

Commercial Advisory Committee



DATE: February 12, 2019

LOCATION: NEEA – 421 SW 6th Ave, 6th Floor (Cedar Conference Room)

TIME: 10:00 am – 4:15 pm Pacific

WEBINAR: <http://neea.adobeconnect.com/cac2019q1/> (includes phone option)

DIAL-IN: 1-877-890-9502, Participant Code: 7702378329 (for those dialing in directly)

AGENDA			Packet Page #
10:00-10:45 am	<p>Welcome, Introductions, Packet Review, Housekeeping</p> <p><i><u>Desired Outcome:</u> CAC member alignment on preparation materials and meeting objectives.</i></p>	Maria Alexandra Ramirez	1-3
10:45-11:30 am	<p>Commercial Portfolio Update & Proposed Work Plan 2019</p> <ul style="list-style-type: none"> Brief Commercial Portfolio Update Proposed Work Plan 2019 <p><i><u>Desired Outcome:</u> Awareness of key updates on commercial programs and review of proposed workplan for this year.</i></p>	Emily Moore	4-7
11:30-12:30 pm	<p>LLLC Scale-Up Approval (SA) Milestone Check-In</p> <ul style="list-style-type: none"> LLLC SA Review with CAC <p><i><u>Desired Outcome:</u> CAC understanding and support for LLLC Scale Up vote at the February 26 RPAC meeting.</i></p>	Anne Curran Chris Wolgamott	8-25
12:30-1:15 pm	Lunch (provided)	All	--
1:15-2:00 pm	<p>CAC Member Share Out/Round Robin</p> <p><i><u>Desired Outcome:</u> Awareness of current activities and issues within the region.</i></p>	All	--
2:00-2:45 pm	<p>XMP Initiative Update</p> <ul style="list-style-type: none"> Pumps Research Study, Market Characterization and Baseline Study, Distributor Outreach <p><i><u>Desired Outcome:</u> CAC understanding of program progress and current activities.</i></p>	Warren Fish	26
2:45-3:00 pm	Break	All	--

Commercial Advisory Committee



3:00-3:30 pm	<p>Codes & Standards Update</p> <ul style="list-style-type: none"> • Introduce Codes & Standards Team • Brief Codes & Standards Update <p><i><u>Desired Outcome:</u> : Awareness of key updates on codes and standards work.</i></p>	Bing Liu	27-28
3:30-4:00 pm	<p>C+I Lighting Regional Strategic Marketing Plan (RSMP)</p> <ul style="list-style-type: none"> • Update on Progress & Proposed Approach for 2019 <p><i><u>Desired Outcome:</u> Inform and solicit feedback and support for the 2019 priorities.</i></p>	Steering Committee	29
4:00-4:15 pm	Opportunity for public comment and adjourn	Maria Alexandra Ramirez	--

Memorandum – *Agenda Item (Tier 1)*

February 12, 2019



TO: Commercial Advisory Committee (CAC)

FROM: Maria Alexandra Ramirez, Stakeholder Relations Manager

SUBJECT: Meeting Packet, Informational Updates, Additional Details

MEETING PACKET APPROACH

This packet continues the “tiered” approach:

- Tier-1 memos for active agenda items;
- Tier-2 memos for informational updates on items not currently requiring agenda time;
- Tier-3 materials provided as additional detail for those interested, accessible via links in the Tier-1 and Tier-2 memos.

This approach helps keep packets concise and digestible. Any input for improvement is appreciated.

INFORMATIONAL UPDATES

Enclosed please find Tier-2 informational updates on the following:

- Page 30: CAC Conference Coordination
- Page 31: Advisory Committee Streamlining
- Page 32: MRE & Washington Code Evaluation Update
- Pages 33-34: Integrated Design Lab Biannual Progress Update

ADDITIONAL DETAILS (Tier 3)

Tier-3 materials related to the agenda items and informational updates listed above will be accessible through links in those memos. Additional Tier-3 details are available here:

- Q4 2018 [CAC Meeting Notes](#)
- Q4 2018 [Marketing Newsletter](#)
- Q1 2019 [Codes and Standards Quarterly Report](#)
- Q1 2019 [Emerging Technology Newsletter](#)
- Q1 2019 [Market Research & Evaluation Newsletter](#)

Memorandum – *Agenda item (Tier 1)*

February 12, 2019



TO: Commercial Advisory Committee (CAC)

FROM: Emily Moore, Senior Manager, Commercial/Industrial

SUBJECT: Commercial Portfolio Updates

Our Ask of You:

In the CAC meeting, NEEA staff will provide a brief review and update on the commercial program portfolio. Please review the program highlights from the last quarter and bring any questions or comments you may have to the meeting.

PROGRAM HIGHLIGHTS:

Lighting

Reduced Wattage Lamp Replacement (RWLR)

- The RWLR program ended active market development activities in December 2018. The program succeeded in moving the market from a low 10-15% low wattage (LW) market share to roughly 52% by Q4 2018, against a backdrop of significant lighting market change and decline in the overall fluorescent market.
- The Northwest share of low wattage lamps is now significantly higher than the rest of the country, which has stayed at 10-13% LW. In addition, through the RWLR program the alliance has built a Distributor Platform that continues to supply commercial lighting data and program leverage for other commercial energy efficiency targeted technologies.
- The RWLR team is preparing the final program documentation for the Transition Complete milestone and will share final results and key learnings to the Advisory Committee and RPAC in Q2.

Luminaire Level Lighting Controls (LLLC)

- A one day networked lighting controls class targeted at trade allies was launched in Q4. The training, developed by the Lighting Design Lab, improves upon an earlier class and now brings some additional hands on experience with multiple LLLC product brands. The training is designed to be hosted by NEEA funders, and Snohomish PUD hosted this first session.
- The program developed market specific flyers targeted office, healthcare and educational facilities respectively. These are designed to be branded and used by NEEA funders to support their customer engagement.
- LLLC will be brought to RPAC in their Q1 meeting on February 26, 2019 for vote on the Scale-Up approval milestone. Please refer to the Tier 1 memo on page 8 for context for the CAC agenda item.

Top Tier Trade Ally (TTTA)

- The first Level 2 workshop was launched in Seattle in Q4 2018 with support of Seattle area funders. Sixteen Level 1 designees attended and are currently working to completing the Level 2 course work.
- In Q4, 28 individuals earned the Level 1 designation for a total program to date of 179 individuals and 47 companies.

- The program delivered a workshop on "The Value of Lighting" via webinar to trade allies that NEEA funders had invited to participate. This session was designed to connect trade allies to the program and "jump start" their NXT Level training. 51 trade allies attended and 24 submitted applications.

C+I Lighting Regional Strategic Market Plan Implementation

- See C+I Lighting Quarterly Newsletter for updates [here](#).

Building Envelope

Window Attachments

- AERC continues to increase revenue through membership and certification fees, and is sustaining beyond the DOE funding which expired at the end of 2018. AERC is also building a commercial certification program with an expected launch date in early 2020. Currently, the priority for the Window Attachments team is to work alongside manufacturers to build regional awareness, identify early adopters, and continue to support AERC's commercial certification program.

Pumps

Extended Motor Products

- Contractor selected for market characterization project through competitive bidding process, and kicked off in January 2019. Expecting final report in Q3 2019.
- Continued progress in Q4 gathering existing data and field data on pumps and circulators from data contributors across the Northwest. The project is on track to shift from data gathering to the data analysis phase in February 2019.
- Conducted outreach to several Northwest pump manufacturer representatives in Q4, and signed first participation agreement in early Q1 2019. The pump data portal, agreement structure and other elements of this midstream test are set up to leverage the assets of the Distributor Platform developed through the Reduced Wattage Replacement (RWLR) program.
- Please refer to the Tier 1 memo on page 26 for further context for the CAC agenda item.

HVAC

High-Performance HVAC

- The program partnered with the American Institute of Architects (AIA), a local distributor, Portland area utilities and Energy Trust of Oregon to bring an all-day, high efficiency heat recovery ventilation training to Portland. The training was held twice due to overwhelming demand on day one, and over 75 people were trained in total.
- Report on available calculation tools finalized. Findings illustrate that improvement upon existing HVAC tools and/or creation of a new tool is not the most effective use of resources at this time, and design guidelines may be a better focus. The program will continue to survey mid- and upstream market actors to determine what type of resources may be needed to overcome barriers to VHE DOAS.
- Contractor brought on board to provide additional technical assistance on potential VHE DOAS projects. Please contact Maria Murphy if your team would like assistance vetting a potential project for applicability.

Cross-cutting Infrastructure

Distributor Platform

- The Midstream Commodity Lighting Pilot, a collaboration between the alliance and SCL that leverages the relationships, data and program processes of the Distributor Platform, launched Phase 2 of the pilot in January 2019. Phase 2 encompasses layering bonus structures by branch to accelerate the conversion to LED commodity lighting. These market penetration-like bonuses were used to great effect in the RWLR program and the pilots will test their effectiveness in the LED market.

- In addition, the pilot added new distributor participants that focus just on LED products. All partners are also providing full category data on the seven targeted categories which continues to build the alliances regional lighting data set.
- A second pilot with Snohomish PUD will launch at the end of Q1 2019 and targets a subset of Snohomish PUD's Lighting to Go distributors with market penetration bonus structures.

Commercial Real Estate (CRE)

- Through the support of City of Seattle's Tune-up Accelerator (TUA) program, approximately 50 Spark reports were generated for TUA participants. These reports are being shared to participants by University of Washington Integrated Design Lab Q4 2018-Q1 2019.
- The CRE program collaborated with the University of Washington Integrated Design Lab to support the City of Bellevue, along with Northwest Energy Efficiency Council (NEEC), BOMA King County and the Bellevue Downtown Association, in delivering three, one hour trainings sessions on value of benchmarking and the business case for commercial building tune-ups and retro-commissioning.
- Currently, the CRE infrastructure program is planned to end by the end of the current business cycle. Planning is underway to develop an assessment of existing BetterBricks and CRE relationships, tools and resources, develop a strategy for the BetterBricks platform in NEEA's next business cycle, and develop a transition strategy for CRE assets for 2019, including Spark.

Strategic Energy Management (SEM)

- With the approval of the Cycle 6 business plan, SEM Infrastructure will be an optional program next cycle, with budget allocated in Special Funds. The program began conversations with funders in Q4, and will be reaching out to Board members in early 2019 to discuss the opt-in process. This process will determine the future scope of the SEM Infrastructure program and NEEA's role in convening regional SEM stakeholders in support of market transformation.
- After an engaging NW SEM Collaborative Fall Workshop, the NW SEM Collaborative Leadership Team aligned on 2019 Goals and Working Groups - retaining some areas of focus from 2018 to continue into 2019, and adding other areas of focus based on interest raised at the Workshop. These Working Groups work to address key resource gap areas and barriers in regional SEM program design, implementation and evaluation.
- The program assessed the SEM Hub to identify high-priority gaps and areas of improvement to better serve the region in delivering SEM. The project included a regional user feedback survey and a resource assessment. Outcomes included recommendations for improving usability and relevancy of the site, as well as potential ways to address resource gaps for the region. The scope of improvements to be made to the SEM Hub will correlate with decisions made in the opt-in process.
- The program continues to provide support for funders to customize SEM Hub's Energy Management Assessment (EMA) tool and its Learning Management System (LMS) platform with SEM online courses. These are plug-and-play resources to expand funder engagement with SEM participants, and can be customized with unique URL, branding and content. NEEA customized the EMA tool for Energy Trust of Oregon's Commercial program in Q4, launching the new customized site in early January 2019 with its customers.

Memorandum – Agenda Item (Tier 1)



February 12, 2019

TO: Commercial Advisory Committee (CAC)

FROM: Emily Moore, Senior Manager, Commercial/Industrial

SUBJECT: Proposed Content for 2019 CAC Agendas

Our Ask of You

The following table is a DRAFT plan for the CAC's 2019 meetings, including timing of key program milestones. Please review and let us know if there are any additional topics of focus you'd like to see in 2019. If so, what topics?

Q1 2019 Feb 12 – Portland	Q2 2019 May 9 - Portland	Q3 2019 Aug 6 - Seattle	Q4 2019 Nov 5 - Portland	Q1 2020 TBD
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PORTFOLIO REVIEW

Portfolio Review	Portfolio Review	Portfolio Review	Portfolio Review	Portfolio Review
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PROGRAM REVIEWS

Luminaire Level Lighting Controls (LLLC) SA VOTE REVIEW	High Performance HVAC PROGRAM UPDATE	Top Tier Trade Ally PROGRAM UPDATE	Commercial Real Estate Infrastructure TRANSITION TO BETTERBRICKS PLATFORM	Luminaire Level Lighting Controls (LLLC) PROGRAM UPDATE
Extended Motor Products (XMP) PROGRAM UPDATE	Reduced Wattage Lamp Replacement (RWLR) – TRANSITION TO LONG TERM MONITORING & TRACKING	Window Attachments (WA) PROGRAM UPDATE		Extended Motor Products (XMP) PROGRAM UPDATE
		Strategic Energy Management (SEM) PROGRAM UPDATE		

REGIONAL MARKET STRATEGIES

C&I Lighting Regional Strategic Market Plan (RSMP) ANNUAL UPDATE AND PRIORITIZATION	C&I Lighting Regional Strategic Market Plan (RSMP) Updates	C&I Lighting Regional Strategic Market Plan (RSMP) Updates	C&I Lighting Regional Strategic Market Plan (RSMP) Updates	C&I Lighting Regional Strategic Market Plan (RSMP) ANNUAL UPDATE AND PRIORITIZATION
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ANNUAL OPERATIONS PLANNING

		2020 Ops Plan – Preview for CAC input	2020 Ops Plan – All Advisory Committee webinar	
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EMERGING TECH

Emerging Tech Updates	Emerging Tech Updates	Emerging Tech Updates	Emerging Tech Updates	Emerging Tech Updates
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CODES & STANDARDS

Codes & Standards UPDATE	Codes & Standards Update	Codes & Standards Update	Codes & Standards Update	Codes & Standards UPDATE
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GOVERNANCE/OTHER

Workplan Update	Workplan Update	Workplan Update	Workplan Update	Workplan Update
CAC Roundtable	CAC Roundtable	CAC Roundtable	CAC Roundtable	CAC Roundtable
		Annual CAC Charter Review		Annual CAC Charter Review

MISC TOPICS

CBSA Update	CBSA Update	CBSA Update	CBSA Update	CBSA Update
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IS = Initiative Start Milestone SA = Scale-up Approval Milestone

Memorandum – *Agenda item (Tier 1)*

February 12, 2019



TO: Commercial Advisory Committee (CAC)

FROM: Anne Curran, Program Manager

SUBJECT: Luminaire Level Lighting Controls (LLLC) Update

Our Ask of You: Please review and bring any questions, recommendations or concerns to the Q1 CAC meeting.

Program Stage Gate:

On February 26, 2019, LLLC program will request approval from RPAC to enter its Market Development phase.

In this next phase, the program plans a multi-faceted approach to tackle market barriers around cost, skill and awareness to accelerate adoption of LLLC.

- **Training and Education:** Training and education for installers, designers and lighting specifiers.
- **Supply Chain Intervention:** Collaboration with manufacturers, sales agencies (manufacturer representatives) and distributors to bring additional sales and promotional focus to the region.
- **Building Awareness:** Foster awareness amongst decision makers and influencers through case studies, leverage of industry partnerships and support for funder programs.

Feedback from Funder Check-ins:

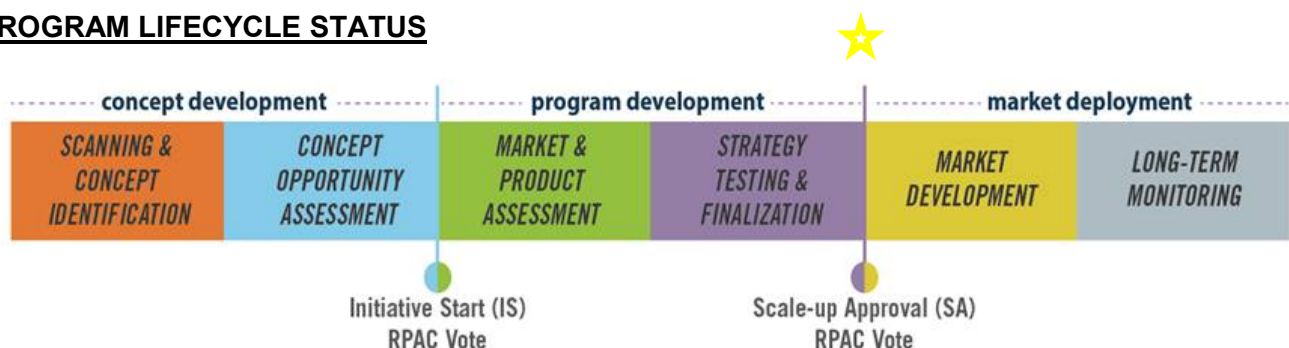
Since December, Chris Wolgamott and I have set up individual sessions with each of you and your teams to review plans and gain feedback. We have appreciated the open dialogue on the state of the market and program plans to address barriers.

Thus far, these conversations resulted in a few minor clarifications to program milestone documentation, though no changes to plan or budget:

- Added a checkpoint to Funder Coordination Plan to return to RPAC no later than two years from approval to assess evolving market and program progress
- Clarified program's leverage of NEEA's Top Tier Trade Ally program and Distributor Platform
- Clarified transition strategy as it relates to markets where progress may lag the rest of the region

We are engaging in a few follow up conversations prior to the CAC meeting and will factor in that input as well. I look forward to some further discussion at the CAC. Included in this packet is the program milestone documentation, with changes from previous version tracked. Please contact Anne Curran at acurran@neea.org if you have any questions.

PROGRAM LIFECYCLE STATUS



Initiative Lifecycle (ILC) Milestone Document

Business Case



Purpose: The ILC Milestone Document is a tool that supports milestone decisions. The document summarizes and serves as the definitive source of key information about our Market Transformation effort. This document also serves as the Initiative Business Case for our funders.

Audience: Directors, Program Team, Portfolio Management Team, Advisory Committee Members

PROGRAM: **Luminaire Level Lighting Controls**

DATE: **February 5, 2019**

Commented [AC1]: Updated. Changes tracked below.

SECTOR: **Commercial/Industrial**

PROGRAM MGR: **Anne Curran**

STRATEGIC MARKET: **Commercial Lighting**

MILESTONE FOR WHICH TEAM IS SEEKING APPROVAL: **Scale Up**

TYPE OF PROGRAM:

Initiative: NEEA in driving role with aggressive market transformation objectives, clear exit strategy. Infrastructure: Ongoing investment in development and maintenance of market resources and/or platforms that support NEEA initiatives and utility programs

☒ Initiative

☐ Infrastructure

PROGRAM VISION of a Transformed Market

Vision: Implementation of Luminaire Level Lighting Controls (LLC) becomes standard practice for commercial buildings, as the majority of lighting products come with embedded sensors and controls as the default option..

The program uses a multi-faceted approach incorporating specification development, market awareness building, training, utility program support, supply chain interventions, and integration with energy codes to transform the market.

PROGRAM TIMELINE: [Strike Zone Link](#)



1. Executive Summary

. (Author: Program Manager)

Luminaire Level Lighting Control (LLLC) systems integrate controls and sensors into the luminaire to offer an improved lighting experience for occupants while increasing energy savings. LLLC is one coherent system designed to work together and address issues that have held back previous generations of controls by providing a better out of box experience, simpler installation with less wiring, better tools for set up and verification, and more adaptability when changes in space use require controls reconfiguration. Additionally, LLLC offers other value to businesses including data analytics and integration with other building and business systems.

While market momentum on the supply side has been strong, the demand side has not caught up. Barriers to adoption include high initial cost, lack of installation and configuration skills in market and limited customer awareness of value proposition. Interest in adoption of LEDs and a robust commercial construction market present opportunity, but also a need to deploy strategies quickly to prevent lost opportunity.

As reflected in the LLLC logic model, the program employs a multi-faceted approach to transform the market. In its first phases, the LLLC program has laid a foundation for its long-term vision of the implementation of LLLC becoming standard practice for commercial buildings.

- Product readiness: National specifications are in place and there is strong availability of qualified products.
- Training: Training for installers is available for funders to host for their trade allies.
- Energy Savings: Savings rates have been established by the Regional Technical Forum (RTF).
- Codes: LLLC are included as an option in Washington building code and in the IECC national code base.
- Utility Incentive Programs: A number of NEEA funders have incorporated incentives in their program designs or have dedicated resources to pilot activities.

In its next phase, the program will build upon the progress made to date and will tackle market barriers around cost, skill and awareness to address slow adoption of LLLC thus far. Key program intervention strategies during the market development life cycle phase will include:

- Training and Education: Training and education for installers, designers, and lighting specifiers to bolster market capabilities, aid in driving down cost and increase awareness and acceptance of LLLC.
- Supply Chain Intervention:
 - Collaboration with sales agencies (manufacturer representatives) to change product recommendation habits, create champions for LLLC in the market, and collect market data.
 - Coordination with manufacturers and distributors to bring additional sales and promotional focus to the region and to collect market data.
- Building Awareness: Foster awareness amongst decision makers and influencers through case studies, leverage of industry partnerships, and support for funder programs.

The energy savings LLLC delivers is significant, with estimates dependent on space type of 25 to 75 percent savings compared with non-controlled fixtures. Regionally, this market transformation opportunity aggregates to 54 aMW over the long term. The comprehensive market development plans that the program has put in place for its next phase, combined with the strong regional collaboration already underway, will influence the market trajectory and speed up LLLC adoption, thus enabling the region to both realize the savings potential from LLLC and to avoid lost opportunity from the adoption of non-controlled LEDs.

2. Progress, Findings and Adjustments

(Author: Program Manager)

2.1 Summary of Market Progress

- Product Specifications: National product specifications for LLLC have been published and are being administered by the Design Lights Consortium (DLC).
- Product Availability: Availability of product is strong and continuously increasing, with 18 controls systems from 13 manufacturers listed on the DLC Qualified Product List (QPL) as of August 31, 2018.
- Codes: The Washington State building code and IECC national code base have been updated to include LLLC as an option.
- Training: Over 150 regional trade allies to date have taken a one day training on networked lighting controls hosted by the program and NEEA funders.

2.2 Summary of Other Progress

- Savings: The Regional Technical Forum (RTF) has incorporated LLLC in its non-residential retrofit and new construction lighting protocols and has established energy savings rates.
- Utility Incentive Programs: Funders have incorporated incentives into their lighting program designs to help offset the initial incremental cost of LLLC. Puget Sound Energy, Tacoma Power, Seattle City Light, Pacific Power and Idaho Power currently have incentives in place. The BPA Lighting Calculator also provides an incentive which can be leveraged by its customer public utilities. Snohomish PUD and Energy Trust of Oregon have dedicated resources to LLLC pilot activities.

2.3 Go / No-Go Decisions for this Milestone

In its first phases, the LLLC program has laid a foundation around product readiness, specifications, energy savings, training and regional program support. While there is now strong momentum on supply side, the demand side is lagging. In its next phase, the program will build upon the progress made to date and through implementation of its market development plan will tackle market barriers around cost, knowledge, skills and awareness to address slow adoption of LLLC thus far.

The program seeks approval to move through the ILC Scale Up milestone and into the Market Development phase and has put the following in place to support that progression:

- Alignment of program with the priorities of the Regional Strategic Market Plan for Lighting
- A market development plan in place that operationalizes the logic model:
 - Documented in section 3.2 and [Program Implementation Plan](#) in Appendix
 - Documented in updated [Logic Model](#) in Appendix

- Product energy savings are established:
 - The RTF has incorporated LLLC in its non-residential lighting retrofit and new construction protocols
 - Additional research over time will help refine these savings values
- A 20 year forecast of market energy savings is established:
 - 54 aMW of savings has been identified over 20 year period
 - Outlined in section 4
- A risk mitigation plan is in place:
 - Documented in section 8
 - Challenges in collecting sufficient sales data to enable reporting of energy savings from all market activity are addressed in more detailed [Risk Management Plan](#) in Appendix

2.4 Key Assumptions, Findings and Adjustments

Since the Product Readiness Milestone Approval in June 2017, the program has invested in better understanding the market and challenges to adoption.

	Assumption and Finding	Adjustments to Program Strategy
1	<p>Earlier Assumption: Sales data from distributors would be sufficient to report energy savings.</p> <p>Finding: Distributor databases are not set up well to track LLLC. Working with existing participants in the Distributor Platform would only document a small portion of sales.</p>	<p>Continue to work with distributors to resolve data collection challenges</p> <p>Add strategies to collect sales data from additional sources including manufacturers and their sales agencies</p> <p>Perform additional characterization of the market to inform data collection strategy through better understanding of sales and distribution channels and of market share</p>
2	<p>Earlier Assumption: Training of installers is critical to market adoption</p> <p>Finding: Through initial training delivery, confirmed need for focus on installer training. Additionally, through participation in Department of Energy's Next Generation Lighting System initiative, we observed first-hand the lack of knowledge that is hampering successful installation.</p>	<p>Continue to collaborate with NEEA funders to deliver training to their trade allies</p> <p>Make improvements to installer-focused training to provide additional product exposure.</p> <p>Training plan updated to focus on the Lighting Design Lab as delivery channel throughout the Northwest region</p>
3	<p>Additional Market Learning: The program prioritized learning more about the market actors who influence the selection of product through a series of interviews.</p> <p>Finding: The split between selection of fixtures (by Designers) and controls (Engineers) creates challenges for an integrated product like LLLC. Manufacturer representatives at independent sales agencies are a very important source of information for all other market actors and are influential in product selection. Additionally, designers, engineers and manufacturer representatives hold a number of misperceptions about LLLC and are not always a proponent of LLLC.</p>	<p>Accelerate plan for educating designers and lighting engineers through partnership with the Lighting Design Lab</p> <p>Incorporate engagement of sales agencies and manufacturer representatives into market development plans. Potentially offer a SPIF promotion for a limited time period to generate interest in LLLC and change recommendation behaviors.</p>

3. Market Transformation Theory

3.1 Market Transformation Theory Narrative (Author : Product Manager)

Vision: Implementation of LLLC becomes standard practice for commercial buildings, as the majority of lighting products come with embedded sensors and controls as the default option.

[Logic Model](#) and [Documentation Packet](#) updated Q3 2018.

Energy efficiency programs have long pursued increased use of lighting controls, with limited success. LLLC systems, however, are easier to install and program than traditional controls, and have the potential to deliver greater energy savings alongside other non-energy benefits.

The program uses a multi-faceted approach incorporating specification development, market awareness building, training, utility program support, supply chain interventions, and integration with energy codes to transform the market so that LLLC systems become standard practice for commercial buildings.

This initiative’s market transformation theory is presented in the table below.

IF NEEA OVERCOMES THESE TARGETED MARKET OPPORTUNITIES/BARRIERS,	BY EXECUTING THESE INTERVENTION STRATEGIES...	THIS DESIRED CONDITION WILL EXIST IN THE MARKET AS LONG-TERM OUTCOMES (5-10' YRS.) OF THE INITIATIVE
Product Readiness	<ul style="list-style-type: none"> Develop and Maintain LLLC specification in conjunction with Design Lights Consortium Influence lighting and controls manufacturers to continue to promote and sell LLLC products Bring additional reseach to market and serve on PNNL/DOE’s Next Generation Lighting Systems (NGLS) committee to influence manufacturers to address usability issues 	<ul style="list-style-type: none"> Product category is clearer and more standardized through specifications and QPL Product readily available Product is straightforward to use
First Cost	<ul style="list-style-type: none"> Support well trained trade allies through LLLC training throughout the region Provide a foundation (i.e., specifications, marketing, RTF savings, cost research) to enable utility program incentives and promotion. Influence manufacturers to increase number of products with LLLC capabilities 	<ul style="list-style-type: none"> Trade allies gain comfort with deployment of LLLC solutions, allowing for more cost effective projects Technology costs and product pricing continue to decrease, thereby placing Integrated LLLC product on par with standard luminaires
Value Proposition and Awareness	<ul style="list-style-type: none"> Research energy savings, cost, NEBs and installation complexity to better articulate value to the purchaser Support and complement utility marketing efforts Coordinate with distributors, manufacturers and other supply chain actors on marketing 	<ul style="list-style-type: none"> Lighting purchase decision makers and influencers understand both energy and nonenergy benefits of LLLC LLLC being chosen as a path for supporting business needs; lighting increasingly viewed as business data collection platform
Energy Code	<ul style="list-style-type: none"> Include LLLC in state energy code 	<ul style="list-style-type: none"> LLLC becomes required by energy code for all new construction projects
Lack of Skilled Trade Allies	<ul style="list-style-type: none"> Regional LLLC training NXT Level curriculum includes LLLC Manufacturers provide local training for LLLC products 	<ul style="list-style-type: none"> Trade allies gain comfort with deployment of LLLC solutions, allowing for more cost effective projects Trade allies have the skills and knowledge to bid, install, and program LLLC products

3.2 Next Phase: Priority Intervention Strategies (Author : Program Manager)

Program activities will be staged through 2026 when transition to long term monitoring is planned. See [Program Implementation Plan](#) in Appendix for additional detail. Key program intervention strategies during the market development life cycle phase will include:

- Training and Education: Educate installers (trade allies) to bolster market capabilities and to aid in driving down cost and increasing awareness. Educate designers and lighting engineers to increase product acceptance.
- Supply Chain Intervention: Collaborate with sales agencies (manufacturer representatives) to change product recommendation habits, create champions for LLLC in the market, and collect sales data. Continue to collaborate with manufacturers and distributors to bring additional sales and promotional focus to the region and to provide market data.
- Building Awareness and Market Acceptance: Foster awareness amongst decision makers and influencers through leverage of industry partnerships and support for funder programs. Continue to support funder programs in offering downstream incentives to bring down first cost, bolster value proposition and drive customer awareness. Downstream marketing activities are not currently planned for this program. See the [Marketing Strategic Plan](#) for more information about marketing activities.

	Upcoming Activities and Purpose	Estimated Timeline
1	Continue to refine data management plan and develop strategies to ensure granular information can be collected to enable deeper market understanding and to ensure program energy savings can be successfully reported. Leverage the Distributor Platform to engage distributors in data collection. Develop strategies for collection of data from sales agencies (manufacturer representatives).	2019 and ongoing
2	Collaborate with sales agencies on education and marketing to create champions for LLLC in the market. Develop targeted SPIF promotion to change product recommendation habits at key local sales agencies (manufacturer representatives).	2019 - 2021
3	Leverage the Lighting Design Lab to deliver training opportunities throughout the region. Educate designers and lighting engineers to aid in increasing product acceptance. Continue to educate trade allies to bolster market capabilities, aid in driving down installation cost, and increase awareness.	2019 - 2022
4	Continue coordination with manufacturers regarding product plans, training, and specifications. Increase promotional activities in region through collaboration with manufacturers and their sales channels, including distributors.	2019 and ongoing
5	Work with the DLC, manufacturers, and utilities nationally to refine and progress LLLC specifications in order to expand product value in the market and deliver energy efficiency.	2019 and ongoing

	Upcoming Activities and Purpose	Estimated Timeline
6	Foster LLLC awareness, acceptance and demand among building owners, property managers, facility managers, and architects through leverage of industry partnerships and support for funder incentive programs. Create materials for use by funders to drive awareness of LLLC with their customers, including case studies.	2019 and ongoing
7	Perform market research according to the Research and Evaluation Plan to inform program activities, including understanding sales channels, decision making, product energy savings, non-energy benefits, and cost trends.	2019 and ongoing, as targeted needs arise
8	Continue collaboration with IECC on representation of LLLC in the IECC 2021 and 2024 code bases. Educate the market to strengthen awareness of LLLC as a code option in region. Leverage Commercial Code Enhancement Program to coordinate with new construction programs.	2019-2024
9	Influence accepted practices for new construction/renovation design and for retrofit through research, identification of best practices, and collaboration with standards institutions (IES, ANSI), labs and researchers.	2021 and ongoing

The LLLC program will Leverage other NEEA programs wherever feasible. The program coordinates with Top Tier Trade Ally program on incorporating curriculum on LLLC in to NXT Level training. NEEA's Distributor Platform provides processes, contracts and relationships with distributors to advance awareness of LLLC and to collect sales data. Better Bricks Platform provides a repository of LLLC materials, including case studies, and serves as a vehicle to foster awareness of LLLC. The LLLC program coordinates with the Commercial Code Enhancement program to foster regional collaboration on code direction as it relates to LLLC.

Commented [AC2]: Added per request to clarify leverage on NEEA programs

3.3 Transition Strategy

(Author : Product Manager)

Target Year for Transition Complete Milestone: 2026	
Transition Strategy	<ul style="list-style-type: none"> When the Exit Criteria below are met, NEEA will strategically discontinue program interventions and will rely on code and market forces to maintain the LLLC market adoption trajectory If there are subregions in the Northwest that are lagging markets, the program would consider a staggered exit and work with NEEA funders and market actors on a phased transition.
NEEA's Exit Criteria	<p>The criteria that will inform NEEA's decision to exit the market are based upon the program Logic Model and MPis outlined in the Logic Model Documentation Packet. They include:</p> <ul style="list-style-type: none"> LLLC is included in the energy code in all NW states for new construction projects A majority of the top lighting manufacturers offer LLLC as a standard feature (i.e., not an optional add-on) on all their LLLC-appropriate fixtures A majority of trade allies who install lighting controls agree that LLLC is the easiest-to-install lighting controls solution A majority of the top regional distributors offer LLLC at near price parity to similar non-controlled luminaires from the same manufacturer The market share of LLLC products increases so that the majority of luminaires sold include LLLC

Commented [AC3]: Updated to address potential for lagging markets, especially in more rural areas

4. Investment Rationale

Author: Program Manager and Planning

Market Situation/ Opportunity <i>(Why Now?)</i>	Adoption of lighting controls thus far has been low. LLLC addresses many of the issues that have held back previous generations of controls from being adopted. The market shift toward LEDs creates opportunities for adding controls but also brings the risk of lost opportunity if the rate of control adoption does not keep pace. A robust current market in commercial new construction creates a natural opportunity to transform the lighting controls market using LLLC.				
Linkage to Market Strategy? <i>(Why NEEA)</i>	NEEA is well positioned to play a role in driving awareness of the LLLC value proposition, bringing clarity to the market through product specifications, collaborating with utilities to address upfront cost and bolstering market capabilities through training.				
Proposed Investment for 2019-2020					
Activities <i>(from Section 3.2)</i>		Cost Center	Amount (Direct Costs)		
Data Collection & Assessment		MSE	\$	354,000	
Field & Lab Testing		MSE	\$	18,000	
Incentives		MSE			
Market Channel Development		MSE	\$	358,000	
Marketing		MSE	\$	295,000	
Program Mgmt		MSE	\$	200,000	
Technical Support & Training		MSE	\$	396,000	
Market Research		MRE	\$	224,750	
		Total	\$	1,845,750	
Job Title of Required NEEA Personnel		Avg. Hours per Week	Total Hours	Total FTE	
Program Manager		32	3,072	0.80	
Project Manager/Coordinator		11	1,056	0.28	
Product Manager		16	1,536	0.40	
Market Research & Evaluation		8	768	0.20	
Planning		6	576	0.15	
Stakeholder Engagement		2	192	0.05	
Marketing		6	576	0.15	
Code		1	96	0.03	
Total Estimated Hours and FTE			7,872	2.05	
Note: Annual rate for both direct costs by activity and NEEA resources will begin to decrease slightly starting in 2022 and then ramp down further starting in 2024.					
Total Proposed Program Investment – Direct Costs Only					
Phase			Proposed Total Investment per Phase		
Scanning & Concept Identification/ 2011-2013			\$ 239,000		
Concept Opportunity Assessment, Market & Product Assessment/ 2013-May 2017			\$ 825,000		
Strategy Testing & Finalization/ June 2017-March 2019			\$ 850,000		
Market Development/ April 2019-December 2026			\$ 5,550,000		
Long-Term Monitoring			\$ 100,000 per year		
Total			\$ 7,464,000		
Return on Investment (ROI)/Outcomes					
Energy Efficiency/Savings Forecast					
Savings Forecast	2020 - 2024	2025 - 2029	2030 - 2034	2035 - 2037	20 - Year Total* (2018-2037)
Total Regional Savings	3.3	11.4	25.9	14.3	54
Co-Created Savings	2.9	9.8	19.0	8.9	41
Net Market Effects	0.9	2.9	5.7	2.7	12
7th Power Plan Savings Forecast		2016-2021			
Total Regional Savings (Power Plan Baseline)		0.6			
Remaining Savings (Power Plan Baseline)		0.2			
Cost Effectiveness: Total Resource Cost Perspective					
		Value	Additional Information <i>(please include source of information)</i>		

Commented [AC4]: Corrected typo – total was missing

Levelized Cost (w/o Act Credit)	2.6-4.4 ¢/kWh	The numbers are the average value across the program's target market. The range illustrates the impact on the cost effectiveness of choosing different types of LLLC systems.
Benefit Cost Ratio	1.6-2.2	

**The 20-Year potential is measured starting in 2018. For 2015-2019 cycle, the program is forecasting less than 0.1 aMW of the savings potential to be realized. In order to report energy savings from all market activity, the program is addressing the current challenges it faces in collecting sufficient market data. See Section 3 Risk Management for additional context.*

Additional Value Delivery
<ul style="list-style-type: none"> • Provide training to build controls installation capabilities and support funder trade ally engagement • Increase opportunities for funder customer engagement • Bring data and research on lighting controls for the region, including informing RTF savings rate • Support specification development, resulting in reduced market confusion and a qualified product list available to utilities and the market • Support funders in leveraging common resources and thus providing benefits to trade allies working across service areas • Market development for LLLC supports future Demand Response capabilities and programs

5. Product and Market Definition

Author: Product Manager

5.1 Product Definition

Luminaire Level Lighting Controls (LLLC) are lighting products with integrated (either at the factory or on site) sensors and controllers that are wirelessly networked, enabling lighting products within the system to communicate with each other and transmit data. The Design Lights Consortium (DLC) maintains a Qualified Product List (QPL) for Networked Lighting Controls that includes LLLC products. This QPL and its specification requirements are the cornerstone of NEEA's product definition for LLLC.

5.2 Competing Products or Services

	Strengths	Weaknesses
Energy Efficient "Product" LLLC	<ul style="list-style-type: none"> • Simple installation and commissioning • Multiple control strategies • Higher energy savings 	<ul style="list-style-type: none"> • Lack of qualified installers • Cost (near term) • Product awareness
Competing Alternative #1 No controls	<ul style="list-style-type: none"> • No extra work • No extra cost 	<ul style="list-style-type: none"> • Relies on direct human interaction to control • No energy savings from controls
Competing Alternative #2 Simple single technology controls	<ul style="list-style-type: none"> • Lower upfront costs • Well known technology 	<ul style="list-style-type: none"> • Difficult to maintain operational integrity • Minimal energy savings • Limited persistence of energy savings over time
Competing Alternative #3 Other Networked controls	<ul style="list-style-type: none"> • Multiple control strategies • High energy saving potential 	<ul style="list-style-type: none"> • High cost • Complex installation and commissioning • Lack of qualified installers • Difficult to maintain operational integrity

5.3 Market Definition

Target Market		
Who Purchases? <i>(Purchase Decision Makers)</i>	<ul style="list-style-type: none"> • Building Owners • Business Owners • Building Managers • Building Tenants 	
Who are the End Users?	<ul style="list-style-type: none"> • Building Owners • Business Owners • Building Managers • Building Tenants 	
Who Influences the Purchase Decision?	<ul style="list-style-type: none"> • Trade Allies (Installers) • Distributors • Lighting Designers • Architects • Manufacturers' Sales Representatives • Building Owners • Business Owners • Building Managers • Building Tenants • IT Departments • Specifying Engineers 	
Market Size		Data Source
Current Market Size	2 billion square feet of floor space in Office, Warehouse, Large Retail, Schools, University and Hospital.	The 7 th Power Plan.
Potential of Market <i>(What is the size we are going after?)</i>	200-600 million square feet of floor space (10-30% of current market)	NEEA based on DOE's projection of Connected Lighting.

6. Roles: NEEA, Market Contributors, and Utilities *(complementary approach)*

. Author: Program Manager

NEEA'S ROLE:		
<p>Product and specifications:</p> <ul style="list-style-type: none">• Represent the region to champion national specifications• Collaborate with manufacturers on product plans and availability <p>Education:</p> <ul style="list-style-type: none">• Bring training opportunities to the region for installers, designers and lighting engineers• Collaborate with funders to match training to their local program needs• Support education on code <p>Supply chain engagement:</p> <ul style="list-style-type: none">• Collaborate with manufacturers on promotional activities• Coordinate with distributors on marketing and education• Develop intervention strategies to turn manufacturer representatives at sales agencies into product champions <p>Support for funder programs and demand side awareness:</p> <ul style="list-style-type: none">• Support funder programs in offering downstream incentives and driving awareness with their customers.• Work with RTF and regional stakeholders on energy savings rates• Articulate the value proposition through research, marketing collateral development and publication of case studies.• Bring insights to the region on market dynamics, barriers and opportunities• Leverage other NEEA programs such as Top Tier Trade Ally, Distributor Platform, Commercial Code Enhancement and Better Bricks, as well as partners such as Integrated Design Labs and Northwest Energy Efficiency Council to generate awareness.		
MARKET CONTRIBUTORS	WHAT ARE THEY DOING?	HOW ARE WE ENGAGING WITH THEM?
Lighting Manufacturers	<ul style="list-style-type: none">• Bringing qualified product to market• Providing product-specific training• Managing sales channels• 	<ul style="list-style-type: none">• Engaging manufacturers on specifications, product features, training and regional promotional activities
Distributors	<ul style="list-style-type: none">• Selling and fulfilling orders for LLLC• Providing sales data	<ul style="list-style-type: none">• Providing support for marketing• Leveraging Distributor Platform to establish agreements for collecting sales data
Sales agencies (manufacturer representatives)	<ul style="list-style-type: none">• Recommending product, providing product information and influencing sales	<ul style="list-style-type: none">• Coordinating on marketing and education• Developing an promotional strategy to change product recommendation habits
Installation Contractors (Trade Allies)	<ul style="list-style-type: none">• Installing product and making recommendations that influence sales	<ul style="list-style-type: none">• Providing education through utility-hosted trainings
Lighting designers and engineers	<ul style="list-style-type: none">• Selecting and specifying products for renovations and new construction	<ul style="list-style-type: none">• Providing educational opportunities

Design Lights Consortium (DLC)	<ul style="list-style-type: none"> • Administering specifications and QPL • Developing online training on networked lighting controls • Developing a savings database • Convening forums for manufacturers, utility programs, research organizations, standards organizations and other stakeholders 	<ul style="list-style-type: none"> • Maintaining membership in DLC • Collaborating closely on training curriculum • Influencing specifications • Participating in targeted committees and helping support national controls efforts
West Coast Utility Lighting Exchange (WCULT) and National Utility Lighting Exchange (NULX)	<ul style="list-style-type: none"> • Sharing best practices, sharing resources, and collaborating to address challenges facing utilities and market 	<ul style="list-style-type: none"> • Participating in meetings • Leveraging Conduit for information sharing
Regional Technical Forum	<ul style="list-style-type: none"> • Incorporating LLLC in lighting protocols 	<ul style="list-style-type: none"> • Coordination on research
Pacific Northwest National Labs (PNNL) / DOE	<ul style="list-style-type: none"> • Convening market stakeholders on challenges such as interoperability and reporting standards • Administering the Next Generation Lighting System (NGLS) initiative on installation and set up challenges 	<ul style="list-style-type: none"> • Participation in forums • Serving on NGLS committee and collaborating on papers to distribute findings

FUNDERS' ROLE:		
<p>Education:</p> <ul style="list-style-type: none"> • In partnership with NEEA, offer training to trade allies to strengthen market capabilities <p>Programs:</p> <ul style="list-style-type: none"> • Incorporate LLLC in downstream incentive programs to offset upfront cost and drive awareness and product demand within their customer base • Provide data on incentivized LLLC projects to further regional understanding and support regional savings reporting 		
INDIVIDUAL FUNDER	WHAT WILL/ARE THEY DOING?	WHEN
Ask for All Funders	<p>Incorporate LLLC in downstream programs:</p> <ul style="list-style-type: none"> • Puget Sound Energy, Tacoma Power, Seattle City Light, Idaho Power, Pacific Power and BPA member utilities have incentives in place • Energy Trust of Oregon's New Construction program and Snohomish PUD have pilots underway. Energy Trust of Oregon's Existing Buildings and Industrial programs are considering a pilot. 	ongoing
Ask for All Funders	<p>Offer LLLC training to trade allies</p> <ul style="list-style-type: none"> • Idaho Power, Snohomish PUD, Tacoma Power, Energy Trust of Oregon and BPA have hosted LLLC trainings 	ongoing
Ask for All Funders	Provide data on incentivized projects	ongoing

7. Funder Coordination Plan

Author: Stakeholder Relations

Commented [AC5]: Added a return to RPAC for a program update within two years of scale up approval to check in on evolving market and program progress

Who	What	When
Sector Advisory Committee	ILC Milestone Doc (Business Case) <ul style="list-style-type: none"> CAC SA Milestone review of all business case components. Share ongoing program updates via CAC meetings. 	Q1 2019 Quarterly
	Utility Roles & Responsibilities: <ul style="list-style-type: none"> Incorporate LLLC in their downstream programs. Collaborate with NEEA to plan and host trainings for their trade allies. Assist with awareness building and case studies. Provide data on incentivized LLLC projects to further regional understanding and support regional savings reporting. 	Q1 2019 Q1 2019 Q1 2019 Ongoing
	Market Transformation Results: <ul style="list-style-type: none"> Share updates via annual Ops Plan, CAC meetings and communications throughout the year. 	Annually Quarterly
	Evaluation: <ul style="list-style-type: none"> Advise of MPERs, research activities and MRE updates through MRE Newsletter 	Quarterly
	Marketing: <ul style="list-style-type: none"> Share Marketing Strategic Plan via SA milestone review Share Annual Marketing Calendar via annual Operations Plan review. Any planned downstream activities will go through the Downstream Marketing Coordination Process via RPAC and marketing leads. Share updates on any marketing activities via quarterly Marketing Newsletter 	Q1 2019 Annually Quarterly
WORK GROUP (WG)	ILC Milestone Doc (Business Case) <ul style="list-style-type: none"> Review of business case components done in coordination with CAC review Share updates on Program Implementation Plan via annual Ops Plan, WG meetings and communications throughout the year 	Q1 2019 Annually 2-3x/year
	Other: <ul style="list-style-type: none"> Advise of MPERs through progress updates via WG meetings Share all planned marketing activities via quarterly LLLC program updates 	2-3x/year Quarterly
RPAC	ILC Milestone Doc (Business Case) <ul style="list-style-type: none"> Present Scale-up Approval business case for RPAC vote Share program updates via annual Ops Plan, RPAC meetings and communications through the year <u>Check-in with RPAC no later than two years from approval to assess evolving market and program progress</u> 	Q1 2019 Quarterly <u>Q1 2021</u>
	Other <ul style="list-style-type: none"> Share Marketing Calendar via annual Ops Plan. 	Annually
Cost Effectiveness Adv. Comm. (CEAC)	Planning & Evaluation <ul style="list-style-type: none"> Share updates on portfolio metric changes (aMW, CE, risk, equity) via annual CEAC meeting Consult/share first MPER 	Annually 2020
Individual Funder Needs	ILC Milestone Doc (Business Case) <ul style="list-style-type: none"> Review of business case components with all stakeholders, via 1:1 roadshow visits and webinars Collaborate with individual utilities to (1) Incorporate LLLC in their downstream programs (2) collaborate with NEEA to plan and host trainings for their trade allies and (3) assist with awareness building and case studies, and (4) provide data on incentivized LLLC projects. 	Q4 2018 -Q1 2019 2019 - 2026

Who	What	When
	Evaluation <ul style="list-style-type: none"> Collaborate with ETO on LLLC pilot for market research Share MPER reports throughout this phase 	Q3 2018 -Q4 2019 2020 - 2026
	Marketing <ul style="list-style-type: none"> Share Annual Marketing Calendar via annual Operations Plan review. Any planned downstream activities will go through the Downstream Marketing Coordination Process via RPAC and marketing leads. Share updates on any marketing activities via quarterly Marketing Newsletter. 	Annually Quarterly
	Regional Groups ILC Milestone Doc (Business Case) <ul style="list-style-type: none"> Collaborate with DesignLights Consortium (DLC), Pacific Northwest National Lab/ US Department of Energy, Lighting Design Lab, Regional Technical Forum, National Utility Lighting Exchange (NULX) and standards institutions (IECC, ANSI, IES) 	2019 - 2026

8. Program Risk Summary

Author: Program Manager and Planning

Program Risk Assessment					
Risk No.	Risk and Potential Consequences "IF" this happens, "THEN" this will occur (impact)	Level	Response Type	Response Plan	Owner
1	If market sales data cannot be collected under current data management plan, the program will not be able to measure and report full market savings and the 54 aMw forecasted will be diminished.	H	Mitigate	<ul style="list-style-type: none"> Leverage the Distributor Platform to continue to collect data from distributors and work through data collection challenges. Explore additional sources including associations, manufacturers and manufacturer representatives. Continue to work with Planning on granularity of data needed and alternative methods of reporting savings. Continue to work with NEEA management to review successes and challenges with the data management plan, and adjust plan accordingly. Details on plan to collect sufficient data to report energy savings from all market activity can be found in Appendix Risk Management Plan 	Anne Curran

2	If installers do not gain comfort with the technology and the set up required, LLLC sales will fall short of potential, resulting in lost energy saving potential.	M	Mitigate	<ul style="list-style-type: none"> Continue program emphasis on installer training. Work with manufacturers to improve out of box experience and encourage increased product-specific training. Support Next Generation Lighting Systems initiative efforts to bring manufacturer attention to supply chain challenges. 	Anne Curran
3	If market does not accept technology in near term, lost opportunity as LED adoption increases.	M	Mitigate	<ul style="list-style-type: none"> Implement multiple program strategies simultaneously such as training, market actor leverage, and case studies. Work with manufacturers to encourage additional hands-on support for early adopters. If needed, bolster marketing and engagement activities and explore upstream incentives. 	Anne Curran
4	If utilities do not adequately promote and incentivize LLLC, market adoption will be slowed.	L	Mitigate	<ul style="list-style-type: none"> Continue engagement with utilities to provide support to enable programs. Leverage Regional Strategic Market Plan efforts around Networked Controls to provide additional tools to utilities to support incentive and training programs. Implement education, training and supply chain collaboration activities in parallel with utility collaboration. If needed, explore further upstream activities and incentives. 	Anne Curran
5	If unforeseen developments in technology supplant LLLC controls approach, program energy savings will be diminished.	L	Accept	<ul style="list-style-type: none"> Track emerging technologies and monitor LLLC adoption. 	Chris Wolgamott

Risk Levels:

H - Serious Situation, insufficient information about the situation, potential solution(s) being evaluated

M - No serious situation, some information exists about the situation, in wait mode for more comprehensive data

L - Most (i.e. critical mass) information about the situation exists to support no serious/negative impact

Each of these criteria is examined and scored on a 1-6 scale where 1 is minimal risk and 6 is high risk. Each of the criteria is equally weighted and the overall risk is an average of the criteria scores.

Overall Risk	Cost Effectiveness	Measurability	Unproven Technology	Unproven Market Approach	Late Life Savings Delivery
3	3	4	2	2	3

Equity Metrics

Regional Equity			
NEEA's metric for Regional Equity compares each state's share of the regional technical savings potential to the share of NEEA's funding that comes from that state in an index.			
ID	MT	OR	WA
0.8	1.3	1.2	0.9
Rural Equity			
This is assigned by determining the efficiency opportunity in the target market split between rural vs. urban and comparing that to NEEA's funding mix. The result should then be adjusted by the initiative team based on the expectation of the long term impacts of our intervention in that market.			
Rural Equity Score	5 Points Distributed Between Urban and Rural		
	Urban	Rural	
1.4	3.5	1.5	

9. Appendices

All of the ILC Deliverables that are required for each phase are listed in the ILC Appendices Spreadsheet. These deliverables are also found on the back of the ILC Placemat. Open the ILC Appendices Spreadsheet and Filter on column 1 (Milestone) based on the milestone you're completing in order to display the deliverables required for that phase. Use this spreadsheet to manage the completion of deliverables within your team. Insert who the owner of the deliverable is (who is responsible for creating it), who the contributors are, who it has been approved by (the functional manager) and what the status is. Once a draft deliverable has been created, insert a hyperlink over the name of the deliverable to the location within SharePoint.

Double click table to open the source file.

ILC Milestone Appendices							
Milestone	Deliverable Name and Link	Owner	Contributors	Approved by:	Status	Notes/Link to the deliverable	Additional Links
Scale-Up Approval (SA)	Updated ILC Milestone Document (Business Case)	Anne Curran	Chris Wolgamott, Kathryn Bae, Maria Alexandra Ramirez	Emily Moore	Approved	ILC Milestone Document	
Scale-Up Approval (SA)	Updated Program Plan	Anne Curran		see sub-deliverables below:			
Scale-Up Approval (SA)	Implementation Plan	Anne Curran		Emily Moore	Approved	Implementation Plan	
Scale-Up Approval (SA)	Updated Product Assessment Plan	Chris Wolgamott		Mark Rehley	Approved	Product Assessment Plan	
Scale-Up Approval (SA)	Updated Program Strikezone	Anne Curran		Emily Moore	Approved	Current Program Strikezone	
Scale-Up Approval (SA)	Updated Risk Assessment & Management Plan	Anne Curran	Kathryn Bae	Emily Moore	Approved	Risk Assessment & Management Plan	
Scale-Up Approval (SA)	Updated Transition Strategy	Chris Wolgamott		Mark Rehley	Approved	Transition Strategy	
Scale-Up Approval (SA)	Updated Data Management Plan	Anne Curran		Emily Moore	Approved	Data Management Plan	Data Management Plan Memo
Scale-Up Approval (SA)	Updated Product Definition	Chris Wolgamott		Mark Rehley	Approved	Product Definition	
Scale-Up Approval (SA)	Updated Logic Model	Chris Wolgamott		Mark Rehley	Approved	Logic Model Packet	Logic Model
Scale-Up Approval (SA)	Updated Research and Evaluation Plan	Meei Lum	Jennifer Stout	Corinne McCarthy	Approved	Market Research & Evaluation Plan	
Scale-Up Approval (SA)	Savings & CE Forecast	Kathryn Bae		Stephanie Rider	Approved	Savings & CE Forecast	
Scale-Up Approval (SA)	Updated Funder Coordination Plan	Maria Alexandra Ramirez		BJ Moghadam	Approved	Funder Coordination Plan	
Scale-Up Approval (SA)	Advisory Committee Feedback Report	Maria Alexandra Ramirez		Stacy Blumberg	Not Started	Advisory Committee Feedback Report	
Scale-Up Approval (SA)	Updated Marketing Strategic Plan	Stacy Blumberg		(reviewed by Josh Bakker)	Approved	Marketing Strategic Plan	

Or, directly access each deliverable via these hyperlinks:

- [ILC Milestone Document](#)
- Program Plan:
 - [Implementation Plan](#)
 - [Product Assessment Plan](#)
 - [Current Program Strikezone](#)
 - [Risk Assessment & Management Plan](#)
 - [Transition Strategy](#)
- [Data Management Plan](#) and [Data Management Plan Memo](#)
- [Product Definition](#)
- [Logic Model Packet](#) and [Logic Model](#)
- [Market Research & Evaluation Plan](#)
- [Savings & CE Forecast](#)

- [Funder Coordination Plan](#)
 - [Marketing Strategic Plan](#)
 - [Advisory Committee Feedback Report](#) (not started; to be completed after Q1 2019 CAC)
-

Memorandum – *Agenda item (Tier 1)*

February 12, 2019



TO: Commercial Advisory Committee (CAC)

FROM: Warren Fish, XMP Program Manager, wfish@neea.org

SUBJECT: XMP Update on 2018 Progress and 2019 Activities

Our Ask of You: Please review the summary below and come prepared to discuss:

- What questions or concerns do you have about XMP program activities?
- Are there additional ways in which your organization would like to coordinate with the program or keep apprised of the activities and progress?

Progress Summary:

Now one year into Program Development, the XMP Initiative is taking shape with significant progress in our major focus areas: pumps energy savings validation, market research, and distributor engagement.

Pumps Energy Savings Validation:

- The XMP Technical Workgroup (TWG) held its fourth meeting on November 29th (40 participants; files on Conduit; webinar recording available on request. Meeting #5 to be held April 17th).
- Continued progress in Q4 on gathering existing data and field data on pumps and circulators from data contributors across the Northwest. We now have 80% of data sites identified for Commercial and Industrial pumps, and 70% of data sites identified for Circulator pumps, with data continuing to come in from many contributors. We really appreciate all of you who have facilitated data contributions and joined the TWG calls! On track to complete study and present to RTF in Q4-19.
- Reduced regional costs by leveraging a \$100,000 grant from Pacific Gas and Electric toward study.

Market Characterization and Baseline:

- Contracted with Cadmus Group through competitive bid in order to study the Northwest pumps market, the barriers to energy efficient equipment, the market size, and other key characteristics.
- Kicked off the project with them in January 2019 and on track to complete in Q3-19.

Distributor Engagement:

- Began meeting with Northwest pump manufacturer's representatives in Q4-18, and signed up our first participating firm in January 2019.
- Building out written agreements and a midstream pump data portal leveraging assets of the NEEA Reduced Wattage Lamp Replacement initiative.
- Developed an [educational video](#) in Q3-18 with Hydraulic Institute about the Energy Rating Label.
- Developing 2 or 3 regional pump case studies showcasing the energy efficiency value proposition.

Program Lifecycle Status:



Memorandum – *Agenda item (Tier 1)*

February 12, 2019



TO: Commercial Advisory Committee (CAC)

FROM: Bing Liu, Senior Manager Codes & Standards

SUBJECT: CAC Q1 Update

Our Ask of You:

Please review key activities from NEEA's Codes & Standards and bring any questions to the CAC meeting or reach out to [Bing Liu](#). For more detailed information, please refer to Codes & Standards [quarterly report](#).

Key Activities

IECC

- NEEA is participating in the **2021 IECC code development process**, providing technical support and proposal development. NEEA has submitted 15 proposals in January 2019 and will participate in upcoming code hearings in April and October of 2019. Adoption is anticipated to be finalized by November 2019. NEEA will provide IECC development updates through the state Code Collaboratives and CCE funder engagement.

Washington

- The **Washington commercial code development** process started in Q1 2018 and NEEA has stayed engaged throughout the process. In Q4, the State Building Code Council (SBCC) held two public hearings concerning the commercial energy Code and proposal review by the Energy Technical Advisory Group (TAG) and the SBCC members. The final SBCC meeting to determine the new WA Commercial Code will be held in March. NEEA will communicate the new Code requirements to stakeholders during Q2.
- **Commercial Code Enhancement (CCE)** is scheduling the next Washington meeting at the end of February with Washington utilities and key code stakeholders. CCE and the Washington participants will continue discussing the possibility of using the Total System Performance Ratio (TSPR) tool in utility programs to incentivize whole system HVAC efficiency.
- An **Appliance Standards Bill** ([SB 5115](#)) is being assembled for the 2019 legislative session. The list of products covers a wide range of products for which standards are now timely.

Oregon

- The **Oregon Commercial Code development** process went through unpredictable changes during 2018. NEEA has provided proposals and technical support following the code adoption process and will continue tracking changes to adoption in 2019. The estimated date for final Code adoption is October 2019. The Oregon Building Code Division (BCD) is currently proposing ASHRAE Standard 90.1–2016 (in replacement of 2018 IECC) as the new Oregon Commercial Energy Code. The Oregon Building Code Structures Board, who is responsible for reviewing and recommending all energy code changes, will review different options at its board meeting on February 6th, 2019.
- **Commercial Code Enhancement (CCE)** will meet with the Energy Trust on February 14th to develop a data plan for 2019. The Energy Trust and NEEA have discussed opportunities to use Energy Trust

program data to inform future Oregon commercial code proposals. The data plan will consist of data points the Energy Trust collects through their commercial new construction programs and identify analysis that could help understand market trends and design decision making.

- The 2019 Oregon legislative session starts in Q1 2019. It isn't clear yet whether there will be an **appliance standard bill** this session. ODOE will likely watch how the session goes, and if the timing is right afterward, decide whether to conduct an administrative process to update and/or propose new standards. This likely wouldn't happen until Q3 2019.

Idaho

- NEEA is working with the **Idaho Energy Code Collaborative** to review upcoming adoption of 2018 IECC energy code and possible amendments. The Code Collaborative is also developing a comprehensive energy code training plan for the state of Idaho that addresses current code requirements and prepares the market for upcoming 2018 IECC changes.
- **Commercial Code Enhancement (CCE)** will integrate with the Energy Code Collaborative and support Idaho's adoption of the 2018 IECC. CCE will participate in Energy Code Collaborative meetings and focus on opportunities to prepare for future code cycles, as directed by the Code Collaborative.

Montana

- NEEA is participating in the **Montana Energy Code Collaborative** to prepare for the 2018 IECC adoption in Montana. The timeframe remains unclear, as membership for the Building Codes Advisory Council has not been determined. The Building Codes Advisory Council works cooperatively with representatives from the construction industry, as well as members from the interested public to develop, implement, and interpret the state building codes.
- **Commercial Code Enhancement (CCE)** will integrate with the Montana Energy Code Collaborative and participate in quarterly Collaborative meetings.

Please contact [Bing Liu](#) if you have any questions.

Memorandum – *Agenda item (Tier 1)*

February 12, 2019



TO: Commercial Advisory Committee

FROM: Debbie Driscoll, Commercial Market Strategy Manager, NEEA, on behalf of the C+I Lighting Regional Strategic Market Plan Steering Committee: Charlie Grist, NW Power and Conservation Council; Fred Gordon, Energy Trust of Oregon; Lori Moen, Seattle City Light; Michael Lane, Puget Sound Energy; Dave Murphy, BPA

SUBJECT: 2019 Update to the Commercial + Industrial Lighting Regional Strategic Market Plan

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In this agenda item we will:

- 1) Share a progress update on 2018 priority strategies
- 2) Provide an overview of 2019 plan updates
- 3) Discuss your feedback on the 2019 Plan and how you'd like your organization to be involved

Ask of You:

Please review this memo in preparation for a discussion of:

- Your questions and feedback on the 2019 plan
- Actions in which you would like to see your organization participate or lead

Progress on 2018 Priority Strategies

The collaborative made significant progress in the past quarter. Highlights include:

1. A new data dashboard that combines both sales and pricing data for linear lamps, with the goal of offering timely and granular data to inform program decision making. In the future, the hope is to expand this dashboard to include a variety of commodity lamp and fixture types. The first prototype can be viewed [here](#).
2. The Lighting Program Manager Work Group prioritized the creation and sharing of targeted marketing materials as a way to overcome adoption networked lighting controls adoption barriers. NEEA's LLLC initiative produced three one-page marketing brochures that are now available for re-branding by any funder and BPA has plans to produce shareable marketing materials as well.

Additional updates on each strategy can be found in our [quarterly newsletter](#).

2019 Updates to Plan

In early 2019, the C+I Lighting RSMP Steering Committee, with input from regional stakeholders, led a process to update the plan and set priorities for the coming year. While the strategies and actions identified in previous iterations of the plan will continue to be monitored, the Steering Committee and Lighting Program Manager Work Group see greatest value in continuing to focus on the same two priority strategies as were our focus throughout 2018:

- 1) Increase adoption of networked lighting controls (NLC) with a focus on luminaire level lighting controls (LLLC), which are a subset of NLC that have sensors and controls embedded in the fixture.
- 2) Inform program planning for commodity lamps (TLED, HID-LED, CFL-LED, etc.)

Please contact [Debbie Driscoll](#) if you have questions about the C+I Lighting Regional Strategic Market Plan.

Memorandum – *Agenda item (Tier 2)*



February 12, 2019

TO: Commercial Advisory Committee (CAC)

FROM: Maria Alexandra Ramirez, Stakeholder Relations Manager

SUBJECT: Conference Coordination

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Background:

In response to a NEEA Board discussion in 2017, about conference/event attendance, NEEA developed a:

- (1) Tracking system to improve its management of staff attending events, and
- (2) Criteria that improves NEEA's ability to manage its annual operations plan and budget.

There is a coordination opportunity here to ensure that we're connecting as appropriate in advance and sharing out key relevant takeaways afterwards with the region. This will be a standing housekeeping item for this Advisory Committee moving forward.

Our Ask of You:

Please review the Upcoming Event agenda(s) linked below and email me (maramirez@neea.org) if you'd like to coordinate with NEEA staff in advance of the event, and/or if there are specific topics/breakouts you'd like to hear about at our next CAC meeting.

Upcoming Events:

Date	Conference	Report
2/24/2019	Hydraulic Institute Annual Conference	Tier 2 Memo
5/21/2019	Light Fair	Via Lighting Workgroup

Memorandum – *Informational (Tier 2)*



February 12, 2019

TO: Commercial Advisory Committee (CAC)

FROM: Maria Alexandra Ramirez, Stakeholder Relations Manager

SUBJECT: Advisory Committee Streamlining for 2020-24 Business Cycle

Our Ask of You:

Please review the following and provide your input on this matter to your Regional Portfolio Advisory Committee (RPAC) member.

Background

As part of NEEA's Cycle 6 Business Planning effort, the NEEA Board of Directors asked the Regional Portfolio Advisory Committee (RPAC) to advise on a recommended budget reduction for NEEA's advisory committee/coordination process. During its August 2018 meeting, RPAC held a robust discussion on streamlining the process and recommended that a Task Force be formed to propose changes to improve the efficiency and effectiveness of alliance collaboration. Based on RPAC's guidance, the Board has asked that NEEA's resource commitment to the Advisory Committee/coordination process be reduced by \$250k for the 2020-2024 Business Cycle (\$50k/year). A Streamlining Task Force initiated December 2018, has been meeting weekly/biweekly to develop recommendations to bring back to RPAC in Q1.

Status

The Task Force set an objective to develop recommendations on how to utilize RPAC, Sector Advisory Committees (SACs) and Work Groups (WGs) to ensure efficient and effective collaboration on alliance programs/activities. Proposed recommendations will be presented to RPAC at its February 26 meeting for review and input, with the goal of reaching agreement on proposed recommendations. In advance of that meeting, draft recommendations will be shared with all RPAC members so they can seek feedback from relevant staff within their organizations. Upon agreement by RPAC, the proposal and any resulting Charter revisions will be shared with the relevant NEEA Board Committee(s) for input, and with the full NEEA Board for approval in Q2 2019.

Upon Board approval, the revised process will be communicated to the Sector Advisory Committees and existing Work Groups. The remainder of 2019 will be used to transition to the revised process, with all changes fully implemented by Q1 2020.

Memorandum – *Informational (Tier 2)*



February 12, 2019

TO: Commercial Advisory Committee (CAC)
FROM: Dulane Moran, Market Research & Evaluation (MRE)
SUBJECT: MRE Q1 2019 Update

Our Ask of You:

Please review the MRE newsletter for additional details on commercial sector studies. Bring any questions, recommendations, feedback, or concerns to the Q1 CAC meeting on February 12. Access the Market Research & Evaluation team newsletter [here](#).

Brief Update: Commercial Sector Studies

The Commercial Building Stock Assessment is in the field. With recruitment underway, utilities may hear from customers that have been contacted about participating in the study. Thanks to all of you who have reviewed contact lists and offered support for recruitment. If you have any questions about the recruitment process or want to be involved in site recruitment for your territory, please contact Dulane Moran at dmoran@neea.org. Additional information on the CBSA is included in the MRE newsletter (link above) and slides from the most recent regional webinar can be found on Conduit [here](#).

Commercial Code Evaluations are underway for both Oregon and Washington. The Oregon study is wrapping up, with analysis underway while the Washington study is preparing for fielding. NEEA staff are busy finalizing the data collection instrument and on-site protocols that will support the Washington study. Additional information on the study timeline is in the MRE newsletter. If you have any questions, or want to be involved in the Washington study, please contact Steve Phoutrides at sphoutrides@neea.org.

A transition Market Progress Evaluation Report (MPER) is underway for the Reduced Wattage Lamp Replacement program. For more information about the scope and objectives, please check the MRE newsletter. If you have any additional questions, please contact Dulane Moran at dmoran@neea.org.

Memorandum – *Informational (Tier 2)*

February 12, 2019



TO: Commercial Advisory Committee (CAC)

FROM: Debbie Driscoll, NEEA, and IDL Directors Jaya Mukhopadhyay and Kevin Amende, Montana State University Integrated Design Lab (MSU); Ken Baker & Elizabeth Cooper, University of Idaho Integrated Design Lab (UI); Kevin Van den Wymelenberg, University of Oregon Energy Studies in Buildings Lab (UO); and Chris Meek & Heather Burpee, University of Washington Integrated Design Lab (UW)

SUBJECT: Bi-annual Integrated Design Lab (IDL) Progress Report

Ask of You: Please read this progress report to acquire greater visibility and understanding of the many activities the region's Integrated Design Labs (IDLs) perform in support of Alliance programs. This is an overview of the progress on the Labs' service contracts with NEEA, between July and December 2018. For further detail, please refer to the [complete report on Conduit](#).



Luminaire Level Lighting Controls (LLLC)

The Labs provide market intelligence, outreach, stakeholder engagement, and technical guidance to accelerate adoption of LLLC technology. Efforts have focused on identifying targets for building awareness and market intelligence and to share information for better technology uptake.

UI: Completed case study of an elementary school and identified a second school that may be a candidate for a LLLC project and case studies.

UO: Completed product selection and study review for a LLLC Replacement and Redesign Comparison Study. Energy monitoring equipment acquired and installed; establishment and logging of baseline is ongoing. LLLC equipment acquisition for five alternates in process, with install of retrofit solutions to follow.

UW: Provided strategic awareness building with market actors and specifiers, conducted product research, delivered retrofit customer engagement via the City of Seattle's Tune-Up Accelerator program, and jointly hosted an industry-focused Advanced Lighting Controls Roundtable in Seattle.



Commercial Code Enhancement (CCE)

The Labs provide research and technical support to NEEA's CCE Program, as determined through the state coordination plans, to ensure successful adoption of proposed technologies and practices into state code.

MSU: Participated in development of Montana State Coordination plan and the Montana Code Collaborative. Reviewed and recommended technology, practices, and processes for future code adoption.

UI: Conducted technology scanning, implemented architect interviews, attended stakeholder meetings, developed code proposals and communicated with NEEA. Other work included provision of technical assistance to design professionals, and tracking, report and coordination of above code ideas.

UO: Supported the assessment of several new technologies and practices that were reviewed as part of the state coordination plans. The Lab support the Architecture 2030 Awards for the 2018 AIA Portland Architecture Awards by conducting data management and processing for projects submitted to the competition, and reviewed applications and performance metrics for project rankings.

UW: Identified technologies and practices that are candidates for future code proposals to the Washington State Energy Code, beta tested the Total System Performance Ratio (TSPR) proposal that IDL assisted with in Q1 and 2, and provided technical support to AIA Seattle for the Energy in Design Award.



Window Attachments

The Labs' projects seek to reduce the risk to building owners by understanding, documenting, and addressing the technological and operational challenges associated the widespread adoption.

UO: Analyzed results of previous human factors blind use field study, developed new blind control algorithm, present algorithm to industry panels and facilitate adoption as new standard.

UW: Conducted interviews with select building owners and designers to understand the operational and maintenance implications of dynamic window shades and blinds.



Commercial Real Estate (CRE)

Labs engaged municipalities, building owners, managers and vendors to develop market expertise and accelerate the voluntary implementation of energy efficiency improvements.

UO: Organized and implemented energy retrofit trainings in the Bellevue, WA area and coordinated development of a transition plan for the CRE Spark tool, which examined its successes, shortcomings, and potential futures.

UW: The City of Seattle Office of Sustainability & Environment (OSE) in partnership with the UW IDL and Seattle City Light (SCL), engaged building owners, managers and vendors to develop market expertise and accelerate the voluntary implementation of energy efficiency improvements in Seattle's medium commercial building stock.



HVAC: Very High Efficiency Dedicated Outside Air System (VHE-DOAS)

The Labs provided recruiting and technical support during recruitment, design, installation and data collection for VHE DOAS pilot projects, along with monitoring of conventional RTUs for baseline comparison.

UI: Sought out suppliers for qualifying products and attempted to establish pilot project at high school near targeted climate zone, but no pilot was secured.

UO: Installed long-term monitoring equipment with ongoing data acquisition for both a VHE DOAS school pilot project site and an existing RTU office baseline site. The Lab worked to recruit a suitable VHE DOAS retail pilot project site; none of the possible sites identified site met all program requirements.

UW: Collected baseline data from three rooftop units at Clallam PUD's offices in Sequim, WA. We have developed a fact-sheet for practitioners that describe the VHE-DOAS concept, and developed the basis of development for a Design Guide aimed at practitioners, installers, and owners slated for development in 2019.



Emerging Technologies: Bullitt Center Baseline Verification

The UO Lab worked with utility and industry representatives to analyze and quantify the performance of the Bullitt Center and "counterfactual" baseline, facilitating 20-yr power purchase agreement with Seattle City Light.

Please contact Debbie Driscoll at DDriscoll@neea.org if you have questions about NEEA's work with the IDLs.