

Memorandum



DATE: July 25, 2018

TO: NEEA Board

FROM: NEEA Staff

SUBJECT: NEEA's Draft Cycle 6, 2020-2024 Electric Business Plan Budget, Electric Savings and Trends

Our Ask: Review this material to facilitate decision making

This memo provides details on the draft budget and electric energy savings presented in the second draft of the Cycle 6 Business Plan. When developing the \$164M budget recommended by the Business Planning Committee, NEEA staff built a budget that balances emerging technology and electric energy savings work with the preservation of organizational capacity to deliver this work, including regional collaboration and coordination, market intelligence and core business administration functions.

Budget Overview

Table 1: Total 5-Year Electric Budget by Primary Strategy and Administration (\$ Thousands)

Primary Strategies and Administration (Direct Costs and Salary & Benefits)	Total 5-Year Budget	% of Budget
Emerging technology Includes scanning and product management directs and labor costs.	\$14,976	7.5%
Effective Portfolio Execution Includes direct and labor costs associated with existing and new programs, including program implementation, marketing, planning, market research, evaluation, market intelligence and codes and standards. Note: Labor costs for codes and standards are incorporated in the codes and standards strategy.	\$93,479	47%
Codes & Standards Includes labor costs of codes and standards and direct costs associated with work that crosses multiple programs.	\$14,006	7%
Market Intelligence Includes direct and labor costs associated with market research, evaluation, planning and market intelligence work that crosses multiple programs.	\$11,484	5.8%

Primary Strategies and Administration (Direct Costs and Salary & Benefits)	Total 5-Year Budget	% of Budget
Convene and Collaborate Includes direct costs associated with facilitation as well as labor costs associated with the Stakeholder Relations and Corporate Communications functions.	\$9,165	4.6%
Administration Includes direct and labor costs associated with IT, contracting, finance, accounting, legal and human resources as well as direct costs associated with facilities and the Corporate Communications function.	\$20,867	10.5%
Sub Total Core Activities	\$163,977	
Optional MT Activities	\$6,933	3.5%
Sub Total Electric Activities	\$170,910	
Natural Gas	\$18,904	9.4%
End Use Load Research	\$9,309	4.7%
Total	\$199,123	

Overall NEEA Budget Trends

NEEA's budget for the past two cycles is represented below in Table 2 with the draft budget for Cycle 6. NOTE: The approved budget for Cycle 4 was \$196M, but staff reduced expenditures in the last 18 months of the cycle in anticipation of a reduced Cycle 5 budget. Within these budget constraints, NEEA created and partially staffed a Stakeholder Relations department in Cycle 4 to address the need, identified by funders and stakeholders, for increased regional and funder specific coordination and collaboration. In Cycle 5, a Market Intelligence function was developed to inform increasingly complex, targeted, and cost-challenged regional programs.

Table 2: NEEA Electric Budget Trends

Cycle	Budget (\$ Thousands)	% change from previous Cycle
Cycle 4 (2010-2014)	\$196,000 (Budgeted, \$179,154 Actual)	
Cycle 5 (2015-2019)	\$168,241 (Budgeted, without Cowlitz PUD funding and with optional funding)	-14%
Cycle 6 (2020-2024)	\$163,976 (Draft, without optional funding)	-3%

Cycle 5 and Cycle 6 Budget Comparison

Table 3 below compares budgets of Cycle 5 and draft Cycle 6 by direct project costs, salary and benefits, and other G&A.¹

¹ There are no merit increases included for labor. Staff will rely on vacancies and operating efficiencies to address the anticipated annual 3.2% cost increases associated with recruiting and retaining staff. This was also the case with the 2015-2019 budget.

Table 3: Budget Changes from Cycle 5 and Cycle 6 (\$ in Thousands)

	Budget Cycle 5	Forecast Cycle 5	Draft Cycle 6	Net Change: Budget Cycle 5 & Draft Cycle 6	% Net Change: Budget Cycle 5 and Draft Cycle 6	Reasons for Net Change Between Budget C5 and Draft Cycle 6
Direct Project Costs						
Program Implementation	\$58,280	\$62,536	\$59,085	\$804	1%	Newer programs which are ramping up are more than offset by programs ramping down or ending. ²
Emerging Technology	\$9,973	\$8,171	\$7,460	(\$2,513)	-25%	Reductions in product management budget within Program Implementation to meet budget target.
Marketing	\$11,400	\$10,476	\$7,166	(\$4,234)	-37%	Largest marketing spend in C5 is in the Ductless Heat Pump (DHP) and Heat Pump Water Heater (HPWH) programs. DHP is moving to Long-Term Monitoring and Tracking in the first year of C6 and the HPWH budget is reduced significantly.
Market Intelligence	\$5,514	\$6,918	\$6,717	\$1,203	22%	C5 budget for commercial code compliance evaluations was a rough estimate since this work had never been done before in the US. Once the alliance agreed on a methodology the work in two states began, with a reallocation of budget. The C6 budget includes two residential code evaluations, where none were budgeted in C5.
New Initiatives	\$9,043	\$8,828	\$7,250	(\$1,793)	-20%	Reduced to meet budget target.
Long-Term Monitoring and Tracking	\$2,324	\$3,743	\$1,725	(\$599)	-26%	Reduced to meet budget target.
Sub-Total Direct Project Costs	\$96,535	\$100,672	\$89,403	(\$7,132)	-7%	
Salary and Benefits						
Direct Program	\$36,609	\$33,352	\$40,135	\$3,526	10%	Salary costs increased 3% to maintain competitive salaries by biennial benchmarking and due to an expected reduction in turn-over and reduced vacancy periods. Benefits increased by 28%, mainly due to healthcare costs.
Convene and Collaborate	\$6,324	\$6,912	\$6,712	\$388	6%	
Administration	\$12,608	\$12,645	\$13,740	\$1,133	9%	
Sub-Total Salary & Benefits	\$55,541	\$52,909	\$60,588	\$5,048	9%	2017 Benchmarking study indicated benefits package is below market ³
Other G&A	\$16,165	\$12,177	\$13,985	(\$2,180)	-13%	Discontinuation of Consortium for Energy Efficiency fee, adjustment of rent and decreased professional services & development
Sub-Total Core Activities	\$168,241	\$165,757	\$163,976	(\$4,264)	-3%	
Optional Activities	NA	NA	\$6,933	NA	NA	Optional activities for Cycle 5 are embedded in budgeted and forecast numbers
Total	\$168,241	\$165,757	\$170,909	(\$4,264)	-3%	

Table 4: Direct Cost Changes by Sector Between Cycle 5 and Cycle 6

Table 4 includes all direct costs associated with electric programs including emerging technology, program implementation, marketing, market research and evaluation, market intelligence and codes and standards. The decrease in residential budget in the proposed Cycle 6 compared to Cycle 5 budget is largely driven by the decrease in expenditures in Heat Pump Water Heater program⁴ as well as the Ductless Heat Pump program transitioning into Long-Term Monitoring and Tracking in 2020.

Sectors	Budgeted Cycle 5	Forecast Cycle 5	Cycle 6 Draft Sector Expense	Variance Between Cycle 5 and Draft Cycle 6 Budgets	% Change Between Cycle 5 and Draft Cycle 6 Budget
Commercial	\$27,842	\$26,474	\$28,986	\$1,144	4%
Industrial/Agriculture	\$2,467	\$3,336	\$5,308	\$2,841	115%
Residential	\$55,449	\$49,993	\$36,176	(\$19,273)	-35%
New Initiatives	\$9,043	\$7,048	\$7,250	(\$1,793)	20%
Total	\$94,801	\$86,851	\$77,720	(\$17,081)	-18%

Delivering a \$164M Budget

When developing the \$164M budget recommended by the Business Planning Committee, NEEA staff built a budget that balances emerging technology and electric energy savings work with the preservation of organizational capacity to deliver this work, including regional collaboration and coordination, market intelligence and core business administration functions. In building this budget, staff looked at all alliance activities contained in the Draft 1 Business Plan and identified those that could be eliminated, reduced, or converted to optional funding (see Memo: Opportunities for Optionality in the Draft 2020-2024 NEEA Business Plan). NEEA staff recognizes these are difficult choices, and that the Board of Directors may wish to consider other alternatives and outcomes. \$4.5M of cost share from the electric budget to the Natural Gas budget was also identified, which the Ad Hoc Natural Gas Planning Committee approved on behalf of gas funders.

Table 5 below summarizes categories of activities which, with additional funding above \$164M, would deliver value to the alliance beyond that presented in the second draft of the Business Plan.

² New programs ramping up include Dryers, Commercial HVAC, Extended Motor Products, Commercial Code Enhancement, Windows, and Luminaire Level Lighting Controls. Programs ramping down include Next Step Homes, DHPs, Commercial Real Estate, HPWHs, Retail Product Portfolio, and Top Tier Trade Ally. Programs ending include Reduced Wattage Lamp Replacement and Industrial Technical Training.

³ NEEA conducted a benefits-to-salary ratio benchmarking study in 2017 using Bureau of Labor Statistics data. NEEA’s benefits ratio was compared to all private employers (of any size), private employers of head count size 50-99, and utilities. NEEA benefit to salary ratio of 28.6% was lower than all these benchmark firm types by 1.2% or more, e.g. the closest ratio to NEEA’s was private employers of head count size 50-99 which had a ratio of 30.2%.

⁴ A significant portion of reduced program expenditure in the Heat Pump Water Heater program is a result of reduced incentive dollars.

Table 5: Summary of Additional Value by Category, Incremental to that Presented in Draft 2 Business Plan

Category	Cost of Additions (\$ Thousands)	Descriptions (\$ Thousands)
Electric Energy Savings	\$5,986	<p>Overall, the additional funding would lower risk in the portfolio, expand emerging technology work and accelerate programs faster. NEEA staff estimate the activities below will generate 7-10% additional aMW of energy savings between 2020-2024, the equivalent of approximately 5 aMW, as well as additional market support identified below. The additional funding would subsequently result in an additional 17%, 20-35 aMW, over the 10-year horizon between 2020-2029.</p> <p><u>New Programs in Portfolio:</u> 5-Year Energy Savings: 1-3 aMW 10-Year Energy Savings: 14-20 aMW 20-Year Potential: 180-325 aMW Maturity of Modeled Estimate: Low</p> <ol style="list-style-type: none"> 1. Building Envelope: Increases market research, emerging technology, and scale and scope of the program. Increased funding will expand focus from commercial market to include residential and will expand the number of building types and applications that the alliance will address. (\$1,005) 2. Commercial and Residential HVAC: Increases market research, emerging technology, and expands the opportunity for the commercial high-performance HVAC program as well as overall development of the commercial and residential HVAC opportunities. (\$810) 3. Motor-Driven Products: Increases in program implementation, market research and emerging technology will increase likelihood to address other high savings potential from this product category, such as fans and compressed air. (\$725) <p><u>Programs in Development:</u> 5-Year Energy Savings: 2-4 aMW 10-Year Energy Savings: 8-15 aMW 20-Year Potential: 160-240 aMW Maturity of Modeled Estimate: Low-Moderate</p> <ol style="list-style-type: none"> 1. Dryers/Consumer Products: Expands scope from dryers to full laundry market intervention, which could support stronger specifications and possibly standards influence. (\$734)

		<ol style="list-style-type: none"> 2. Luminaire Level Lighting Control: Increases in program implementation, market research and emerging technology will accelerate market movement and energy savings opportunity within Cycle 6. (\$275) 3. Manufactured Homes: Extends presence in the market to support increased adoption that will strengthen likelihood of a standards adoption. (\$545) 4. Next Step Home: Maintains current (Cycle 5) levels of training and quality assurance, and continues the annual Home Energy Forum. (\$1,349) <p><u>Mature Programs in Market Development:</u> 5-Year Energy Savings: n/a 10-Year Energy Savings: n/a 20-Year Potential: 300-330 Maturity of Modeled Estimate: Moderate-High</p> <ol style="list-style-type: none"> 1. Ductless Heat Pump/HVAC: Delaying transition out of the DHP program will help solidify supply chain development which can support entry of new residential HVAC products. (\$275) <p><u>Cross-Cutting Enabling Infrastructure:</u> 5-Year Energy Savings: n/a 10-Year Energy Savings: n/a 20-Year Potential: n/a</p> <ol style="list-style-type: none"> 1. Commercial Real Estate through BetterBricks infrastructure: Increases level of tools and resources to support energy efficiency decision-making in the commercial market. (\$88) 2. Top Tier Trade Ally: Increases scale of training offered in the market, accelerating the adoption of lighting allies achieving NXT Level designation. (\$180)
Convene and Collaborate	\$1,150	<p>Would:</p> <ol style="list-style-type: none"> 1. Maintain Cycle 5 levels of regional facilitation and coordination, tools, resources, advisory committees and events (\$750). Also includes retaining Conduit (\$400) which serves as: 2. A communication between advisory committees and work groups 3. The place where the Regional Emerging Technology Advisory Committee hosts its regional tracking tool 4. The website/registration page for Efficiency Exchange and its session submissions 5. A tool that the region uses to communicate, share and retain information
Market Intelligence	\$4,275	<p>Would:</p> <ol style="list-style-type: none"> 1. Include Commercial Building Stock Assessment post survey interviews to understand the reasons for the energy savings trends and behavioral tendencies of occupants (\$500). 2. Include additional money for Residential Building Stock Assessment to include manufactured homes and multifamily residences as per current practice (\$1,000).

		<ol style="list-style-type: none"> 3. Conduct commercial and residential code compliance studies in all four states. The current Draft 2 Business Plan includes commercial and residential studies in two states (\$1,750). 4. Add an additional Market Intelligence spend would also include the addition of a Market Research Online Community to support residential programs (\$1,025).
Pipeline Development	\$2,000	<p>Would:</p> <ol style="list-style-type: none"> 1. Increase speed and scale of emerging technology opportunities 2. Increase new initiative investments in new market transformation opportunities, impacting future cycle savings
Delivery Capacity and Support	\$4,975	<p>Would:</p> <ol style="list-style-type: none"> 1. Maintain the alliance's investment in the Integrated Design Labs (\$2,500) at Universities of Idaho, Oregon and Washington, and at Montana and Washington State Universities. The IDLs provide valuable regional and local level services through research, technical assistance and education, each bringing a unique skillset and area of expertise. 2. Maintain the alliance's Consortium for Energy Efficiency (CEE) membership (\$775) 3. Maintain current level of staff benefits (\$800), keeping NEEA's benefit to salary ratio at market rate (see footnote 3 on page 4). 4. Maintain existing facility (\$400) and execution support (\$500)
Optional programs	\$6,933	Includes the following: Industrial Facility Stock Assessment (\$1,425), Multi-Family Stock Assessment (\$3,758), and Strategic Energy Management program (\$1,750). See Memo: "Opportunities for Optionality in the Draft 2020-2024 NEEA Business Plan" for more information
Total	\$25,319	

Savings Overview

Projected Cycle 5 Energy Savings Compared to Cycle 6

The estimated savings represented as a result of alliance efforts are forecast to be lower in the next few years than seen in previous years. In addition to the challenges of increased complexity of technologies, this is the effect of large programs in residential products and standards reaching baseline expectations, increased coordination requirements and the effect of program discontinuation as part of the Cycle 5 Business Plan. These forecasts contain the reassignment of programs that are Cycle 5 Current Investment into what staff believes will be considered in the Previous Investment category in Cycle 6 (namely Ductless Heat Pumps, Residential Codes and Reduced Wattage Lamp Replacements).

Table 6: Cycle 5 and 6 Electric Co-Created Savings Forecasts

	2015-2019 Savings Range (aMW)	2020-2024 Savings Range (aMW)	2020-2029 Savings Range (aMW)
Previously Funded Investments	120-130	75-90	100-125
Current Investments	60-65	45-65	115-205
All Investments	180-195	120-155	215-330

Table 7: Cycle 5 and 6 Electric Total Regional Savings Forecasts

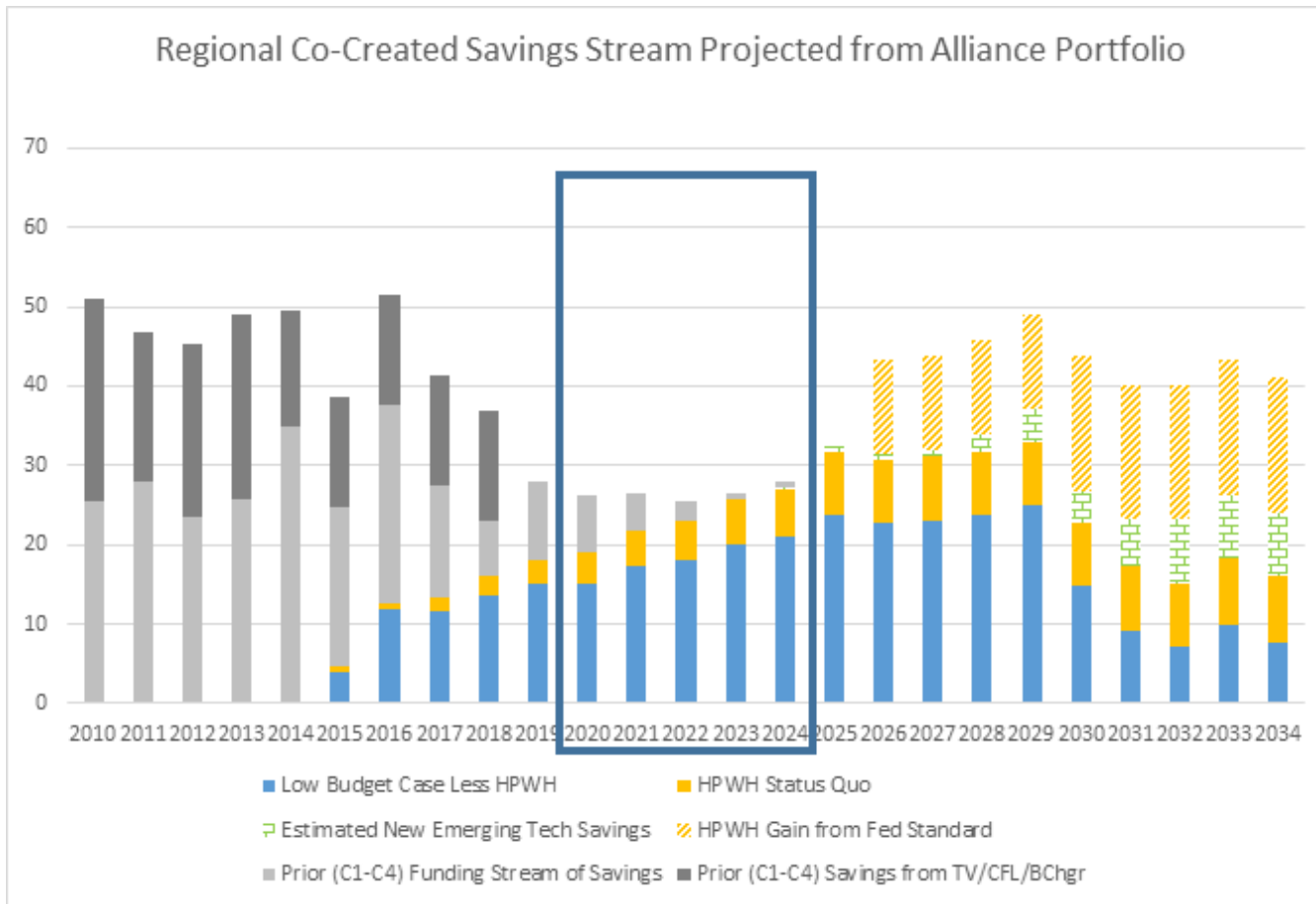
	2015-2019 Savings Range (aMW)	2020-2024 Savings Range (aMW)	2020-2029 Savings Range (aMW)
Previously Funded Investments	510-525	300-400	500-700
Current Investments	140-150	65-105	165-270
All Investments	650-670	365-505	665-970

Electric Savings Trends and Forecasts – All investments

The savings forecast is preliminary and will be refined before finalizing for the business plan based on the direction the Board gives staff on the starting portfolio of programs and activities. Forecasting for the newest programs is based on early data and preliminary estimates, and comes with significant uncertainty. Savings in the near-term are driven primarily by three programs: Ductless Heat Pumps, Heat Pump Water Heaters, and Retail Product Portfolio. Risk in any of these programs will have a significant impact on the savings potential of the portfolio. Risk mitigation for the long-term is found through strong investment in new emerging technology opportunities and advancement of new programs. The long-term savings has only a minimal placeholder for emerging technologies yet to be identified in the next cycle.

As has been shared in other venues, NEEA staff is forecasting a periodic dip in the co-created savings stream during the next cycle due to previous investments phasing out and new programs phasing in at a slower rate, as well as the impact on the pipeline of the removal of three initiatives from the portfolio at the start of Cycle 5. The forecast increases again after 2025 in large part due an expected federal standard on electric water heaters mandating heat pump levels of performance. These energy savings estimates are based on the current Business Plan and are illustrated below in Figure 1.

Figure 1: Alliance Electric Co-Created Savings Details – 2015-2034 (aMW)



Energy Savings by Sector

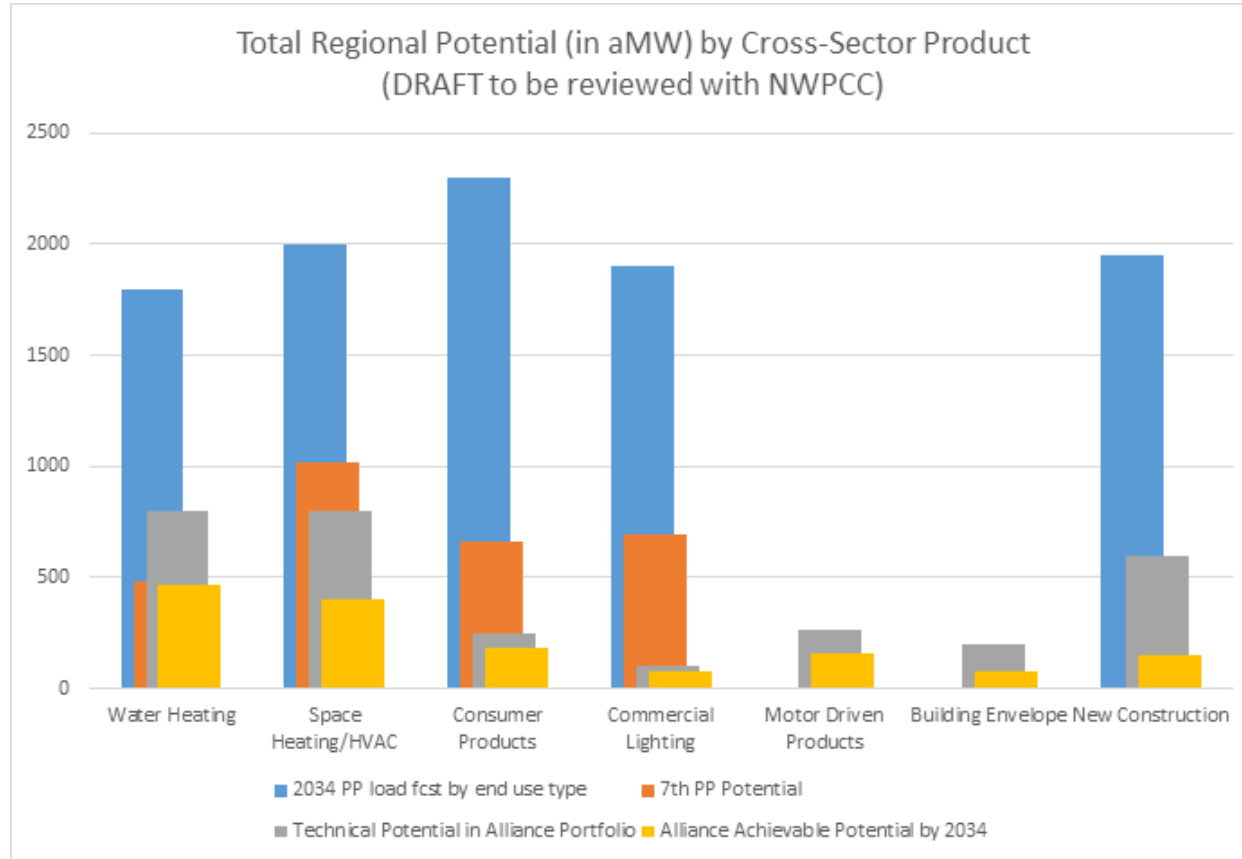
Table 8: Co-Created Electric Energy Savings by Sector

Sectors	5 year Co-Created Savings Estimate (2010-2014) aMW	5 year Co-Created Savings Estimate (2015-2019) aMW	5 year Co-Created Savings Estimate (2020-2024) aMW	10 year Co-Created Savings Estimate (2020-2029) aMW
Commercial	57	49	25-35	35-66
Industrial	40	11	15-17	18-22
Residential	144	120	80-103	162-242
Total	241	180		

Energy Savings by Cross-Sector Product

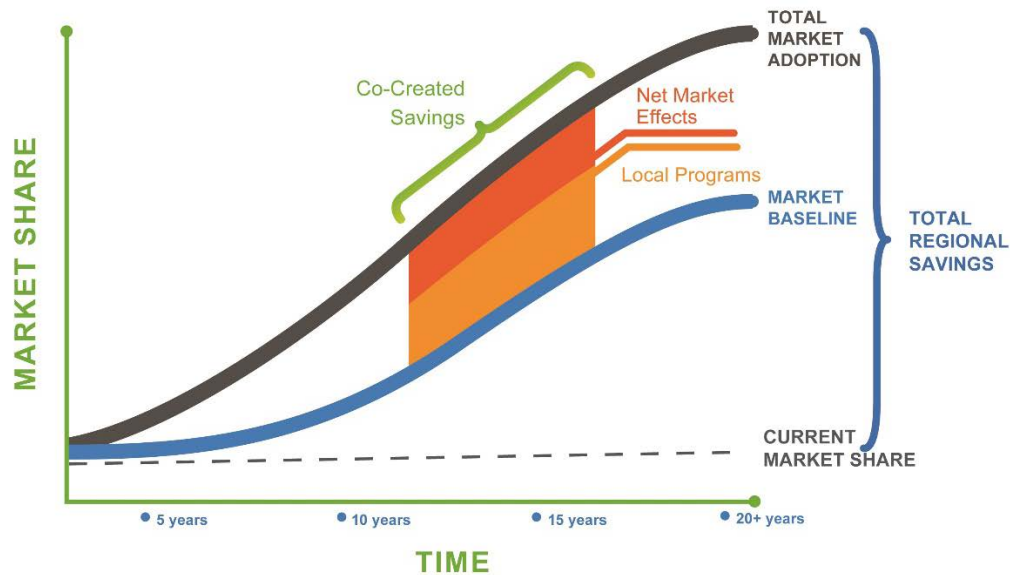
Figure 2 illustrates the 20-year estimated energy savings potential for the region by Cross-Sector Product category through 2034. The orange illustrates the total energy efficiency potential outlined in the NW Power and Conservation Council's Seventh Power Plan. The grey illustrates the alliance's total technical potential of the product category for energy efficiency in the Northwest, with the estimated forecast based on regional market transformation investment illustrated in the yellow.

Figure 2: Total Regional Opportunity by Cross-Sector Product⁵



⁵ Achievable Potential will be variable depending on final budget; and Commercial Lighting work will segue into Building Controls. Power Plan data is DRAFT and is still to be reviewed with Council Staff.

Figure 4: Definition of Alliance Electric Energy Savings



Total Regional Savings: Savings associated with all market changes.

Baseline Savings: Savings from naturally occurring market change without utility, NEEA, Bonneville Power Administration, and Energy Trust of Oregon funded intervention.

Local Programs (See Key Terms for Definitions): Savings claimed through local utility, Bonneville Power Administration, and Energy Trust of Oregon activities.

Net Market Effects: Savings associated with market change that are not counted as Baseline or Local Programs. (Total Regional Savings less Baseline less Local Programs)

Co-Created Savings: Total Regional Savings less Baseline.