cost ratio for each program is assessed across its full lifecycle with the objective of achieving a ratio of equal to or greater than one. The benefit-cost assessment for each program is evaluated by a third-party to inform the advancement decision.

In addition to the metrics outlined above, NEEA will measure program-level success through market progress indicators (MPIs) related to market-level objectives of transformation and sustainability. MPIs are tracked through program evaluations, which quantify adoption trends and the advancement of technology performance (e.g., broader applicability and higher savings). Evaluations also capture additional qualitative market progress indicators, such as the development of long-standing relationships with manufacturers and other market actors that fuels innovation and market change now and in the future. Annually, NEEA staff will establish program-level goals and targets through the Operations Planning process, and report against those targets to the Board.

Regional Value Delivery

In addition to energy savings and associated benefits, NEEA's Market Transformation activities also deliver regional benefits that go far beyond energy savings, including:

A pipeline of new energy-efficient technologies

NEEA's emerging technology scanning efforts typically include several dozen emerging opportunities across multiple Product Groups. The most promising of these opportunities will be developed for Market Transformation programs and potential new measures for future utility programs. By sharing the costs of emerging technology development across the region, the alliance reduces risk to individual organizations while ensuring that new technologies will always be available to help funders meet their energy efficiency goals.

Opportunities to participate in emerging technology research projects

Demonstration pilots provide an opportunity for utilities to engage with customers, builders and developers through innovative and cost-saving technology pilots in their local service territory. In addition, research like the Cold Climate Heat Pump Water Heater Demonstration Project can be designed and leveraged to accelerate market adoption in parts of the region with unique barriers and opportunities for energy efficiency.

Increased availability of energy-efficient products for all Northwest consumers at increasingly affordable prices

NEEA partners with national retailers and groups representing local stores to influence the stocking and availability of efficient products throughout the Northwest. Through NEEA's efforts to improve energy codes and equipment standards, efficiency gets locked in and becomes the baseline for products and installation practices across the region. As energy-efficient products become more widely available and the efficient solution becomes the default, price per unit comes down increasing the affordability of efficiency for everyone.

Training, tools and resources to support the contractor base and increase the market's ability to install, test and maintain energy-efficient products, services and practices

For example, NEEA regularly:

- Partners with utilities to provide trade ally trainings that complement local efforts and support local needs.
- Offers technical assistance to builders to develop the knowledge and skills to meet evolving energy codes.
- Provides targeted messaging and materials for installers in markets that have been slower to adopt an efficient technology.

Market research and independent third-party evaluations that can be used to help utilities develop their own local efficiency programs

In any given year, NEEA delivers 20–30 market research, evaluation or market characterization reports, which are made available to the public on neea.org.

Regional building stock assessments and the End-Use Load Research project to inform future utility planning efforts

Stock assessments in the commercial, industrial and residential sectors provide the building-characteristic and energy-consumption data necessary for the region to uncover, measure, track and plan for the next generation of Market Transformation and utility energy efficiency programs. NEEA's funders have the opportunity to oversample building stock in their service territory to support their own organizational objectives at a fraction of the cost of fielding a separate study.

Convening and collaboration

NEEA serves as a convenor for regional utility and energy efficiency stakeholders, bringing stakeholders together to:

- Collaborate on issues of strategic importance (e.g., regional load flexibility efforts and opportunities for federal efficiency funding).
- Celebrate regional accomplishments (e.g., the Leadership in Energy Efficiency Awards).
- Learn from one another and share best practices (e.g., the annual Efficiency Exchange conference).
- Address shared challenges (e.g., developing a savings attribution methodology for dual-fuel technologies).

Additional Value Delivery

Furthermore, investing in NEEA can contribute to state and local priorities, including:

More energy efficiency jobs

NEEA provides opportunities for energy-efficiency-related education and training through many of its programs. These opportunities are offered to a broad range of energy professionals, helping them build skills and differentiate themselves from competitors. NEEA also supports a broad network of regional energy efficiency contractors that it engages to support program implementation, research and data-collection efforts.

Improved home comfort

NEEA's Market Transformation programs improve home comfort through improved indoor air quality, enhanced space heating and cooling year-round, and quiet, energy-saving appliances.

Improved energy affordability

Energy efficiency reduces energy bills and can help alleviate the energy burden for low-income communities and others. Through its Market Transformation programs, the alliance works with the supply chain to remove barriers for efficient products, including the first-cost barrier for end-use consumers.

Reduced greenhouse gas emissions

By contributing to regional energy savings and locking in efficiency through its codes and standards activities, alliance Market Transformation programs contribute to the reduction of greenhouse gas emissions by ensuring the most efficient products, technologies and best-practice applications become the baseline.

Improved resilience through peak-load savings

When timed right, energy efficiency programs can reduce demand on the energy system at times of peak load. Many programs in NEEA's current portfolio contribute to peak-load reduction in both summer and winter. Additionally, where it supports NEEA's Market Transformation objectives, NEEA works with manufacturers to incorporate demand response capabilities into efficient products.

Cycle 7

Special Funding

In the process of developing the Cycle 7 Business Plan, a handful of opportunities were identified that align with NEEA's strategic goals, while also 1) delivering a primary benefit other than energy efficiency, and/or 2) addressing needs that are not shared across the region.

One of these projects, the regional End-Use Load Research Study, is carrying over from the current business cycle and has already received funding commitments (see Electric Portfolio).

Other special funding opportunities include, but aren't limited to:

- **A regional end-use load flexibility effort.**
- **A strategy for whole-building efficiency.**

These opportunities would be funded outside of this Business Plan if a subset of regional funders or other stakeholders wishes to pursue them.

As additional opportunities for special funding arise during the business cycle, they will be evaluated by the Board's Strategic Planning Committee through NEEA's existing Special Opportunity Assessment Guidelines for new strategic opportunity screening (see Appendix I).

Special Project Opportunity: End-use Load Flexibility

The 2021 Northwest Power Plan projects as much as 3,500 MW of additional coal plant retirements by 2029. The expected addition of 3,500 MW of renewable resources by 2027 will help to mitigate this loss. However, renewable resources with variable generation cannot begin to replace the firm capacity of retired regional coal plants on a one-to-one basis.[7] Flexible end-use load resources can help with system integration of the renewable resources and contribute to filling an expanding capacity gap by helping to meet system peaks and allowing for more flexibility in load control.

NEEA's 2025–2029 Strategic Plan identifies "accelerating adoption of grid-enabled end-use technologies through Market Transformation" as a strategic goal for the alliance in Cycle 7. This goal allows for exploration of Market Transformation opportunities supporting the region's ability to manage electric loads by making the end use of energy not just more efficient, but also connected and controllable. Specifically, NEEA will prioritize opportunities to leverage existing market relationships and product development expertise to 1) accelerate the integration of features that enable end-use flexibility, and 2) promote standardized protocols that enable products to communicate with one another and the grid. While focused on end-use technologies, these products and practices must integrate within the broader electric utility system operations. This will require close collaboration with electric utilities and a strong understanding of their operations and systems.

Barriers to Adoption

Although the technical potential for load flexibility is high in the Northwest, there are quite a few challenges preventing the region from maximizing the benefits of end-use load flexibility programs or technologies. These barriers include:

- **Implementation costs and lack of financing** Accelerating technology advancement in sensors, controls and communications is creating new opportunities for load flexibility

[7] See: U.S. Capacity Factor by Energy Source 2021 in https://www.energy.gov/ne/articles/what-generation-capacity (source: U.S. DOE).

through lowered costs and increasing efficiency. However, while the costs for controls themselves are decreasing overall, the investment required to implement communicating controls is a major barrier, particularly for smaller commercial buildings. Demand-side investments will have partially limited access to financing until they can be aggregated and standardized.

- **Unreliable communication capabilities**
  Demand-response aggregators have noted that reliability challenges with Wi-Fi-based and/or cloud communication protocols have led to unmet commitments. Other communications pathways are technically feasible (e.g., FM broadcast, cellular or mesh networks) but not widely used for load management.

- **Lack of interoperability and open standards**
  Extensive competition among energy management system providers leads to proprietary systems that only work with devices from the same manufacturer, which limits the development of innovative applications. Additionally, once a proprietary system has sufficient force in the market, the manufacturer can charge utilities significantly more for access to that resource, or they could go out of business and strand the needed assets.

- **Unclear value proposition for end customers and utilities**
  Due to the lack of a consistent bulk power system value, the monetary compensation for participation in traditional demand-response programs is often fairly small to individual end consumers, even though the aggregated value to an individual utility or the region may be large. This can lead to expensive, ongoing customer engagement programs to keep participation high, especially where end customers are concerned about privacy or lack of control. Even with high-touch engagement efforts, participation rates tend to be low for opt-in demand-response programs (typically around 15% of the eligible population).

Role for NEEA

As a Market Transformation organization, NEEA can play an important role in helping the region accelerate adoption of new end-use technologies that enable more flexible, efficient operation of the electric system and increased integration of renewable energy. Specifically, NEEA can:

- Serve as a convener and developer of Northwest use cases, recognizing differing characteristics of Northwest and adjoining power markets.
- Utilize its experience and structure to ensure stakeholders are effectively engaged to focus the project on maximizing value and collaborative opportunities.
- Employ its existing Emerging Technology scanning processes to identify appropriate products, solutions and potential interventions.
- Leverage its existing strategic partnerships with manufacturers, codes and standards organizations, trade associations and the supply chain market to drive development and accelerate the adoption of flexible, demand-enabled features into products.
- Help advance standardized communication protocols across product groups to enable two-way communication from utility to end use, including voluntary specifications and qualified product lists.
- Support the evolution of controls by coordinating with manufacturers and utilities to advance open-source solutions.
- Conduct field studies and research to study the grid benefits of connected technologies such as water heaters, lighting, HVAC and pumps.
- Apply its experience with customer engagement in target market segments to enhance the uptake of end-use load flexibility initiatives.
- Use research from its Northwest End-Use Load Research project to accurately

characterize actual (not design) performance at 1-minute intervals of electric-resistance water heaters, heat pump water heaters, heat pumps, air conditioners, electric furnaces and electric vehicles for load flexibility purposes.

- Leverage voluntary specifications to include flexible load requirements as technologies develop and evolve. NEEA's ability to develop qualified products lists with an eye towards flexibility will be key to the uptake with national standards groups.

Special Project Opportunity: Whole-Building Efficiency

The region's commercial building sector is experiencing seismic shifts, each of which creates new drivers for whole-building retrofits that deliver significant energy-use intensity (EUI) improvements. These shifts include:

Policy: Building owners are increasingly under pressure to meet organizational sustainability goals and aggressive state and local building performance standards. Building EUI is becoming more of a focus than efficiency improvements to individual systems.

Financial uncertainty: In addition to reconfiguring around post-pandemic changes in how buildings are used, commercial building owners and managers must also grapple with high interest rates. Commercial real estate investors are likely to hold their investments longer, allowing them to reap the financial benefits of efficiency improvements, which tend to be dependable investments, even in times of uncertainty.

Technology innovations: Ubiquitous sensors and controls embedded in every building system and are enabling smarter, more integrated, and more efficient buildings.

Grid-interactivity: Load management opens new value streams to enhance building profitability.

For a variety of reasons, building owners have been historically reticent to undertake deep energy retrofit projects. However, the changing landscape presents new opportunities for a regional Market Transformation effort focused on driving broader and deeper adoption of whole-building efficiency. This effort can build on NEEA's past and ongoing work in building renewal, strategic energy management and commercial real estate engagement.

Barriers to Adoption

Even with these new levers, understanding and addressing the key barriers for the commercial building community will be crucial for success. Recent market outreach points to challenges in:

- Identifying the combinations of upgrades to pursue.
- Ensuring the results will meet both code and building performance standards.
- Understanding how to profitably engage load-management strategies.
- Determining pathways for financing in the context of substantially longer payback periods.

While these barriers are felt across the board, they are most acute for small- and medium-sized businesses, nonprofits, and those with limited access to capital.

Role for NEEA

NEEA sees the potential for a new Market Transformation program focused on driving broader and deeper adoption of whole-building efficiency through strategies that include:

- Exploring new technologies and practices to improve operation and maintenance efficiency.
- Evaluating grid-enabled energy-resource strategies to maximize value for building owners and utilities.

- Streamlining approaches to developing building upgrade plans.
- Creating and disseminating tools and resources that simplify all aspects of energy upgrades, including audits, portfolio planning, technology selection, workforce selection and financing.
- Expanding knowledge of, and access to, financial mechanisms needed to put upgrade plans into action.
- Improving consistency and value of energy efficiency upgrades in real estate valuation.
- Exploring opportunities to develop or use a commercial building energy use intensity (EUI) dataset to support regional efficiency efforts, including supporting energy management efforts or helping utilities identify buildings that have consumption levels significantly higher than other comparable buildings.[8]

With a current portfolio of programs, the BetterBricks platform and a long history of engagement in integrated design, NEEA is strategically positioned to support the transformation of whole-building efficiency. An essential next step is engaging funders to develop a shared understanding of the current and emerging state- and local-level policies driving deeper whole-building efficiency, the barriers and opportunities, and how NEEA can best complement funder efforts to achieve this vision. Whole-Building Efficiency is being proposed as a specially funded project due to varying factors, including 1) diverging policy drivers, and 2) the variety and concentration of commercial building stock, that make this opportunity of greater value to some of NEEA's funders than others.

[8] Identified as a Regional Recommendation for Energy Efficiency in the Northwest Power and Conservation Council's 2021 Power Plan.

Special Project Tracking: Hydrogen-Ready Appliances

In 2022, NEEA conducted a specially funded research overview of the current market situation for end-use equipment fueled by natural gas blended with varying amounts of hydrogen. This small project found that there is currently a need for revisions to North American testing and rating standards to ensure that newly manufactured equipment could be powered by natural gas/hydrogen blends without impacting safety or efficiency. Further work has uncovered that there are a number of national and international initiatives attempting to address this issue as well as a nascent labeling effort led by California. Given this, NEEA does not currently plan to pursue activities in this space. While it appears that some market barriers are already being addressed by industry, there may be a need for future assistance in helping the regional energy system ensure efficiency of end-use products as the natural gas system evolves. If additional opportunities arise, NEEA will work through its committee processes to assess and approve any new strategic opportunities with our Advisory and Board committees to help support a more efficient regional energy system.


Rogue Valley, Ore

Cycle 7

Operations and Budget

Administration

NEEA's Business Administration and Human Resources functions support the people, processes and technology required by NEEA staff to effectively achieve annual and five-year goals. Ensuring that internal processes and technologies are efficient, streamlined and compliant allows NEEA staff to operate proficiently, efficiently and flexibly across all Market Transformation work.

Key Assumptions

- An upgrade is required to NEEA's business accounting, budgeting, forecasting, reporting, and contract management software in Cycle 7.
- NEEA will maintain its current office lease.

Cycle 7 Activities

Both Human Resources and Business Administration support and serve NEEA's natural gas and electric business units. Activities include:

- Information Technology
- Finance and Accounting
- Contracts
- Legal and Risk Management
- People Management (including recruiting and hiring)
- Facilities Management

Commitment to Organizational Efficiency

NEEA acts as a careful steward of utility customer dollars, recognizing that it is entrusted with delivering value to those customers on behalf of its funders. NEEA carefully adheres to Board-determined policies to assure equitable allocation and appropriate prioritization of resources and activities across the region.

Within all of its operations, NEEA actively looks to achieve results while creating efficiencies that save time and reduce costs. Examples include:

- Working in cross-sector Product Groups (e.g., commercial and residential HVAC) to efficiently leverage shared relationships, expertise, research and data collection between commercial and residential programs, rather than duplicating efforts and recreating assets. Similar leverage opportunities also exist between the natural gas and electric portfolios.
- Optimizing resourcing by insourcing key activities where it makes sense. For example, NEEA manages its data and analytics functions internally. This highly specialized work is repurposed many times over across multiple programs, thereby maximizing its value to the region.

In Cycle 7, NEEA staff will continue to seek efficiencies and leverage resources across its electric and natural gas portfolios to ensure streamlined operations and deliver on business plan goals within the five-year budget.

Resourcing Philosophy

NEEA's greatest asset is its staff. Market Transformation practitioners spend years, sometimes decades, developing and honing the skills and relationships required to cultivate and implement market strategies that drive lasting market change. Given the specialized nature of the work, outsourcing for these critical strategic roles has proven difficult and costly given the time it takes to develop Market Transformation expertise. NEEA's Executive Director is responsible

for managing the organization's budget to align with business plan goals in the most efficient and effective way possible, including resourcing decisions. Traditionally, NEEA strives to manage and administer strategy development and other critical tasks using internal staff and seeks to outsource execution tasks. This approach has traditionally resulted in around 45–50% in-house staff and 50–55% outsourced contractors. NEEA expects to maintain a similar philosophy toward resourcing in Cycle 7.

Annual Planning and Reporting

Each year of the business cycle, NEEA's Board of Directors will approve an annual operations plan and budget for the organization. The operations plan includes planned activities, budgeted program, labor and administrative expenses, and key performance metrics. It also provides input to alliance portfolio management systems to ensure the portfolio delivers value to the region. This yearly planning process helps maintain the alliance's flexibility by presenting new opportunities in a timely manner as they emerge within the five-year business cycle.

NEEA maintains systems, processes, records and reporting protocols sufficient to demonstrate fiscal responsibility and effective risk management practices in all aspects of operations. The Executive Director will provide the Board with a summary of pending, in progress and completed activities under the approved annual Operations Plan.

Cycle 7 Budget

Northwest utilities and energy efficiency organizations fund NEEA based on each participant's share of the overall regional energy system. This approach is built on the idea that all utilities receive long-term benefits from local energy savings and from the regional benefit of reduced demand on the energy system.

Assumptions and Drivers

NEEA's unique funding model creates some complexities in dealing with inflation as the cumulative effects of five years of future inflation must be considered in the next five-year budgeting and planning process. Prior to the start of the current business plan, inflation had been historically low, between one and three percent annually, so it did not factor significantly into business planning.

However, since the most recent business planning process was completed in 2018, the consumer price index has increased by approximately 20 percent.[9] To recover some of its purchasing power, particularly with respect to recruiting and retention, NEEA has factored a conservative estimate for inflation into its Cycle 7 budget estimates:

- **Labor and General and Administrative Cost Assumptions**

  To estimate the impact of inflation, the business plan assumes a compound annual inflation rate of 4.4 percent (averaged between salaries, benefits, and some general and administrative costs) and uses the Cycle 6 forecast prepared for the 2023 Operations Plan as a baseline.

- **Project Cost Assumptions**

  To estimate direct project costs, the business plan does not assume a flat inflation rate across the portfolio. Rather, annual budgets are based on anticipated program milestones and associated increases in market investment, areas of increased market opportunity (e.g., markets where deeper engagement will drive near-term energy savings), and potential for increased cost-efficiencies in operations. Project costs reflect 2023 rates, with no inflation assumptions embedded past 2023.

[9] Source: U.S. Bureau of Labor Statistics.

Budget Detail

NEEA's total five-year (2025-2029) core budget is $211.8 million for the electric portfolio and $35.3 million for natural gas. The proportion of funding budgeted each year will be reviewed and approved as part of NEEA's annual operations planning process.

Additionally, the business plan includes $2.1 million in contracted expenses for the on-going End Use Load Research special project and a placeholder of about $25 million for additional special projects that are expected to emerge throughout the course of the business cycle. NEEA has established business processes to evaluate these opportunities (see Appendix I: Processes and Practices to Ensure Adaptability), as well as processes to segregate and account for additional funding. These financial processes are overseen by NEEA's Board and align with financial policies.

Table 4: Total Five-year Budget by Workstream ($ Thousands)

Workstreams	Electric	Natural Gas	End-Use Load Research Project[10]	Other Special Projects[11]	Total
Emerging Technology	17,733	3,027	0	0	20,760
Market Strategy and Execution	91,005	19,512	0	20,132	130,649
Codes & Standards	16,952	1,283	0	0	18,235
Analytics, Research & Evaluation	48,552	5,333	1,914	0	55,799
Convene & Collaborate	11,910	75	0	0	11,985
Administration (Shared Services)	36,789	0	0	0	36,789
Allocation of Shared Services[12]	(11,141)	6,088	190	4,863	0
Total (All NEEA Core Activities)	**211,800**	**35,316**	**2,104**	**24,995**	**274,215**

[10] The End-Use Load Research project (EULR) is a special project, funded and operated separately from activities that are regionally funded in the Business Plan.

[11] Excluding EULR, this column is an estimate of Cycle 7 Special Projects outside of core Business Plan activities and not yet under contract. Dollars will be allocated to individual workstreams upon contracting.

[12] Shared Services are NEEA's Convene and Collaborate and Administration workstreams. All Shared Services costs are incurred within the electric budget. Natural Gas and Special Projects reimburse the electric budget for their allocation of Shared Services, facilities and supplies.

Cycle 7

Risks and Opportunities

NEEA's success depends on several factors with the potential to fluctuate within its rapidly changing operating environment. Each of these factors carry risks and opportunities, which could impact NEEA's ability to achieve its strategic goals and fulfill its purpose and mission.

Risks and Opportunities NEEA Plans to Mitigate

Loss of Funding

The loss of a funder(s) could result in an impact to NEEA's leverage required for Market Transformation. This potential loss could also create inequity and free-ridership issues across the region. At any point, funding could be in jeopardy if:

- NEEA does not achieve its goals.
- NEEA fails to deliver on its commitments.
- NEEA is perceived by funders as not providing additional value.
- NEEA does not evenly distribute benefits across the region.
- Investment in NEEA is precluded by a regulatory commission decision.

NEEA mitigates these risks 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. Should a funder withdraw from NEEA after the Cycle 7 Business Plan has been approved and funding shares have been finalized by the Board, NEEA would delete their assumed level of dollars from the Board-approved total funding amount and recalculate effective shares such that other funders' dollar amounts are unchanged. In this event, NEEA would apply the following principles to investment reduction decisions:

- Maintain Cycle 7 value delivery as much as possible without increasing individual funder contributions.
- Preserve planned investment in high value, high certainty categories.
- Reduce investment or delay timing and scope in areas where 1) NEEA has a higher degree of uncertainty or 2) where reductions will have low to no impact on Cycle 7 energy savings and peak value.
- Ensure regional distribution of value for NEEA's remaining funders.

Annual priorities and budgets will continue to be approved by the Board through NEEA's Operations Planning process.

Uncertain Policy Environment for Natural Gas

Acknowledging that the landscape for natural gas efficiency in the Northwest will continue to evolve in Cycle 7, contingencies are required for future external policy or market shifts that may impact NEEA's natural gas portfolio and associated interventions. Some possible scenarios include state or local restrictions on the use of natural gas or incentivization of natural gas efficiency or shifts in clean energy policies that deprioritize energy efficiency as a decarbonization strategy.

NEEA will continue to track policy shifts and, if needed, use the annual operations planning process to pivot natural gas efforts to focus

on the most beneficial opportunities given the new market conditions. Staff will leverage the Natural Gas Advisory Committee to guide and inform intervention strategies to adaptively manage the natural gas portfolio, and to make recommendations to the Board of Directors' Natural Gas Committee.

If NEEA's investment in natural gas efficiency needs to be significantly reduced or phased out in Cycle 7, NEEA will work with the Board of Directors' Natural Gas Committee and Governance Committee to develop a strategy and timeline for divestment or refunds. In the case that regulatory requirements restrict funders' ability to receive reimbursement for their core investment, NEEA will coordinate with affected funders to conclude funding agreements in a timely fashion. In this event, NEEA's electric business unit would be required to absorb the portion of shared administrative costs that are currently budgeted from natural gas.

Different Approaches to Market Transformation

Other parts of the country, including California, Minnesota and New York, are actively investigating Market Transformation. Differing approaches by large players in these states could create market confusion and hinder the ability of the Northwest to effectively influence markets. NEEA will mitigate this risk by continuing to establish and maintain relationships with key players in other geographies to influence and collaborate on Market Transformation programs. The Cycle 7 Business Plan maintains NEEA's influence by:

- Continuing, and in many cases, deepening engagement and relationships in all current markets.
- Continuing to support national partnerships and collaboratives to maintain alignment and market momentum.
- Continuing investment in the Integrated Design Labs and BetterBricks platform, providing opportunities to engage and influence commercial building decision-makers and influencers.
- Investing in convening and collaboration in anticipation of increased need for engagement with other Market Transformation organizations
- Formalizing NEEA's commitment to delivering secondary co-benefits of efficiency, keeping NEEA relevant and able to engage in broader regional and national conversations on behalf of the Northwest.

Federal Funding Opportunities and Uncertainties

Upcoming federal funding flowing from the Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) could represent an unprecedented boon for energy efficiency in the Northwest. Given the number of new and expanded federal programs joining the complex patchwork of existing local and regional programs, including NEEA's Market Transformation programs, purposeful coordination is necessary to 1) ensure these new opportunities integrate effectively with existing programs and 2) to amplify Northwest efforts and to mitigate unintended program impacts. In Cycle 7, NEEA will seek opportunities to enhance energy efficiency outcomes for Northwest consumers by identifying and leveraging opportunities associated with federal funding streams. Likely roles for NEEA include:

- Continuing to convene regional stakeholders, including state energy offices, regional utilities, and others to coordinate around federal funding opportunities and share information (e.g., timing, eligibility, relevant technologies, etc.).
- Serving as a bridge between U.S. Department of Energy (DOE) staff and regional stakeholders, conveying rules, guidelines, and other useful information and sharing regional feedback with the DOE to ensure Northwest needs are represented and considered.

- Coordinating with entities (e.g., Consortium for Energy Efficiency, ACEEE) who may also be accessing federal funding to leverage each other's efforts (e.g., research) and avoid duplication of work.
- Engaging with the market (e.g., manufacturers, retailers) to help NEEA's partners stay current on with DOE priorities, coordination efforts at the state and regional levels, and utility priorities.

Given some of the uncertainty around DOE timelines and priorities, NEEA has not included any assumptions for direct federal funding in the Cycle 7 budget. Any investment that does flow to NEEA will be supplemental to regional investment. Likely areas of focus based on DOE's currently expressed priorities include building codes, specifically efforts to support market readiness and compliance, emerging technology development, and research.

Contribution of Special Funding Assumptions to Budget Estimate

The Cycle 7 Business Plan budget includes a ~$25 million placeholder for special funding opportunities. As described in the 2025-2029 Business Plan, these special funding opportunities are not yet under contract. The total amount of special funding estimated in the Cycle 7 budget is similar to NEEA's percentage of special funding in Cycle 6. Should these special projects not materialize in Cycle 7, or materialize to a lesser degree, NEEA's electric and gas core budgets would be required to absorb the portion of shared administrative costs that are currently budgeted from special funding. In that event, NEEA would leverage its adaptive management approach to ensure no impact to regional value delivery.

Risks Outside of NEEA's Control that Cannot be Easily Mitigated

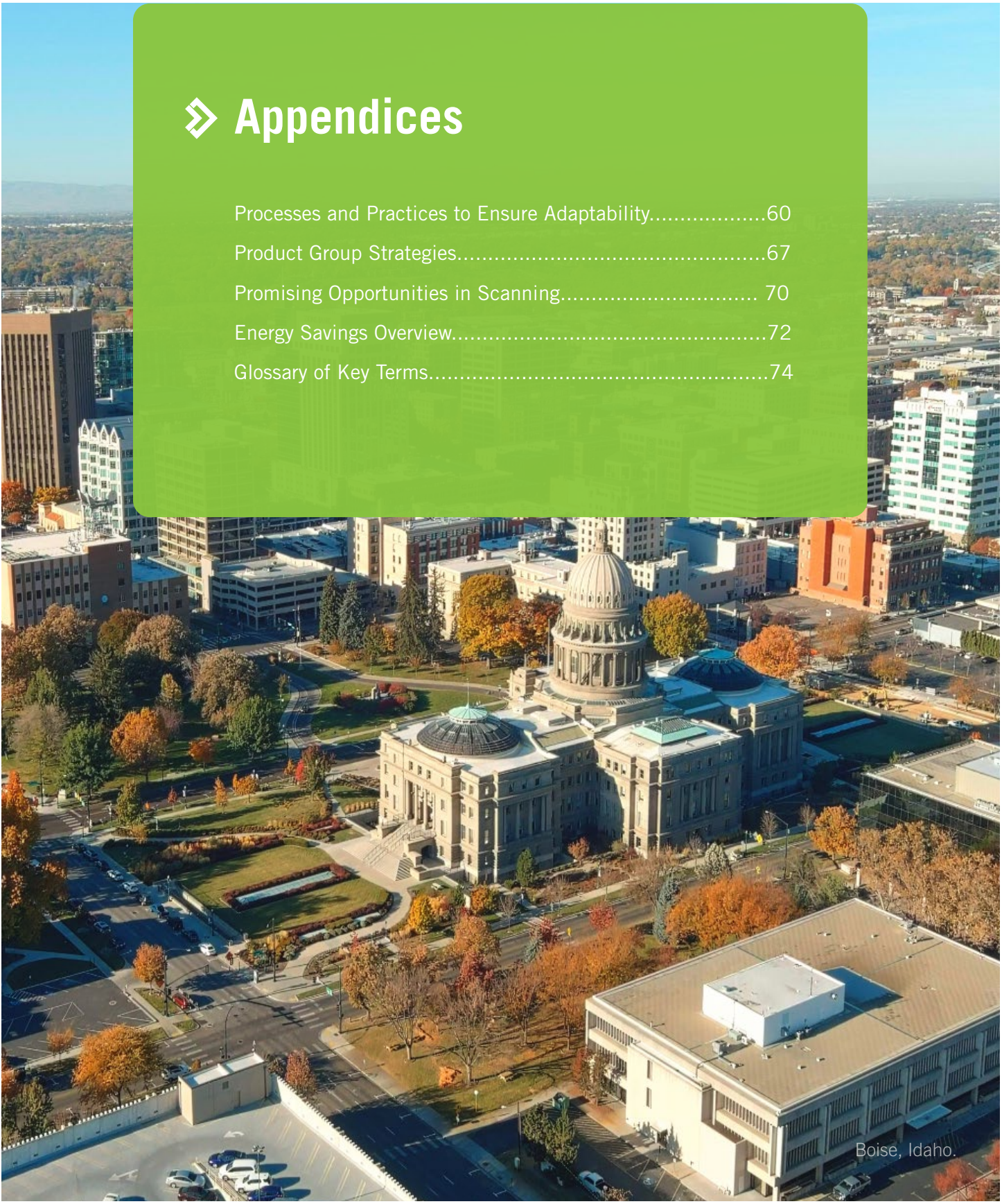
There are many ongoing risk factors in the market that are beyond NEEA's sphere of influence, including pressure for utilities to limit rate increases, as combined with rising energy costs and economic pressures. Other such risks include:

- Regulatory or governing body decisions that end or curtail investments in efficiency.
- Events or conditions that lead to a significant contraction of the economy, supply chain disruptions or continued high levels of inflation.
- Changes in leadership and/or priorities at the state or federal level.
- Significant changes or disintermediation that shift energy efficiency away from utilities.

NEEA regularly monitors activity and developments in the industry to identify potential impacts. As the need arises, NEEA will work through its Board of Directors to develop specific mitigations. Additionally, during the development of the annual Operations Plan, NEEA staff uses these analyses to determine proactive mitigation strategies to address market shifts.


Livingston, Mont.

Appendices



Boise, Idaho.

Cycle 7

Appendix I – Processes and Practices to Ensure Adaptability

NEEA's five-year business cycle provides the stability and level of investment predictability that's required for Market Transformation success. However, it also introduces a degree of risk as it's very difficult to predict market and industry conditions five to seven years in the future. This is particularly true in the energy sector, which is now experiencing unprecedented levels of uncertainty and change. To mitigate this risk, NEEA uses a number of Board and stakeholder processes that support adaptive management by ensuring regional collaboration and coordination and providing Board oversight of annual budgets. These processes are described in more detail below.

Note: All of NEEA's current guidelines and policies will be reviewed by the Board for consistency with the Cycle 7 Business and Strategic Plans once the plans are finalized.

Adaptive Management Approach

NEEA's adaptive management approach maximizes value delivery to the region within available resources. Portfolio and program-level decisions are made based on where NEEA is likely to have the greatest impact to deliver on business plan goals. This approach ensures that NEEA remains nimble and able to pivot to respond to market dynamics or embrace new opportunities.

Through its annual operations planning process, NEEA assesses market opportunities, makes trade-off decisions, and strategically manages risk in consultation with funders and stakeholders. These decisions are often driven by market dynamics and timing and may include:

Focusing on opportunities to leverage market momentum
Whenever possible, NEEA prioritizes high-leverage market opportunities. By focusing on markets that are being disrupted (e.g., markets with new manufacturers or with distributors that are changing practices), or where demand for an energy-efficient product is growing, NEEA can deliver greater transformation for less investment.

For example, in Cycle 6, NEEA decided to increase investment in heat pump water heaters to support regional growth in demand, target interventions with manufacturers, wholesalers and installers, and ensure the availability of Northwest data and experience to inform the federal standards development process.

Scaling back intervention activities but remaining engaged enough to monitor the market and retain relationships with critical market actors
For slower moving, harder to transition markets, NEEA may opt to strike a balance between observation and engagement that limits staff time and other resource needs until a leverage opportunity arises.

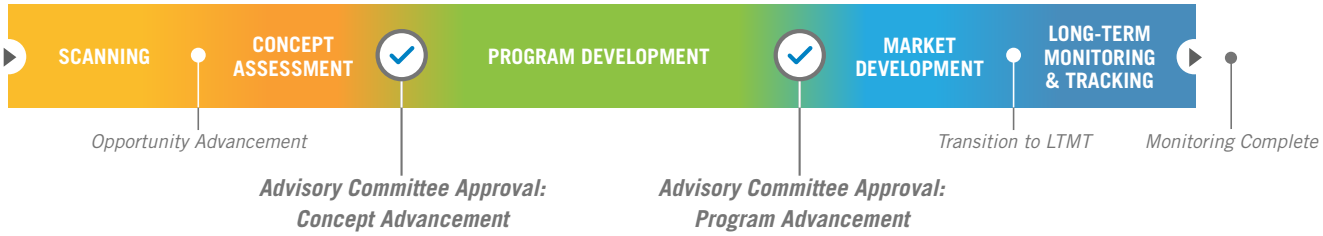
For example, in 2023, NEEA discontinued Windows Attachments as standalone program but decided to maintain some critical activities and key relationships should an opportunity to reengage in the market arise.

Pausing activities when NEEA doesn't have a leverage point and/or market partners
If trade-offs are required, NEEA will pause in areas where a market leverage opportunity doesn't exist or where relationships haven't been established. These are typically markets in which activities haven't started and/or significant investments have not been made. For example, in 2023, NEEA decided to invest conservatively in developing the new Efficient Fans program to allow for more robust investment in Extended Motor Products Pumps, which is a faster moving market.

Initiative Lifecycle

NEEA has established a portfolio management system that provides a clear framework for decision-making on Market Transformation program investments. Through NEEA's Natural Gas Advisory Committee (NGAC) and Regional Portfolio Advisory Committee (RPAC), NEEA staff actively manage the portfolio of Market Transformation activities to deliver value based on a range of criteria. Each program in NEEA's portfolio goes through a consistent stage-gate development process called the Initiative Lifecycle, illustrated below:

Figure 1: NEEA's Initiative Lifecycle (ILC) Process



There are two key decision points within the Initiative Lifecycle where a formal vote by RPAC or NGAC is required for any Market Transformation program to advance. These points occur 1) prior to an initiative being adopted into the alliance Market Transformation program portfolio (i.e., Concept Advancement), and 2) prior to an initiative being approved to scale-up its market activities (i.e., Program Advancement).

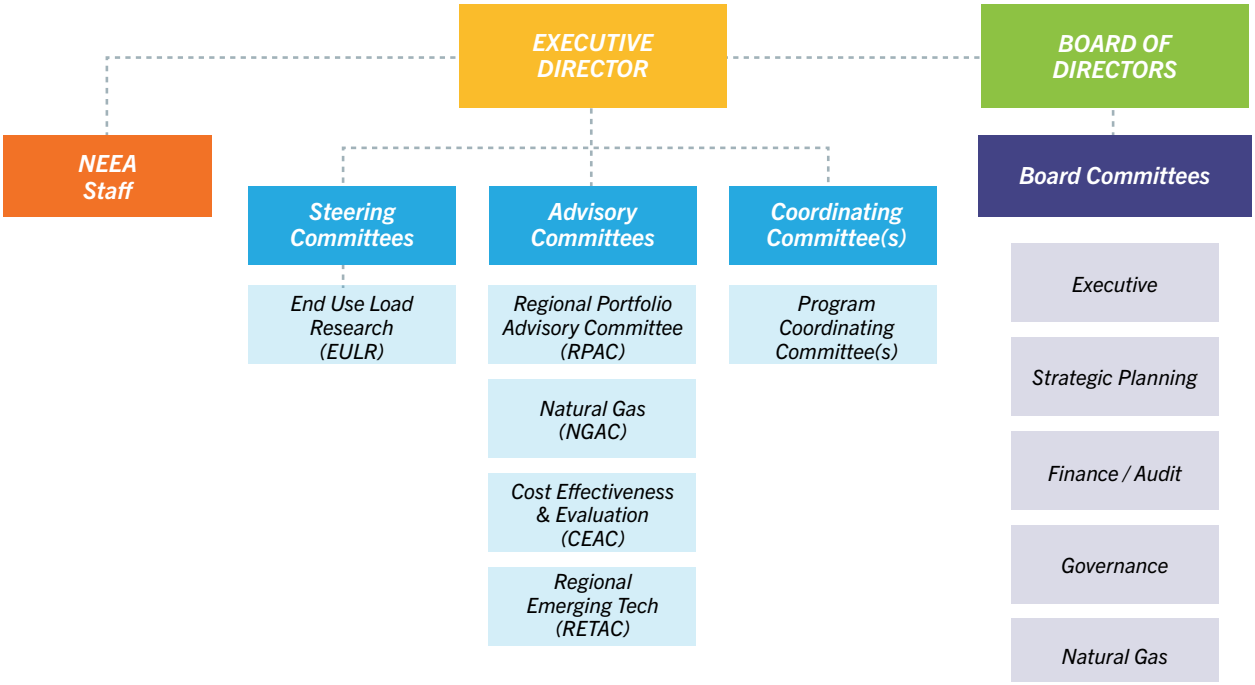
Annual Operations Planning

On an annual basis, NEEA staff will prepare an operations plan and budget for approval by NEEA's Board of Directors. The Operations Plan includes planned activities, budgeted expenditures for program work, labor and administrative costs, and key performance metrics. It also provides input to alliance portfolio management systems to ensure the portfolio delivers value to the region. This yearly planning process supports the alliance's flexibility by presenting new opportunities in a timely manner as they emerge within the five-year business cycle.

Board and Advisory Committee Process

NEEA staff facilitates a robust process to ensure that regional input is considered in alliance program planning and decision-making. This coordination and collaboration process happens at many levels throughout both NEEA and stakeholder organizations. It includes NEEA's Board of Directors as well as the Board committees shown in Figure 2. Additional Board committees, either permanent or ad hoc, may be created depending on the needs of the alliance, e.g., Business Planning or Diversity Equity and Inclusion.

Figure 2: Alliance Governance and Committee Structure as of March 2024



Regional Portfolio Advisory Committee (RPAC)

- Advises NEEA's Executive Director on portfolio performance and program advancement, including the formalized "challenge flag" process.
    - RPAC+,[13] an extension group of this committee, will advise NEEA's executive director on downstream marketing elections.[14]
- Monitors developments from other committees regarding regional coordination, market progress and emerging technology.

Natural Gas Advisory Committee (NGAC)

- Advises NEEA's Executive Director on gas portfolio performance and program advancement, including the formalized "challenge flag" process.
- Monitors developments from other advisory committees regarding market progress and emerging technology.

Coordinating Committee(s)

- Collaborates with NEEA staff and reports to RPAC on coordination and optimization recommendations regarding NEEA programs and related activities.
- Identifies and manages potential implementation challenges between NEEA and local utility activities and seizes opportunities for amplified market influence.

Cost-Effectiveness and Evaluation Advisory Committee (CEAC)

- Advises NEEA's Executive Director on methods, data sources and inputs for use in NEEA's cost-benefit analysis and energy-savings reporting.
- Advises NEEA's Executive Director on market research and evaluation methodologies.

Regional Emerging Technology Advisory Committee (RETAC)

- Advises NEEA's Executive Director on NEEA's progress toward achieving strategic pipeline goals.
- Tracks and coordinates the progression of energy efficiency technologies to improve technology readiness and market adoption in the Northwest.

Workgroups

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

[13] Committees may evolve based on alliance needs in Cycle 7

[14] RPAC+ is a group consisting of RPAC members, funder marketing staff and other electric and natural gas funder staff.

[15] Downstream marketing activities are regionwide marketing activities to promote energy-efficient products, services, and/or practices in the NEEA portfolio directly to end-use customers where NEEA may use a market-facing brand. Channels include digital ads, purchased social, billboards and print, broadcast (radio/tv), point of purchase and direct mail. These activities do not include marketing to midstream and upstream partners, including installer base, distributors and manufacturers.

New Strategic Opportunity Screening and Review Guidelines

NEEA has a structured and open process to look for new opportunities to accelerate the adoption of energy efficiency. Some of these opportunities may be in the form of new technologies and fall within the scope of the current Business Plan. Other opportunities may fall outside the scope of the activities defined in the current Business Plan but may still fall within the scope and purpose of NEEA as an organization. Opportunities that fall outside the Business Plan are assumed to be accompanied by their own financial resources to support the additional work. Many of these new opportunities could help NEEA and its stakeholders broaden efforts to transform markets in the region. On the other hand, some of these opportunities also bring risk of diluting NEEA's core purpose and primary added value for the Northwest.

NEEA's Board-approved guidelines for new opportunity assessment lay out a set of primary criteria for screening these new opportunities that will support decision making aligned with NEEA's primary stakeholder's interests and NEEA's core strengths. These guidelines apply to new opportunities with significant strategic, financial or internal resource implications. They do not replace or subsume other NEEA portfolio or initiative level screening or review processes that are intended to address new opportunities that are of lesser impact to the organization and/or fall within the scope of the current Business Plan.

Current Guidelines

1. NEEA welcomes new opportunities that strategically advance the purpose of the organization.

2. New opportunities that fall reasonably within the scope and budget of the current Strategic and Business Plans are included within the annual operations planning, budgeting and implementation processes at NEEA. These processes include review by advisory committees where appropriate. Such opportunities are considered within the discretion of the Executive Director to pursue and manage as part of overall organizational management authority.

3. Opportunities that fall outside of the scope and budget of the current Strategic and Business Plans require Board engagement to the extent that they represent significant and unanticipated impacts on the organization. Board engagement may include Executive Director communication with the Chair but may escalate to discussions with the Executive Committee and/or Strategic Planning Committee depending on the nature and scope of the opportunity. The Executive Committee or Strategic Planning Committee may choose to recommend full Board discussion if the nature of the opportunity and the impacts on the organization are significant. Examples of possible impacts that might trigger Board engagement include but are not limited to:

    - Significant financial impacts: Any new opportunity supported by funds separate from core NEEA funding (e.g., US Department of Energy grants) that represent five percent or more of NEEA's annual budget.

    - Regulatory impacts: Any opportunity that may have potential impacts on regulatory treatment of NEEA or NEEA funders.

    - Legal or Organizational changes: Any impacts on the organization that represent potential new legal liabilities or changes to the organizational structure such as to governance, tax exempt status, expansion of membership, changes to geographic representation (e.g., request to join by a Canadian utility).

    - Staff Diversion: Opportunities which, if pursued, would require a diversion of staff focus that could detrimentally impact the achievement of Business Plan goals and objectives.

    - Public Perceptions: Opportunities that significantly affect the way NEEA or its funding organizations are perceived by the public or by key stakeholders.

4. Board engagement should include a review of the opportunity as outlined in the New Strategic Opportunity Assessment by the Strategic Planning Committee followed by the Board.

RPAC+ Downstream Marketing Coordination Process

Though downstream marketing activities are a small subset of the marketing activities undertaken at NEEA, they require careful coordination with NEEA's funders due to the customer touch. These guiding principles address a dual objective: 1) funder concerns around marketing to customers, and 2) 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 Activities

- An implementation process will achieve the dual objective above.
- An option for self-delivery and exemption will be provided for funders.
- Funders will have flexibility regarding the timing of self-delivery.
- 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.
- Decisions made should include consideration of the regional result and initiatives' objectives.

Coordination Process

1. **ILC Milestones** – As part of the Business Case for Program Advancement 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 Concept Advancement milestone, it will be flagged in the business case. *Purpose: Information sharing around marketing, decision point for program progress.*
2. **Prior to October each year, or as early as available** – Funders agree to share marketing plans relating to relevant alliance programs. *Purpose: Information sharing, consider opportunities for leverage and coordination.*
3. **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. *Purpose: Information sharing in preparation for decision at Q4 RPAC meeting.*
4. **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.*
5. **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.*
6. **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.*
7. **Quarterly** – Marketing updates will be included as needed in quarterly advisory and coordinating committee packets. *Purpose: Information sharing.*

8. **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.*

Options for Self-Delivery and Exemption

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

Flexibility Around Self-Delivery Timing

- 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.
- When a funder opts to self-deliver 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 and partnership commitments).

Overlapping Zip Codes

- 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.
- 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.

Reimbursement

- 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.
- No reimbursements are provided if the campaign or activity is canceled.
- Reimbursement is not provided for exemption.
- Reimbursement will be provided on request and computed on an annual basis. It will be provided in the form of a bill credit after acceptance of the audit report for the preceding year.

Cycle 7

Appendix II – Product Group Strategies

In Cycle 7, NEEA will continue to operate in as many as six cross-sector product groups, leveraging its adaptive management approach to explore and advance the highest value opportunities for the region:

The Building Envelope Product Group includes the supply chain that manufactures, distributes and sells the materials that physically separate the interior and exterior of a building (e.g., walls, fenestration and roofs), and the end consumers who purchase them. High-Performance Windows (HPW) is the one program in this Product Group at the beginning of Cycle 7. It is supported by both electric and natural gas funders.

Market Transformation objectives:

- Engage in national partnerships to build alignment and market momentum in both window attachment and primary window markets. This includes increasing market demand for high performance fenestration products by leveraging 1) the U.S. DOE's investment and focus on the Partnership for Advanced Window Solutions (PAWS) national collaborative, and 2) emerging policies for deep energy retrofits of existing buildings.
- Continue to advance codes and standards for high-performance windows, leveraging the latest ENERGY STAR specification(s) to drive market adoption in the Northwest.
- Assess viability of additional window and envelope measures beyond fenestration through product scanning.

The Consumer Products Product Group includes the supply chain that delivers consumer goods and services in high volume, including manufacturers, distributors, physical and online retailers, contractors and installers, and the end customers who purchase them. The Retail Products Portfolio (RPP) is the one electric program in this Product Group at the beginning of Cycle 7.

Market Transformation objectives:

- Scan the market and work with manufacturers on new or emerging technologies across consumer product categories that will deliver the next level of energy efficiency for consumers.
- Build scale nationally with utilities and Market Transformation entities outside the Northwest, national retailers and ENERGY STAR to influence the purchasing decisions of corporate retail buyers that in turn influence manufacturers' product development and manufacturing decisions.
- Influence ENERGY STAR specifications and federal standards with data and insights.
- Improve U.S. DOE and U.S. EPA test protocols so that they accurately reflect real-world conditions and energy savings.

The HVAC Product Group includes the supply chain that manufactures, distributes, specifies, designs and installs commercial and residential HVAC products, and the end consumers who purchase them. High-Performance HVAC (HP HVAC) and Advanced Heat Pumps (AHP) are the two electric programs in this Product Group, while Efficient Rooftop Units (Efficient RTUs) is the one natural-gas-funded program at the beginning of Cycle 7.

Market Transformation objectives:

- Amplify alliance investments by collaborating with regional and national partners, including by leveraging the growing momentum around heat pumps, indoor air quality and HVAC efficiency.
- Increase supply-chain and end-user awareness and promotion of the very high efficiency dedicated outside air systems (very high efficiency DOAS) approach and its significant cost savings and non-energy benefits.
- Continuously improve average installed efficiency and peak savings across all residential-sized heat pump systems in the Northwest by

motivating manufacturers and other market partners to incorporate efficiency improvements into specifications and standards, which will enable manufacturers and the market to differentiate the best performing products and create competitive advantage.

- Scan for opportunities to 1) increase market adoption of heat pumps at the individual-room level through window-mounted heat pumps and reduced-cost installation strategies, 2) support hydronic heating and cooling in HP HVAC, and 3) deliver capacity, carbon and grid flexibility benefits in combination with HVAC efficiency.
- Continue to develop natural gas opportunities for HP HVAC and dual-fuel (hybrid) opportunities for efficient RTUs and the residential market.
- Inform and accelerate the region's interventions in equipment, design and installation efficiency through insights derived from data and research.

The Lighting Product Group includes the supply chain that manufactures, distributes, specifies, designs and installs lighting products (e.g., lamps, ballasts, controls and fixtures), and the end consumers who purchase them. Luminaire Level Lighting Controls (LLLC) is the one electric program in this Product Group at the beginning of Cycle 7.

Market Transformation objectives:

- Engage national and regional partnerships to build demand for networked lighting solutions and create greater market leverage with national manufacturers.
- Continue partnerships with U.S. DOE and Design Lights Consortium to improve networked lighting product performance and specifications.
- Engage key lighting manufacturers and their sales channels to enhance promotion and uptake of LLLC in the Northwest.
- Build awareness of LLLC and its benefits and develop the market-actor capabilities.
- Continue to assess networked lighting and building controls opportunities, such as integrated lighting and HVAC controls.

The Motor-driven Systems Product Group includes the supply chain that manufactures, distributes, specifies, designs and installs a variety of motor-driven systems (e.g., pumps, fans, compressed air systems and high-performance motors), and the decision-makers who influence the purchase of these products. Efficient Fans and Extended Motor Products (XMP) are the two electric programs in this Product Group at the beginning of Cycle 7.

Market Transformation objectives:

- Inform the development of voluntary specifications to reward the most efficient motor-driven systems, and then leverage those specifications to influence development of federal standards.
- Engage influential manufacturers, distributors and trade associations to demonstrate product performance of smart pumps and address market barriers to adoption.
- Ultimately, expand federal standards to require integrated variable speed drives and advanced controls for all covered pumps.
- Partner with manufacturers and industry associations to increase awareness, visibility and adoption of more efficient fan products.
- Scan for opportunities that optimize motor-driven systems to maximize system-level efficiency.

The Water Heating Product Group includes the supply chain that manufactures, distributes (wholesale and retail), specifies, designs and installs electric and natural gas water heating systems (commercial and residential), and the end consumers who purchase them. Heat Pump Water Heaters (HPWH) is the one electric program in this Product Group at the beginning of Cycle 7. In Cycle 7, NEEA will leverage the relationships and resources developed through the natural gas Efficient Water Heating program to explore residential and commercial gas heat pump opportunities.

Market Transformation Objectives:

- Increase regional adoption of heat pump water heaters by continuing supply chain engagement to drive demand and build confidence in the technology.
- Support the market as adoption widens to focus on remaining barriers to heat pump water heater market acceptance and challenging market segments, including those in cold climates, with challenging installation locations, and across varying income levels.
- Engage with manufacturers to improve efficiency of water heating products and systems, and develop efficient water heating solutions for multifamily and commercial applications.
- 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.

Product Groups are supported by an enabling infrastructure that is leveraged by multiple programs to build relationships, support market engagement and bolster regional clout. In Cycle 7, NEEA is supporting two such infrastructure programs: BetterBricks and the Integrated Design Labs.

BetterBricks supports alliance and regional energy efficiency programs by providing access to target market actors through its relationships and communication channels. This allows multiple programs to leverage a central investment while working to overcome market barriers, such as raising awareness and generating demand for energy-efficient technologies in commercial buildings. BetterBricks launched in 1999 and represents a long-standing, trusted resource for building professionals. BetterBricks target audiences include building owners, property managers, buildings facilities staff, architects, designers, engineers and contractors.

BetterBricks objectives:

- Cultivating and deepening market relationships by serving as a trusted third-party. This role brings both credibility and attention to NEEA's work in commercial buildings and helps build important partnerships that result in consistent opportunities for programs to engage with and better understand key segments and audiences.
- Creating, inventorying and disseminating tools and resources. These efforts educate the market about alliance programs and associated benefits and support the market by helping them properly implementing these solutions.
- Maintaining communication channels**.** These channels allow alliance programs to deliver targeted communications to and from target audiences using curated messaging.

Integrated Design Labs have a mission to transform the design, construction and operations of commercial, institutional and residential buildings to advance energy-efficient, high-performance and healthy buildings in the Northwest. Integrated Design Labs exist at several prominent universities in the Northwest, including Montana State University, the University of Idaho, the University of Oregon, the University of Washington, and Washington State University. These universities are critical partners to alliance programs by helping accelerate Market Transformation through research, technical assistance and education.

Integrated Design Labs are a critical source of, and testing ground for, emerging technologies and practices. Their activities can be further leveraged to support local and regional efficiency programs in a variety of ways, including through case studies, training, testing and evaluating new technologies, and building awareness of new programs or technologies within the design community. The market partners they work with (e.g., designers, engineers and building owners and managers) are a critical leverage point for efficient building practices across programs. Integrated Design Labs has an important role providing them with resources to support their understanding and ability to implement energy-efficient building practices.

Cycle 7

Appendix III – Promising Opportunities in Scanning

Residential and Commercial HVAC

Opportunity

Space heating is by far the largest opportunity for residential energy savings. In the Northwest, the current load is 1,600 aMW for electric residential space heating, and 470 aMW for commercial space heating. The cooling load is smaller, but growing, with the current load at 700 aMW for residential and nearly 1,800 for commercial. Innovative solutions are emerging for heat pumps to serve both residential and commercial heating and cooling demand. Much of this innovation and the potential to transform this market focuses on controls that improve the adaptability of the systems to deliver efficient space heat and cooling in variable climates and building types.

- **Next Generation Residential Heat Pumps:** While variable speed heat pumps can offer more efficiency than other types of space heating, leaky ducts and other installation and operating challenges can diminish their effectiveness. By adding advanced controls, heat pumps can be optimized to perform better, save more energy and deliver ancillary benefits to the grid. The same controls and sensors that enable efficiency and comfort simultaneously offer the flexibility of demand response.
- **Commercial RTUs with Heat Pumps:** There are hundreds of thousands of RTUs in the region, the majority of which are electric-resistance or gas powered. Adding heat pumps with integrated controls will allow these units to modulate up and down, saving energy by sensing and responding to weather conditions and other inputs. Advanced controls can also help business operators know if the systems are 1) installed, 2) functioning properly, and 3) could be delivering more efficiently in a way that adapts to their specific building.

Market Transformation Approach

NEEA will work with market actors to advance and test solutions that deliver occupant comfort and efficiency at a reasonable cost to consumers, with approaches specifically tailored to the existing Northwest building stock. This transformation requires finding solutions that are unique to the Northwest and are equipped with communicating controls that are intelligent enough to deliver efficiency and flexibility across the majority of building stock in the region.

Residential, Commercial and Industrial Motors/ Drives

Opportunity

Motors use about half of the electricity in the U.S. and account for 30% of the total electric load in the region. Adding smart controls to variable-speed motor-driven systems (e.g., pumps, fans and compressors) represent a significant energy-saving opportunity for the region.

To capture these savings, NEEA will expand applications of motor systems within the pump and fan program, and potentially add a new program for variable-speed drives to increase energy efficiency for existing single-speed pumps, motors and fans.

Market Transformation Approach

This market is ready to be transformed through a combination of practices, including: 1) improving how systems are installed and sized for efficient operation, 2) optimizing efficiency by measuring performance as a system instead of individual components, and 3) gaining adoption in the market through training operators and trade allies to retrofit existing systems with smart controls.

NEEA will collaborate in the development and validation of test methods and ratings that differentiate the variable-speed systems and quantify their energy and non-energy benefits for the region.

Residential and Commercial Water Heating

Opportunity

Heat pump water heaters are gaining momentum in the Northwest, but there remains an important opportunity to adapt the products to meet the needs of a broader pool of homes and buildings. Emerging products with varying capacities and form factors offer alternatives for large central systems and small hard-to-reach applications. These products represent efficient alternatives for the majority of water heater installation needs and hold the potential to significantly reduce the region's 1,300 aMW residential and 140 aMW commercial water-heating loads.

- **Residential Heat Pump Water Heaters for All Applications:** Heat pump water heaters are gaining awareness with homeowners and residential contractors, but the products tend to be one-size-fits-all offerings. NEEA will work with manufacturers and the supply chain to accelerate development of a range of water heaters that are ready to install in common installations, such as attics and small closet spaces, to make efficient heat pump water heaters off-the-shelf accessible to a broader market of consumers.
- **Commercial/Multifamily Central Heat Pump Water Heaters:** There is tremendous opportunity for the central heat pump water heater (CHPWH) product in the new construction sector. In new multifamily buildings, water heating represents 1) 25–30% of the total energy use, 2) one of the highest energy intensity uses, and 3) one of the largest direct sources of carbon emissions in most of these buildings.

NEEA's Advanced Water Heating Specification (AWHS) includes commercial water heating systems. These electric heat pumps with a central water-heating and distribution system provide domestic hot water in multifamily buildings. Gas boilers or electric resistance have been the go-to technology for central hot water due to a lack of technologies and low fuel costs. However, CHPWHs are 2–3 times more efficient and have the potential to operate at significantly lower costs. In addition, they support the growing number of policies for decarbonization by eliminating carbon emissions at the building and at the generation source. Grid-enabled CHPWHs offer fully flexible load shifting to help grid operators balance the grid during peak times.

Market Transformation approach

Commercial heat pump water heater technology has been available in the U.S. market for many years, but market adoption has languished due to complex engineering and unpredictable performance outcomes. Until now, the market has designed these heat pumps as a series of components that are a custom-engineered solution. This requires design engineers and installation contractors to specify all parts and pieces for a water-heating system, size it properly, develop a control system to integrate all active components, and then install it, commission it, and ensure proper maintenance. This approach has been a risky and expensive deployment strategy and has led to unpredictable performance results.

While transforming this market will require improving and leveraging existing tools, several products are available, with new products from major manufacturers expected soon. NEEA has published an Advanced Water Heater Specification v8.0 and defined all the parts of a fully functional commercial/multifamily system. This, along with modeling and sizing tools available for the design and engineering community, will enable the proposed system to be reliably modeled to predict performance. In addition, the water heating Qualified Products List (QPL) is in place to set performance expectations for those products, and workforce development training is available to help move the market forward.

Cycle 7

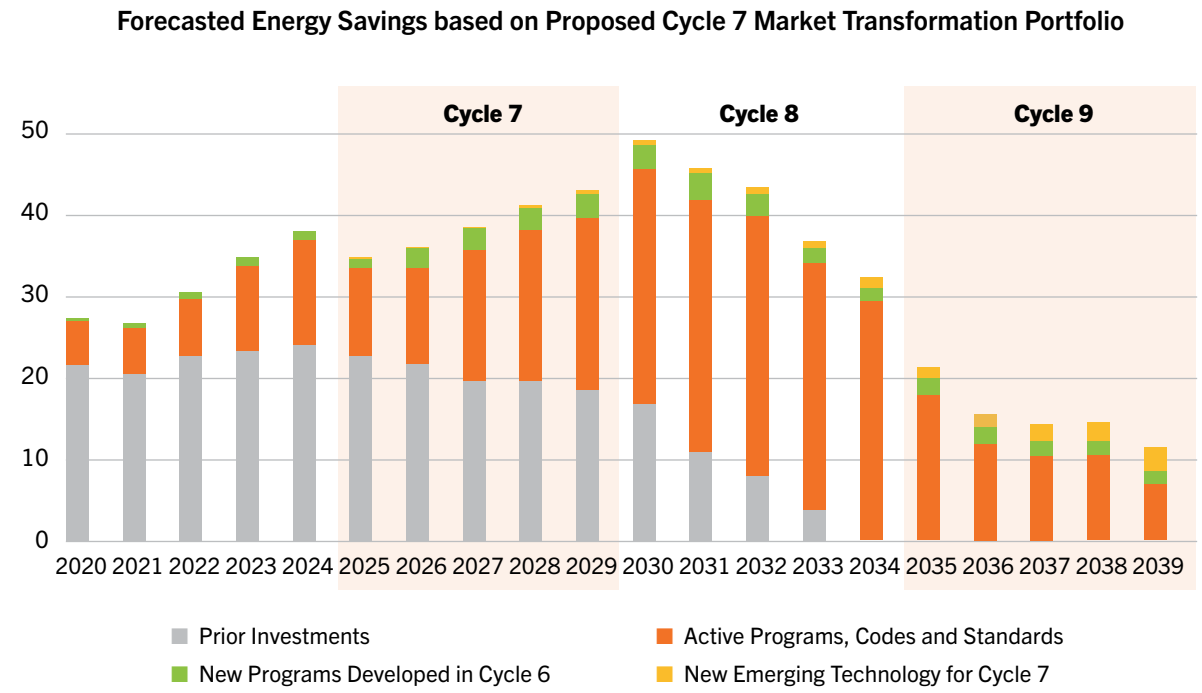
Appendix IV – Energy Savings Overview

Electric Energy Savings

The intention of NEEA's Market Transformation work is to achieve energy efficiency that is permanently embedded into market structures and behaviors. NEEA's current Cycle 7 electric portfolio of investments has a total achievable potential energy savings value to the region of 1300 aMW over the lifecycle of the investments. This savings potential is expected to increase as new emerging technologies and subsequent Market Transformation programs are identified in Cycle 7.

NEEA's primary energy savings measure is co-created savings,[15] which are savings that are generated above the estimated naturally occurring market baseline and inclusive of utility local program results. Because of the collaborative nature of many Market Transformation programs and the unique roles that NEEA and its utility partners play in transformation, NEEA does not assign attribution to either the regional or local effort. However, NEEA does collect program data to factor in local savings and avoid double counting in the reporting process. Additionally, NEEA tracks the avoided costs on the system to ensure regional benefits outweigh the societal costs of new efficiency adoption in the market.

Figure 3: Co-Created Savings Estimate (2020–2039)



[16] NEEA began tracking and reporting co-created savings in 2011 following an extensive Board-led value metrics exercise, which utilized McKinsey and involved extensive regional engagement.

Figure 3 above shows the estimated time horizon of alliance co-created energy savings (2020–2039) and the individual sources of energy savings, including:

- **Active Market Transformation Activities**
  In Cycle 7, NEEA will carry forward current programs in market development, as well as continued advancement of codes and standards efforts to lock in the market changes. Approximately half of the co-created energy savings expected in Cycle 7 will be from those current investments (shown in orange bars on previous page).

- **Prior Investments**
  The other half of anticipated Cycle 7 savings will be derived from codes and standards that went into effect prior to Cycle 7, along with a possible continuation of above-baseline savings from NEEA's previously funded Ductless Heat Pump program, which ended in 2021 (shown in the gray bars on previous page.)

- **New Programs Developed in Cycle 6**
  NEEA has advanced three new electric programs so far in Cycle 6 (High-Performance HVAC, Advanced Heat Pumps and Extended Motor Products). These programs are very early in maturity, which means that despite NEEA's confidence in the total energy savings potential, the specific timing of when those savings will be recognized through work in the market remains in flux. Those savings, shown in the green bars on the previous page, will be refined as the program strategy advances.

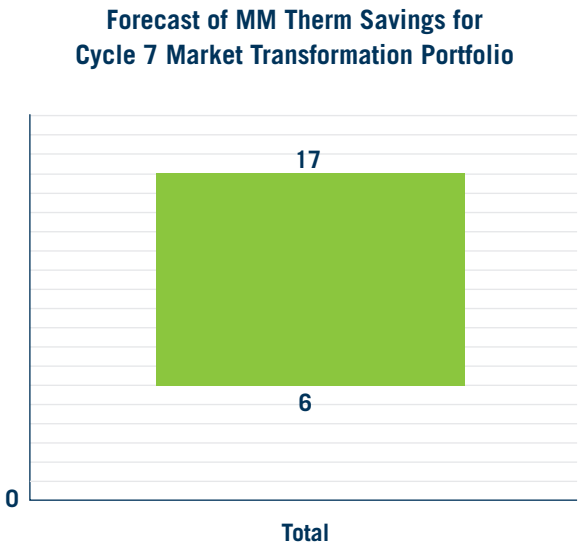
- **New Emerging Technology for Cycle 7**
  Energy savings from both current and previous investments begins to drop off by 2035. This places considerable emphasis on both the need for continued investment in emerging technology and to advance new programs into the portfolio to ensure future continuity of energy savings for the region. This need is particularly pivotal given the current and anticipated future pressures on the energy system described in NEEA's 2025-2029 Strategic Plan. Any new investments made after 2029, or any new codes or standards that may go into effect after that time, are not included in the Cycle 8 forecast.

Natural Gas Energy Savings

Compared to the electric portfolio, NEEA's venture into natural gas efficiency is very recent, with funding beginning in 2015. Through exploration and opportunity identification, NEEA has now established a solid investment portfolio in Market Transformation for funding in Cycle 7.

Through work to date, NEEA has one natural gas program in market development (Efficient RTUs) and a host of additional opportunities it is vetting for advancement. As a result, there is a wide range of potential for Cycle 7 natural gas energy savings. The savings estimates depicted in Figure 4 are based on current programs and do not contain savings potential for new work cultivated and advanced as part of the Cycle 7 plan. The range below depicts estimated savings in the Cycle 7 timeframe for 1) Efficient Rooftop Units for commercial buildings, 2) the potential for commercially available gas heat pumps, and 3) continued advancements in codes and standards. Refer to the natural gas portfolio, Table 2, for a full depiction of present opportunities for natural gas efficiency.

Figure 4: MM Therms Co-Created Savings Estimate (2025–2029)



Cycle 7

Appendix V – Glossary of Key Terms

NEEA's Board of Directors has defined the following set of key terms in the context of the 2025–2029 Strategic and Business Planning process:

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

Baseline Savings
Energy savings from market growth and change that would naturally occur without any market intervention on behalf of efficiency, including interventions funded by any utility, NEEA, Bonneville Power Administration (BPA) and Energy Trust of Oregon.

Basic Research
Generally the first step in research and development, this systematic study is aimed at gaining better understanding of the fundamental aspects of a concept or a phenomenon, without directed applications toward products. For example, 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 pursuing an optimal portfolio and that other pursuits remain consistent with the Purpose.

Co-Created Savings
All energy savings above baseline that occur in the market due to the combined efforts of utilities, NEEA and other actors.

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 relationship and focuses on 1) efforts that reduce and/or remove market barriers, primarily upstream and midstream, and 2) on the readiness of the market to permanently adopt energy-efficient products, practices and services at the best overall value.

Decarbonization
The reduction or elimination of carbon dioxide emissions.

Energy Efficiency or Energy and Capacity Savings
The reduction of energy consumption (kWh) and/or the reduction of demand (kW) on the customer side of the meter.

Funder
An organization that provides money to achieve NEEA's mission.

- ***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 who is an investor-owned utility that funds NEEA through Energy Trust of Oregon.

Funder Coordination Plan
A framework to help alliance programs identify specific activities that require close coordination with funders to better leverage one another's work and minimize potential overlap throughout the Initiative Lifecycle process.

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.

Load Flexibility
The ability to shape the demand curve in real-time and shift energy usage to off-peak times.

Local Programs Savings
Energy savings counted through BPA, the Energy Trust of Oregon and local utilities. NEEA estimates and forecasts these values by annually surveying these stakeholders about their local programs.

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, contracts or instruments, for money or barter. The Business Plan identifies the specific markets in which NEEA sees a long-term opportunity to help the region achieve energy efficiency goals through Market Transformation work and regional leverage.

Montana
As referenced in NEEA's Business and Strategic Plans, Montana represents Western Montana to 75 East of the Continental Divide, encompassing NorthWestern Energy and several public utilities served by Bonneville Power Administration.

Net Market Effects
Energy savings associated with market change that are not counted as Baseline or Local Programs Savings. It is a derived calculation of all other changes in the market that are not counted through Baseline or Local Programs Savings, but that the alliance is able to track through its ability to estimate Total Regional Savings.

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

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 parts of California, Nevada and Wyoming that receive electric utility services through Preference Customers of BPA.

Operational Efficiency
The ratio of service realized (i.e., 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, long-term market tracking activities, and ultimately code and standard adoption.

Prioritization
As in the "prioritized Portfolio of initiatives," prioritization is 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.

Regional Distribution of Value (portfolio criteria)
This is the balance the portfolio of work to deliver value equitably across the region, with a recognition of the needs of stakeholders in all four states and in both rural and urban settings. This requires addressing and balancing the needs of both large and small utilities and other energy efficiency organizations. The balance will include a mix of regionwide and limited geographic opportunities, and operational differences, such as the rate of Market Transformation and product adoption across the region.

Strategic Plan
The Strategic Plan identifies long-term goals and objectives determined to be in NEEA's best interests, along with strategies for reaching each goal and objective. The Plan defines NEEA's Mission, Purpose, guiding 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, these may be manufacturers, standards bodies, national energy efficiency organizations, code officials, regulatory agencies (e.g., national agencies such as U.S. EPA or U.S. DOE, as opposed to utility regulators), and distributors.

- ***midstream channel***
  Entities that are typically in direct contact with the end user, decision-maker, or consumer. For example, these may be trade allies or contractors, retailers, architects and engineers.

- ***downstream channel***
  The end user or their agent, or the consumer of a technology or approach.

Total Regional Savings
Energy savings associated with all market changes. Total Regional Savings represent the trackable adoption in the market of the efficient product or service. Note, this only captures first-year savings.

Voluntary Industry Standard
Equipment specifications that are agreed to by all, or a significant share, of manufacturers. This agreement enables or enhances an increased level of energy efficiency or reliability (e.g., communication standards to facilitate equipment self-reporting and/or control).