NORTHWEST ENERGY EFFICIENCY ALLIANCE

Business Plan | 2015-2019
July 8,2014

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EXECUTIVE SUMMARY

OVERVIEW

Regional stakeholders created the Northwest Energy Efficiency Alliance (NEEA) in 1996 to achieve sustained energy efficiency benefits through a coordinated, market-based approach to efficiency programs. Through collaboration and pooling of resources, the region's utilities[1] and stakeholders harness their collective influence to drive market adoption of energy efficiency products, services and practices for the benefit of consumers and utilities in Idaho, Montana, Oregon and Washington.

This Business Plan provides NEEA's five-year roadmap to fulfill these goals. NEEA's Board provides oversight and guidance for dealing with changes in strategy, scope and budget allocation over the five-year period. In addition, NEEA staff works with its advisory committees at appropriate stage gates in its Portfolio Review and Management process to define how initiatives are executed.

This Business Plan for 2015-2019 outlines how NEEA will work as a regional alliance to support its strategic plan to secure a vibrant, sustainable future for the Northwest. NEEA will achieve its mission, to "Mobilize the Northwest to become increasingly energy efficient for a sustainable future," by focusing on two strategic goals:

1. Fill the energy efficiency pipeline with new products, services, practices and approaches; and
2. Create market conditions that will accelerate and sustain the market adoption of emerging energy efficiency products, services and practices.

Background

Collectively, the Northwest has achieved the equivalent of over 5,000 average megawatts (aMW) of clean, carbon-free energy through energy efficiency investments since 1978. The Northwest Power and Conservation Council (Council) estimates that the region can meet 85 percent of new load growth over the next 20 years through energy efficiency.

Current economic conditions, including low and uneven near-term load growth for utilities and reduced natural gas prices, create challenges for energy efficiency investment. There are also other challenging trends in the energy efficiency industry that impact market transformation. The "low-hanging fruit" is disappearing, which means that the remaining potential is generally in smaller, more complex and inter-related programs. As the complexity of new efficiency opportunities increases and savings from individual programs shrink, collaboration in the region is increasingly important. Increased program complexity also requires some paradigm shifts in current measurement methods.

NEEA is responding to these trends by adjusting its approach to improve momentum in achieving regional goals for energy efficiency. The most significant change is the adoption of a Strategic Market framework with strategic partnerships and infrastructure to support the coordinated implementation of both regional and local utility programs. This enhanced framework will decrease the cost to transform markets and also improve time to market for key energy efficiency initiatives.

Learning From Experience, Adapting for the Future

Many of NEEA's current market transformation strategies and activities will continue into the 2015-2019 Business Cycle. At the same time, NEEA is adjusting its approach to leverage key learnings from prior business cycles and adapting to meet a changing market for energy efficiency in the following ways:

[1] "Utilities" includes the region's utilities, the Bonneville Power Administration and the Energy Trust of Oregon.

- Strategic Market Framework – NEEA will concentrate market transformation investments in targeted strategic markets to deliver high value to the region for the lowest cost. NEEA will develop regional strategic market plans in collaboration with the region and will explicitly support overall regional energy efficiency efforts in addition to NEEA-driven programs.
- Infrastructure Investment – NEEA will invest in ongoing market infrastructure to provide leverage across multiple sectors to cost-effectively support multiple market transformation initiatives over the course of many years.
- Market Portfolio Focus – NEEA will focus its portfolio of market transformation programs within four strategic markets: consumer products; residential new construction; commercial lighting; and commercial new construction. This focus represents a shift in the portfolio of market transformation activities more towards the residential sector in the 2015-2019 Business Plan.
- Portfolio and Initiative Management Systems – This plan is based on the best information available in 2014. New initiatives or activities will require review and approval through NEEA's Portfolio and Lifecycle management processes and the Regional Portfolio Advisory Committee (RPAC) review process.
- Emerging Technology Focus – NEEA will focus its new technology scanning and assessment activities on filling the market transformation pipeline to maintain a steady stream of new initiatives that will replace initiatives that transition out of direct market development during this business period. NEEA will continue to host the Regional Emerging Technology Advisory Group (RETAC) to facilitate regional coordination of emerging technology planning and activities.
- New or Revised Programs – Building off investments in strategic partnerships and infrastructure, NEEA will develop new market transformation programs and evolve existing programs in our strategic markets. Examples include:
  - Retail Product Portfolio – NEEA will develop a retail product portfolio that builds on the success of the TV initiative and will support market transformation of additional consumer products with the potential for cost-effective increases in energy efficiency savings. Consistent with NEEA's Initiative Lifecycle process, full development of this market transformation initiative will be contingent on a successful pilot.
  - Residential New Construction – NEEA will transition Northwest Energy Star Homes to the market and continue strategic focus on more stringent residential building codes via the Next Step Homes initiative. Next Step Homes will focus on partnerships with builders to improve market capability and support for advanced building practices.
- Other Services – NEEA will focus regional services on two programs: the Regional Energy Efficiency Conference and Conduit (conduitnw.org), the online community which provides the region with space to post and share information to more effectively achieve its energy efficiency goals.
- Operational Efficiencies – NEEA will continue to focus on improving overall operational efficiency via improved systems including improvements in data and knowledge management, stakeholder communications, program coordination with local utilities, financial systems and contract management.
- Stakeholder Coordination – NEEA believes its market transformation activities should ultimately enhance—and never hinder or confuse—the utility customer relationship or the mid-stream activities that drive success at the local level through energy efficiency programs. NEEA commits to and is already implementing a new process to improve funder coordination and input through increased transparency, early joint planning, and ongoing coordination for mutual success.

- Flexibility for Funders – Many of NEEA's funders have grown and expanded the capacity and capability of their own local energy efficiency organizations in recent years. In recognition of differences in funder needs and priorities for NEEA investment, this Business Plan assumes that NEEA will collaborate with funder organizations to identify and execute all necessary market transformation activities, while providing flexibility for funders to conduct some of these activities themselves (see Appendix 12). This flexible approach will minimize confusion among local trade allies and customers and will more fully leverage existing relationships between utilities and their customers. In addition, NEEA funders can choose to opt out of funding three programs in this business plan (i.e., Commercial Real Estate/Existing Building Renewal; Top-Tier Trade Ally Advanced Training; Industrial Technical Training). The Board will request an assessment of the costs and benefits of the optional programs and activities, if needed.

Investment and Return

Market transformation is inherently a long-term investment strategy that supports energy efficiency efforts by the region over a 20-year horizon. While there are also short-term benefits to engaging in market transformation, the majority of the value is long-term and delivered after the five-year business plan cycle. Accordingly, NEEA measures returns on investment using metrics that are reflective of this long-term view and includes short-term metrics, where appropriate. While the ultimate outcome of market transformation is energy efficiency, in the early stages of market transformation, NEEA measures potential savings and market progress towards long-term market transformation goals. NEEA will provide return on investment as follows:

Energy Savings

As a result of NEEA's efforts towards its two strategic goals, the investment during this Business Plan will result in significant energy savings in both the near and long term. NEEA forecasts that the region will benefit from at least 145 aMW of total regional energy savings by 2019 from an investment of up to $169 million over five years. Of the 145 aMW of savings forecast for 2015-2019, NEEA expects 75 aMW will be co-created through NEEA and its utility partners working collaboratively, 55 aMW of which will be net

Goal 1 - Fill the energy efficiency pipeline with new products, services, practices and approaches.

During this Business Plan period, NEEA will:

- Continue an active energy efficiency opportunity identification and assessment process that will maintain a portfolio of new emerging technologies with a targeted 20-year technical potential of 1,400 aMW;
- Maintain a "pipeline" of new market transformation initiatives that represent a 20-year achievable potential of 1,000 aMW; and,
- Convert "pipeline" potential into full-scale market transformation initiatives with a 20-year forecasted total regional savings of 175 aMW.

Goal 2 - Create market conditions that will accelerate and sustain the market adoption of emerging energy efficiency products, services and practices.

During this Business Plan period, NEEA will:

- Implement a portfolio of market transformation initiatives in four strategic markets;
- Ensure that, in 100 percent of the markets in which NEEA works, NEEA programs result in substantive and measurable change in market conditions[2]; and,
- Advance efficiency in building codes and equipment standards.

[2]Specific objectives included in sector trables.

TABLE 1 – SAVINGS METRICS (CURRENT INVESTMENTS)

	2015 – 2019 Savings (aMW)			2015 – 2024 Savings (aMW)		2015 – 2034 Savings (aMW)	
	TRS	CC	NME	TRS	CC	TRS	CC
Forecast	145	75	55	365	180	640	265

TABLE 2 – VALUE METRICS FOR ACCELERATION OF MARKET ADOPTION AND REGIONAL ADVANTAGE

Value Metrics	Target
Measurable Change in Market Conditions	Measurable change occurs in all targeted markets - see sector tables for detailed objectives
State Code Stringency Relative to Benchmark Code[3]	All state codes meet or exceed benchmark
Residential Code Compliance relative to 90% ARRA[4]	≥ 90%
Participation in Pending Standards Rulemakings	100%
Additional Annual Marketing Value Secured[5]	$4M

[3]The 2009 International Energy Conservation Code (IECC)
[4]ARRA requires states to achieve 90 percent compliance with the 2009 IECC by 2017
[5]Includes value of free media (PSAs); coop supply chain promotion contributions; coop marketing program dollars; donated in-store POP ad placements; earned media; bulk buying and nonprofit discounts, based on previous experience.

market effects savings. Net market effects is a calculated value over and above energy savings reported by individual utilities as a result of local program activity. NEEA will forecast and report net market effects savings in addition to total regional savings and co-created savings. The total resource cost (TRC) target for NEEA's portfolio is equal to or less than 3.5¢/kWh. Despite lowered natural gas prices, energy efficiency continues to be the least-cost resource, is readily available and is also vital for the environmental health of the region.

Tables 1 and 2 show both savings metrics and market adoption metrics. The savings metrics include five-, ten-, and twenty-year energy savings forecasts for total regional savings (TRS) and co-created savings (CC)[6], as well as the net market effects (NME) estimate for the five-year period.

Program Investment

Program investment comprises both contractor expenses and NEEA staff costs, including market research and evaluation, market planning and stakeholder relations. The five-year funding level will range from $145 million to $169 million, depending on funder choices to participate in optional programs and activities. Table 3 shows NEEA's total five-year (2015-2019) investment and its average annual investment by sector or functional area.

[6]Co-created savings are the result of local and regional programs working together, and are above what would happen without any intervention.

TABLE 3 – INVESTMENT SUMMARY		
	5-Year Total Core Investment, $M	**5-Year Total Optional Investment, $M**
Residential Programs	$52.0	$7.6
Commercial Programs	$20.8	$12.5
Industrial/Agriculture Programs	$1.4	$1.5
New Initiatives - To be defined[7]	$17.5	$0.7
Codes and Standards	$16.4	
Building Stock Assessments	$6.8	
Opportunity Scanning/Market Strategy	$6.0	
Other Services	$2.9	
Long-term Monitoring	$2.7	
Administration	$18.3	$1.7
Total Investment	**$144.8**	**$24.0**

[7]Some new initiatives will advance from scanning activities during the five-year plan. These initiatives could emerge from any of the sectors or markets identified in the Business Plan.

FUNDING

For the past 17 years, both public and investor-owned utilities in the four-state Northwest area have funded NEEA. Although the details have varied slightly over this time, the basic approach has been proportional funding based on each participant's share of the overall regional power system. The philosophy behind this approach is that all of the utilities receive long-term benefits—both from local energy savings and from the regional benefit of reduced demand on the regional power system.

In addition to the base funding provided by NEEA's funders, there may be additional activities or opportunities to advance NEEA's mission that emerge throughout the course of the business plan from other sources of funding. NEEA has established business processes to segregate and account for additional funding and will work with the Board to ensure that any additional funding opportunities are reviewed and approved to ensure consistency with the mission and NEEA's ongoing work as described in this Business Plan.

NEEA has invested in robust operational systems and processes to prioritize, plan and execute market transformation initiatives throughout their lifecycles. An initiative lifecycle stage-gate process provides a framework for the essential components of market transformation work including logic models, market progress indicators, market implementation plans, evaluation plans, cost effectiveness models and energy savings forecasts. This process ensures that NEEA appropriately analyzes, vets and either advances or rejects opportunities based on portfolio balancing criteria which include: cost-effectiveness, risk, long- and short-term energy savings, regional equity and urban/rural equity. NEEA's stage-gate process guides investment decisions based on ongoing assessments of market conditions and progress per market transformation objectives—thus ensuring that NEEA continues only those investments that are delivering value.

If a current NEEA funder ceases to participate in the Alliance, remaining funders would not be expected to contribute additional amounts to retain the same level of overall funding. NEEA will conduct an assessment of the impact on delivery of goals and may propose appropriate scale adjustments in services.

MARKET TRANSFORMATION STRATEGY

NEEA's core business is transforming markets to accelerate market adoption of energy-efficient products, services and practices. This section of the Business Plan focuses on the core NEEA activities targeted at and supporting market transformation. It describes NEEA's specific work in strategic markets for which NEEA sees a long-term opportunity to help the region achieve its energy efficiency goals.

Northwest Energy Efficiency Trends

Since the 2010-2014 Business Plan was developed, market conditions for energy efficiency have changed, in some cases dramatically. NEEA conducted market research in the fall of 2012 and spring of 2013 that identified a number of trends that will affect NEEA's work as a region to transform markets in the coming 2015-2019 Business Planning period. These trends include:

"Low-hanging fruit" is disappearing: Thanks in large part to the leadership of the Northwest, the success of building codes and appliance standards efforts has made the era of large, easy-to-capture, energy efficiency programs (e.g., compact fluorescent lamps, commercial lighting retrofits) a rapidly shrinking enterprise. The remaining energy efficiency potential available for programs is generally smaller, more diverse, and tends to integrate into larger systems and behaviors that are necessary to address simultaneously to capture the savings. This complexity and diversity is not easy to address within the current structure of most local utility and market transformation program efforts.

Energy savings measurement is evolving: In response to an increasingly complex efficiency environment, new measurement systems are coming into the market. Examples include whole-building performance measurement, direct power measurement embedded within the efficiency measure, and "whole market" product sales-data capture. These new systems are a response to both new data possibilities as well as needs of both end-customers and efficiency programs for measurement approaches that are more integrated and consistent with their existing business measurement structures. These new measurement approaches create new possibilities for efficiency programs as well as new tools for market transformation efforts such as strategic energy management that rely on end-user measurement of energy intensity to succeed.

Technology is rapidly changing: Technology in energy-consuming products and services is evolving at an increasing pace; with a corresponding increase in the speed of introducing new products and services as old products are retired from the market. It is challenging for energy efficiency programs to keep up with the speed of change. Solid-state lighting (a.k.a. LED lighting) products are changing so quickly that by the time emerging technology testing and reporting is complete, the products tested have already been replaced by newer models. As the Regional Technical Forum (RTF) is debating the unit energy savings for ductless heat pumps (DHPs), most of the DHPs included in the dataset used for the RTF's deliberations are no longer available. DHPs and LED lights are examples of the challenge for emerging technology efforts and efficiency programs to keep up with a marketplace shaped by rapidly changing technology.

Collaboration is an increasingly important tool: The Northwest has a long history of successful collaboration; recent examples include market transformation for ductless heat pumps, strategic energy management and heat pump water heaters. Collaboration will become more important as the complexity of new efficiency opportunities increases and the size of individual incremental efficiency opportunities shrinks. Further, many new efficiency opportunities are under the decision making control of entities that cross utility or state boundaries and may be outside the region. The effective collaboration and coordination of local programs, regional market transformation efforts and state and extra-regional parties will be increasingly important to maximize the cost-effective use of utility customer-funded efforts to capture the full potential of the energy efficiency resources in the region. Table 4 illustrates NEEA's response to these trends.

TABLE 4 – 2015-2019 BUSINESS PLAN RESPONSE TO TRENDS

Trend		Business Plan Component		Resulting in:
Low-hanging fruit disappearing; smaller, more diverse efficiency opportunities	→	• Develop Strategic Market Framework with infrastructure and platforms that support coordinated regional implementation of both market transformation and local utility programs.	→	• Ability to capture savings of many small opportunities • Lower implementation costs through integrated data collection and reporting • Faster time to market for new EE opportunities
Energy savings measurement is evolving	→	• Explore technologies that enable innovative measurement and verification. • Identify and facilitate measurement and data collection systems embedded in existing business process that can serve dual purposes of measurement of energy performance for both end-users and utilities. • Leverage market relationships in platforms as a vehicle to negotiate collection of whole-market data otherwise unavailable.	→	• Reliable estimates of energy savings for both end-users and utility power managers • Lower cost of data collection • Deeper and broader data collection from leveraged relationship with market • Market specific data supporting market progress measurement
Technology is rapidly changing	→	• Develop accelerated methods for identifying, testing, and validating performance for Emerging Technologies. • Leverage Market Platforms and develop pathways for utility programs that allow speedy uptake of new, proven emerging technologies.	→	• New EE approaches rapidly advanced into utility and MT programs • EE features included in manufacturer new product development efforts
Collaboration is an increasingly important tool	→	• Convene, support and, where appropriate, lead regional collaborative efforts to leverage the aggregated market power of the region. • Provide options for funders to collaborate on programs that may have less than full regional support. • Expand collaboration across initiatives by offering funding organizations the option to provide customer-facing marketing efforts themselves, in coordination with regional efforts. • Link with other regions such as the Northeast, Midwest and California.	→	• Lower costs, more efficiency measures, and deeper energy savings that result in long-term sustained market change • Increased and accelerated market adoption as markets respond to larger demand that in turn lower costs to Northwest consumers • Coordinated market transformation strategies for each strategic market identified in this business plan

Strategic Markets

Given the trends in Table 4 and the long-term nature of market transformation, NEEA will organize its market transformation work on a few, high-priority strategic markets. This focus allows NEEA to deliver the highest value to the region in its role as convener and collaborator to transform these markets over the long term. Criteria for selection of these markets include:

- A stream of energy savings opportunities with significant potential over a ten-year period inclusive of both existing and emerging technologies;
- A large portion of the energy savings potential suited for market transformation activities;
- Partnership opportunities that provide access to strategic leverage points based on long-term commitments between NEEA and key market actors;
- A clear business case for ongoing NEEA investment at the market level, including:
  - Increased leverage from relationships built with market partners at the regional/national level;
  - Lowered cost to implement market transformation initiatives by spreading the cost of market relationship management across multiple initiatives;
  - Increased effectiveness of initiatives through coordinated implementation that leverages the strategic market partnerships;
  - Increased access to market partners and the resulting ability to influence both efficiency level and time to market for new energy-efficient products; and
  - Long-term, consistent linkage to building codes or appliance standards that have a strong influence on the energy intensity of products or services within the market; e.g. new construction markets are heavily influenced by and connected to energy codes.

Given these criteria and NEEA resources for 2015-2019, NEEA will focus on four strategic markets:

Residential:

1. Consumer Products
2. New Construction

Commercial:

3. Lighting
4. New Construction

Together, these four markets account for over 45 percent of the 20-year efficiency potential and "lost opportunities" identified in the Council's 6th Power Plan. Technology changes are major driving forces within these markets, creating new opportunities for efficiency within the foreseeable future. Key leverage points exist within regional or national decision-makers in these markets. All of these markets represent important areas of engagement between local utility programs and their customers. Lastly, virtually all of the efficiency opportunities in these markets have strong connections to federal standards or state and local energy codes. Detailed information about the characteristics of each of these markets and the applicable selection criteria are contained in Appendix 11: Strategic Market Characteristics and Selection Criteria.

To increase the likelihood of long-term success, NEEA will collaborate with stakeholders to develop and evolve comprehensive Regional Strategic Market Plans for each of these markets. These plans will provide the framework within which NEEA will support the region in its effort to maximize cost-effective, long-term energy efficiency opportunities within these markets. These comprehensive plans will identify common goals and define roles and responsibilities for NEEA and other regional energy efficiency organizations to accomplish those goals.

Key elements of activity in supporting these Strategic Markets include:

Strategic Partnerships: A key to achieving long-term sustained success will be furthering the development of on-going relationships with

key market partners that have shared goals to increase the flow of efficient products and services. These relationships will enable the development of structures that can support efficiency programs in an era of rapidly changing technology and increasingly diverse efficiency opportunities. These lasting partnerships provide the Northwest access to national level decision makers that would be difficult to achieve or sustain at an individual utility level.

Market Infrastructure: Supporting long-term strategic partnerships requires the development and maintenance of infrastructure with key market actors. A major component of this infrastructure includes platforms. These build off the strong foundation of strategic partnerships to create a flexible mechanism that supports multiple market transformation programs targeting a wide array of diverse energy efficiency measures. These platforms will speed the time to market for new efficiency opportunities emerging from the pipeline that will benefit from pre-existing data collection, marketing and processing mechanisms. Key components of these platforms are:

- Uniform product specifications, e.g. ENERGY STAR criteria, to leverage aggregated regional demand to manufacturers and retailers for efficient products and services;
- Consolidated, streamlined data collection, e.g. unit sales data feeds, that provides comprehensive market assessment and supports energy savings evaluation;
- Common marketing and messaging, e.g., ENERGY STAR Most Efficient; and
- Leveraged, mid-stream incentive structures, e.g., TVs and upstream commercial lighting.

Market Resources: These infrastructure elements include both on-going technical resources such as the Northwest Integrated Design Lab (IDL) Network, as well as one-time, shorter-term investments such as development of new training curriculum and tools that expand market actor knowledge and capability. The region should prioritize these resources based on overall return on investment and support for the Strategic Market goals. NEEA's participation in developing these resources should leverage regional advantage to deliver value collectively at a cost that is lower than any one utility could deliver on its own.

Coordinated Market Transformation, Local Utility and Other Programs: The comprehensive strategic market plans will define goals as well as roles and responsibilities between NEEA, local utilities, and state/local energy efficiency programs to achieve those goals. By successfully implementing these plans in a coordinated fashion, the region will benefit from accelerated and sustained market adoption at a much lower cost than could be achieved working individually. For example, in the same consumer markets, NEEA can work upstream to leverage regional advantage with national retailers in close coordination with local utility programs that work with individual consumers. Together, this coordinated activity should result in a powerful market intervention that rapidly increases the adoption of efficient products and services. Table 5 outlines examples of how the strategic market framework will affect the market transformation work.

NEEA has an existing portfolio management system that provides the structure for decision making regarding market transformation program investments. NEEA actively manages the portfolio of activities to deliver value using a balanced scorecard approach. NEEA manages the portfolio across a range of criteria including energy savings, levelized cost of energy saved, regional equity, rural/urban equity and risk. The strategic market framework will provide additional guidance to help the portfolio management process by providing a strategic market overview when making portfolio-level decisions about specific market transformation programs, whether initiatives or infrastructure.

TABLE 5 – EXAMPLES OF HOW THE STRATEGIC MARKET FRAMEWORK WILL AFFECT THE MARKET TRANSFORMATION WORK

Market Transformation Element	Benefit
Scanning and Concept Development	• Strategic markets provide both a focal point as well as a mechanism to identify specific gaps and boundaries. • Roadmaps will directly inform forward looking opportunity discovery and market transformation concept development efforts.
Performance Validation and Market Testing	• Strategic markets will align market actors and utilities around shared goals for these two activities to both accelerate and reduce the cost of this work.
Full-scale Market Development	• Strategic Market infrastructure provides a strong foundation on which market transformation initiatives can stay focused on removing market barriers and exploiting opportunities. • Common infrastructure shared by multiple initiatives reduces overall program costs and improves time to market.
Long-term Monitoring and Tracking	• Trusted relationships and standardized data reporting systems will lower the cost and increase the reliability of data needed to track and report market progress and value streams after NEEA's full-scale development efforts are ended.
Codes and Standards	• The strategic market framework strengthens market support for the critical work of advancing codes and standards by creating shared, long-term goals and joint support of proposed changes to building codes and appliance standards through strategic partnerships.

The following sections provide an overview of the key elements, budget and value delivery for each strategic market organized by sector. A description of new emerging efficiency opportunities and anticipated building code and appliance standard activities are also included. Additional information is contained in the Appendices, including more detailed descriptions of the strategic markets in Appendix 11, budget and savings assumptions in Appendix 4 and detailed initiative descriptions in Appendix 6.

RESIDENTIAL SECTOR

In 2015-2019, NEEA will focus on two strategic markets within the residential sector: Consumer Products and New Construction. Both of these markets present long-term, leveraged opportunities for market transformation with significant energy savings and strong links to building codes and appliance standards. Together, these two markets represent over two-thirds of energy savings potential in the residential sector included in the 6th Power Plan.

Strategic Market: Consumer Products

This market consists of the entire supply chain including manufacturers, distributors, retailers, contractors and installers that deliver consumer goods and services in high volume. Products sold through this supply chain include lighting, appliances, heating and cooling equipment, and consumer electronics. Each year, the 80 million individual products sold through these channels represent annual energy consumption of roughly 500 aMW; the equivalent of the annual output of a large power plant. Significant energy savings opportunities exist across virtually the entire set of product categories sold through these channels. The 6th Power Plan estimated 20-year energy savings potential associated with these products totals almost 2,000 aMW. While some of this potential has already been captured (e.g., lighting, TVs), much remains, and new efficiency opportunities (e.g., super-efficient dryers) are advancing that will likely add to the Council's 6th Plan potential.

Strategic Partnerships

- **National Retailer and Retail Buying Cooperatives:** NEEA will leverage regional aggregated consumer demand to engage retailers at the corporate level to change buying and stocking practices, support consumer marketing and introduce new products into the retail market.
- **Extra-regional Efficiency Organizations:** NEEA will partner with other large energy efficiency program operators, aggregators and influencers to build coalitions large enough to influence national retailers.
- **Northwest Regional Retail Collaborative:** NEEA will work in close collaboration with the Northwest Retail Collaborative to ensure that all retail product-based market transformation initiatives incorporate members' institutional program knowledge and local customer perspectives, and that NEEA's programs do not interfere with local retailer or customer relationships.
- **Western Regional Utility Network (WRUN):** NEEA will work to represent Northwest interests with extra-regional utility partners to gain increased leverage with retailers for specific products targeted by the WRUN resulting in lower costs for Northwest utilities to participate in these efforts.
- **Major Manufacturers:** NEEA will leverage direct manufacturer relationships as well as relationships with influential retailers to provide a strong foundation for transforming targeted products such as water heaters and ductless heat pumps. This allows NEEA access and influence on new product development efforts that in turn accelerates and focuses the introduction of new products that deliver performance optimized for Northwest markets.
- **Trade groups:** NEEA will work with manufacturers to engage directly with specific trade groups that provide opportunities for the joint development of new efficiency specifications and common messaging across a market, as well as data collection opportunities for entire market categories.

Infrastructure

- **Retail Platform:** In coordination with utilities, retailers (corporate level) and other extra-regional collaborators, NEEA will work towards the establishment of a support platform that provides: 1) accurate data reporting on total product sales of both baseline and efficient products; 2) the opportunity for coordinated-marketing/merchandising and in-store staff training for efficiency within the retail environment; and 3) up-stream/mid-stream incentive structures that are flexible, adaptable and leverage regional advantage to maximize market transformation of retail products at the lowest possible cost to the region.
- **Market Resources:** In close collaboration with Northwest utilities, extra-regional efficiency organizations and national partners, NEEA will support development of consumer facing product education and differentiation resources to help address the following market barriers: awareness and value proposition(s) of energy-efficient products; ability to easily identify energy-efficient products; and knowledge of appropriate product end uses/applications. Wherever possible, NEEA will leverage existing resources and tools such as the EPA's ENERGY STAR program.

Initiatives

NEEA's portfolio currently includes three consumer products market transformation initiatives anticipated to continue for a significant portion of the 2015-2019 Business Planning period:

- **Retail Product Portfolio (RPP):** Building off relationships established with retailers through the Televisions initiative, the RPP initiative uses mid-stream incentives to influence retail stocking practices—and ultimately drive manufacturing and standards—for a portfolio of energy-efficient products sold through the retail channel. Over the course of the initiative, NEEA will collaborate closely with the region to manage the portfolio of targeted products and/or product categories. NEEA will work in close collaboration with regional utilities to ensure that the RPP is complementary to and not in conflict with local program delivery. As mentioned previously, NEEA will negotiate regional sales data for the benefit of regional and local program planning and evaluation. NEEA will also use this data to support more stringent product efficiency standards. The RPP initiative currently is in the "Market and Product Assessment" stage of its lifecycle, during which NEEA will develop and pilot an initiative approach and product portfolio. Approval for additional investment and scale will depend upon successful confirmation of the concept and savings potential from the pilot.
- **Heat Pump Water Heaters (HPWHs):** NEEA will accelerate market adoption of Northwest climate-appropriate HPWHs in the replacement water heating market by addressing market barriers including product availability, price and consumer demand. NEEA's efforts will include developing and leveraging its supply chain relationships, and leveraging relationships with manufacturers and big box retailers to influence them to invest in product improvement, distribution and promotion of this technology. The ultimate goal of this initiative is to influence and accelerate federal standards for water heaters.
- **Ductless Heat Pumps (DHPs):** NEEA will continue its efforts to accelerate market adoption of DHPs as an alternative to electric resistance heating by addressing remaining market barriers, including product availability, installer capability/practices, price and consumer awareness. In the next few years, NEEA will focus particularly on increasing DHP availability in the retail channel and exploring alternative installation practices to support trades outside of traditional HVAC channel. NEEA will also explore the barriers and opportunities of "do-it-yourself" installations.

Strategic Market: Residential New Construction

This market includes the supply chain that plans, builds, sells and inspects new residential buildings. It includes both single family and low-rise multi-family structures. The 6th Power Plan forecasts an increase of 1.4 million new residences, with a corresponding 170 aMW of efficiency potential, to the Northwest housing stock over the next 20 years.

Strategic Partnerships

- **New Home Programs:** NEEA will partner with existing efficient/sustainable new home programs to ensure that there is a core component of energy efficiency performance required in their qualification criteria, and that consumers have clear visibility of that performance regardless of the branding associated with the home.
- **Home Energy Performance Organizations:** NEEA will work with home energy rating and performance verification organizations that support the new home programs throughout the region to ensure best practices in home performance.
- **Homebuilders:** NEEA will partner with both individual builders and homebuilder associations to help advance best practices for efficient construction as well as to leverage coordinated marketing messages to consumers about efficiency in new homes.
- **Regional and National Organizations:** NEEA will partner with regional and national organizations engaged in the development and advancement of new emerging technologies and whole home solutions in the residential construction market.
- **Codes Allies:** NEEA will leverage the combined efforts of the region to advance efficiency in residential construction in partnership with both state and national organizations that support the advancement of energy codes across the region.

Infrastructure

- NEEA will work to develop and establish coordinated core advanced efficiency requirements that all market-based branded new construction programs can adopt, thereby ensuring a more uniform and higher level of energy performance for new homebuyers who purchase any home with a "green" brand.
- NEEA will work to ensure a robust market-based verification/certification network for third-party certification of efficiency features and performance.
- NEEA will continue to support regional builder/contractor training for new energy efficiency technologies and practices to ensure that builders and contractors possess the technical abilities and experience needed to adopt advanced building practices and stay ahead of the desired code changes.

Initiatives

Next Step Site-Built Homes: NEEA will leverage the new construction infrastructure to develop and increase market adoption of energy-efficient integrated advanced building practices for single-family homes. These practices will improve efficiency 20-25 percent over current energy code requirements. The ultimate goal of this initiative is to influence and accelerate code adoption over the next three to four code cycles.

TABLE 6 – RESIDENTIAL SECTOR SUMMARY BUDGET AND ENERGY SAVINGS

Strategic Market	Intervention	Program Name	Avg. Annual Core Budget ($M)*	5-Year Core Budget ($M)*	Avg. Annual Optional Budget ($M)	5-Year Optional Budget ($M)	5-Year Total Regional Savings Estimate (aMW)	10-Year Total Regional Savings Estimate (aMW)	Market Transformation Objectives
Consumer Products	Infrastructure/ Initiative	Retail Platform/ Retail Prod Portfolio[8]	$3.0	$14.8	$0.0	$0.0	6	20	Influence retailer behavior and stocking practices to increase the volume of energy-efficient products sold via the retail channel and ultimately, being manufactured. Use data to influence federal standards.
	Initiative	Heat Pump Water Heaters	$3.1	$15.8	$0.6	$3.1	21	68	Influence the passage of a federal standard requiring heat pump water heaters for all electric storage tanks > 45 gallons.
	Initiative	Ductless Heat Pumps	$1.6	$8.0	$0.5	$2.5	22	67	Lower average installed price to level required for sustained market adoption, without further intervention, by diversifying product offerings and channels.
Residential New Construction	Infrastructure/ Initiative	Certified Homes / Next Step Homes[9]	$2.7	$13.4	$0.4	$2.0	13	31	Establish "core" advanced efficiency requirements that all market-based programs can adopt; ensure robust market-based verification/certification network; expand builder/contractor capability via training. Advance and influence residential building codes 20-25 percent over next four code cycles; build awareness and market capacity for advanced energy-efficient building practices and technologies.
All Markets	Standards	Other Standards					15	30	Raise the bar for product standards to lock in energy efficiency.
Total			**$10.4**	**$52.0**	**$1.5**	**$7.6**	**77**	**216**	

[8]NEEA's Retail Platform is interdependent with the Retail Product Portfolio initiative because the incentives associated with the initiative enable the Northwest to form relationships with and influence supply chain market actors.
[9]Includes budget for Northwest Energy Star Homes.
*Includes contractor expense and NEEA staff costs including market research/evaluation, planning and stakeholder relations. Additional detail regarding budget assumptions is included in Appendix 4.

Additional Value Delivery

The consumer products and new construction strategic markets both contain platforms that will provide additional value to support the Northwest energy efficiency efforts in those markets, including:

- **Market Leverage:** The retail platform provides the Northwest a unique opportunity to leverage the region's consumer base to engage with national level retailers at a level that would not be possible without a unified effort.
- **Data Collection:** Both the retail and new construction platforms provide a built in data collection mechanism that will provide timely, complete sales data for efficient products and homes and the ability to capture savings of many small opportunities.
- **Education and Training:** The new homes platform will provide builder/contractor training on energy-efficient home construction that will support all efficient home programs.
- **Integrated Program Delivery:** The retail platform leverages the combined investment of both utility and NEEA programs for more favorable retailer terms, such as retailer contributions to promotion expense, price reductions, and stocking practices.
- **Lower Combined Implementation Costs:** The retail product platform coordinates and spreads the cost of several program support components across multiple initiatives.
- **Faster Time to Market:** Platforms move new energy efficiency opportunities more effectively through strategic distributor relationships.

Emerging Technology Pipeline

NEEA anticipates that there will be a number of prospective emerging technologies that will enter the portfolio of market transformation initiatives during the 2015-2019 funding cycle. Table 7 below gives some examples of emerging technologies currently in NEEA's scanning process, with a focus on "proving the concept" embodied in these technologies.

The projects in Table 7 illustrate the kinds of new residential sector opportunities that could advance from emerging technology and enter NEEA's portfolio of market transformation initiatives over the course of the 2015-2019 Business Planning period.

Codes and Standards

The Retail Product Portfolio is coordinated with ENERGY STAR to provide sales data that will influence the improvement of voluntary standards and implement federal minimum standards when applicable. The Next Step Homes Initiative will develop and accelerate the adoption of advanced technologies and practices into codes over the next three to four code cycles.

TABLE 7 – EXAMPLE RESIDENTIAL EMERGING TECHNOLOGY PROJECTS

Strategic Market	Emerging Technologies Project Description
Consumer Products	Super-efficient Dryers: Work with manufacturers to ensure products deliver both high efficiency and high consumer satisfaction; influence the passage of federal standards to increase the energy efficiency of clothes dryers.
Consumer Products/New Construction	Dual Purpose DHPs: Simple Ductless Heat Pump systems with added capability to heat water while simultaneously providing space heating/cooling; lowering installed cost and improving performance compared to separate installations of DHPs and HPWHs.
Consumer Products	Advanced Heat Pump Water Heaters: There are a number of high-performance new HPWH technologies coming along including split systems and CO2 based technologies that could increase savings from HPWHs up to 50 percent.
New Construction	Efficient Manufactured Homes: Demonstrating performance of a "bundle" of efficient technologies that can save up to 30 percent in newly constructed manufactured homes.

COMMERCIAL SECTOR

In 2015-2019, NEEA will focus on two strategic markets in the commercial sector: Lighting and New Construction. Both markets provide multiple leverage points throughout the lifecycle of product offerings. Together, these two markets represent over 50 percent of the energy savings potential in the commercial sector identified in the 6th Power Plan. In addition, NEEA is also offering optional programs focused on the commercial real estate and commercial lighting markets.

Strategic Market: Commercial Lighting

This market includes the supply chain that manufactures, distributes, specifies, designs and installs lighting equipment in commercial buildings. It includes both products (lamps, ballasts, controls, fixtures) as well as design and installation services that together affect over 20 percent of all commercial energy use in the region. The 6th Power Plan estimates that there is over 650 aMW of energy efficiency potential in this market; roughly one-half of all potential in the commercial sector. While some of this potential has been captured by local utility programs, much of this potential remains untapped; specifically improvements in overall lighting systems efficiency as well as in products that are not affected by the recent change in federal standards.

Strategic Partnerships

- **Product Manufacturers:** NEEA will build and maintain partnerships with national lighting manufacturers to work on transforming the products offered to Northwest lighting markets. This partnership will leverage the aggregated buying power of the Northwest market to ensure that efficient products are available and increasing in market share over time.
- **Electrical Distributors:** NEEA will build and enhance current relationships with regional electrical distributors that stock and sell lighting products and leverage the consolidated demand for efficient lighting products. This will increase the market share of efficient products flowing through these channels and create opportunities for data sharing and joint training for contractors.
- **Commercial Lighting Regional Strategy Group:** NEEA will continue the work of this group in developing and advancing Northwest Regional strategy for commercial lighting.
- **Regional and National Efficiency Organizations:** NEEA will coordinate with Northwest Utilities and work with extra-regional consortiums working on the west coast and nationally to transform the commercial lighting market. These partnerships will leverage the Northwest market for lighting to represent a large market while working with national manufacturers of lighting equipment.
- **Product Rating, Specification, and Testing Organizations:** NEEA will work on behalf of the region to partner with organizations that provide product testing, rating, labeling and qualification services nationally to lighting product manufacturers. These partnerships will provide the region a voice at the table when setting product requirements or developing testing methods that will ultimately help the market differentiate efficient products from others.
- **Advanced Lighting Product Development Organizations**: NEEA will partner with organizations like the US Department of Energy that are working to advance new, emerging technologies into the lighting market.

Infrastructure

- **Upstream Lighting Platform:** NEEA will lead a coordinated effort with regional and national electrical equipment manufacturers and distributors to establish and support data reporting on both baseline and efficient products sold to lighting contractors in the region, coordinated sales and marketing of high-efficiency products to contractors, and upstream/mid-stream incentive structures that leverage regional advantage to

get maximum efficiency for minimum cost to the region. This platform will support a variety of products including lamps, ballasts, controls, fixtures and design support. NEEA will work in close collaboration with the regional Commercial Lighting Workgroup to ensure that the region has a coordinated regional strategy and that NEEA's work complements—and does not interfere with—local efficiency programs.

- **Regional Resources:** NEEA will develop resources and tools that support utilities and the market in building market awareness, demand and capability among contractors that design, specify and install lighting for retrofit or new construction projects.

Initiatives

- **Reduced Wattage Replacement Lamps:** NEEA will leverage the upstream platform by using mid-stream incentives to increase lighting distributors' stocking and promotion of reduced-wattage general-purpose lamps in the maintenance market. NEEA will use data and market experience from this effort to support future federal standards efforts that affect these products. Currently, this initiative is in the "Market Test" stage of the initiative lifecycle and, if successful, will likely allow NEEA to apply this approach to additional products or categories of lighting equipment. NEEA will work in close collaboration with the regional utilities and other stakeholders to determine appropriate additional products.
- **Luminaire Level Lighting Controls (LLLC):** NEEA will lead a coordinated effort to establish the use of luminaire level lighting controls with commercial office lighting troffers—as standard industry practice in retrofit applications. This emerging technology provides up to 50 percent savings through a unique control strategy based on sensing conditions at each fixture. NEEA will address market barriers including lack of product standards, lack of awareness of the technology and its benefits, and lack of a programmatic model that allows utilities to capture the full benefits of the LLLC technology.

Optional Program

Top-Tier Trade Ally Advanced Training: In addition to the lighting programs included in the core NEEA funding, this optional infrastructure program is designed to accelerate market adoption of commercial and industrial advanced lighting retrofit practices by building connectivity between contractors, training resources, and utility programs. Top Tier Trade Ally Advanced Training Infrastructure will enable the Northwest to meet evolving training needs of Commercial Lighting Market actors. The region can leverage this infrastructure within local programs to expand the base of contractors possessing the skills to deliver complex commercial lighting projects. This program will also increase the visibility of the participating contractors in the market so that the market and utilities can differentiate and reward those with higher skills.

Strategic Market: Commercial New Construction

This market includes the community of businesses that develop, plan, design, build and commission new commercial buildings. For purposes of this Business Plan, this includes all business types, but resources will be prioritized based on market need to address the most common types of new construction during the Business Planning period. The 6th Plan includes 60 aMW of efficiency potential in this market; though it could be much more if the regional economy recovers more quickly than forecast.

Strategic Partnerships

- **Developers**: NEEA will partner with the business community that plans and develops new commercial properties in the region. NEEA has had a very successful relationship with a number of these developers over the past decade that has

resulted in some of the premier sustainable and efficient buildings in the Northwest. These relationships have provided pathways for innovation in new construction that have been leveraged into best practices in new construction and ultimately into energy code development.

- **Architects and Engineers:** NEEA will build off of its long-standing relationships with the architectural and engineering community that designs new commercial buildings. Through these relationships, NEEA will continue to advance the practice of integrated design for high performance through the Integrated Design Lab network.
- **Non-Governmental Organizations:** NEEA will leverage our current working relationships with the many regional and national non-governmental organizations targeting new construction in the commercial sector to facilitate collaborative strategies to ensure that energy efficiency stays at the core of sustainable design that is moving towards net-zero buildings.
- **Codes and Standards Organizations:** NEEA will maintain and strengthen its current relationships with the agencies and organizations that develop and promulgate energy codes and standards. NEEA will work with these organizations to advance specific efficient technologies and practices and integrate them into the appropriate energy codes and equipment standards processes.

Infrastructure

- **Market Resources:** The Integrated Design Lab Network (IDL) will continue to innovate and advance the practice of integrated design by working on real projects with architecture and engineering firms throughout the region. The Labs will provide this support to both new construction projects and to major renovations. NEEA will also support development of tools needed to advance integrated design, construction and operation of low-energy consumption buildings and that support market differentiation of efficient buildings both in new construction and existing building markets. NEEA's base-level funding of the IDL provides an opportunity for Northwest utilities to leverage additional support for their own new construction and renovation program needs.

Initiatives

There are currently no initiatives in the NEEA portfolio targeting the new commercial construction market. NEEA will submit future initiatives through the NEEA Initiative Lifecycle process in close collaboration with regional utilities and other stakeholders.

Optional Program

Commercial Real Estate/Existing Building Renewal: In addition to the strategic markets described earlier, NEEA is offering an optional market transformation program targeting the commercial real estate market. The following describes the overall market opportunity and the effort that NEEA would undertake if funding for the full scope of activities is available from participants.

In commercial real estate, the building owner, who makes decisions related to any physical or operational characteristics of the building, is separate from the building occupants who lease the space and pay for energy use. This is in contrast to owner-occupied buildings such as government or institutional buildings. The commercial real estate market includes a wide range of business types including offices, warehouses, retail and office parks. It includes both large and small buildings and encompasses the whole supply chain providing products and services to these businesses. This model of ownership and operation applies to an estimated 40 percent or higher of the entire commercial building floor space.

Strategic Partnerships

- **Property Owners and Managers:** NEEA will work to build upon and enhance existing relationships with regional property owner/management companies and their associations. These relationships will allow NEEA and regional utilities to accelerate energy efficiency into standardized business practices and create new opportunities for efficiency technologies and programs to engage with these key decision makers.
- **Non-Governmental Sustainability and Efficiency Organizations:** NEEA will develop and maintain strategic partnerships with key non-governmental organizations with similar interests in advancing efficiency as a business proposition for commercial real estate owners and managers.
- **Local Governments:** NEEA will partner with local cities and counties where appropriate to support local policies (e.g. energy disclosure ordinances) that will advance efficiency as part of the business environment for commercial real estate.
- **Service Providers:** NEEA will work to partner with regional and national service providers that are responsible to design, build, operate and maintain commercial real estate in the region. These partnerships will enable a faster path for introduction of innovation in energy efficiency to the commercial real estate market as well as a mechanism for coordinated efficiency program interaction between local utilities and regional market transformation activities.

Infrastructure

NEEA will engage and leverage these strategic partnerships to deliver a range of tools and strategies unique to the commercial real estate market. These tools and strategies will leverage the competitive advantage of energy efficiency best practices to accelerate their adoption by commercial real estate owners, property management firms, service providers and tenants. NEEA will also provide energy management strategies that utility partners can leverage in their commercial programs. Tools and resources provided as part of this infrastructure include:

- **Strategic Energy Management:** Deliver a range of tools and training in support of the transactional and technical best practices for commercial real estate and utility partners on a spectrum of energy management practices—from benchmarking, to tenant engagement, to comprehensive deep energy retrofit and building renewal. These include technical best practices and service provider guidelines, case studies, and program deployment tools drawing from the Commercial and Industrial SEM Infrastructure.
- **Industry Recognition:** NEEA will leverage industry competition to recognize Commercial Real Estate leaders in efficiency, and convene utility partners and market leaders to support future opportunities.
- **Tenant Engagement:** To increase demand by corporate occupiers for high-performing buildings, and equip them with end-user strategies, NEEA will deliver tools and resources including broker/tenant engagement resources, green leasing case studies, and plug-load management guides.
- **Deep Energy Retrofit Tools:** NEEA will continue development and market delivery of tools that can accelerate adoption of deep energy retrofits, defined as a comprehensive, integrated set of measures that achieves at least 35 percent energy savings over a building's existing performance. These tools will include further development of a business case for deep energy retrofit and quantification of non-energy benefits; as well as support for owner engagement through a business case tool for use in the market. These tools enable owner decision-making to proceed with a deep energy retrofit as an interactive resource for assessing deep energy retrofit opportunities, developing a project-specific scope, and providing a holistic business case that accounts for non-energy value created.

TABLE 8 – COMMERCIAL SECTOR SUMMARY BUDGET, ENERGY SAVINGS AND MARKET TRANSFORMATION OBJECTIVES

Strategic Market	Intervention	Program Name	Average Annual Core Budget ($M)*	5-Year Core Budget ($M)*	Average Optional Budget ($M)	5-Year Optional Budget ($M)	5-Year TRS Estimate (aMW)	10-Year TRS Estimate (aMW)	Market Transformation Objectives
Commercial Lighting	Infrastructure/ Initiative	Commercial Lighting Upstream Platform/ Reduced Wattage Replacement Lamps[10]	$1.4	$7.1	$0.1	$0.5	27	56	Upstream Platform: • Electrical distributors representing 70 percent of commercial lighting sales stock/promote targeted lighting products. • Region obtains annual C&I regional lighting sales data. • Northwest market share of low wattage (LW) T8s (28/25W) grows to 50 percent of the lamp replacement market. • LW lamp prices decrease relative to 32W in the Northwest due to economies of scale, changed stocking practices, and increased demand.
	Infrastructure	Regional Resources	$0.4	$1.9					• Deliver technical and marketing tools that are leveraged by regional trade allies and local utility C& I programs.
	Initiative	Luminaire Level Lighting Controls	$0.9	$4.6			7	19	• 4-6 major manufacturers offer LLLC products that meet specification. • Accelerate the growth of LLLC market share over both advanced and non-control systems.
	Infrastructure	Top-Tier Trade Ally			$1.0	$4.9		0**	• Expand the base of highly skilled contractors to complete complex commercial lighting retrofit projects.
New Construction	Infrastructure	Integrated Design Labs	$0.9	$4.3					• R&D and demonstrations of new integrated designs in actual buildings achieving efficiencies 30 percent or more in excess of code requirements.

[10]NEEA's Commercial Lighting Upstream Platform is interdependent with the Reduced Wattage Replacement Lamp Initiative because the incentives associated with the initiative enable the Northwest to form relationships with and influence supply chain market actors.

TABLE 8 – COMMERCIAL SECTOR SUMMARY BUDGET, ENERGY SAVINGS AND MARKET TRANSFORMATION OBJECTIVES (CONTINUED)

Strategic Market	Intervention	Program Name	Average Annual Core Budget ($M)*	5-Year Core Budget ($M)*	Average Optional Budget ($M)	5-Year Optional Budget ($M)	5-Year TRS Estimate (aMW)	10-Year TRS Estimate (aMW)	Market Transformation Objectives
New Construction	Initiative	Building Operator Certification Expansion	$0.3	$1.5			1	2	• Create lasting improvement in the energy-efficient O&M of commercial buildings in the northwest by expanding market demand and increasing the supply of educated and certified building operators. • Transition to the market in 2015.
	Infrastructure	Commercial Real Estate/ Existing Building Renewal			$1.4	$7.1		0**	• Deliver value to utility partners through market knowledge and program tools and resources that address industry barriers. and increase CRE industry engagement. • Develop and disseminate tools supporting deep retrofits.
Commercial & Industrial	Infrastructure	Commercial & Industrial Strategic Energy Management	$0.3	$1.4					• Sustained adoption of SEM is valued and desired by business owners. • Support SEM implementation in the region. • Support a regional working group to achieve consensus on common SEM standards. • Consolidate regional leverage to influence promotion of an international standard.
All Commercial Markets	Standards	Other Standards					30	61	• Raise the bar for product standards to lock in energy efficiency.
Total			**$4.2**	**$20.8**	**$2.5**	**$12.5**	**65**	**138**	

*Includes contractor expense and NEEA staff costs including market research/evaluation, planning and stakeholder relations; Additional detail regarding budget assumptions is included in Appendix 4.
**At this point, counting and reporting energy savings is not a primary objective of infrastructure programs. However, in the future NEEA could determine methods for measuring, tracking and reporting energy savings from these programs.

Additional Value Delivery

The commercial sector markets provide additional value delivery beyond the savings and market transformation objectives in Table 8. In addition, the activities in this sector will provide:

- **Market Leverage:** The electrical distributor platform provides the Northwest a unique opportunity to unify demand for specific products through this channel, including a connection to national manufacturers who sell through this channel.
- **Data Collection:** Both the commercial real estate and the electrical distributor platforms provide built in data collection mechanisms that will provide timely, complete sales data for efficient products and commercial property adoption and progress towards strategic energy management in the region.
- **Education and Training**: Both platforms will provide training for trade allies to deliver a higher level of service in the market. The new construction platform will provide project-centered training on integrated design for architects and engineers.
- **Strategic Energy Management Tools and Resources:** NEEA will continue to develop and maintain tools and resources in support of strategic energy management for commercial and industrial markets. These tools will include training materials, online resources and resources to help utilities and market actors build awareness and capability to support SEM, particularly for small to medium businesses and industry.

Emerging Technology Pipeline

NEEA anticipates that there will be a number of prospective emerging technologies that will enter the portfolio of market transformation initiatives during the 2015-2019 funding cycle. Table 9 below gives some examples of emerging technologies that are currently in NEEA's scanning process, with a focus on proving the concept embodied in these technologies. The projects in Table 9 are illustrative of the kinds of new opportunities that could advance from emerging technology and enter NEEA's portfolio of market transformation initiatives over the course of the 2015-2019 Business Planning period.

TABLE 9 – EXAMPLE COMMERCIAL EMERGING TECHNOLOGY OPPORTUNITIES

Strategic Market	Example Commercial Emerging Technology Opportunities
Commercial Real Estate	Low-cost, high-reliability building performance metering: This technology/service would provide high-quality unbiased measurement of building performance that can appropriately delineate changes in performance between occupant driven behavior (occupancy) versus external factors (weather) or equipment failure. This technology would be the basis for a new set of efficiency programs such as pay-for-performance as well as provide a reliable foundation for building performance and disclosure ordinances.
Commercial Real Estate	Advanced Roof-Top-Units and Controls: This initiative would develop the market for the fourth generation evaporative cooling technology as well as integrate web-based controls to advance high performance HVAC into the vast majority of buildings served by RTU's.
New Construction	Low-cost, high-performance pre-analyzed integrated packages of measures for medium to small commercial new construction: This project would create standards and a guide for sustainable new construction in "low-value" buildings that cannot afford or otherwise would not seek certification from a full-featured process like LEED.
New Construction	Advanced integrated design strategies, tools and equipment to progress along the path to net-zero capable medium to large commercial buildings.

Codes and Standards

NEEA will identify and develop specific energy efficiency technologies that are good candidates for inclusion into future commercial energy codes or federal standards. Some of these technologies will come from the new construction activity while others may come directly from the emerging technology pipeline. NEEA will prioritize these technologies and will conduct appropriate research to determine barriers to their adoption into the market and into codes. NEEA will engage with utilities to have these technologies incorporated into voluntary programs to demonstrate feasibility to codes and standards agencies that work directly on code adoption and standards rulemaking processes. See Appendix 7 for a list of standards anticipated for action during the 2015-2019 Business Planning period.

INDUSTRIAL/AGRICULTURAL SECTOR

In 2015-2019, NEEA will scale back its industrial/agricultural sector investment to a limited infrastructure effort focused on supporting the regional industrial efficiency delivery capability. NEEA will identify additional market transformation investment opportunities via its scanning process (see Table 11). In particular, NEEA will actively seek new investment opportunities in the agricultural sector.

As it embarks on the 2015-2019 Business Plan, NEEA will focus its industrial sector efforts on completing one initiative (Refrigeration Energy Specialist Certification), and implementing a limited infrastructure program that provides regional resources that support the advancement of energy efficiency across the entire sector. Proposed investments and activities include:

Strategic Partnerships

- **Industry Associations:** NEEA will maintain existing relationships with regional industry associations representing key segments of Northwest industries. These partnerships will provide a foundation for establishing shared goals with association members and regional efficiency interests and bilateral exchanges of information and data where appropriate.
- **Northwest Strategic Energy Management Collaborative:** NEEA will continue to work with this important support group to advance its mission to advance SEM in the Northwest.
- **Industry Supplier Associations:** NEEA will work with the associations that represent key equipment and service providers to Northwest industry such as the Hydraulic Institute, National Electrical Manufacturers, Compressed Air and Gas Institute, and others. NEEA will leverage those relationships to bring new products and services to the Northwest as well as training and technical support for these critical components of industrial energy use.
- **Industrial Efficiency Organizations:** NEEA will continue to partner with other regional and national organizations such as CEE, ACEEE, and US DOE that are working to advance efficiency in industrial motor-driven systems to represent the aggregated voice of the Northwest industrial market.
- **Strategic Energy Management Organizations:** NEEA will continue to partner with regional and national organizations that are committed to the development and advancement of strategic energy management in the industrial sector.
- **Codes and Standards Organizations:** NEEA will build off of its current work with the organizations responsible for setting appropriate standards for equipment and practices in the industrial/agricultural sector. NEEA has a long history of working with industry standards organizations as well as appropriate federal agencies in this sector.

Infrastructure

Strategic Energy Management (SEM) Regional Resources: NEEA will share resources in support of strategic energy management tool development with the commercial sector efforts. NEEA's industrial effort will work to tailor components of the shared tools and resources for small and medium industrial customers. Table 8 shows the cost of these resources in the Commercial Sector Sumary Budget.

Optional Program

Industrial Technical Training: This optional infrastructure program provides coordinated technical training on key industrial energy efficiency concepts to support industrial energy efficiency programs and build market capacity to facilitate and implement industrial energy efficiency best practices. Trainings will provide technical resources to utilities and their industrial customers. A NEEA-coordinated regional program allows the region to achieve economies of scale in curriculum development and training delivery, and delivers regional advantage by capitalizing on the strategic partnerships noted above.

Initiatives

Certified Refrigeration Energy Specialist (CRES) Certification: NEEA will continue its effort to increase the supply of and demand for certification training for personnel operating industrial refrigeration systems, thereby increasing the market adoption of energy efficiency best practices in refrigeration operations. CRES certification provides practical, hands-on learning with documented results, and results in a certification that differentiates and creates value for trainees and their employers. This initiative focuses on addressing key market barriers—the lack of an ANSI-accredited certification program, lack of a program owner, and the lack of demand/awareness of the value proposition for certification among Refrigeration System Operators (RSOs) and managers. Refrigeration Engineers and Technicians Association (RETA) currently offers the certification with NEEA support; the CRES initiative seeks to attain full industry ownership, supported by membership and student tuition fees, by 2017.

NEEA may identify new initiatives through scanning and, if appropriate, will advance those through the NEEA initiative lifecycle process.

TABLE 10 – INDUSTRIAL/AGRICULTURAL SECTOR SUMMARY BUDGET AND ENERGY SAVINGS

Intervention	Program Name	Average Annual Core Budget ($M)*	5-Year Core Budget ($M)*	Average Annual Optional Budget ($M)	5-Year Optional Budget ($M)	5-Year TRS Estimate (aMW)	10-Year TRS Estimate (aMW)	Market Transformation Objectives
Infrastructure	Industrial Technical Training			$0.3	$1.3			• N/A – Utility program support resource
Initiative	Refrigeration Energy Specialist Certification	$0.3	$1.4	$0.0	$0.2	3	11	• CRES certification is actively sought by refrigeration professionals to gain competitive edge • Business owners gain benefits in hiring and promoting certified system operators
Total		**$0.3**	**$1.4**	**$0.3**	**$1.5**	**3**	**11**	

Additional Value Delivery

The industrial/agriculture sector provides additional value delivery beyond the savings and market transformation objectives in the previous table. The activities in this sector will provide:

- **Data Collection:** Using regional targeted market research NEEA, will provide information for its Northwest collaborative activities and help support industrial standards development.
- **Coordinated Knowledge Transfer:** The Northwest Industrial SEM Collaborative provides a mechanism to share and transfer working results on SEM innovation as well as solution improvements undertaken in the region.

Emerging Technology Pipeline

NEEA anticipates that there may be some prospective industrial emerging technologies that could enter the portfolio of market transformation initiatives during the 2015-2019 funding cycle. In the agriculture sector, NEEA will research opportunities for an irrigation market transformation initiative that has broad applicability and benefit across the region. Table 11 gives some additional examples of emerging technologies currently in NEEA's opportunity discovery process with a focus on "proving the concept" embodied in these technologies. The projects in Table 11 are illustrative of the kinds of new opportunities that could advance industrial emerging technology and are potential candidates to enter NEEA's portfolio of market transformation initiatives over the course of the 2015-2019 Business Planning period.

TABLE 11 – EXAMPLE INDUSTRIAL EMERGING TECHNOLOGY OPPORTUNITIES

Project Name	Project Description
Industrial Energy Management Information Systems	These systems provide valuable feedback to industrial firms with SEM in place to help them understand progress towards energy intensity goals. These systems also simultaneously provide energy savings data back to utility programs as demonstrated evidence of energy savings from SEM.
Complete Integrated Motor System Solutions (Extended Products)	This project is exploring a new product category that provides a complete motor-driven systems solution with motor, coupling, drives and controls that provide for high-efficiency across a range of end-use needs. This would effectively lower the cost and ease the installation for variable use situations while improving efficiency.
Pump System Operator Certification	This operator certification would follow the same pattern developed under the RETA-CRES certification program for operators of large individual or collective pumping systems.

Codes and Standards

NEEA staff responsible for Codes and Standards will work with those responsible for Emerging Technologies on an on-going basis to create and maintain a prioritized list of specific items identified for inclusion into future industrial motor driven system federal standards. NEEA will work directly on federal standards rulemaking processes. Current examples include three US DOE rulemakings in pump, fan and compressor energy efficiency standards.

NEEA continues to collaborate with ACEEE as well as OEM equipment manufacturers, and trade organizations on developing labeling protocols for extended products that represent energy-efficient motor-driven systems which may also benefit from future federal standards rulemaking.

NEEA's Product Managers supported the development of International Systems Standard for Energy Management Systems ISO 50001 and continue to support development of implementation guidelines that aid manufacturing plants in adopting ISO 50001. Future harmonization among management system standards is underway.

NEEA staff will continue to support the development of voluntary data standards that facilitate the data exchange between and integration of advanced irrigation management technologies.

EMERGING TECHNOLOGY

Current Situation/Overview

Since re-starting Emerging Technology as a dedicated business focus in 2010, NEEA has built a solid foundation focused on identifying, testing, and advancing new, emerging energy efficiency technologies into the market. NEEA has worked collaboratively with Bonneville Power Administration, Energy Trust of Oregon and other regional partners to enhance the overall region's efforts in this important area by hosting the Regional Emerging Technology Advisory Committee.

Value Proposition

NEEA lowers the region's cost and risk to identify, explore and develop these new technologies compared to any one entity in the region pursuing these projects on its own. NEEA's emerging technology effort also increases regional leverage with extra-regional organizations engaged in emerging technology work. NEEA provides a point of regional collaboration on emerging technology projects that essentially expands the overall pool of available resources to explore these new opportunities.

For 2015-2019, NEEA will maintain a portfolio of new efficiency opportunity projects. These projects will be the basis for screening, sorting and prioritizing new opportunities for entry into NEEA's formal market transformation initiative pipeline and stage-gate process as well as for new utility program opportunities. NEEA will also continue to support regional collaboration by hosting the Regional Emerging Technology Advisory Committee. Where possible and practical, NEEA will partner with other regional and national emerging technology efforts to leverage regional emerging technology resources with extra-regional funds.

CODES AND STANDARDS

Current Situation/Overview

Over the past 15 years, NEEA has worked with the region to support the development of individual state and local energy codes that are practical, effective and grounded in market realities. Post-adoption of new codes, NEEA provides education, training and technical support to the hundreds of local jurisdictions which implement the codes. This supports high compliance rates that, in turn, maximize energy savings.

For standards, NEEA participates in rulemaking processes at the U.S. Department of Energy (DOE), as well as in individual states, providing technical input and analysis. NEEA, and more generally the Northwest region, often has a disproportionate influence on the DOE process because NEEA provides data from both market research and programs. This is frequently the only field-based data available.

Codes and standards have become part of the energy mainstream over the past several years. The Obama administration has made them a centerpiece of its energy policy and the media and efficiency forums frequently mention them as one of the primary mechanisms for achieving energy savings. Large advances have occurred in both codes and standards during the past five years, so much so that the conversation about their role and future potential has fundamentally changed. Utilities are now concerned that advanced codes have left few cost-effective measures for new construction programs and that much of the most obvious energy savings in standards have been, or likely soon will be, incorporated into minimum requirements. In codes, the rapid increases in stringency have created a gap between current practice and code, meaning that achieving high compliance rates has become much more important.

There are still very large, cost-effective savings available in codes and standards. However, over the next five years there is a need to transition from a traditional focus on increasing individual component efficiency toward more comprehensive approaches that can incorporate systems and overall performance. It is unclear whether the practices and laws for the current code development processes and standards rulemakings will support this transition; if not, new structures will be required.

Value Proposition

Codes and standards set the floor for efficiency which drives the motivation for innovation which NEEA's work with emerging technologies and market transformation initiatives then capture. They are building blocks which are inextricably linked to NEEA's other work and these links result in far greater energy savings sooner than could be achieved by any one of these elements of the market transformation process by itself. Codes and standards are one step in a complete market transformation cycle which ideally repeats over and over until buildings use so little energy that there is no value in reducing it.

Table 12 lists key objectives for 2015-2019.

TABLE 12 – 2015-2019 BUSINESS PLAN OBJECTIVES FOR CODES AND STANDARDS

Objective	Metric
Support increases in stringency and compliance of energy codes in each of the four Northwest states.	Savings analysis of new code versus old code.
Support the adoption of more stringent federal and state efficiency standards.	Savings analysis of new standards versus old standards.
Develop a package of policies and data that will support implementation of a hybrid voluntary/mandatory approach to limiting energy use in existing buildings.	Development of package and implementation of proof of concept demonstration projects.
Transition, where appropriate, to system and performance-based standards.	Number of standards (voluntary/mandatory) created that meet the objective.
Integrate building science principles more formally into all advanced practices and systems NEEA promotes.	Documentation of efforts and implementation.

OTHER SERVICES

Current Situation/Overview

The region requested that NEEA step up its efforts to provide services for utility energy efficiency program staff during NEEA's 2010-2014 funding cycle. Through 2013, those efforts included: 1) the delivery of Efficiency Connections Northwest (renamed Efficiency Exchange in 2013 when NEEA began collaborating with BPA on the event), a regional conference targeting utility energy efficiency staff; 2) development and launch of Conduit, an online community for energy efficiency professionals in the Northwest; 3) training and structured network opportunities for utility staff; and 4) development of a regional energy efficiency marketing toolkit. Going forward for the 2015-2019 cycle, NEEA will continue supporting Efficiency Exchange and Conduit—the services determined to be of highest value across the region.

Value Proposition

Efficiency Exchange (formerly Efficiency Connections Northwest) is a large-scale event targeted at Northwest utility energy efficiency staff from all utilities (both public and investor-owned) in the region. The conference provides a regular forum for knowledge sharing around topics selected to help Northwest utility energy efficiency staff achieve their program goals. In addition, the conference offers utility energy efficiency staff a unique opportunity to network with their peers and other industry experts, exchanging information and establishing professional relationships that allow continued knowledge sharing after the conference ends. Close integration with Conduit augments information sharing (both before and after event) at the conference. NEEA works in partnership with BPA and the Council in planning and executing the conference. The number of utility attendees as well as a participant survey will measure success of the annual conference.

Conduit (conduitnw.org) is an online community which provides the region with space to post and share information and comments and to create group collaborative spaces to help utility energy efficiency staff improve program implementation and more effectively achieve their energy efficiency goals. Where the conference provides a venue for concentrated face-to-face knowledge sharing and networking, Conduit facilitates on-going information exchange and remote collaboration among energy efficiency professionals across the region. In some cases (e.g., Efficiency Exchange and the NWPPA Communications and Energy Innovations Conference), Conduit has become an integrated part of conference programs, providing a space for participants to begin discussions before the conference and continue sharing information and collaborating after the conference is over.

Data services are another added value that NEEA provides; these services are detailed in the Market Research and Evaluation section.

STAKEHOLDER RELATIONS

In 2013, NEEA formed Stakeholder Relations to ensure that NEEA's regional energy efficiency work reflects the diverse needs of the region. These diverse stakeholders are comprised of funders and other key regional players including the Northwest Power and Conservation Council, state energy offices, public utility commissions, advocacy groups and others.

Stakeholder Relations ensures an effective and efficient stakeholder input process through advisory committees and other means; champions NEEA funder and local perspectives on regional initiatives; coordinates outbound corporate communications on NEEA's progress and results; protects NEEA's image so that the NEEA's market influence is maximized; facilitates internal communication in a highly matrixed organization; and monitors energy policy matters that inform NEEA's efforts.

This plan includes significant improvements to stakeholder coordination on the timing, requirements and process of bringing a new market transformation initiative into the NEEA portfolio. NEEA will solicit funder input on the market transformation theory and design associated with each initiative early in the process and will make significant modifications

to its current processes and activities:

- **Earlier, Deeper Stakeholder Engagement** NEEA will engage with experts from funding organizations earlier and at a deeper level to collaboratively design and plan the market transformation strategy, implementation and coordination activities. This collaboration will be coordinated through sector advisory committees and work groups.
- **Revamped Initiative Advancement Process** In addition to collaborating with the appropriate sector advisory committee and work group, NEEA staff will create a new process to increase initiative advancement transparency by formally soliciting Regional Portfolio Advisory Committee (RPAC) input at two key points: 1) prior to an initiative being adopted into the NEEA market transformation program portfolio (i.e., Initiative Start stage-gate); and 2) prior to an initiative being approved to scale-up its market activities (i.e., Scale-Up Approval stage-gate). NOTE: This process will be developed in detail separately and reviewed by the Board. This process will include: the scope of advisory committee participation; how commanding/ruling the vote is; advance notice required for items coming before RPAC; which RPAC members are eligible to vote; and a Board review of the process after a full year of experience. As part of this process, NEEA will provide:
  - **Stakeholder Coordination Plan** to identify areas of coordination, what steps NEEA will take to ensure appropriate coordination, and what process NEEA will follow moving forward. NEEA and funder representatives will generate this plan in a collaborative process prior to release to RPAC.
  - **Market Transformation Strategy** to describe the overall design of the initiative, including the specific market barriers that are impeding market transformation, the steps proposed to overcome those barriers, whether efforts are best done by NEEA, the local organization or others, and the estimated costs, benefits, and related assumptions used to define the scope, goals, and outcome metrics for the initiative.
  - **Program Implementation Plan** that provides details on planned market interventions, timing and clarification of roles and responsibilities.
- **Clarification of Work Group and Advisory Committee Roles** – NEEA staff will work with stakeholders to further clarify and modify the roles, responsibilities and authority of work groups and advisory committees in this process.
- **Standard Rules of Engagement** – NEEA staff will adhere to the following guidelines for coordinating market transformation with funders:

NEEA will:

- Jointly develop a local/regional program coordination plan in collaboration with funders that clearly defines roles and responsibilities prior to each milestone decision.

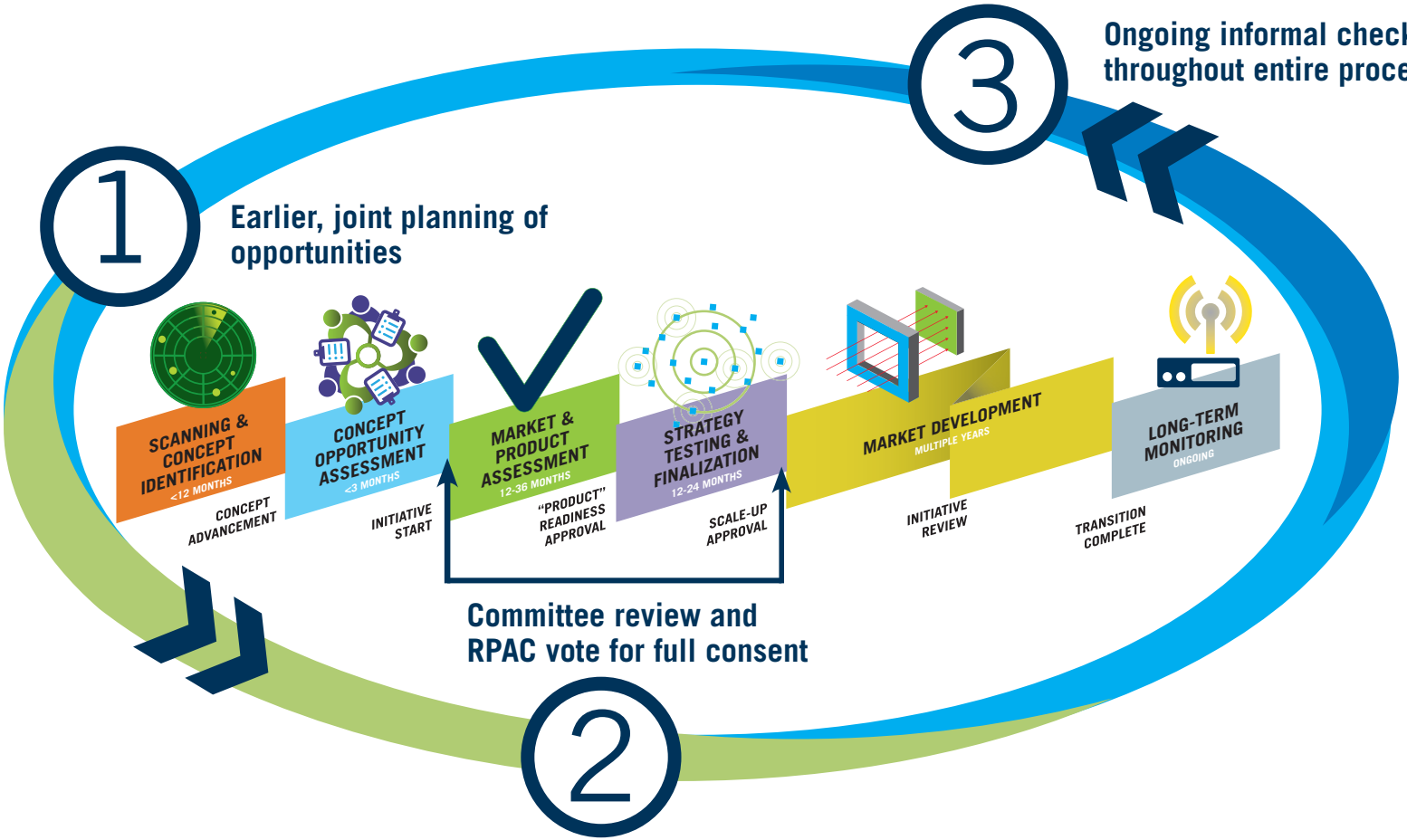
NEEA will not:

- Engage with market actors in funding utilities' territory without approval as detailed in the approved Stakeholder Coordination Plan; or
- Engage with or market directly to utility customers unless the activities are approved as part of the Stakeholder Coordination Plan.

NEEA will ask Local Utilities to:

- Commit to address market barriers on a local basis where they opt out of the market transformation activities such as marketing or channel development activities;
- Work with NEEA to identify potential areas of overlap with local market actors early in initiative planning/design to avoid conflict/surprises; and
- Agree to participate in any initiative evaluation where they elect to play a role in marketing or channel development activities.

FIGURE 1- REVAMPED STAKEHOLDER COORDINATION/ENGAGEMENT PROCESS (PROPOSED)



NEEA believes this revamped approach allows funders significantly more upfront time and visibility to effectively coordinate on planning and program design, as well as a greater degree of transparency and influence.

It includes an intervention process to allow for changes and improvements if a funder believes an initiative is not living up to the experience. In particular, NEEA's objective is to drive a higher level of consensus and collaboration without increasing complexity or time needed to meet market transformation goals.

MARKET RESEARCH AND EVALUATION

Market Research and Evaluation provides services to NEEA in the form of market research to inform market transformation efforts as well as formal evaluations of initiatives in market development. Core competencies include primary market research in both quantitative and qualitative forms which provide insight into potential target market sizing and segmentation, market characterization efforts, and baseline estimates projecting adoption of energy-efficient products and practices. In addition, this group provides evaluative services through independent, third-party contractors which assess the impact or processes of NEEA's funded initiatives. Staff coordinates activities within the initiative teams to provide recommendations on potential program design changes associated with an evaluation or market-based assumptions regarding inputs to Alliance Cost Effectiveness (ACE) models maintained by NEEA.

Market Research and Evaluation also conducts regional studies primarily represented by the large building stock assessments in residential, commercial, and industrial segments. It serves as a central repository of regional data, including a repository of regional sales data across a variety of products, and provides enhanced analytical capabilities.

NEEA is planning for building stock assessments in the residential and commercial sector staggered over the five-year period, with residential beginning in 2016 and commercial beginning in 2018. In order to address some of the sample frame limitations that have arisen in previous work, NEEA plans to devote the year prior to commencement for sample frame preparation. NEEA will conduct an industrial facility assessment during the 2020-2024 business cycle.

NEEA will provide a centralized resource for sales data collection/analysis for the region, including the collection of additional sales data within the region, beyond what is associated with NEEA's market transformation initiatives. NEEA will continue to focus on its current objectives of raising the level of rigor and establishing NEEA as a premier leader in research methodology and approach.

MARKET PLANNING

Market Planning supports the organization with analytical expertise and is responsible for forecasting and reporting cost effective, energy savings, and other value metrics. The department develops and manages cost effective models, defensible methodologies to measure the effects of market interventions and other valuation tools to support initiatives at various stages of the market transformation initiative's lifecycle. It manages the forecasting and reporting of savings for both current and previously funded initiatives, and owns funder and Board reporting of energy savings and cost effectiveness metrics at initiative and portfolio levels. Market Planning supports the organization with analytical expertise and is responsible for forecasting and reporting cost-effective energy savings and other value metrics.

Market Planning is responsible for the portfolio management system to ensure that NEEA is on track to meet its business plan goals. The portfolio management system supports decisions related to initiative adoption, emphasis and termination. This system and processes are transparent, help ensure ongoing efficiency and accountability, and provide stakeholders insight into portfolio management criteria (e.g., contribution to Business Plan objectives, regional equity, resource requirements, risk and initiative performance to date).

BUSINESS ADMINISTRATION

Business Administration includes Accounting/ Finance, Contracts Administration, Facilities, Human Resources, Legal/Risk Management, Information Technology and Data Management. NEEA has strengthened its underlying infrastructure and the Business Administration team has moved from an operational and control-based approach to a more strategic-based approach for business support. For example, Business Administration has been partnering across the organization to help define and advance functional excellence across every department and function.

Business Administration focuses on making the business processes effective, streamlined and efficient, so that the organization can operate with maximum efficiency and the execution teams can focus their efforts on market transformation work. NEEA will allocate a proportionate share of business administration expenses to optional programs to cover administrative overhead for those programs funded by the participating subset of NEEA funders.

STRATEGIC OPPORTUNITY: NATURAL GAS

Improving energy efficiency for Northwest homes and businesses is inherently a multi-fuel issue that offers significant benefits to the regional economy and its energy availability. Recognizing that coordinated dual fuel energy efficiency efforts focusing on the customers' overall needs may prove more effective than those aimed at only one fuel, NEEA is piloting a natural gas efficiency effort to explore the potential of improving results for both fuels and, thereby, improving cost-effectiveness of efforts solely in electric or natural gas initiatives.

However, NEEA's current single fuel funding source places limitations on responses to market needs that focus more on natural gas-related efficiency opportunities. In addition, because NEEA works in dual fuel markets, natural gas energy savings are often a by-product of pursuing electric market transformation opportunities. These incidental natural gas savings are significant in some markets but are not evaluated or reported to the same level of accuracy or reliability as electric savings.

NEEA's experience in these markets suggests that the region would benefit from a more integrated approach funded by both fuels that allows us to leverage the aggregated market power of the region in the full market place. For example, the 50 percent market share of electric water heat currently limits NEEA's leverage with national manufacturers of water heating products. With dual fuel funding, NEEA could approach manufacturers regarding 90 plus percentage of their business, a far more compelling story to them and hence more leverage for the region.

Natural gas and dual fuel utilities in the Northwest region are interested in exploring natural gas market transformation opportunities. With funding from gas stakeholders, NEEA has formed a natural gas collaborative composed of natural gas and dual fuel utilities, Energy Trust of Oregon and the Northwest Gas Association to develop a strategy and business plan for natural gas market transformation that will be presented to the NEEA Board of Directors in late 2014. This could result in more full-scale gas and/or dual fuel activities beginning in 2015, which would bring additional value to the region above what is currently included in this 2015-2019 Business Plan. NEEA would develop a funding model for such an expansion in collaboration with both gas and electric utilities and NEEA's Board. No funding for natural gas pilot activities is included in this business plan. Instead, NEEA will present the funding and activities for such a pilot to the Board, once the participants come to an agreement on NEEA's role.

OPERATIONS, SUCCESS FACTORS AND CHALLENGES

Operating Principles and Guidelines

The following guidelines, along with the Principles and Values defined in Section Three of NEEA's Strategic Plan, guide NEEA's work:

- **Long-Term Orientation and Lasting Change** - Our core work is the long-term development of emerging, cost-effective energy efficiency resources via market transformation. Our activities aim for lasting changes in the structure and function of markets resulting in the market adoption of emerging opportunities. We are committed to ensuring that our market transformation process is fine-tuned, collaborative and transparent.
- **Complementary Approach** - Our work complements and supports utilities' local program activities, and local programs support regional work. As such, we focus on activities with market participants who are "upstream" from utility customers. We recognize the importance of the utility/customer relationship and commit to collaborate with utilities as those utilities deem appropriate on specific market transformation efforts that involve direct customer engagement. We will develop coordinated efforts that engage local programs in a way that maximizes the overall market transformation effort while upholding and enhancing customer relationships and service.
- **Equity** - We balance our portfolio of work to deliver value equitably across the region, recognizing the needs of stakeholders in all four states and in both rural and urban settings. In so doing, we address and balance the needs of both large and small utilities and other energy efficiency organizations. This balance includes the mix of region-wide and limited geographic opportunities as well as operational differences such as the rate of market transformation and product adoption across the region. To ensure value delivery in both rural and urban markets, each market transformation program plan includes an explicit strategy for addressing rural markets, as well as evaluation to assess market progress in rural vs. non-rural markets.
- **Continuous improvement** - We adapt quickly to changes in market dynamics. We make fact-based decisions and conduct ongoing market research and evaluation to accelerate the learning and ongoing improvement reflected in our work.
- **Operational Efficiency** - We are accountable to funders and ensure excellent stewardship of resources deployed to achieve regional energy efficiency goals cost-effectively. We are thorough and maintain a high level of rigor in our analytical processes. We commit to best practices in: portfolio management; development, delivery and evaluation of programs; contractor management; and budget and expenditure controls. We provide a high level of visibility to all of our organizational assets and results to assure funders that an investment in a regional alliance is in the best interest of each funder. NEEA conducts Quarterly Business Reviews to update and analyze organizational and initiative scorecards and track progress against key goals and objectives. NEEA's Board of Directors approves an Annual Operating Plan each year. The Annual Operating Plans provide program and initiative goals, objectives and budgets.
- **Integrity** - Integrity includes honesty—both by the organization and the individual conduct of staff and management—as well as transparency and openness. We are committed to an open and transparent process, which will use the region's dollars to transform markets, and how value is determined and results reported. The NEEA Board directs criteria for these investments at the highest level. Key functional areas of NEEA operate with input from Advisory Committees and through the work of many stakeholder workgroups, staff and contractors.

NEEA Core Competencies and Unique Characteristics

NEEA is one of many organizations working toward improving energy efficiency in the region. NEEA maximizes return on investment by focusing on areas that leverage its core competencies and unique strengths to complement local energy efficiency programs. Characteristics that distinguish NEEA in the region include the following:

- **Aggregator of market resources** – NEEA is the only alliance of both public and private electric utilities that represents the entire four-state region to national and global market partners. The aggregation of market resources provides the region with greater potential to influence market actors for the benefit of its regional stakeholders.
- **Objective promoter of energy efficiency** – NEEA's sole focus will continue to be on energy efficiency. Because it has no product or service to sell or promote, it presents a credible, objective face to the market.
- **Upstream, long-term orientation** – NEEA focuses on upstream market participants such as manufacturers, distributors and installers. This includes the identification and development of emerging technologies and allows investment in riskier, long-term energy efficiency initiatives not typically undertaken by individual utilities.

NEEA leverages the following core competencies which provide the foundation for the 2015-2019 Business Plan goals and objectives:

- **Market Scanning and Assessment to Identify Energy Efficiency Opportunities** – NEEA has developed expertise in research and assessment over the past 15 years. This includes stock assessments such as the Residential Building Stock Assessment and the Commercial Building Stock Assessment, which have also supported integrated resource planning for many regional utilities. NEEA also has a core competency in scanning strategic markets for emerging technologies or practices which can be leverage points for accelerating energy efficiency. This scanning and assessment work has enabled the identification and pursuit of the most promising opportunities to fill the pipeline with energy efficiency programs.
- **Design of Innovative Market Strategies to Accelerate Energy Efficiency** – NEEA has a core competency in identifying and developing strategies for removing market barriers to achieve low-cost acceleration of energy efficiency. In addition to product and market development capabilities, this includes establishing and maintaining key strategic long-term relationships with market partners who are instrumental in transforming markets.
- **Execution of Market Transformation Programs to Accelerate Energy Efficiency** – NEEA continues to hone its competency in market transformation program management. This competency includes a robust stage-gate program management discipline that ensures NEEA prioritizes and deploys investment to optimize regional value delivery and market transformation outcomes.
- **Codes and Standards Expertise and Relationships** – NEEA has expertise in state energy code development and strategy formulation and has successfully engaged in the national standards setting process for many years as part of the market transformation strategy. NEEA has integrated codes and standards into the whole of its market transformation strategy from the time that emerging technologies are identified and through each stage of the initiative lifecycle. NEEA's competency in this area includes interpretation and utilization of energy use data, deep understanding of regulatory systems and processes and innovative approaches to test concepts and political reactions.
- **Regional Coordination and Planning** – NEEA serves as a convener of the region's energy efficiency experts to collectively maximize the overall market transformation effort while also ensuring excellence in customer relationships and service. This competency includes the facilitation of advisory committees as well as working groups focused on specific programs.

Risks and Challenges

NEEA's success depends on many factors in a complex and rapidly-changing environment. There are significant risks inherent in these factors which could impact NEEA's ability to achieve its strategic goals, and, in the end, its mission.

Risks for which NEEA has some level of control and has plans to mitigate:

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

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

NEEA mitigates this risk by clearly defining and delivering value to funders and by maintaining open, meaningful channels of communication to resolve issues and maximize NEEA's impact. In the event that a funder ceases to participate in the alliance, NEEA does not assume that remaining funders would contribute additional amounts to retain the same level of overall funding. NEEA would conduct an assessment of the impact on delivery of goals and propose appropriate scale adjustments in services.

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

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

Risks which are outside NEEA's control and cannot be easily mitigated:

- Regulatory or governing body decisions that end or curtail investments in energy efficiency;
- Events or conditions that lead to a significant contraction of the economy;
- Significant changes, such as the expansion of distributed generation and/or disintermediation in the utility industry that shift the responsibility of energy efficiency away from utilities;
- Ongoing pressure for utilities to limit rate increases, combined with low load growth and potentially declining avoided costs; and
- Federal government that is less active, and/or reduces funding for Federal Appliance Standards.

NEEA monitors activity and developments in the industry to identify potential impacts and will work through NEEA's Strategic Planning Committee on specific mitigation actions as the need arises.

APPENDICES

1. NEEA Performance Scorecard Goals
2. Energy Savings Estimates
3. Budget Detail
4. 2015-19 Business Plan Budget and Energy Savings Assumptions
5. Cost-effectiveness Estimates
6. Initiative Descriptions
7. Active Federal Standards & Test Procedure Rulemakings - 2015-2019
8. Advisory Committee Structure and Roles
9. Organization Structure and Core Business Areas
10. Glossary of Key Terms
11. Strategic Market Characteristics and Selection Criteria
12. NEEA Market Transformation Building Blocks and Specific Activities

APPENDIX 1 – NEEA PERFORMANCE SCORECARD GOALS

Value Delivery Metrics	
Emerging Technology 20-Year Pipeline (aMW)	Target
Scanning Portfolio Potential	1400
Regional Potential in Process[i]	1000
Readied for Market 2015-2019	175
Accelerating Market Adoption/Regional Advantage	Target
Measurable Change in all Strategic Markets[ii]	TBD
Additional Annual Marketing Value Secured	$4M
Raising the Bar Via Codes and Standards	
Stringency Relative to Benchmark Code[iii]	100%
Residential Code Compliance Relative to 90% ARRA[iv]	90%
Participation in pending standards rulemakings	N/A
2015- 2019 Business Plan - Current Investments	Target
5-year aMW savings (2015-2019)	
Total Regional	145
Co-created	75
10-year aMW savings (2015-2024)	
Total Regional	365
Co-created	180
Estimated Total Regional Savings from standards NEEA has participated in	91
2015- 2019 Business Plan - All Investments[v]	Target
5-year aMW savings (2015-2019)	
Total Regional	600
Co-created	150
10-year aMW savings (2015-2024)	
Total Regional	1000
Co-created	300

Operational Metrics	
YTD Financial Metrics (General Funds Only)	Target
Levelized Total Resource Cost ($/kWh)	$0.035
Total 2015-2019 Expenses ($millions)	$144-169
Business Administration Expenses (% of total exp)	<13%
Other Operational Metrics	Target
Stakeholder Favorability	>80%
Predictability - average days slippage to next milestone	<30
Carbon Reduction Metric TBD	TBD
Employee Turnover (trailing 12 months %)	<10%

i - Includes all potential between Concept Development and Strategy Testing
ii - See Appendix 6 - Iniative Descriptions for market progress goals
iii - The 2009 International Energy Conservation Code (IECC)
iv - ARRA requires states to achieve 90% compliance with 2009 IECC by 2017
v - All investments include energy savings as a result of current investments and all prior investments in NEEA.

APPENDIX 2 – ENERGY SAVINGS ESTIMATES (CURRENT INVESTMENTS)

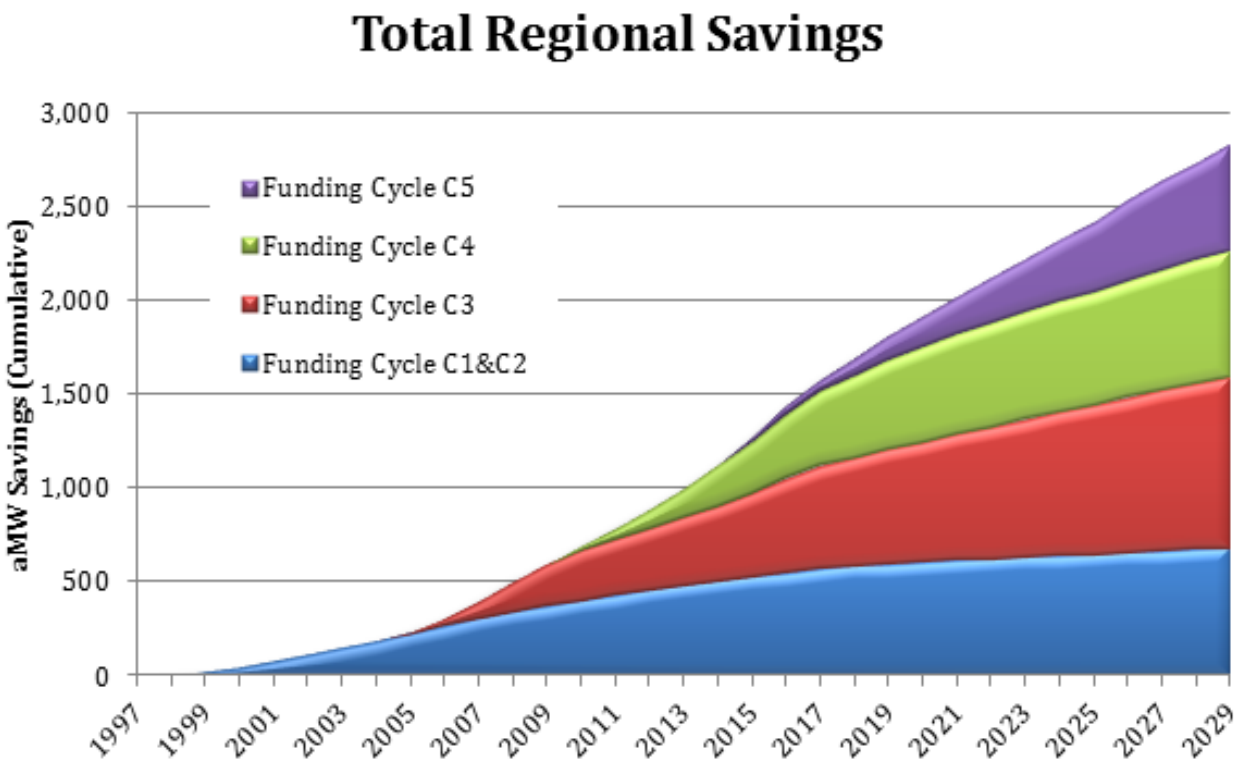
	Total Regional Savings		Co-Created Savings		Net Market Effects	
All values in aMW	5-year 2015-2019	10-year 2015-2024	5-year 2015-2019	10-year 2015-2024	5-year 2015-2019	10-year 2015-2024
Residential	77	216	43	114	28	62
Current Initiatives	71	196	38	99	23	51
Pending Initiatives (1)	6	20	5	15	5	11
Commercial	65	138	29	58	25	55
Current Initiatives	31	63	1	1	1	1
Pending Initiatives (2)	34	75	28	57	24	54
Industrial & Agriculture	3	11	3	8	2	8
Current Initiatives	3	11	3	8	2	8
Pending Initiatives (3)	0	0	0	0	0	0
Total	145	365	75	180	55	125
Current Initiatives	105	270	42	108	26	60
Pending Initiatives	40	95	33	72	29	65
Codes & Standards (4)	*45*	*91*				
Noted, included in line items above						
Residential	*15*	*30*				
Commercial	*30*	*61*				

Notes:

The energy savings values in the table to the left reference initiatives currently in the pipeline as of September 2013, and anticipated to continue into 2015 and the forecasted aMW value delivery apportioned to the 2015-2019 Business Plan.

Pending initiatives slated to enter the pipeline in 2014/2015 are:

1. The pending residential initiative is Retail Products Portfolio.
2. The pending commercial initiatives are Upstream Lighting and Luminaire Level Lighting Controls.
3. There are currently no industrial or agricultural concepts firmly identified for the portfolio at this time.
4. Codes and Standards are currently reflected as 100 percent TRS. NEEA will conduct baseline studies in 2014 to identify savings attributable to Co-created Savings and Net Market Effects.



Notes:

- Funding Cycle 1 & Cycle 2 = 1997-2004
- Funding Cycle 3 = 2005-2009
- Funding Cycle 4 = 2010-2014
- Funding Cycle 5 = 2015-2019

APPENDIX 3 – BUDGET DETAIL

APPENDIX 3.1 – NEEA EXPENSES BY DEPARTMENT 2015-2019

Cost Center	Total 5-Year Core Expense	Average Annual Core Budget	Total 5-Year Optional Budget	Average Annual Optional Budget	Total Proposed Cycle 5 Budget 2015	2016	2017	2018	2019
Executive Office	$2,924,153	$584,831	$318,346	$63,669	$613,649	$630,950	$647,863	$666,412	$683,624
Business Operations	3,369,711	673,942	366,853	73,371	692,078	718,612	746,209	774,908	804,756
Business Administration	4,688,364	937,673	510,413	102,083	1,145,082	1,176,343	1,000,855	917,667	958,831
Information Technology	4,633,023	926,605	504,389	100,878	1,043,639	998,046	1,009,620	1,025,844	1,060,262
Shared	2,694,753	538,950		-	538,809	540,650	541,326	536,825	537,143
Total Administration	**$18,310,004**	**$3,662,001**	**$1,700,001***	**$340,000**	**$4,033,257**	**$4,064,601**	**$3,945,873**	**$3,921,656**	**$4,044,616**
Stakeholder Relations	4,668,309	933,662			873,964	902,643	932,468	963,487	995,747
Corporate Communications	5,570,418	1,114,084			1,053,066	1,070,418	1,088,464	1,107,232	1,251,238
Total SH Relations	**$10,238,727**	**$2,047,746**			**$1,927,030**	**$1,973,061**	**$2,020,932**	**$2,070,719**	**$2,246,985**
Codes & Standards	11,976,917	2,395,383			2,361,468	2,377,761	2,394,705	2,412,328	2,430,655
Market Strategy	3,470,000	694,000			640,000	665,000	695,000	720,000	750,000
Tech/Product Mgmt	10,215,917	2,043,183			1,924,713	1,981,482	2,040,521	2,101,922	2,167,279
Total Market Strategy	**$25,662,834**	**$5,132,566**			**$4,926,181**	**$5,024,243**	**$5,130,226**	**$5,234,250**	**$5,347,934**
Market Planning	5,884,182	1,176,836			1,175,787	1,211,958	1,249,521	1,103,200	1,143,716
Research & Evaluation	21,431,792	4,286,358			3,894,309	5,108,917	5,149,123	4,147,118	3,132,325
Total Planning & Evaluation	**$27,315,974**	**$5,463,194**			**$5,070,096**	**$6,320,875**	**$6,398,644**	**$5,250,318**	**$4,276,041**
Market Execution Admin	1,728,532	345,706			322,562	333,681	345,244	357,269	369,776
Comm/Ind/Ag	16,518,156	3,323,631	14,764,947	2,932,989	6,254,765	6,296,459	6,219,284	6,218,907	6,293,688
Residential	39,845,863	7,969,173	7,500,000	1,500,000	9,511,501	9,738,408	9,702,188	9,333,388	9,060,378
Market Resources	5,165,296	1,033,059			960,281	992,532	1,040,873	1,070,348	1,101,262
Total Market Execution	**$63,057,847**	**$12,651,569**	**$22,264,947**	**$4,452,989**	**$17,049,109**	**$17,361,080**	**$17,307,589**	**$16,979,912**	**$16,825,104**
Grand Total	**$144,785,386**	**$28,957,077**	**$23,964,948**	**$4,792,990**	**$33,005,673**	**$34,743,860**	**$34,803,264**	**$33,456,855**	**$32,740,680**

* Administrative expenses allocated to optional programs; expenses would not decrease significantly if optional programs are not funded.

APPENDIX 3.2 – NEEA FUNCTIONAL EXPENSES

	Total 5-Year Core Expense	Average Annual Core Expense	Total 5-Year Optional Expense	Average Annual Optional Expense		2015	2016	2017	2018	2019
Salary and Benefits	**$53,390,824**	**$10,678,165**	**$1,351,080**	**$270,216**		**$10,167,664**	**$10,492,398**	**$10,915,121**	**$11,354,752**	**$11,811,969**
General and Administrative:										
Professional Services	2,385,036	477,007	60,354	12,071		635,897	635,284	439,710	361,673	372,826
Equipment and Software	934,165	186,833	23,639	4,728		203,246	208,566	179,923	182,318	183,751
Travel, Professional Development	2,963,493	592,699	74,993	14,999		597,129	602,002	608,445	612,960	617,950
Corporate Communications	3,028,514	605,703	76,639	15,328		596,643	596,643	596,643	596,643	718,580
Depreciation	1,974,354	394,871				482,604	492,604	494,604	252,271	252,271
Facilities & Other	4,477,126	895,425	113,296	22,659		907,717	911,063	918,298	922,553	930,791
Total General and Administrative	**$15,762,688**	**$3,152,538**	**$348,920**	**$69,785**		**$3,423,236**	**$3,446,162**	**$3,237,623**	**$2,928,418**	**$3,076,169**
Project Expenses	**75,631,874**	**15,126,375**	**22,264,947**	**4,452,989**		**19,414,773**	**20,805,300**	**20,650,520**	**19,173,685**	**17,852,542**
Total	**$144,785,386**	**$28,957,077**	**$23,964,947**	**$4,792,989**		**$33,005,673**	**$34,743,860**	**$34,803,264**	**$33,456,855**	**$32,740,680**

APPENDIX 3.3 – NEEA FIVE-YEAR EXPENSES BY PROGRAM

Sector or Market	Program	Tech/Product Mgmt	Market Execution		Research & Evaluation	NEEA Total	NEEA Core	NEEA Optional
			Initiative/ Infrastructure	Incentives				
Scanning	General Scanning	$6,003,683				$6,003,683	$6,003,683	
Programs in Emerging Technology Pipeline								
Consumer Products	Retail Product Portfolio		3,875,883	10,100,000	855,795	14,831,678	14,831,678	
	Heat Pump Water Heaters		13,602,378	4,050,000	1,141,244	18,793,622	15,743,622	3,050,000
New Construction	Next Step Home		12,553,101	50,000	997,350	13,600,451	11,550,451	2,050,000
Total Residential in Pipeline			**30,031,362**	**14,200,000**	**2,994,389**	**47,225,751**	**42,125,751**	**5,100,000**
Programs in Commercial / Industrial / Agricultural (CIA) Pipeline								
Commercial Lighting	TTTA/Comm Lighting		4,863,717			4,863,717		4,863,717
	Commercial Lighting Infrastructure		1,808,988		82,256	1,891,244	1,891,244	
	Luminaire Level Lighting Controls		3,789,602		819,462	4,609,064	4,609,064	
	Reduced Watt Replacement Lamps		3,859,402	2,540,000	1,185,414	7,584,816	7,064,816	520,000
Commercial Real Estate	Existing Building Renewal		4,500,745			4,500,745		4,500,745
	Office Real Estate		2,500,485			2,500,485		2,500,485
Industrial	RETA Operator Certification		989,076		619,983	1,609,059	1,369,059	240,000
Commercial and Industrial	C & I SEM + Online CEI/Industrial		1,383,071		62,889	1,445,960	1,445,960	
Total CIA In Pipeline			**23,695,086**	**2,540,000**	**2,770,004**	**29,005,090**	**16,380,143**	**12,624,947**
Sector/Market TBD	New Initiatives		15,475,355		2,774,957	18,250,312	17,510,312	740,000
Programs in Full-Scale Market Development								
	Building Operations Certification		1,315,516		185,274	1,500,790	1,500,790	
	Certified Homes Programs		1,767,112		80,352	1,847,464	1,847,464	
	Ductless Heat Pumps		9,551,309		987,358	10,538,667	8,038,667	2,500,000
Total in Full-Scale Market Development			**$12,633,937**		**$1,252,984**	**$13,886,921**	**$11,386,921**	**$2,500,000**

APPENDIX 3.3 — NEEA FIVE-YEAR EXPENSES BY PROGRAM (CONTINUED)

Sector or Market	Program	Tech/Product Mgmt	Market Execution		Research & Evaluation	NEEA Total	NEEA Core	NEEA Optional
			Initiative/ Infrastructure	Incentives				
New Construction	Integrated Design Lab Support		$4,300,249			$4,300,249	$4,300,249	
Industrial	Technical Training & Education		1,300,000			1,300,000		1,300,000
All	Conferences		449,982			449,982	449,982	
All	Online Community (Conduit)		874,950			874,950	874,950	
All	Data Services				1,599,021	1,599,021	1,599,021	
All	Codes and Standards	13,753,594			2,646,395	16,399,989	16,399,989	
All	Stock Assessments and Studies				6,744,269	6,744,269	6,744,269	
All	Long-term Monitoring and Tracking				2,700,112	2,700,112	2,700,112	
	Total Programs	**19,757,277**	**88,760,921**	**16,740,000**	**23,482,131**	**148,740,329**	**126,475,382**	**22,264,947**
Summary:								
	Scanning	6,003,683				6,003,683	6,003,683	
	Emerging Technology Pipeline		69,201,803	16,740,000	8,539,350	94,481,153	76,016,206	18,464,947
	Programs in Full-Scale Mkt Development		12,633,937		1,252,984	13,886,921	11,386,921	2,500,000
	Technical Support and Trainings		5,600,249			5,600,249	4,300,249	1,300,000
	Other Services		1,324,932		1,599,021	2,923,953	2,923,953	
	Codes & Standards	13,753,594			2,646,395	16,399,989	16,399,989	
	Stock Assessments/Studies/LTMT				9,444,381	9,444,381	9,444,381	
	Total Programs	**19,757,277**	**88,760,921**	**16,740,000**	**23,482,131**	**148,740,329**	**126,475,382**	**22,264,947**
	Executive and Business Administration					**20,010,005**	**18,310,004**	**1,700,000***
	Grand Total NEEA	**$19,757,277**	**$88,760,921**	**$16,740,000**	**$23,482,131**	**$168,750,334**	**$144,785,386**	**$23,964,947**

* Administrative expenses allocated to optional programs; expenses would not decrease significantly if optional programs are not funded.

APPENDIX 3.4 — 2015-2019 ANNUALIZED EXPENSES BY PROGRAM AND BUILDING BLOCK

	Ductless Heat Pumps	Retail Product Portfolio (RPP)	Heat Pump Water Heaters	Office Real Estate	Existing Building Renewal	Reduced Watt Lamps	Comm. Lighting Regional Resources	Luminaire Level Lighting Controls	RETA Operator Cert	Comm. & Ind. SEM + Online CEI	Next Step Home	Efficient Homes
Data Collection & Assessment	$50	$203	-	-	-	$51	-	-	$20	-	$191	$50
Field & Lab Testing	171	-	145	-	-	-	-	-	-	-	-	-
Market Channel Development	240	78	160	-	-	158	-	156	16	-	150	30
Marketing Resources	90	-	70	-	-	-	-	120	30	80	150	10
Stakeholder Support	10	-	15	-	-	33	50	60	6	-	136	23
Technical Support & Training	25	-	87	-	-	-	65	56	-	60	250	50
Market Research & Evaluation	197	170	228	-	-	237	14	164	123	11	200	13
Incentives--Upstream	-	-	810	-	-	508	-	-	-	-	10	-
Incentives--Midstream	-	2,020	-	-	-	-	-	-	-	-	-	-
Incentives--Customer	-	-	-	-	-	-	-	-	-	-	-	-
Program Management: Contractor	125	142	488	-	-	100	15	30	10	10	301	40
NEEA Program Staff, G &A	722	353	1,125	-	-	340	184	336	117	128	934	143
New Initiatives TBD												
The following items are inclusive of NEEA labor costs:												
Scanning & Concept Development												
Stock Assessments												
Data services												
Long term monitoring												
Market Strategy												
EE Conferences												
Conduit on-line community												
Administration												
Total w/out Options	**1,630**	**2,966**	**3,128**	**-**	**-**	**1,427**	**328**	**922**	**322**	**289**	**2,322**	**359**
Optional Activities/Programs	500	-	623	500	900	100	-	-	40	-	395	10
Total Maximum	**$2,130**	**$2,966**	**$3,751**	**$500**	**$900**	**$1,527**	**$328**	**$922**	**$362**	**$289**	**$2,717**	**$369**

APPENDIX 3.4 — 2015-2019 ANNUALIZED EXPENSES BY PROGRAM AND BUILDING BLOCK (CONTINUED)

	Building Operator Cert	Integrated Design Labs	Industrial Technical Training	Top Tier Trade Ally Advanced Training	Codes & Standards	New Initiatives TBD	Other	Total
Data Collection & Assessment	-	-	-	-	-			565
Field & Lab Testing	-	-	-	-	-			316
Market Channel Development	16	-	-	-	1,375			2,379
Marketing Resources	18	-	-	-	-			568
Stakeholder Support	-	-	-	-	-			333
Technical Support & Training	91	860	-	-	585			2,129
Market Research & Evaluation	35	-	-	-	529			1,921
Incentives--Upstream	-	-	-	-	-			1,328
Incentives--Midstream	-	-	-	-	-			2,020
Incentives--Customer	-	-	-	-	-			-
Program Management: Contractor	15	-	-	-	-			1,276
NEEA Program Staff, G &A	125		-	-	791			5,298
New Initiatives TBD						3,502		3,502
The following items are inclusive of NEEA labor costs:								
Scanning & Concept Development							1,200	1,200
Stock Assessments							1,349	1,349
Data services							300	300
Long-term monitoring							540	540
Market Strategy							-	-
EE Conferences							90	90
Conduit on-line community							175	175
Administration							3,668	3,668
Total w/out Options	300	860	-	-	3,280	3,502	7,322	28,957
Optional Activities/Programs*	-		260	975		150	340	4,793
Total Maximum	**$300**	**$860**	**$260**	**$975**	**$3,280**	**$3,652**	**$7,662**	**$33,750**

* Administrative expenses for optional programs are estimated at $340 and included in the "Other" column. All figures in $1,000s.

APPENDIX 4 – 2015-2019 BUSINESS PLAN PROGRAM BUDGET AND ENERGY SAVINGS ASSUMPTIONS

Strategic Market	Market Transformation Program	5-year Core Budget Estimate ($M)	5-year Optional Budget Estimate ($M)	Budget Assumptions	5-year Total Regional Savings Estimate (aMW for Current Investment)	10-year Total Regional Savings Estimate (aMW for Current Investment)	Lifecycle Phase and Energy Savings Stage	Energy Savings Assumptions for Initiatives in Phase 2 (Concept Assessment)
Consumer Products	Retail Product Portfolio/Retail Platform	$14.8		• $11M in incentives • Successful 2014 scalability pilot • Regional acceptance of product portfolio • Market acceptance of product portfolio resulting in broad retailer participation • Successful collaboration/coordination via NW regional retail collaborative • Economies of scale with sub-regional partners	6	20	P2 (Concept Assessment) Savings forecast are planning estimates and will be refined as products are finalized and their reception is tested in P3	Source: Navitas market size and efficiency potential • Assumes the potential product lines: Consumer electronics, appliances, home office, lighting
Consumer Products	Heat Pump Water Heaters	$15.8	$3.1	• $4.6M in incentives; tiered approach targeting most efficient technology • Decreased incentives as product costs decrease • Deep financial engagement with manufacturers to bring higher tier products to market • Utility programs continue to grow; complement this investment • Introduction of DHP/HPWH combo unit	21	68	P4 (Strategy Testing) Savings forecast are preliminary with moderate level of confidence	Key technical and market assumptions are under assessment
Consumer Products	Ductless Heat Pumps	$8.0	$2.5	• Ongoing product development work (e.g., testing, specification, vetting) to ensure high quality new models come to market • Increased retailer participation and stocking • Development of product Standard • $2M in channel development • $1.9M in research/evaluation • Introduction of DHP/HPWH combo unit	22	67	P5 (Market Development) Savings forecast are with high degree of rigor and confidence	Key technical and market assumptions have been reviewed and vetted with Cost Effectiveness Advisory Committee (CEAC), through annual meeting as standard operating procedure
Res New Construction	Next Step Homes	$11.6	$2.0	• $2.5M for field testing/evaluation of advanced building practices • $1.8M in technical training/support • Successful 2014 pilot • Validated energy savings in 2015 • Leverage existing market brands/partners to adopt Next Step Home Measures • Leverage existing relationships and infrastructure created by NW ENERGY STAR	6	15	P3 (Mkt. & Product Assessment) Planning estimates and key assumptions that drive the savings forecast are in development; moderate confidence	Key technical and market assumptions are under assessment

APPENDIX 4 – 2015-2019 BUSINESS PLAN PROGRAM BUDGET AND ENERGY SAVINGS ASSUMPTIONS (CONTINUED)

Strategic Market	Market Transformation Program	5-year Core Budget Estimate ($M)	5-year Optional Budget Estimate ($M)	Budget Assumptions	5-year Total Regional Savings Estimate (aMW for Current Investment)	10-year Total Regional Savings Estimate (aMW for Current Investment)	Lifecycle Phase and Energy Savings Stage	Energy Savings Assumptions for Initiatives in Phase 2 (Concept Assessment)
Res New Construction	Certified Homes	$1.8		• Transition complete for Efficient Homes initiative in 2015 • Strong sustained market infrastructure • Transition elements/assets to EPA to incorporate into national platform	7	16	P5 (Market Development) Savings estimates are with high degree of rigor and confidence	Key technical and market assumptions have been reviewed and vetted with CEAC, through annual meeting as standard operating procedure
Commercial Lighting	Commercial Lighting Upstream Platform/ Reduced Wattage Replacement Lamps	$7.1	$0.5	• Successful 2014 pilot of low wattage replacement lamp technology with adequate data measurability • Successful coordination between utilities and distributors • Data collection warehouse development • $2.5M in incentives for various selected technologies • $0.8M in evaluation	27	56	P3 (Mkt. & Product Assessment) Savings forecast are planning estimates, will be refined as product technical specifications for confirmation in P4	Source: Ray Hartwell, Product Development Contractor. Assumes target market size of 44m 4' T8 and T12 lamps in commercial market, with 85% maximum potential and average wattage savings of 3.5 per bulb per RTF (weighted average depending upon bulb mix)
Commercial Lighting	Commercial Lighting Infrastructure, including Top Tier Trade Ally	$1.9	$4.9	• Product qualifications • Hosting various trade ally communication tools, website, etc. • Online basic training development • Top Tier Trade Ally Advanced Training program	0*	0*	N/A	N/A

APPENDIX 4 – 2015-2019 BUSINESS PLAN PROGRAM BUDGET AND ENERGY SAVINGS ASSUMPTIONS (CONTINUED)

Strategic Market	Market Transformation Program	5-year Core Budget Estimate ($M)	5-year Optional Budget Estimate ($M)	Budget Assumptions	5-year Total Regional Savings Estimate (aMW for Current Investment)	10-year Total Regional Savings Estimate (aMW for Current Investment)	Lifecycle Phase and Energy Savings Stage	Energy Savings Assumptions for Initiatives in Phase 2 (Concept Assessment)
Commercial Lighting	Luminaire Level Lighting Controls	$4.6		• Successful development of market competition amongst major LLLC manufacturers • Develop business case for NEB • Utilities adopt into their portfolio per developed savings protocol	7	19	P3 (Mkt. & Product Assessment) Planning estimate and key assumptions that drive the savings forecast are in development; moderate confidence	Key technical and market assumptions are under assessment
Commercial Real Estate	Building Operator Certification Expansion	$1.5			1	2	P5 (Market Development) Savings estimates are with high degree of rigor and confidence	Key technical and market assumptions have been reviewed and vetted with CEAC, through annual meeting as standard operating procedure
Commercial Real Estate	Commercial Real Estate/ Existing Building Renewal		$7.1	• Continuous regional coordination of technical support, training, awareness-building • $0.6M in market research/evaluation • Development and dissemination of resources and tools for technical and business case support • Education and awareness of building owner and market actors	0*	0*		
Commercial New Construction	Integrated Design Labs	$4.3		• Continued infrastructure support for IDL Network serving all four states assumed flat for all five years at $600K/year (the same level as 2013 budget) • Additional project work for the IDL Network included in individual initiatives; not budgeted here			N/A	N/A

APPENDIX 4 – 2015-2019 BUSINESS PLAN PROGRAM BUDGET AND ENERGY SAVINGS ASSUMPTIONS (CONTINUED)

Strategic Market	Market Transformation Program	5-year Core Budget Estimate ($M)	5-year Optional Budget Estimate ($M)	Budget Assumptions	5-year Total Regional Savings Estimate (aMW for Current Investment)	10-year Total Regional Savings Estimate (aMW for Current Investment)	Lifecycle Phase and Energy Savings Stage	Energy Savings Assumptions for Initiatives in Phase 2 (Concept Assessment)
Commercial and Industrial Sectors	Commercial and Industrial Strategic Energy Management/ Industrial Technical Training	$1.4	$1.3	• Regional SEM tools and resource development such as EMIS • NW regional collaborative • National coordination to adopt ISO standards • Developing and disseminating regional resources and tools			N/A	N/A
Industrial Sector	Refrigeration Energy Specialist Certification	$1.4	$0.2	• Successful ownership of CRES by RETA • Awareness and adoption of CRES in the industry	3	11	P3 (Mkt. & Product Assessment) Planning estimate and savings rate is preliminary and will be refined as pilot progresses	Key technical and market assumptions are under assessment
Residential Codes & Standards		$8.2		• Participate in all NW-applicable federal and state standards development and adoption processes • Participate in all state and national model energy code development and adoption processes • Provide education and technical assistance for energy codes across the region	15 (for standards only)	30	Planning estimate of savings is preliminary with low confidence due to the lack of predictability in federal standards process	Source: NWPCC and DOE, and CA state for battery chargers. Forecast of federal standards for dryers, furnace, and heat pump systems, as well as state standards for battery chargers

APPENDIX 4 – 2015-2019 BUSINESS PLAN PROGRAM BUDGET AND ENERGY SAVINGS ASSUMPTIONS (CONTINUED)

Strategic Market	Market Transformation Program	5-year Core Budget Estimate ($M)	5-year Optional Budget Estimate ($M)	Budget Assumptions	5-year Total Regional Savings Estimate (aMW for Current Investment)	10-year Total Regional Savings Estimate (aMW for Current Investment)	Lifecycle Phase and Energy Savings Stage	Energy Savings Assumptions for Initiatives in Phase 2 (Concept Assessment)
Commercial Codes & Standards		$8.2		• Participate in all NW-applicable federal and state standards development and adoption processes • Participate in all state and national model energy code development and adoption processes • Provide education and technical assistance for energy codes across the region.	30 (for standards only)	61	Planning estimate of savings is preliminary with low confidence due to the lack of predictability in federal standards process	Source: DOE national savings forecast. Forecast for federal standards for fluorescent lamp ballasts and small electric motors.
New Programs, TBD		$17.5	$0.7	• Support for three new initiatives graduating from the pipeline by 2019	TBD: depending on the initiatives graduated from the portfolio		These initiatives are either currently in the pipeline or in scanning	

*At this point, tracking and reporting energy savings is not a primary objective of infrastructure programs. However, in the future NEEA may be able to determine methods for measuring, tracking and reporting energy savings from these programs.

APPENDIX 5 – COST-EFFECTIVENESS ESTIMATES

NEEA will measure its portfolio cost effectiveness using a Levelized Cost (LC) from a Total Resource Cost (TRC) perspective. The target for 2015 – 2019 Business Plan is to deliver a portfolio at or below 3.5¢/kWh. NEEA calculates this TRC metric using the standard definition adopted by most of the regulatory commissions in the region: sum of all societal costs net of the sum of all societal quantifiable benefits divided by total regional energy savings and levelized over the typical life of the measure.

NEEA uses a modeling process that is based on and consistent with the Northwest Power and Conservation Council's (NWPCC) cost-effectiveness protocols. To calculate LC, NEEA uses a 20-year period of analysis since market transformation is inherently a long-term investment and it also is in line with the NWPCC. In addition to the period of analysis, NEEA follows the NWPCC Power Plan methodology to calculate the LC, and uses its regional input assumptions such as real discount rate, weighted average financing rates, and deferred costs for transmission and distribution systems. Information specific to each market transformation initiative, such as program and administrative costs, non-electric benefits/costs, and the energy savings streams, come from internal forecasts based on analysis vetted through third-party research and evaluation. On an annual basis, NEEA also vets key assumptions and cost-effective metrics associated with each market transformation initiative that is in full scale market development with its Cost Effectiveness Advisory Committee.

To calculate the Business Plan portfolio-level LC, NEEA distributes the full 2015-2019 budget to the forecasted Business Plan initiatives and weights the results based on the 2015-2019 forecast of total regional savings attributable to the Business Plan initiatives. The result of this is a LC of approximately 3.5¢/kWh. This calculation does not include initiatives that NEEA expects will generate 2015-2019 Business Plan savings, such as Upstream Commercial Lighting, Commercial Codes and the Retail Products Portfolio initiatives, because these initiatives are too early in their lifecycle to model LC.

Lastly, this calculation only includes the forecasted energy savings stream from initiatives which are in full scale market development, and not savings from prior investment periods, such as Residential Lighting and Televisions. The Cost Effectiveness Advisory Committee reviewed the key assumptions for these initiatives during the annual review process in 2013.

Following are the initiatives included in the Portfolio Levelized Cost:

PORTFOLIO LEVELIZED COST – 20-YEAR HORIZON

Objective	Weighted by Total Regional Savings (TRS)	
Initiatives (which have a cost effectiveness model developed at the time of the development of this Plan)	Weights	Levelized Cost – TRC (cents/kWh)
Efficient Homes	37%	2.2
Heat Pump Water Heaters	19%	2.7
Ductless Heat Pumps	42%	5.0
Building Operator Certification - Extension	2%	1.4
Portfolio Levelized Cost		3.5

The estimated cost of securing energy efficiency through this regional effort should be less than about half the cost of any likely generating resource options. Currently the NWPCC levelized cost estimate for a gas combined cycle plant is 5-8 cents per kWh (NWPCC).

NEEA INITIATIVE: Retail Product Portfolio 2015-2019

The Retail Product Portfolio (RPP) initiative uses mid-stream incentives to influence retail stocking practices, ultimately driving manufacturing and standards for a portfolio of energy-efficient products sold through the retail channel.

WHY NEEA?

NEEA leverages relationships established through previous initiatives with retailers' corporate buying groups and utilities outside the region, such as PG&E. This allows NEEA to pool mid-stream incentive dollars with other utilities across the country, giving the Northwest influence on retailer buying, stocking, merchandizing and data-sharing practices.

MARKET BARRIERS

- Lack of perceived business case/interest for retailers to change buying, stocking or promotion strategies based on a product's energy efficiency
- Limited retailer data
- Lack of product differentiator allowing consumers to select the most energy-efficient products

MARKET INTERVENTIONS

NEEA uses its regional leverage and economies of scale, while reducing risk to the region's utilities, to overcome barriers by:

- Providing mid-stream incentives to corporate retailer partners
- Pooling incentive dollars with utilities outside the Northwest to amplify the region's investment and influence with retailers
- Collecting and analyzing data from retailers across multiple product categories
- Establishing vendor-level relationships with retailers

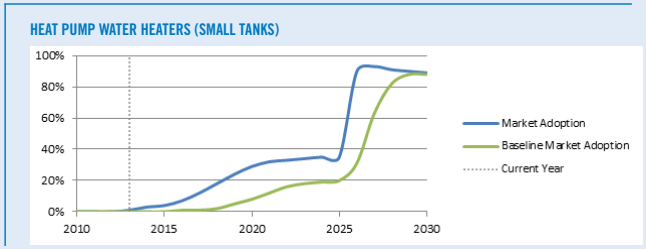
OUTCOMES

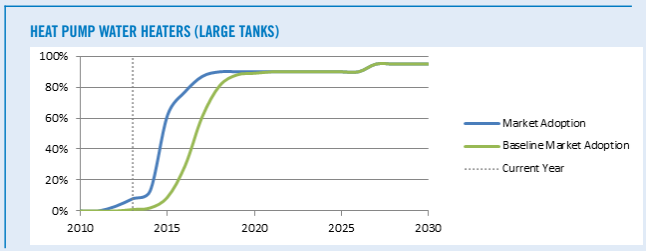
NEEA's market interventions will transform the market in the following ways:

- Energy efficiency is considered during the buying cycle
- Retail shelf space is devoted to energy-efficient products
- Product mix on retail shelves is more energy efficient
- Increase in product energy efficiency standards
- Manufacturers produce more energy-efficient products
- Expanded retail data collection
- Consumers can identify energy-efficient products

» *For a complete list of NEEA's current initiatives, please visit neea.org*

NEEA INITIATIVE: Heat Pump Water Heaters 2015-2019





The Heat Pump Water Heater (HPWH) initiative seeks to influence the passage of a federal standard requiring HPWHs for all electric storage tanks greater than 45 gallons by influencing the development of products that function well in Northern climates, creating and expanding distribution channels and increasing market awareness and demand.

WHY NEEA?

NEEA uses its regional leverage with manufacturers to ensure availability of energy-efficient heat pump water heater (HPWH) product designs that meet the needs of Northwest homeowners. NEEA also minimizes risk for its utility partners by conducting pilot tests of new products before they are widely distributed in the market. Finally, NEEA uses the infrastructure and relationships developed with retailers, distributors, and contracting networks to build market capacity and expertise to stock, sell and install these products.

MARKET BARRIERS

- High cost of installation and equipment
- Limited consumer awareness of and demand for this technology
- HPWHs not integrated into existing water heater supply channels
- Lack of supply chain interest in HPWHs
- Federal test procedure/ENERGY STAR rating system does not support Northern Climate Specification (NCS)
- Lack of trained installation contractor base

MARKET INTERVENTIONS

NEEA will use its regional leverage and economies of scale, while reducing risk to the region's utilities, to overcome barriers by:

- Working with officials to influence federal standards adoption
- Developing and maintaining energy-efficient product specifications
- Increasing product availability at lower cost through new or expanded channels
- Using NEEA's non-profit status and regional influence to develop and implement coordinated marketing strategies with market and utility partners at reduced cost*
- Developing training and marketing resources for utility and market partners to leverage in educating trade allies and consumers*
- Recruiting, training and maintaining a network of qualified installers*
- Ensuring quality installations and consumer satisfaction through implementation of quality assurance programs
- Developing and/or coordinating financing and incentive platforms that can be leveraged and scaled across the market
- Identifying and mitigating risks for product deployment in the market

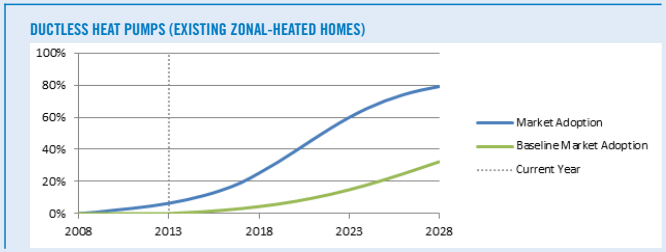
OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- Federal standard is adopted for all electric tanks greater than 45 gallons
- Products that meet NCS are accessible and affordable to market
- Trained and active installer base exists in the region
- Increased awareness and adoption of NCS products among manufacturers, retailers and consumers
- Manufacturers/distributors incorporate installation recommendations into trainings/materials

**Some or all of this market intervention is included in the optional market transformation activities.*

NEEA INITIATIVE: Ductless Heat Pumps 2015-2019



The Ductless Heat Pump initiative works to accelerate the adoption of inverter-driven ductless heat pumps (DHPs) in electrically heated homes by building product distribution channels, market capacity and consumer demand for DHPs.

WHY NEEA?

NEEA uses its established relationships with manufacturers, distributors and retailers to enhance product design and availability in the market through new or expanded distribution channels. NEEA also uses its regional positioning to facilitate coordination between manufacturers, distributors and contractors to promote the product and increase demand.

MARKET BARRIERS

- Lack of consumer awareness and demand
- DHPs not widely promoted by market as an alternative to electric resistance heat
- Trade allies unfamiliar with benefits of 1:1 displacement theory
- Confusing and limited purchasing process for consumers with limited financing
- Current performance testing not aligned with product functionality and capabilities
- High cost of equipment throughout supply chain
- High up-front cost to consumers
- Limited consumer education on proper DHP operation

MARKET INTERVENTIONS

NEEA will use its regional leverage and economies of scale to overcome these barriers by:

- Negotiating reduced product pricing with manufacturers and distributors
- Leveraging NEEA's regional influence to develop and implement coordinated marketing strategies with market and utility partners*
- Using NEEA's non-profit status and regional influence to implement consumer awareness and media campaigns at reduced cost in coordination with utility and market partners*
- Leveraging market-based financing mechanisms to address consumer costs
- Developing training and marketing resources for utility and market partners to leverage in educating trade allies and consumers*
- Recruiting, training and maintaining a network of qualified installers*
- Leveraging lab tests and field findings to develop testing protocols
- Partnering with national retailers, distributors, and manufacturers to expand availability and promotions of ductless technology throughout the supply chain

OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- Increased product availability and promotion through new or expanded supply chain channels
- New product lines introduced into the market
- Increased consumer awareness and demand for DHPs
- DHPs are affordable and accessible for consumers
- Regional and trained installers network implementing quality installations
- Consumers understand how to properly use their systems
- DHPs have their own ENERGY STAR rating separate from standard heat pumps
- Barriers to adoption are not introduced via codes
- Ductless heating and cooling systems are the preferred technology in electrically heated homes

**Some or all of this market intervention is included in the optional market transformation activities.*

NEEA INITIATIVE: Residential New Construction/Next Step Homes 2015-2019

The Next Step Homes initiative leverages the infrastructure created by the prior Efficient Homes program to develop and increase market adoption of energy-efficient advanced building practices for single-family homes, aimed at influencing and accelerating code adoption over the next 3-4 code cycles.

WHY NEEA?

NEEA builds market capability and expertise among builders, verifiers, appraisers and real estate agents who work across the region to support the adoption of advanced building practices in new homes. NEEA also mitigates risk for the region by establishing best practices and validating energy savings for advanced building practices through pilot projects before they are widely used by the market.

MARKET BARRIERS

- Future efficiency opportunities will require advanced building skills that builders currently do not possess
- Appraisal/lender and real estate industries do not consider energy efficiency upgrades in home valuations
- Cost of advanced building practices and technologies remains high
- Lack of consumer awareness of and demand for energy-efficient homes
- Inability of consumers to identify and compare efficient features in new homes
- Perceived lack of business case for builders to build advanced energy-efficient homes

MARKET INTERVENTIONS

NEEA will use its regional leverage and economies of scale, while reducing risk to the region's utilities, to overcome these barriers by:

- Developing and validating advanced energy-efficient building specifications that are cost-effective for builders and consumers
- Aligning green home labeling programs and embedding advanced EE building specifications into them
- Supporting and advancing the existing market-based verification infrastructure
- Influencing state and federal building codes
- Providing technical trainings, education and tools to builders, verifiers, appraisers and real estate agents
- Leveraging NEEA's regional influence to develop and implement coordinated marketing strategies with market and utility partners*
- Using NEEA's non-profit status and regional influence to implement consumer awareness and media campaigns at reduced cost in coordination with utility and market partners*
- Developing marketing resources for utility and market partners to leverage in educating trade allies and consumers*
- Providing a QA process for the region to ensure proper installation and best practices are used

OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- Green label specifications are aligned and leveraging NEEA's new construction infrastructure
- Energy-efficient homes are valued higher
- Verifiers and builders incorporate advanced energy-efficient building practices and third-party verification into their business models
- Verifiers and builders are trained with technical skills resulting in quality home products
- Increased consumer awareness and demand for energy-efficient homes
- Voluntary adoption of advanced energy efficiency measures pave the pathway for state and federal code adoption

**Some or all of this market intervention is included in the optional market transformation activities.*

» *For a complete list of NEEA's current initiatives, please visit neea.org*

NEEA INITIATIVE: Building Operator Certification Expansion 2015-2019

The Building Operator Certification (BOC) Expansion accelerates market adoption of energy-efficient operation and maintenance practices in commercial buildings by creating market demand and increasing supply of BOC-certified building operators.

WHY NEEA?

Through its relationships with regional and national building operation and management organizations, NEEA leverages current market knowledge and expertise to cost-effectively drive the adoption of certified building operators in the Northwest.

MARKET BARRIERS

- BOC's business value is not well understood among building owners, operators and employers
- Building operators lack time to devote to earning BOC credential
- Courses are not offered regularly in rural areas
- No national standard to ensure product meets Federal Buildings Personnel Training Act

MARKET INTERVENTIONS

NEEA works to overcome these barriers by collaborating with key building operator associations and organizations as well as other market partners to:

- Deliver a compelling business case for BOC credential to building owners and employers
- Ensure BOC credential is associated with Department of Energy Better Building Workforce brand by pursuing ANSI accreditation
- Develop blended online curriculum to improve accessibility across the region
- Develop regional partnerships with key building operator associations to achieve additional cost-effectiveness
- Explore the implementation of new, cutting-edge training techniques at a regional scale

OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- The ANSI accredited BOC is well-known and highly valued by building owners and operators
- BOC blended online courses are conveniently offered year-round in all areas, rural and non-rural
- Certified operators are consistently in high demand by building owners and managers
- The BOC program is leveraged by, and integrated into, other energy efficiency programs

NEEA PROGRAM: Top-Tier Trade Ally Advanced Training* 2015-2019

The Top-Tier Trade Ally (TTTA) infrastructure accelerates market adoption of commercial and industrial advanced lighting retrofit practices by building connectivity between contractors, training resources, and utility programs throughout the Northwest.

WHY NEEA?

NEEA's regional position facilitates the coordination and development of an Advanced Training Infrastructure that will enable the Northwest to meet evolving training needs of Commercial Lighting Market actors. The region can leverage this infrastructure to expand the base of contractors possessing the skills to complete complex commercial lighting projects.

MARKET BARRIERS

These infrastructure resources address the following market barriers:

- Building owners are unaware of added value of advanced lighting strategies
- Few contractor requirements (a low bar)
- No market differentiation between high and low skills
- Few incentive programs that make advanced practices profitable for contractors
- Insufficient base of skilled trade allies capable of working with advanced lighting retrofits

MARKET INTERVENTIONS

NEEA will use its regional leverage and economies of scale to overcome these barriers by:

- Creating a training approach and infrastructure for evolving utility program and trade ally technical needs
- Coordinating, leveraging and aligning advanced technical trainings to trade allies across manufacturer, market and utility efforts.
- Testing new training curriculums/formats to increase advanced energy-efficient lighting skills
- Coordinating with local utility programs to incorporate advanced training into program design to build demand for allies that can demonstrate advanced skills
- Developing "Top-Tier Trade Ally" differentiation and list that allows utility programs to objectively identify highly-skilled contractors committed to advanced retrofit practices
- Increasing owner awareness of best practice advanced lighting strategies via existing NEEA owner initiatives (CRE and BOC)

OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- Higher level collaboration with trade allies and market partners
- Contractors invest in skill building, project development, and efficiency program success
- Contractors who acquire advanced skills are visible in market
- Utility programs reward these contractors with program access, incentives, recognition, etc.

**Program is optional.*

» *For a complete list of NEEA's current initiatives, please visit neea.org*

NEEA INITIATIVE: Commercial Lighting Upstream Platform/ Low Wattage Replacement Lamps 2015-2019

Develop an upstream platform with distributors and manufacturers that influences the stocking and sales practices of efficient lighting products that can be leveraged for lighting initiatives.

WHY NEEA?

NEEA uses regional leverage to establish relationships with electrical distributors and lighting product manufacturers, allowing it to implement upstream strategies that influence the stocking and sales practices of target technologies. NEEA also capitalizes on its regional advantage to collect regional sales data, and deliver training programs and marketing efforts that increase demand for efficient commercial lighting.

MARKET BARRIERS

- Limited relationships exist with lighting manufacturers and distributors
- Low awareness for efficient commercial lighting products like low wattage linear fluorescent replacement lamps
- Commercial lighting product sales data not tracked across the region
- Low market demand for commercial EE lighting due to upfront cost barriers

MARKET INTERVENTIONS

NEEA will use its regional leverage and economies of scale to overcome these barriers by:

- Developing relationships with national manufacturers and distributors
- Facilitating development of upstream incentive programs that shift stocking and marketing practices
- Coordinating and aligning local utility programs and upstream interventions
- Developing data collection and savings reporting infrastructure
- Developing education and marketing strategies to help electrical distributors increase awareness and demand of energy-efficient commercial lighting
- Piloting a “market lift” concept with distributors in the linear fluorescent lamp maintenance market

OUTCOMES

NEEA’s market interventions will transform the market in the following ways:

- Increased availability and distributor stocking practices of energy-efficient lighting
- Reduced price points on commercial lighting products
- Established centralized database on distributor lighting product sales resulting in more efficient and streamlined program implementation for the region
- Increased awareness and market demand for energy-efficient commercial lighting products
- Alignment with out-of-region opportunities identified and shared within the Northwest

» *For a complete list of NEEA’s current initiatives, please visit neea.org*

NEEA PROGRAM: Commercial Lighting Regional Resources 2015-2019

The Commercial Lighting Regional Resources initiative provides resources and tools that support utilities and the market in building market awareness, demand and capability for designing and installing energy-efficient commercial lighting.

WHY NEEA?

NEEA leverages its relationships with trade allies, electrical distributors, manufacturers, trade organizations and other market actors to build market capacity to deliver quality energy-efficient lighting. NEEA also pools the region's lighting industry knowledge to develop tools and training modules to help trade allies increase their expertise and differentiate their advanced skills in the market.

MARKET BARRIERS

These infrastructure resources address the following market barriers:

- Trade allies lack technical skillsets and knowledge on energy-efficient lighting design, controls and energy-efficient best lighting practices
- Training for trade allies is not coordinated and aligned among manufacturers, market and utilities
- Trade allies who possess more advanced skills are not differentiated from those who only deliver basic lighting retrofits
- Insufficient awareness and industry alignment on emerging, qualified LED technologies and controls

MARKET INTERVENTIONS

NEEA will use its regional leverage and economies of scale to overcome these barriers by:

- Supporting LED product specifications for the region through the Design Lights Consortium membership
- Developing an e-learning platform for utilities and market partners to leverage in conducting basic commercial lighting trainings
- Facilitating regional meetings and information sharing
- Providing technical tools and best practice lighting templates via the NW Lighting Network website that utilities and the market can leverage

OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- Leading trade allies in the region understand and deliver best practice lighting, achieving significant savings over traditional retrofits
- Regional alignment of commercial lighting best practices across the Northwest
- Increased awareness and demand for EE commercial lighting design and installation as measured through the success of utility lighting programs

» *For a complete list of NEEA's current initiatives, please visit neea.org*

NEEA INITIATIVE: Luminaire Level Lighting Controls 2015-2019

The Luminaire Level Lighting Controls (LLLC) initiative works to bring clarity to the controls market by developing best practice specifications for LLLC, aiming to have the technology adopted as standard industry practice by the commercial office lighting market.

WHY NEEA?

NEEA brings the aggregate demand of the region to the attention of lighting manufacturers to influence their adoption of high-performance product specifications and encourage greater industry competition. NEEA also helps absorb the burden of risk by piloting new program models and testing new lighting technology.

MARKET BARRIERS

- Controls market is emerging with multiple technical solutions to controlling commercial lighting and has yet to coalesce around one standard approach
- Lack of awareness about LLLC's technical approach and its associated benefits
- Insufficiency numbers of qualified, high-volume manufacturers currently offering affordable LLLC products
- Energy and non-energy benefits not quantified
- No programmatic model that allows utilities to capture full benefits of LLLC technology

MARKET INTERVENTIONS

NEEA will use regional leverage and economies of scale to overcome market barriers by collaborating with manufacturers, distributors, electrical contractors and other market partners to:

- Complete a proof-of-concept test for Enlighted brand lighting controls to confirm energy savings of first identified product that meets LLLC criteria
- Determine full economic value of LLLC technology that includes the complete suite of energy and non-energy benefits
- Develop specifications for major manufacturers to encourage high-volume LLLC competition
- Guide the LLLC technology through the RTF savings protocol process so utilities can include and promote LLLC technology via their commercial lighting programs
- Connect LLLC technology to other possible value streams so market actors see full value of LLLC technology
- Pilot a "pay for performance" program model to assess real-time measurement of energy usage by light fixture
- Leverage trade ally trainings to ensure supply chain is able to specify, sell and install LLLC technology

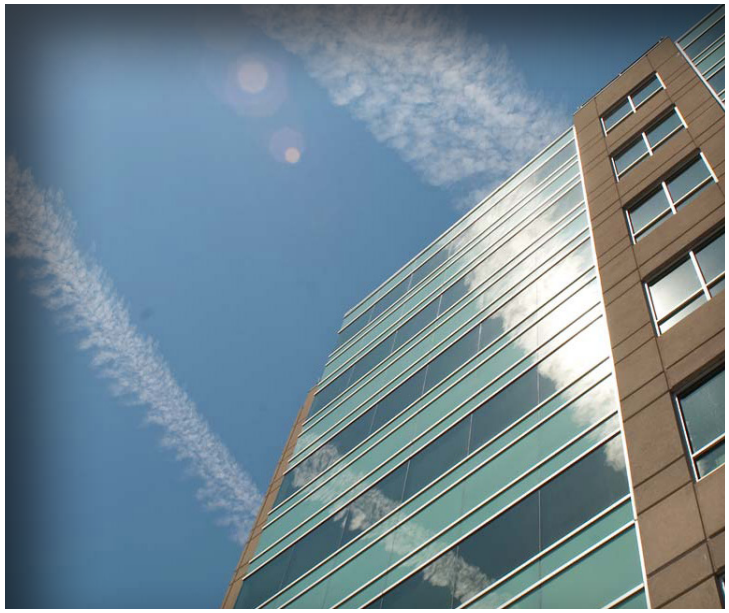
OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- All major lighting controls manufacturers offer LLLC technology to the market
- Major fixture manufacturers begin to integrate LLLC technology into fixtures themselves
- A robust and well-trained supply chain exists to fulfill demand for LLLC product
- NEEA's market partners benefit from additional value streams, such as remote M&V
- Business value of using LLLC technology in retrofit applications is common industry knowledge and LLLC product specifications become the industry standard

» *For a complete list of NEEA's current initiatives, please visit neea.org*

NEEA PROGRAM: Commercial Real Estate (Includes Existing Building Renewal)* 2015-2019



The Commercial Real Estate (CRE) infrastructure program leverages strategic, partnerships to deliver a broad range of energy efficiency best practices for commercial real estate and utility partners.

WHY NEEA?

NEEA is well-positioned to prime this complex and fragmented market for increased utility program participation by leveraging strategic relationships and developing market tools.

MARKET BARRIERS

This infrastructure program enables utilities and market partners to address the following market barriers:

- Lack of awareness of energy management best practices by target audiences (CRE owners, property managers, brokers, engineers, service providers, tenants).
- Little understanding of business case and competitive advantage of energy efficiency investments and best practices.
- Inadequate business and technical tools and resources for this market.
- Low supply of consultants and organizations delivering energy efficiency best practices.

MARKET INTERVENTIONS

NEEA will deliver cost efficiencies advantage and regional leverage through:

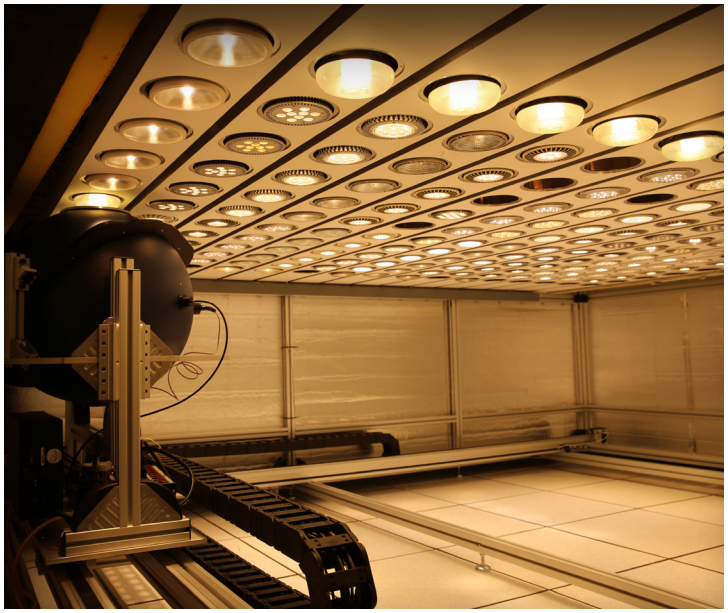
- Strategic Partnerships: Collaborate with trusted market allies (industry associations, local governments, districts, service providers, and firms with national/regional portfolios) to deliver CRE-tailored energy management best practices and tools.
- Market Tools: Develop regional tools and training to build market capacity to implement energy efficiency best practices, including: benchmarking, tenant engagement, enhanced building operations (O&M), and comprehensive deep energy retrofit (from prior Existing Building Renewal Initiative). Support CRE decision-making through business case tools that quantify total value of efficiency investments.
- Utility Program Support: Provide consultation, replicable tools, and market insight that utility partners can leverage to supplement programs or further engage customers.
- Industry Recognition: Build demand by demonstrating the competitive advantage of efficiency through recognition of industry leadership.
- Serve as demand-creation and market delivery channel for NEEA's related commercial programs, including Lighting, Building Operator Certification, and future Energy Management Information Systems.

OUTCOMES

- New program opportunities support utilities and increase CRE industry engagement.
- Readily available market tools support implementation of range of EE practices, from operations and maintenance to deep energy retrofits.
- Increased market demand as CRE ownership and property management firms view energy efficiency best practices as a strategic necessity for competitive advantage.
- Energy disclosure and building rating systems drive market demand.

**Program is optional.*

NEEA PROGRAM: Integrated Design Labs 2015-2019



The Integrated Design Lab (IDL) network provides resources and tools for utilities and market partners to innovate and advance the practice of integrated design to achieve high performance commercial buildings.

WHY NEEA?

NEEA uses its regional position to establish centralized, independent facilities that cost effectively develop, distribute and maintain resources, tools, training, data, research and other infrastructure elements to accelerate and sustain innovation in the design and construction market.

MARKET BARRIER

This infrastructure is for utilities and market partners to leverage to address the following market barriers:

- Lack of familiarity with integrated design approach, techniques and supporting tools among architects and engineers
- Advanced energy efficiency measures are not part of the current standard commercial design and construction approach
- Building project budgets rarely allow time for architects and engineers to research new innovations
- Few accessible sources for credible information on strategies, products and tools exist

MARKET INTERVENTIONS

NEEA leverages its regional positioning through the Integrated Design Lab network by:

- Providing technical expertise, training and resources to architects and engineers
- Sharing costs across the region's utilities, minimizing financial impact on individual utilities
- Centralizing tools, resources and equipment that utilities and market actors can leverage
- Distributing expertise across the labs, avoiding duplication of services across the network of labs
- Providing technical analytic skills and diagnostic equipment not readily available outside of lab
- Testing new design approaches and equipment before utility program deployment

OUTCOMES

This infrastructure provides long-term value to the region by establishing:

- Centralized, independent research facilities that provide a continuous source of innovation for the design and construction communities in the region
- Independent and credible sources of expertise to validate new approaches, techniques, and tools as they are developed
- A central source of tools, resources and equipment for utilities and market actors

NEEA PROGRAM: Commercial and Industrial SEM Infrastructure 2015-2019

NEEA's Commercial and Industrial Regional Resources provide a holistic and integrated set of tools that support utilities and the market in building market capability, awareness and demand for Strategic Energy Management (SEM).

WHY NEEA?

NEEA takes advantage of economies of scale to cost effectively develop tools, technologies, and templates that are maintained in a centralized location and that can easily be leveraged by utilities across the region to promote Strategic Energy Management (SEM) among industrial end users in their service territories.

MARKET BARRIERS

This infrastructure provides resources that utilities and market partners can leverage to address:

- Lack of awareness of the business value of SEM practices among facility owners and managers
- Lack of sustained and reinforced SEM practices

MARKET INTERVENTIONS

NEEA will leverage its regional advantage and take advantage of economies of scale by facilitating the Northwest Regional SEM Collaborative and working with other market actors to:

- Build regional awareness of and knowledge for SEM best practices
- Foster collaboration and facilitate a common set of standards for SEM program implementation
- Develop enabling tools and technologies for SEM resources for the region
- Develop tools and templates that utilities and market partners can leverage to implement cost-effective marketing strategies to increase demand for SEM among facility owners
- Benchmark SEM market adoption in the region
- Help build a more sustained SEM implementation plan by working at the national level to promote ISO 50001
- Manage a centralized online knowledge center that hosts training modules, templates and resources that utilities and market partners can leverage, customize and brand as their own

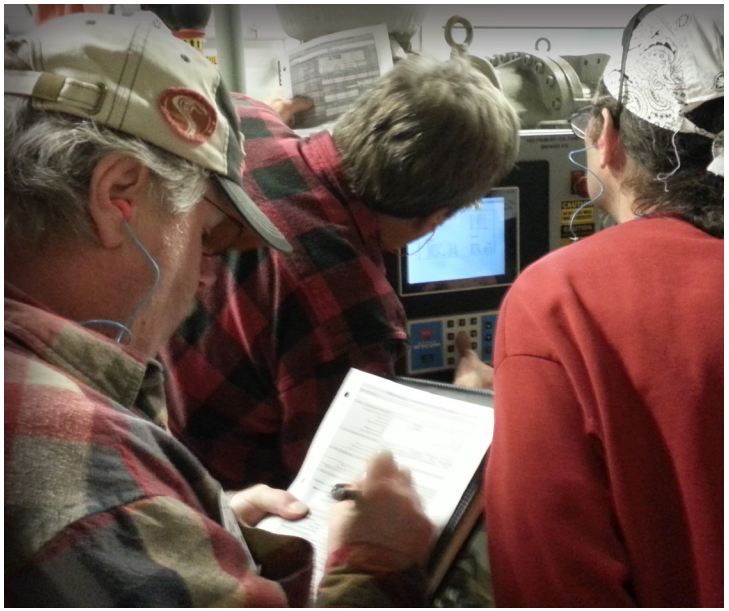
OUTCOMES

This infrastructure provides long-term value to the region by:

- Creating an environment where sustained adoption of SEM is valued and desired by business owners
- Establishing centralized resources to support SEM implementation in the region
- Supporting a regional working group to achieve consensus on common SEM standards
- Consolidating regional leverage to influence promotion of an international standard

» *For a complete list of NEEA's current initiatives, please visit neea.org*

NEEA PROGRAM: Industrial Technical Training* 2015-2019



NEEA's Industrial Technical Training program provides coordinated technical training on key industrial energy efficiency concepts to support industrial energy efficiency programs and build market capacity to facilitate implementation of Strategic Energy Management (SEM).

WHY NEEA?

NEEA takes advantage of economies of scale and its regional advantage to cost effectively deliver a training program that serves all parts of the Northwest, offering training events that utilities across the region can leverage to promote energy efficiency among industrial end users in their service territories.

MARKET BARRIERS

This infrastructure provides resources that utilities and market partners can leverage to address:

- Lack of awareness of industrial energy efficiency among facility owners and managers
- Lack of technical capacity among industrial end users to implement actions that will reduce energy intensity and support implementation of SEM

MARKET INTERVENTIONS

NEEA will leverage its regional advantage and take advantage of economies of scale by facilitating the delivery of industrial technical training across the Northwest to:

- Build regional awareness of the value of industrial energy efficiency approaches and practices among industrial end users
- Build technical capacity among industrial end users to implement specific techniques for controlling energy usage

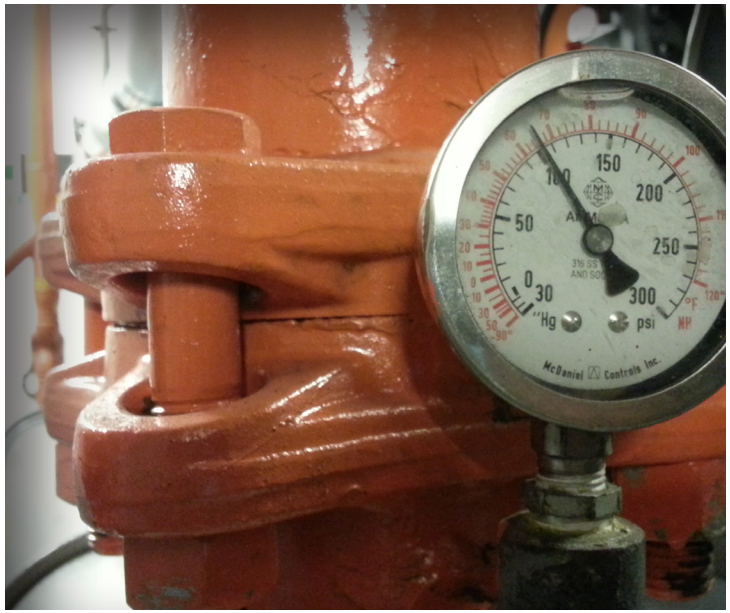
OUTCOMES

This infrastructure provides long-term value to the region by:

- Building industrial energy efficiency awareness and technical capacity among the region's industrial end users
- Achieving economies of scale for providing industrial energy efficiency training in support of the region's MT programs
- Coordinating delivery of training to avoid duplication of effort among utilities and market partners
- Providing resources that utilities can leverage to support SEM implementation in the region

**Program is optional.*

NEEA INITIATIVE: Certified Refrigeration Energy Specialist (CRES) Certification 2015-2019



The Certified Refrigeration Energy Specialist (CRES) initiative increases industrial facility energy efficiency through the implementation of a certification program for refrigeration system operators.

WHY NEEA?

By representing the full market potential of the Northwest, NEEA is able to attract and collaborate with national refrigeration organizations, leveraging their existing infrastructure to cost-effectively bring an accredited refrigeration certification program to the region.

MARKET BARRIERS

- Perceived lack of value for operator's time and organization's money invested in certification
- Lack of energy-related certification program for refrigeration system operators

MARKET INTERVENTIONS

To overcome market barriers, NEEA uses regional leverage to achieve economies of scale while collaborating with Refrigerating Engineers & Technicians Association (RETA), industrial organizations, and other market partners to:

- Leverage RETA's existing, national infrastructure to bring an ANSI-accredited certification focused on energy-efficient operations to the Northwest
- Ensure documented energy saving activities are performed with long-lasting quality through formal certification board review and a renewal process
- Reduce time spent by operators to document activities by developing an online database
- Influence educational and equipment suppliers to embrace CRES through their offerings

OUTCOMES

NEEA's market interventions will transform the market in the following ways:

- CRES certification is actively sought by refrigeration professionals to gain a competitive edge
- Business owners gain benefits in hiring and promoting certified system operators
- Refrigeration System Operator certification is nationally available through RETA

» *For a complete list of NEEA's current initiatives, please visit neea.org*

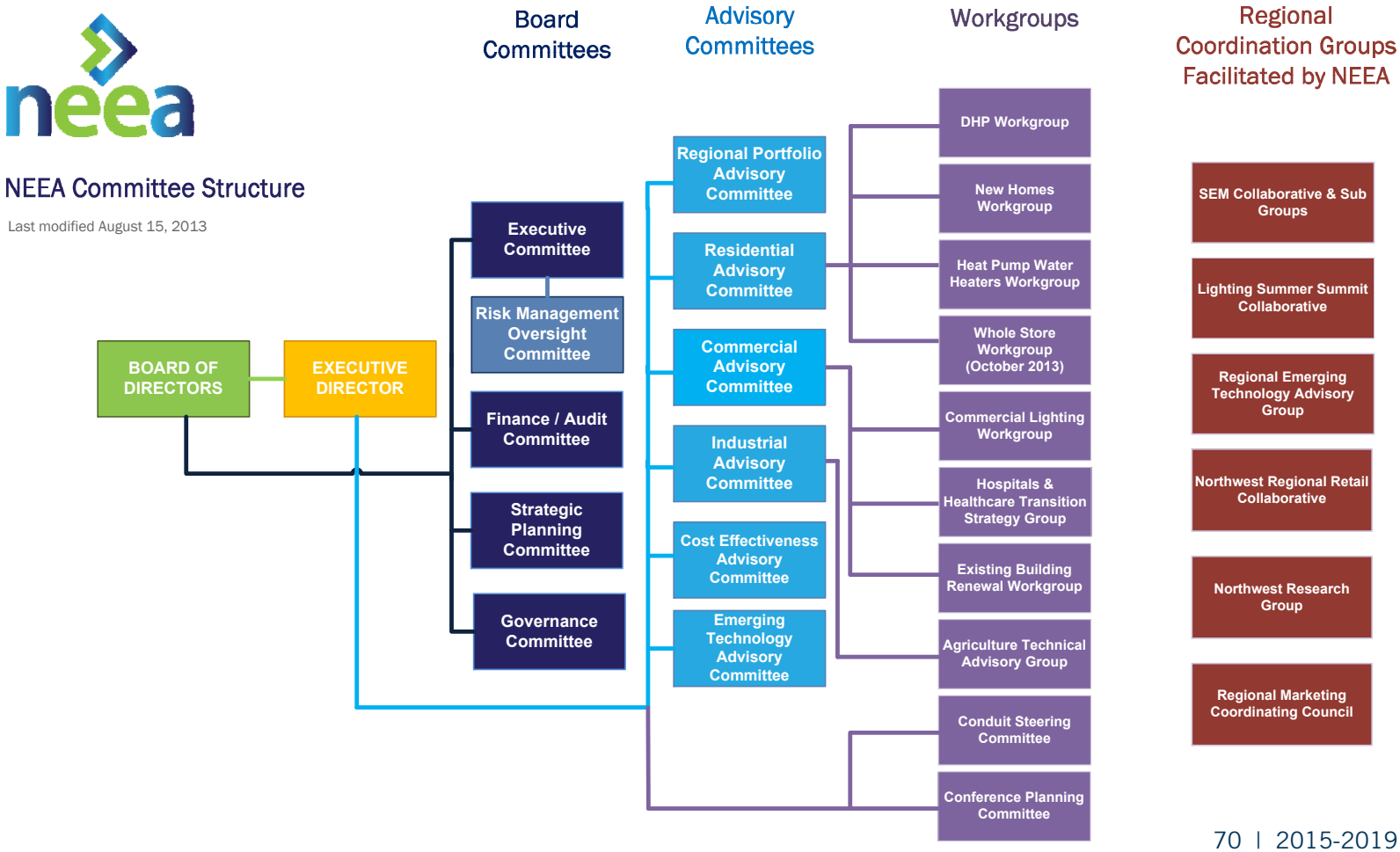
APPENDIX 7 – ACTIVE FEDERAL STANDARDS & TEST PROCEDURE RULEMAKINGS - 2015-2019

Technology	Test Procedures	Standards
Battery Chargers & External Power Supplies	Yes	Yes
Residential Boilers		Yes
Ceiling Fans & Ceiling Fan Light Kits		Yes
Residential Central AC & Heat Pumps	Yes	Yes
Residential Clothes Dryers	Yes	Yes
Residential Clothes Washers	Yes	Yes
Dehumidifiers	Yes	Yes
Direct Heating Equipment		Yes
Residential Dishwashers		Yes
Fluorescent Lamp Ballasts		Yes
Residential Furnaces	Yes	Yes
Residential Furnace Fans	Yes	Yes
General Service Fluorescent Lamps		Yes
GSILs, CFLs, GS LEDs & GS OLEDs	Yes	Yes
Incandescent, Candelabra, Int. Base Lamps		Yes
Certain ER, BR & Sm. Diam. Incandescent Lamps		Yes

Technology	Test Procedures	Standards
Room AC	Yes	Yes
Set-top Boxes & Small Network Equipment	Yes	Yes
Small Motors		Yes
Televisions		Yes
Water Heaters	Yes	Yes
Commercial Boilers		Yes
Commercial Refrigeration Equipment	Yes	Yes
Fans, Blowers & Fume Hoods		Yes
General Service Fluorescent Lamps		Yes
Pumps, Commercial & Industrial	Yes	Yes
Vending Machines	Yes	Yes
Walk-in Coolers & Freezers	Yes	Yes
Packaged Terminal AC & HPs		Yes
Pool Heaters	Yes	Yes
Ranges & Ovens		Yes
Residential Refrigerator-Freezers & Freezers	Yes	Yes

APPENDIX 8 – ADVISORY COMMITTEE STRUCTURE AND ROLES

The following chart illustrates the current advisory committee structure and its relationship to the Executive Director and the Board of Directors. NEEA modified the process for advisory committee interaction in 2013 to provide specific feedback from sector advisory committees and the Regional Portfolio Advisory Committee to the Executive Director. NEEA staff provides updates on initiatives and new opportunities; asks for advice, especially before an initiative starts or advances into the market development phase of the initiative life cycle; summarizes that feedback for the Executive Director; and reports action taken to the committee(s) involved and the Board of Directors. NEEA expects to further refine the process for 2015-2019 to better capture meaningful and actionable feedback.



APPENDIX 9 – ORGANIZATION STRUCTURE AND CORE BUSINESS AREAS

NEEA structures its staff into functional areas to support its business objectives. All parts of the organization work cross-functionally to drive and support Market Transformation (MT) efforts for the Northwest region.

Executive Office: Executive Director, Susan E. Stratton

Executive Office is responsible for all aspects of the alliance to achieve its mission, execute its Strategic and Business Plans to ensure value delivery through operational excellence.

Market Execution: Karen Horkitz, Director

Program Management activities and Market Resources focus on the execution of strategic market and initiative plans; establish best practices, tools, systems and resources that build and support initiative functional excellence; improve NEEA's ability to quantify, track and communicate value delivery; and lead the development and implementation of best practices in the marketing function, including:

- *Program Management* - NEEA's program managers are responsible for the overall planning, resourcing and execution of assigned MT initiatives and infrastructure programs. They coordinate and lead cross-functional teams to advance and implement MT programs and are accountable to deliver the associated business results.
- *Project Management* - NEEA's project managers oversee projects critical to the execution of MT initiatives, including pilots for innovative energy efficiency products, services and practices. They work closely with program managers on project milestones, and are responsible for coordinating the day-to-day operational aspects of a project and for effective project execution that meets program timelines and goals.

Emerging Technology and Market Strategy: Jeff Harris, Director

Emerging Technology (ET) ensures technologies move steadily through the ET pipeline. Market strategy managers focus on an entire market to identify the most viable opportunities in each sector, and pursue opportunities that will have the greatest long-term impact on the market as a whole. Product managers and strategic market managers carry out essential functions, such as scanning, product development and market strategy activities. Codes and Standards is also part of this group.

- *Product Management* - NEEA's product managers plan and develop new, energy-efficient products through the initiative lifecycle stages into a full-scale MT effort. They scan the market for new, innovative energy-efficient products, services and practices.
- *Strategic Market Management* - NEEA's strategy managers define, develop, manage, and deploy a strategy for a broad strategic market segment to capitalize on energy savings and MT goals for that market. They characterize both the demand and supply side of the market segment to identify a long-term engagement strategy, foster market relationships and provide strategic guidance and support to product and initiative managers while identifying opportunities to coordinate with other regional and national efforts.

Research, Planning and Evaluation: Susan Hermenet, Director

Market Planning is responsible for cost-effectiveness modeling of MT initiatives, aMW savings reporting, and portfolio management. Market Research and Evaluation generates information to answer questions about the state of relevant markets, programs and initiatives. This group generates data and reports including market characterizations that inform the design of NEEA's initiatives. The group also conducts third-party evaluations

that help assess the potential and actual market progress of the initiatives as well as regional studies that influence planning efforts.

Stakeholder Relations: Clay Norris, Director

The Stakeholder Relations group ensures high-functioning relationships with NEEA stakeholders and utility collaborators. This group focuses on improving stakeholder relationships through NEEA's advisory committees and direct interactions, implementing a properly resourced stakeholder engagement system internally, and effectively communicating NEEA's results.

Business Administration: Julia Harper, Director

Business Administration includes the general support and governance functions for the organization: Finance, Human Resources, Information Technology, and Business Operations (legal/contracts, risk management and facilities). The focus of these groups is to provide support for leveraging NEEA's resources in a cost-effective manner while appropriately managing risk to the organization.

APPENDIX 10 – GLOSSARY OF KEY TERMS

Savings Accounting/ Metrics

ACE Model: NEEA uses an Excel-based tool, Alliance Cost Effectiveness (ACE) model, to produce the official energy savings forecast of an initiative. The ACE model also produces a set of cost-effectiveness metrics (benefit-cost ratio and levelized cost) to assess ongoing performance and program renewal possibilities. Each year NEEA reassesses the forecasts to ensure alignment with actual values and updated assumptions.

Baseline Savings: An estimate of energy savings that would occur in a market (naturally occurring) without any intervention by NEEA, a utility, BPA, and/or the Energy Trust.

Co-created Savings: An estimate of energy savings, above what would happen without any intervention, resulting from local and regional programs working together.

Forecast (aka official NEEA forecast): Initiative energy savings estimate for current and future years based on an ACE model. This term is relative to energy savings at NEEA; however, forecasts also exist for market and technical assumptions, market progress indicators, penetration rates and market share. The term may also apply to expenses, (e.g., a budget forecast.)

Levelized Cost: NEEA calculates this metric using the standard definition adopted by most of the regulatory commissions in the region: sum of all societal costs net of the sum of all societal quantifiable benefits divided by total regional energy savings and levelized over the typical life of the measure.

Local Programs Savings: An estimate of energy savings claimed by a utility, Bonneville Power Administration, or the Energy Trust's energy efficiency/conservation programs.

Net Market Effects Savings: A calculation of energy savings associated with market change and not counted as Baseline or Local Programs. (Net Market Effects = Total Regional Savings - Naturally Occurring Baseline Savings - Local Program Savings)

Planning Estimate: NEEA generates this best estimate of initiative savings from various sources, including market data and professional judgment. Planning estimates apply when a forecast number is not yet available from an ACE model, and NEEA needs to estimate energy savings potential of the initiative portfolio and/or assess attractiveness of the initiative.

Private Sector Investment: Investment (cash or in-kind) by partners above and beyond NEEA's budget that would not have occurred without NEEA's market activities.

Total Regional Savings: An estimate of energy savings associated with all market changes in a given market.

Strategic Planning

Annual Operating Plan: The more detailed operational plan translated each year from the 5-year Business Plan. The Board of Directors approves the annual operating plan, which links key strategies to specific initiatives, savings, metrics and milestones and provides the input to management systems to ensure delivery of the annual operations goals and objectives.

Annual Planning Process: The annual process that uses NEEA five-year strategic and business plans as guidance in the development of the annual operating plans for each sector/business unit.

Business Plan: Builds on the Strategic Plan and serves as a funder prospectus that outlines value delivery activities required to achieve savings targets. The five-year Business Plan includes specific savings projections, estimated savings by sector, metrics and budget guidelines. The Business Plan is adjusted or refined on an annual basis to ensure that NEEA is pursing the optimal portfolio or energy efficiency pursuits.

Strategic Plan: The plan that defines NEEA's vision, mission, core values, business principles, strategic goals and key strategies. The Strategic Plan is a roadmap for achieving NEEA's vision.

Key Objective/Deliverable: Key targets/ accomplishments (outcome or activity) and

corresponding dates for each initiative shown in the Annual Operating Plan.

Key Strategies: A more defined approach which describes how NEEA will achieve its enterprise-wide strategic goals and identifies market players and tools.

Logic Model: A systematic, and visual, way to present and share an understanding of: the relationships among the resources required for operating the program; the planned activities; and the changes or results hoped to achieve.

Market Progress Indicator: A metric that gauges progress in overcoming identified market barriers or otherwise changing the market, per the initiative theory and helps define performance.

Planning Guidelines: These specific inputs to the planning process provide guidance to the sectors and business units in the annual planning process. Planning guidelines might include specific goals, areas of focus, metrics templates and deliverables (e.g., target markets, savings estimates, projected savings from the five-year business plan, etc.).

Project: An independently managed set of activities that is required for the success of an initiative. Typically, projects are deemed a success if they complete on time, on budget, and with the specified features and functionality. This is in contrast to Initiatives, which NEEA evaluates on the business results that they achieve – for example, market progress, cost-effectiveness or energy savings delivered by the initiative. Projects do not deliver energy savings.

Initiative Terms

Initiative Lifecycle (ILC): NEEA's stage-gate initiative development process provides clear milestone requirements and creates consistency in analytical rigor and decision making at key points in the life of an initiative. Phases include:

- **Market Scanning + Concept Identification:** This first phase of the ILC includes screening, secondary research, feasibility studies and maintaining strategic alliances.
- **Concept Opportunity Assessment:** Once the concept advances, this next phase includes developing a logic model, establishing preliminary savings estimates, implementing a data management plan, identifying roles for NEEA and utilities, and begins stakeholder engagement and initiative planning.
- **Market + Product Assessment:** This phase includes conducting "in-field' demonstrations, testing and validating market assumptions, analyzing field data, and establishing a baseline for the initiative.
- **Market Transformation Strategy Testing + Finalization:** This phase focuses on developing market intervention plans, conducting market research and limited markets tests, developing a cost effectiveness model and incorporating key findings for the next phase.
- **Full-scale Market Development/Strategic Market Intervention:** This ramp-up phase includes a variety of activities such as: developing product standards and certifications, product availability programs, financial incentives, retail training programs, and research-based marketing strategies; collecting/analyzing market data; and, providing technical assistance to professionals who influence energy efficiency choices.
- **Long-Term Monitoring + Tracking:** This final phase is where NEEA market development work ends; the focus shifts to evaluating market progress and revising the data management plan to validate data for market progress and energy savings results.
- **Codes and Standards Support:** Throughout the initiative lifecycle, NEEA provides support for voluntary programs to advance building practices, collects performance data, develops and implements training programs and influences the development of new codes and standards.

Initiative: A set of interdependent (or strategically related) interventions that achieve market transformation goals managed in a coordinated way through a defined strategy. Activities vary per initiative based on the

market transformation strategy, but include, among other things, building strategic alliances, testing and market research, training and evaluation.

Platform: A flexible mechanism that supports multiple market transformation programs and speeds the time to market for new efficiency opportunities. Key platform components could include: uniform product specifications; consolidated, streamlined data; common marketing and messaging; or, leveraged, mid-stream incentive structures.

Infrastructure: A holistic and 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. This infrastructure provides resources that utilities and market partners can leverage to address market barriers and support long-term market transformation within strategic markets.

Strategic Markets: The markets for which NEEA sees a long-term opportunity to help the region achieve its energy efficiency goals through market transformation work and regional leverage.

Activities/Building Blocks: The foundational activities that are required for each initiative to achieve market transformation. Activities could include a combination of data collection and assessment, field and lab testing, marketing resources, incentives, program staff and technical resources and training.

Optional Activities: Initiative-related activities which utilities can choose either to participate in via NEEA or to support and fund separately in their own local territory.

Services: Value-added services that support market transformation, such as energy efficiency conferences, online community (Conduit) and data services.

Incentive: A financial inducement to encourage creation of, participation in, and/or the purchasing of energy-efficient products, services or practices. Types of incentives include:

1. **Downstream:** End-user/customer incentives for the purpose of reducing price, stimulating demand;
2. **Mid-stream:** Distributor or retailer incentives for the purpose of influencing buying decisions, stocking practices, price; and
3. **Upstream:** Manufacturer incentives for the purpose of influencing development of energy efficient and climate appropriate products, encouraging scale production, influencing product distribution, and decreasing price.

Key Abbreviations

ACE Model – Alliance Cost Effectiveness Model

AHAM – Association of Home Appliance Manufacturers

ARRA – American Recovery and Reinvestment Act of 2009

Average Megawatt (aMW) – An aMW is 8,760 (the number of hours in a year) megawatt hours or 8,760,000 kilowatt-hours. This is the continuous output of a resource with one megawatt of capacity over a period of one year.

HP – Horse Power

Kilowatt (kW) – The electrical unit of power which equals 1,000 watts.

Kilowatt-hour (kWh) – The use of a kilowatt (kW) of power for one hour.

LTMT – Long Term Monitoring and Tracking

Megawatt (MW) – The electrical unit of power which is equal to 1,000 kilowatts.

Megawatt-hour (MWh) – The use of a megawatt (MW) of power for one hour.

MPER – Market Progress Evaluation Report

NWPCC – Northwest Power and Conservation Council

O & M – Operation and Maintenance

RPAC – Regional Portfolio Advisory Committee

RTF – Regional Technical Forum

TRC – Total Resource Cost

APPENDIX 11 – STRATEGIC MARKET CHARACTERISTICS AND SELECTION CRITERIA

Trends in markets for energy efficiency have led to the need for a longer-term, strategic framework that can guide the region's market transformation efforts over the next five years. This longer-term framework focuses on identifying and planning for the transformation of markets that meet all of the following criteria. Specifically, these strategic markets should have:

- **Energy Savings Potential:** A significant stream of energy savings potential over a long-term (10+ year) horizon, including both current and emerging technologies;
- **Market Transformation Opportunities:** Savings opportunities that have high market barriers and/or opportunities that require or would benefit significantly from market transformation activities in order to capture the savings over the next 10 years;
- **Regional Leverage:** Partnership opportunities that require or would benefit significantly from the aggregated power of the entire Northwest region to leverage commitments from regional or national level market actors;
- **Business Case for NEEA:** A clear business case for ongoing NEEA investment in the market, e.g., lower overall ratepayer costs to capture the full energy savings potential through a regional market transformation approach, providing necessary supporting infrastructure, facilitating and accelerating paths to market for emerging technologies, unique data collection opportunities at the regional level, etc.; and
- **Link to Codes and Standards:** Long-term, consistent linkage to building codes or appliance standards that have a strong influence on the energy intensity of products or services within the market; e.g., new construction markets are heavily influenced by and connected to energy codes.

Applying these criteria to specific markets within the Residential, Commercial, Industrial/Agricultural sectors resulted in a prioritized set of strategic markets that met these criteria. Based upon our market research, 6th Plan savings potential, and our current market transformation experience, the following are the recommended strategic markets for the 2015-2019 Business Plan:

- Consumer Products
- Residential New Construction
- Commercial Lighting
- Commercial New Construction

It is important to note that these strategic markets will require a coordinated regional effort; NEEA alone cannot transform these markets. NEEA can serve as a catalyst and collaborator to facilitate and accelerate market adoption of energy-efficient products, services and practices along with strategic partners including Northwest utilities and energy efficiency organizations, state and local programs, and key market actors.

Residential Sector: Consumer Products and Residential New Construction

The Residential sector represents 40% of regional electric energy use and almost 6 million individual homes and apartments across the region. According to the 6th Power Plan, 3,070 aMW, or just over half of the 20-year energy savings potential, lies within the Residential sector. From a market transformation perspective, while the consumer is the ultimate decision maker, many of the choices offered to the consumer are "pre-determined" by supply-chain actors who have already made decisions about energy-impacting features before offering the products or buildings to the consumer. These "pre-determined" features are associated primarily with products or services that the consumer will purchase as part of a broader buying decision; e.g. replacing a refrigerator or purchasing a big-screen television. Roughly 61% of the residential efficiency potential in the 6th Power Plan is associated with these

consumer products. Another 33% is associated with efficiency retrofits; e.g., weatherization and ductless heat pumps. Another 6% is associated with shell measures for new construction markets.[11] Virtually all consumer products and new construction are subject to national, state and local codes and standards.

Due to the high efficiency potential and the high-leverage opportunities to affect product decisions high in the supply chain that pre-determine efficiency, NEEA will focus its efforts in the Residential sector on the consumer products market and the new construction market that together represent 67% of the 6th Power Plan potential. NEEA will not pursue the more traditional retrofit market opportunities that include weatherization; duct-sealing and other opportunities where consumers are making decisions primarily based on efficiency, and utility programs are highly successful in acquiring energy savings.

Given the characteristics of the efficiency opportunities within the Residential sector, NEEA will focus on the following strategic markets that together represent roughly 67% of the 6th Power Plan residential targets:

- Consumer Products (1,875 aMW, 61% of Residential Potential)
- New Construction (170 aMW, 6% of Residential Potential)

[11]The 6% does not include savings in new construction markets in lighting, appliances, water heating or HVAC. These savings are bundled in the overall savings for those end-uses. The total savings in new construction is therefore much larger than 6%.

Consumer Products

Market Description: This market represents manufacturers and retailers of products that consumers purchase not specifically for the efficiency characteristics of the product, but rather for the utility of the product (e.g. big screen televisions, refrigerators, and light bulbs) or as a replacement for an existing product (e.g. a water heater). These products cover a wide range of consumer goods including consumer electronics, appliances, portable space conditioning equipment, water heaters and upgrades in efficiency for HVAC equipment at the time of replacement. Both retail and contractor channels carry these products. Key leverage points include corporate retail buyers, regional/national distributors, and national/global manufacturers.

Residential New Construction

Market Description: This market covers all new residential construction, including builders and the supply chains that feed this market.[12] There are three distinct submarkets within the new construction market:

- Single-family
- Multi-family (low-rise, light frame construction)
- Manufactured housing

[12]NEEA may only be able to focus on one or more submarkets within the new construction market.

According to the 6th Power Plan forecasts, 71% of the new housing units added in the region will be single- family units, 21% multi-family, and 8% manufactured housing.

Given that the majority of new homes are single family and the fact that there is a direct link between state codes and single-family construction, NEEA proposes to focus the new construction efforts on single-family new construction. The multi-family market often incorporates technologies developed for the single-family market as these units compete with single-family for new occupants.

Commercial Sector: Commercial Lighting and Commercial New Construction

The Commercial sector represents 33% of regional electric energy use and almost 3 billion square feet of buildings across the region. According to the 6th Power Plan, energy savings potential in the commercial sector represents 1,360 aMW, or 24%, of the regional total. From a market transformation perspective, the diversity of the ownership and decision-making structures in this sector make it imperative to focus on those communities of the market that: 1) have real decision-making authority to affect change in energy-related aspects of the buildings; and 2) have a strong business case to support energy efficiency as a component of their overall profitability.

Given the characteristics of the market as well as the efficiency opportunities and market trends, NEEA will focus on the following strategic markets that together represent roughly 52%[13] of the 6th Power Plan commercial energy savings potential:

- Commercial Lighting (650 aMW or 48%)
- Commercial New Construction (60 aMW or 4%)

Commercial Lighting

Market Description: The US market for lighting is estimated at $8.5 billion annually, translating to a Northwest market of over $400 million in lighting product sales per year. As noted earlier, lighting accounts for 21% of Northwest commercial energy use, or more than 1,300 aMW in 2007.

The market for commercial lighting products and services includes the following market components:

- **Demand Side:** Building owners and property managers who require lighting products and services for both new construction projects as well as maintenance and tenant improvements for their customers.
- **Supply Side:** Lighting manufacturers who manufacture components, fixtures, and controls as well as distributors, contractors, and designers.

Commercial New Construction

Market Description: This market covers all new commercial construction including both the design/construction and equipment/materials supply chain that supplies this market.

Read "Business Plan Supporting Documents - Strategic Markets" for a more detailed description of these and other markets that NEEA considered in drafting its 2015-2019 Business Plan.

[13]The energy savings potential is represented here as a total for purposes of understanding the whole opportunity. NEEA does not claim or propose that it is the sole entity delivering these savings, but would act consistently with the role descriptions in partnership with utilities and other market actors to help the region achieve the full potential described in the 6th Plan.

APPENDIX 12 – NEEA MARKET TRANSFORMATION BUILDING BLOCKS AND SPECIFIC ACTIVITIES*

Building Block	Activities	Core Activities	Optional Activities**
1. Data Collection & Assessment			
	Collection of data from market partners	**X**	
	Data analysis	**X**	
	Opportunity assessment	**X**	
	Reporting	**X**	
	Product allocation and matching	**X**	
	Database and data warehouse development	**X**	
2. Field & Lab Testing			
	In situ studies to validate energy savings assumptions of emerging technologies/products	**X**	
	Laboratory testing to validate energy savings assumptions, manufacturer claims or develop testing procedures/protocols where industry standards do not meet regional needs	**X**	
3. Market Channel Development			
	Develop relationships, support and engage with supply chain market actors (e.g., manufacturers, distributors & trade allies, retailers--corporate level):		
	Manufacturers:		
	Influence development of more efficient/NW climate-appropriate new products (NCS HPWH)	**X**	
	Bring energy efficient products to NW market	**X**	
	Influence product placement and availability for NW market	**X**	
	Support product placement throughout necessary supply chains (i.e. HVAC, plumbing) ensuring product/practice is available throughout supply chains	**X**	

APPENDIX 12 – NEEA MARKET TRANSFORMATION BUILDING BLOCKS AND SPECIFIC ACTIVITIES* (CONTINUED)

Building Block	Activities	Core Activities	Optional Activities**
3. Market Channel Development Cont.			
	Develop new supply chains (retail for DHP)	**X**	
	Create training materials/collateral to increase awareness and adoption (i.e. manufacturer product brochures, training material)	**X**	
	Develop technical resource for manufacturer partners leveraging NW experience with products to influence adoption, installations, installation instructions, etc.)	**X**	
	Coordinate response to market risks (code barriers to adoption – i.e., disconnect switch for DHPs.)	**X**	
	Distributors & Trade Allies:		
	Support supply chain adoption of product to ensure regional availability	**X**	
	Develop cooperative opportunities to leverage distribution communication channels to engage trade ally network (DHP Training)	**X**	
	Influence training and sales materials	**X (for Distributors)**	
	Assess and present data collection process	**X**	
	Coordinate with regional trade schools/educational institutions to advance new practice/product	**X**	
	Influence Distributors "manufacturer market support" funds to be leveraged to advance product/practice	**X**	**X (for trade allies)**
	Retailers:		
	Engage retailers (corporate) to adopt new product offerings (i.e., DHP, NCS HPWH)	**X**	
	Influence & Coordinate Regional/National Promotion calendars	**X**	

APPENDIX 12 – NEEA MARKET TRANSFORMATION BUILDING BLOCKS AND SPECIFIC ACTIVITIES* (CONTINUED)

Building Block	Activities	Core Activities	Optional Activities**
3. Market Channel Development (Continued)			
	Influence and develop retail signage incorporating initiative messaging (Home Depot/DHP)	**X**	
	Influence and provide support to national and regional trainers	**X (national)**	**X (regional)**
	Coordinate utility stakeholder engagement	**X**	**X**
	Influence/coordinate POP Placement (HPWH signage)	**X (influence)**	**X (coordinate placement)**
	All:		
	Influence marketing plans and activities to incorporate the NW message	**X (mfrs, distributors)**	**X (trade allies)**
	Advocate for and develop data collection process	**X**	
	Develop relationships, engage and support new key market actors in the new construction market (e.g., builders, appraisers, realtors and labeling programs) to influence building practices or acceptance of new product/practice	**X**	
	Coordinate activities with national partners (e.g., ENERGY STAR/EPA; retail corporate buying groups; manufacturers)	**X**	
	Manage and influence sub-regional relationships (i.e.. PG&E, LPPC)	**X**	
	Develop and manage strategic market partnerships with key market actors in commercial and industrial strategic markets (e.g., BOMA, LEED, NWFPA, RETA)	**X**	

APPENDIX 12 – NEEA MARKET TRANSFORMATION BUILDING BLOCKS AND SPECIFIC ACTIVITIES* (CONTINUED)

Building Block	Activities	Core Activities	Optional Activities**
4. Market Research & Evaluation			
	Market Characterization Studies	X	
	Baseline Studies	X	
	Market Progress Evaluation Reports	X	
	Market, Consumer and/or Product Research	X	
	Product Validation/Verification	X	
5. Marketing Resources			
	Create market resources to help market partners and utilities drive consumer awareness and adoption:		
	Utility marketing template and tool creation aimed at creating a regional message to accelerate consumer and market adoption.		X
	Customized utility templates, website development creation		X
	Market partner (contractor, manufacturer, distributor, builder, retailer etc.) template and tool creation (cooperative advertising campaigns, cooperative funds, available to influence messaging)		X
	Marketing support and material generation for market partners (i.e., Sears circular language/ regional HPWH promotion)	X	
	Website development and enhancement to create synergy across NW market	X	
	Point of purchase design and development		X

APPENDIX 12 – NEEA MARKET TRANSFORMATION BUILDING BLOCKS AND SPECIFIC ACTIVITIES* (CONTINUED)

Building Block	Activities	Core Activities	Optional Activities**
5. Marketing Resources Cont.			
	Develop and execute consumer awareness campaigns to drive market awareness and showcase NW commitment to market partners.		X
	Develop case studies to increase market partner adoption	X	
	Media Leverage		X
	Public service campaigns leveraging radio and television media		X
	Coordinated media buys leveraging non-profit status and market partner funds		X
	Coordinated public relations efforts that showcase utility programs and result in earned media		X
	Lead generation activities aimed at increasing "close" rate and decreasing cost to "close"		X
	Strategy and message testing	X	
6. Stakeholder Support & Coordination			
	Utility Support and Coordination:		
	Utility webinars	X	
	Utility newsletters	X	
	Utility meetings and regional coordination activities	X	
	Utility work group meetings & coordination	X	
	Coordination between utility programs and market partners		X
	Quality assurance coordination and assistance		X
	Coordinate product display programs for utility partners (i.e., DHP installation in utility lobbies, mobile DHP technology for home shows)		X

APPENDIX 12 – NEEA MARKET TRANSFORMATION BUILDING BLOCKS AND SPECIFIC ACTIVITIES* (CONTINUED)

Building Block	Activities	Core Activities	Optional Activities**
	National/Regional Stakeholders:		
	Energy Efficiency program support and engagement (ENERGY STAR, DOE, EPA, DLC)	X	
	Coordination on comment letters, specification development	X	
	Coordination with sub-regional partners (California, NEEP, MEEA)	X	
7. Technical Support, Training & Resources			
	Integrated Design Labs	X	
	Technical tool development such as SEM energy assessment tools	X	
	Technical Training programs	X	
	RTF measure preparation	X	
	1:1 technical support for distributor/manufacturer/supply chain actors	X	
	Training curriculum developed and implemented to support high quality installations, builder advancements and introduce emerging technologies and practices	X	
	Coordination with EPA technical team to influence specification development	X	
	Regional quality assurance programs to ensure high quality installations	X	
	Contractor technical installation assistance	X	
	1:1 builder technical support	X	
	Supply chain/trade ally workshop development and execution	X	

APPENDIX 12 – NEEA MARKET TRANSFORMATION BUILDING BLOCKS AND SPECIFIC ACTIVITIES* (CONTINUED)

Building Block	Activities	Core Activities	Optional Activities**
8. Incentives—Upstream			
	Manufacturer incentives for the purpose of:		
	Influencing development of energy efficient and climate-appropriate products	X	
	Encouraging scale production	X	
	Influencing product distribution	X	
	Decreasing price	X	
9. Incentives—Midstream			
	Distributor or retailer incentives for the purpose of influencing buying decisions, stocking practices, price	X	
10. Incentives—Customer			
	End-user incentives for the purpose of reducing price, stimulating demand	X	
11. Program Management Contractor			
	Project management	X	
	Reporting	X	
	Subcontractor coordination	X	
	Evaluation coordination	X	
12. NEEA Program Staff and G & A			
	Salaries of program team members (i.e., program manager, project manager, product management staff, stakeholder communications staff, marketing staff, education & training staff, and associated G&A	X	

*This table lists typical activities associated with each budget building block. Note: the program team (NEEA staff, stakeholder workgroup, advisory committee) will determine the actual activities appropriate for each market transformation program.

**NEEA has assumed these optional activities will be performed locally by funders who opt out of them. This set of specific activities was assumed for the purpose of estimating the collective budget associated with them. In practice, funders will still collaborate via the program teams to determine the actual appropriate roles and responsibilties for each program. In other words, the stakeholder collaboration/coordination process will trump the decision to opt in.