DATE: January 25, 2018

LOCATION: SeaTac International Airport, 17801 International Blvd., Seattle, WA 98158
Beijing Conference Room

TIME: 10:00 am – 4:00 pm Pacific

WEBINAR: http://neea.adobeconnect.com/cacfeb2018/ (includes phone option)

DIAL-IN: 1-877-890-9502, Participant Code: 8267790855 (for those dialing in directly)

AGENDA			**Packet Page #**
10:00-10:30 am	Welcome, Introductions, Housekeeping, Packet Review *Desired Outcome:* *Alignment on preparation materials and meeting objectives.*	Maria Alexandra Ramirez	1-3
10:30-11:00 am	Commercial Portfolio Update & 2018 Work Plan • Brief Commercial Portfolio Update • Proposed Work Plan 2018 *Desired Outcome:* *Level-set on commercial portfolio & CAC Workplan for 2018*	Emily Moore	4-6
11:00-noon	Extended Motor Products ("XMP") IS Milestone Check-In • Update & Review of Changes since Q4 2017 • Initiative Start ("IS") review with CAC *Desired Outcome:* *CAC understanding of XMP initiative and support for RPAC Initiative Start vote at February 28th RPAC meeting*	Warren Fish	7-20
Noon-12:45 pm	Lunch (provided)	All	--
12:45-1:45 pm	CAC Member Share Out/Round Robin *Desired Outcome:* *Awareness of current activities and issues in the region*	All	--
1:45-2:30 pm	Guest Presenter – Integrated Design Lab (IDL) • Overview of recent and planned research • Lake Union building dynamic glazing case study *Desired Outcome: Familiarity with the role and benefits of the region's IDLs. Awareness of UW IDL's emerging technology work on dynamic glazing.*	Chris Meek and Heather Burpee	21
2:30-2:45 pm	Break	All	--

2:45-3:05 pm	Reduced Wattage Lamp Replacement (RWLR) • 2017 results and 2018 Plans Preparing for Long Term Monitoring and Tracking (LTMT) *<u>Desired Outcome</u>: CAC familiarity with RWLR results, lessons learned and plans for transition complete.*	Elaine Miller (via Webcam)	22
3:05-3:45 pm	Commercial Code Enhancement (CCE) • Introduction to Neil • Update on State Coordination Plan development *<u>Desired Outcome</u>: Confirm CCE utility participants and agreement on the State Coordination Plan development process.*	Neil Grigsby	23
3:45-4:00 pm	Opportunity for public comment and adjourn	Maria Alexandra Ramirez	--

Memorandum – *Agenda Item (Tier 1)*

January 25, 2018

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. Input appreciated on room for improvement.

INFORMATIONAL UPDATES

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

- Pages 24-25: CAC Charter Review & Recent Update
- Page 26: VHE DOAS Update
- Page 27: CBSA Over-Sample Request
- Page 28: Certified Practitioner in Energy Management Systems – Online Version
- Page 29-30: C&I Lighting Regional Strategy Newsletter

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 2017 CAC Meeting Notes
- Q1 2018 Emerging Technology Newsletter
- Q1 2018 Market Research & Evaluation Newsletter
- Q4 2017 Marketing Newsletter

Memorandum – *Agenda Item (Tier 1)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Emily Moore, Senior Manager, Commercial/Industrial

SUBJECT: Commercial Portfolio Updates

ASK:
In the CAC meeting, NEEA staff will provide a brief review and update on the commercial program portfolio, and review the CAC work plan for 2018. Please review the program highlights from the last quarter and draft CAC work plan (on page 6 of packet), and bring any questions or comments you have to the meeting.

PROGRAM HIGHLIGHTS:

Lighting

Reduced Wattage Lamp Replacement (RWLR)

- See Tier 1 memo for update (on page 22 of packet).

Luminaire Level Lighting Controls (LLLC)

- The program began its rollout of Advanced Lighting Controls training in collaboration with utilities throughout the region who will host these trainings for their trade allies. Snohomish PUD hosted a session in December that was attended by 25 trade allies. The feedback from attendees was very positive. Plans are underway to rollout additional sessions in Q1 2018.
- Puget Sound Energy and NEEA collaborated on a marketing case study of PSE's installation of LLLC in their offices. The case study has been published on Better Bricks.

Top Tier Trade Ally (TTTA)

- In Q4, 27 individuals and 5 companies achieved NXT Level designation. A marketing and outreach campaign the last few months of the year successfully brought in 68 new applications to the program. By year end, uptake of NXT Level Training was at 115 individuals and 37 companies designated.

Lighting Resources

- The regional membership to Design Lights Consortium was renewed, enabling Northwest utilities to leverage DLC resources and tools and to have a seat at the table for national discussions on lighting specifications.
- The last phase of the website update for Northwest Lighting Network was complete, resulting in a better organized site that can more easily feature regional lighting resources for trade allies.

C+I Lighting Regional Strategic Market Plan Implementation

- See C+I Lighting Quarterly Newsletter (on page 29 of packet).

Building Envelope

Window Attachments

- Marketing completed a 4-day customer research study on Low-e Storm Windows.

- The Market Characterization and Baseline for Secondary Glazing Systems (SGS), or Commercial Window Attachments, is complete. The baseline for SGS is estimated to be at or near zero.
- Cowlitz PUD launched its low-income Low-e Storm Windows pilot.

Commercial New Construction

Commercial Code Enhancement (CCE)

- See Tier 1 memo for update (on page 23 of packet).

Cross-cutting Infrastructure

Distributor Platform

- Continuing to work with Seattle City Light on helping them leverage the distributor platform in their area to launch a "Lighting to Go" like midstream program in Q2 2018. We also continue to help Snohomish PUD on acquiring data for their region as well on a possible TLED pilot to be launched in their territory in Q3 or Q4 2018.

Commercial Real Estate (CRE)

- The program has engaged with 48 industry groups representing 75 million square feet of commercial real estate property in the Northwest.
- 130 engineering service providers have been pre-qualified to date to provide building upgrades for Seattle's Tune-up Accelerator (TUA) program. The TUA Program has 95 of its goal of 100 building owners signed up to participate.
- CREHub (Navigator), which provides easier access to commercial energy efficiency practices for the built environment, is live. https://betterbricks.com/cre-hub/#/

Strategic Energy Management (SEM)

- Held the 7th Annual NW SEM Collaborative Fall Workshop in October 2017 with 62 attendees.
- Workgroup on SEM Wikipedia page completed the page, viewable here: https://en.wikipedia.org/wiki/Strategic_energy_management

Memorandum – *Agenda Item (Tier 1)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Emily Moore, Senior Manager, Commercial/Industrial

SUBJECT: Proposed Content for 2018 CAC Agendas

Our Ask of You

The following table is a DRAFT plan for the CAC's 2018 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 2018? If so, what topics?

Q1 2018 Feb 1 - Seattle	Q2 2018 Apr 18 - Portland	Q3 2018 Jul 31 - Portland	Q4 2018 Oct 18 - Portland	Q1 2019 TBD
PORTFOLIO REVIEW				
Portfolio Review	Portfolio Review	Portfolio Review	Portfolio Review	Portfolio Review
PROGRAM REVIEWS				
Extended Motor Product (XMP) - **IS VOTE REVIEW**	Very High Efficiency Dedicated Outside Air Systems (VHE DOAS) - **IS VOTE REVIEW**	Top Tier Trade Ally	LLLC - **SA VOTE REVIEW**	Reduced Wattage Lamp Replacement (RWLR) - Transition to Long term Monitoring and Tracking
Commercial Code Enhancement (CCE)		Window Attachments	Commercial Code Enhancement (CCE)	
Reduced Wattage Lamp Replacement (RWLR)				
REGIONAL MARKET STRATEGIES				
	C&I Lighting - Progress review, proposed revisions			
ANNUAL OPERATIONS PLANNING				
	2019 Ops Plan update on process, CAC direction for 2019	2019 Ops Plan - CAC input on draft		
EMERGING TECH				
Washington Integrated Design Lab on Dynamic Glazing	Emerging Tech updates	Emerging Tech updates	Emerging Tech updates	Emerging Tech updates
CODES & STANDARDS				
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

***IS** = Initiative Start Milestone*

***SA** = Scale-up Approval Milestone*

Memorandum – *Agenda Item (Tier 1)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Warren Fish, Program Manager

SUBJECT: XMP Background Memo for CAC & IAC Meeting Packet

Please review the updated Extended Motor Products (XMP) Initiative Start document. This revision reflects several changes made in response to feedback from our Advisory Committee members and stakeholders, gathered in the Q4 meeting and via 1:1 outreach. Key changes include:

1. Pumps and circulators of 50 horsepower and lower will be our exclusive focus with XMP;
2. Pumps are the only motor-driven system we are taking on with XMP, and any decision to expand beyond pumps in the future (e.g. fans, compressors) will come back to you for review/input before seeking RPAC approval and approval by you and RPAC; and
3. Field research from Northwest sites will be incorporated into the research plan to validate savings.

As you review the document, you'll note that Section 1 (Executive Summary) and Section 2.2 (Plans) have the most revisions, but there are changes throughout. We look forward to discussing these updates and the program development phase of the XMP initiative with you during the February 1st CAC meeting at SeaTac. Note, IAC members will again be invited to join us to participate in the XMP discussion. If you have any questions before the meeting, please reach out to Warren Fish at wfish@neea.org or 503-688-5402. Thank you all again for your input, guidance, and support.

Thank you, also, for joining the XMP team for the January 16 PEI webinar. We hope you found it informative. For those who missed it, here is a link to the recording: https://attendee.gotowebinar.com/register/5576275862093646082

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 NAME: **Extended Motor Products (XMP)**

DATE: **February 28, 2018 - RPAC Meeting**

PROGRAM MGR: **Warren Fish**

SECTOR: **Multiple**

STRATEGIC MARKET: **n/a**

MILESTONE FOR WHICH TEAM IS SEEKING APPROVAL: **IS (Initiative Start)**

TYPE OF PROGRAM:

☒Initiative ☐Infrastructure

PROGRAM VISION of a Transformed Market: The Extended Motor Products (XMP) initiative will accelerate the adoption of more efficient motor driven products, such as pumps, fans, and compressors, in end markets with significant savings potential. At the onset, XMP will support better selections of motor driven packaged pump systems in Commercial and Industrial applications with less than 50 horsepower (hp). By driving awareness, stocking and sales of efficient motor driven products, customers buying these products will know the operating cost differences between models; distributors will be able and motivated to offer the most efficient models; manufacturers will sell more of their most efficient models in the Northwest; utilities will acquire cost-effective energy savings from a product category historically untapped due to cost-effectiveness challenges; DOE will increase Federal energy efficiency standards for motor driven systems; and in the absence of a standard efficient products will become the industry standard. The program is envisioned as a cost-effective way for the region to capture energy savings from the market adoption of energy efficient pumps and, with approval from NEEA funders, other motor driven products in the future.

PROGRAM TIMELINE:

1. Executive Summary

Summary:
The Extended Motor Products (XMP) program aims to support increasingly stringent Federal standards for pumps, and specifically for motor driven packaged pump systems (includes a pump, motor, and integrated controller). Currently, these systems have low market adoption due to price differences between pump systems with no integrated control. The Federal standard scheduled to take effect in 2020 increases the efficiency requirements of pump and pump systems at the lowest level of performance. The Hydraulic Institute also makes use of a new pump standard to provide a label. This label was developed through a collaborative effort facilitated by US DOE, The Hydraulic Institute, utilities, and the pump industry. NEEA staff believe that by focusing the attention initially on the packaged energy efficient pump market, the market adoption of all regulated products will increase, setting the stage for an increased Federal standard sometime between 2025 and 2030.

Market Transformation Goal:
Drive awareness, stocking and sales of efficient motor driven products, initially focusing on pumps, and influence Federal standards over time.

Market Transformation Theory:
The market for efficient pump systems will be transformed through increasing market awareness, availability, and acceptance of efficient pump options, especially pumps sold with variable speed controls. Greater adoption of efficient pumps and packaged pump systems will pave the way for future updates to Federal standards. NEEA staff believe a coordinated effort with utilities is needed to lower first cost and awareness barriers. Utilities already have custom programs for large motor systems. NEEA staff expect that these custom programs, in coordination with the new Federal standard and PEI label, will work to encourage adoption and achieve market transformation of efficient large pump systems above 50 hp. Small pump systems (below 50 hp) are typically not incented through custom programs due to the high sales volume and lower incremental savings. NEEA staff believe an intervention at the distributor level is necessary to increase the adoption of efficient packaged pump systems of 50 hp and below. This theory will be refined and tested in the next phase of the initiative.

What is known at this time:

- The Federal standard has been published and is scheduled to take effect in 2020. This standard doesn't significantly increase efficiency levels, so the market baseline won't be meaningfully impacted. The Federal standard takes advantage of a new test method, ANSI lab certification and rating label developed collaboratively by DOE in cooperation with the Hydraulic Institute, and it sets the stage for future increases in performance requirements.
- The Pump Efficiency Index (PEI) was developed collaboratively by the DOE, Energy Efficiency Advocates, The Hydraulic Institute, and industry; it has wide industry support.
- The Hydraulic Institute has developed the Pump Energy Rating (ER) label, test methodology, independent test lab certification process, online database, and energy performance calculation engine.
- Efficient pump systems currently are more expensive and have low market adoption.
- Technical savings potential of efficient pump systems ranges from 60 to 95 aMW over 20 years.

What isn't known at this time:

- The in-situ savings of pump systems at various PEI levels. The savings will be driven by run times and load profiles in different applications and by the size of the pump. RTF Planning Measures have been developed, and over the next 12-24 months, research, including field research in the NW, is planned to verify expected savings.

- The incremental cost and baseline sales of efficient pump systems in different applications in the Northwest.
- What barriers in addition to price are preventing adoption of packaged systems.
- What market interventions besides utility rebates may be needed to accelerate market adoption.
- What is the mix of products sold into the market by what channel.

What we think might happen once the program development work is done:

- The PEI label will be useful for identifying more efficient pump systems in the market. It will need to be validated by application and certain adjustments may be necessary to use it as an estimate of energy savings.
- A coordinated effort with utilities and NEEA staff will be required to increase sales of efficient pump systems. This will involve utilities continuing to drive demand through their custom programs while NEEA staff explore ways to increase availability and sales of efficient pump and pump systems (packaged pumps) through distributors.
- The Federal standard is necessary to transform this market. However, the standard process is slow, highly uncertain and influenced by politics and market forces. Changes are likely to take more than 10 years, during which time baselines will be stable.

Initiative Start Request:

NEEA staff are requesting the allocation of base NEEA funds to develop the framework of a new program and to explore the merits of the market transformation theory. The next phase, Market and Product Assessment, is expected to require approximately 18 months and $850,000 to complete. The core activities of this development effort include:

- Validation of the PEI label and savings estimates through primary data collection and analysis.
- Market characterization and baseline development to identify market structure, barriers, and opportunities.
- Development and testing of a market intervention program plan and completion of the program design.
- Market test with distributors to understand if distributors could provide a focused intervention point for efficient pump systems of 50 hp and below.

2. Progress, Findings, and Adjustments

2.1 Summary of Market Progress

Extraordinary efforts by US DOE, the RTF, the Hydraulic Institute, ACEEE, and energy efficiency advocates including BPA and NEEA open a significant window of opportunity for market transformation of energy efficient pumps and circulators. Many thousands of pumps and circulators are sold each year in the Northwest; yet only a small fraction of those transactions are for the most efficient pump products. Recent market progress includes:

- US DOE Rulemaking, covering 1 to 200 HP clean-water pumps, takes effect 2020
- US DOE Rulemakings for circulator pumps and fans are in the works but not yet enacted
- Hydraulic Institute launch of online PEI calculator and Energy Rating Label
- RTF approved “Planning” UES measures for C&I pumps and circulator pumps
- Hydraulic Institute has an ANSI accredited test lab certification program in place
- Hydraulic Institute Pump Energy Index online tool and database developed and ready for launch
- Hydraulic Institute has 11 certified Original Equipment Manufacturers (OEMs) participating in the Energy Rating labeling effort

- BPA-grant is providing partial funding for research to bring C&I pump and circulator pump Planning measures to Proven status
- In progress: Conversations with California IOUs for sharing test data and standards

2.2 Plans

Post-Initiative Start, NEEA staff will conduct further research and analysis to validate the savings opportunity, refine the Market Transformation theory and approach, and inform the design of the program. To facilitate funder and NEEA collaboration on XMP, NEEA staff will seek to form a Technical Work Group (TWG) post-IS to review the existing data and research activities, and to scope XMP field research needs. The proposed research plan objectives for the next phase, which will be confirmed by the TWG post-IS, include:

1. Improve the savings estimates of the current C&I pumps and circulators measures and, where we are able to, verify savings estimates and move measures for those specific applications to proven UES status;
2. Identify pump applications or measures for which reliable savings are not or cannot be estimated, and identify alternative solutions;
3. Test and refine our understanding of the market barriers currently standing in the way of efficient pumps making up a larger portion of the Northwest pump sales mix; and
4. Evaluate the opportunity for energy savings from improved pump equipment efficiency as it relates to overall pump system efficiency and optimization.

Additionally, the following table summarizes the key activities planned for the next phase of the initiative development.

	Upcoming Activities and Purpose	Estimated Timeline
1	**Conduct research plan to validate energy savings across a range of pump applications in the Northwest:** • Convene NW stakeholders through formation of an XMP Pumps Research Technical Work Group (TWG) that will meet quarterly and more often as needed; • Gather input and guidance from the TWG on the research plan, field data collection and analysis methodology, and share research results and findings; • Leverage existing field data from Northwest utilities and other reliable sources to achieve our research objectives where applicable; • Select sites for new field research with input from the TWG, gathering additional data to understand the savings opportunities in pump applications in the field; • Improve the accuracy of the energy savings estimates by analyzing application-specific data across the universe of C&I pumps and circulators, developing representative and statistically significant inputs for the key variables that drive our energy savings methodology; • Conduct market actor interviews with distributors, manufacturers, pump operators, and pump purchasers to better understand and define the most effective market intervention approaches to shift the pump sales mix to more efficient equipment; • Collect and analyze comprehensive pump system audit and performance information to understand how improvements in pump equipment efficiency (pump, motor, drive, and controls, as applicable) relate to improvements in overall pump system efficiency.	Q1 2018 to Q3 2019
2	**Complete market characterization and baseline:** • Characterize the market to identify trends, barriers, opportunities, and key market actors • Analyze results and integrate findings into program strategy	Q2 2018 to Q3 2019

	• Develop and validate a market baseline for tracking market transformation	
3	**Develop market intervention plan:** • Design and begin testing market interventions in coordination with NW utilities • Ensure midstream interventions and incentive structure are well coordinated with utility downstream incentive efforts for small pumps and circulators	Q4 2018 to Q3 2019
4	**Begin small-scale market test with distributors:** • Offer distributors participating in the Reduced Wattage Lamp Replacement (RWLR) program data exchange and midstream incentive sales support platform the opportunity to add small pumps and circulators to existing master service agreements • Identify and recruit other distributors to participate in data platform, and put in place new master service agreements • Work at the corporate-level and branch-level with Northwest pump distributors for training, education and marketing support for energy efficient small pumps and circulators • Collect and analyze full category sales data from participating distributors to inform incentive and price levels, market shift baseline, and marketing tactics	Q3 2018 to Q4 2019

3. Investment Rationale

Market Situation/ Opportunity *(Why Now?)*	--US DOE standard takes effect in January of 2020, which will make it illegal to sell pumps in the bottom quartile of energy performance for C&I pumps across 5 pump types from 1 to 200 HP. DOE's rulemaking was done with heavy industry involvement, which led to the RTF being able to obtain a rich set of data on pump performance, sales, and energy. --RTF Planning measures are in place now for small pumps and circulators, but unless the measures are turned to Proven, those Planning measures will expire in 2021. --Hydraulic Institute has created a new Pump Energy Rating label based on the PEI and a supporting online database, which manufacturers are rolling out in conjunction with the XMP effort. --"Smart Pumps" with advanced controls available for much smaller pumps than were previously economically feasible, are now ready for market, but customer uptake is slow. --Other commercial sector savings opportunities (LEDs) are realizing their potential, driving increased utility program interest in EE savings from small pumps and circulators. --We estimate ~70,000 C&I pumps and circulators in our target market are sold in the NW each year, yet utility energy efficiency programs currently provide direct incentives for (estimated) less than 1,000 per year regionally.
Linkage to Market Strategy? *(Why NEEA)*	NEEA will leverage experience and relationships with distributors and other assets established through the Reduced Wattage Lamp Replacement program to give the Northwest influence on buying, stocking, merchandising and data-sharing practices in the pumps and circulators market. This product category is energy intensive, and while outstanding energy efficient alternatives are available, market barriers (see section 2.4 result in very few highly energy efficient pump systems being sold in the NW each year. Opportunities exist for regional influence of this market working mid-stream and upstream, and leveraging existing relationships with distributors, trade associations and OEMs.

Proposed Investment for Next Phase (Q1-2018 – Q4-2019) *(to get you to the next milestone)*			
Activities *(from Section 2.2)*	**Cost Center**	**Amount (Direct Costs)**	
Research plan to validate energy savings for small pumps and circulators	C/I/A	$450,000	
Market characterization and baseline	C/I/A	$100,000	
Market channel research and test with distributors	C/I/A	$300,000	
	Total	**$850,000**	
Job Title of Required NEEA Personnel	**Avg. Hours per Week**	**Total Hours**	**Total FTE**
Program Manager	21	1575	.5
Program Coordinator	7	525	.2
Product Manager	15	1125	.4
Market Research & Evaluation	2	150	.05
Planning	2	150	.05
Stakeholder Engagement	2	150	.05
Marketing	3	225	.08
	Total Estimated Hours and FTE	**3900**	**1.3**

Total Proposed Program Investment – Direct Costs Only *(to achieve Market Transformation)*	
Phase (Estimated time frame per phase) – ~1 year per phase	**Proposed Total Investment per Phase**
Scanning & Concept Identification	$0
Concept Opportunity Assessment	$100,000
Market & Product Assessment	$850,000
Strategy Testing & Finalization	*TBD – est $1,200,000*
Market Development (multi-year)	*TBD – est $2,500,000*[1]
Long-Term Monitoring	*TBD – est $500,000*
Total	***$5,150,000***[2]

Return on Investment (ROI)/Outcomes		
Energy Efficiency/Savings		
Savings Forecast	**20-Year Total (2018-2037)**	
60-95 aMW of maximum achievable Total Regional Savings from efficient pump systems (85% maximum). The potential will be updated as the Program refines target market and intervention strategies.		
Clean Water Pumps	25 – 35 aMW	• 40% of clean water pump savings comes from controls. • Approximately 1/3 of the circulator pump savings comes from water heating savings.
Circulator Pumps	35 – 60 aMW	
Total	**60 – 95 aMW**	
Cost Effectiveness: Total Resource Cost Perspective		
	Value	**Additional Information** *(please include source of information)*
Levelized Cost (w/o ACT Credit)	TBD[3]	Cost effectiveness varies by product class, application, and horsepower. See RTF Measure Workbook for details: ComIndAgPumps_1_1.xlsm ComResCirculatorPumps_1_2.xlsm
Benefit Cost Ratio	TBD	

[1] Depending on scale of utility incentives
[2] Budget estimate will be refined in Market & Product Assessment phase as depends on details of regional intervention design
[3] Address in the Market & Product Readiness phase; assure cost effectiveness

4. Product and Market Definition

4.1 Product or Service Definition

Labeled efficient pump products (1 to 50 horsepower (HP) (as defined by the DOE rulemaking and supported by the RTF UES) clean water and fractional to 5 HP circulator pump systems). A pump system is defined as a Pump + Motor + Control. The label will provide a performance scale and number so that buyers and sellers can compare products performance and incentives can be offered at or above specific performance levels.

4.2 Market Barriers

1) First Cost – buyers typically buy on low first cost, unconcerned with lifetime cost of ownership, and unaware of energy ratings of the pump options they are considering;
2) Split Incentive – pump buyers/specifiers often do not pay the ongoing energy cost to run the pump;
3) Complexity – pumps are a complicated product category and customers often don't have enough information to select the best pumps for the application;
4) Awareness – buyers typically not aware of efficient equipment or its benefits, and typically not using relative energy performance as a product selection criterion;
5) Minimal Local Utility Program Involvement – small pump incentives are rare, and when they are provided, they are typically handled as a custom project;
6) Velocity and Volume of Sales – our initial research indicates that a high volume of pump sales occur in the NW every business day, and that the transactions happen quickly, often on an urgent basis and often as part of larger projects moving at a pace that doesn't allow time for detailed focus on each pump being replaced or ordered.

4.3 Competing Products or Services (SWOT Analysis)

	Strengths	Weaknesses	Opportunities	Threats
Energy Efficient "Product" Labeled efficient pump system	• Lower energy costs • "Drop-In" replacement for standard system available/similar form factor • For integrated pump systems: reduced installation costs, better controllability, and reliability (integrated performance tracking)	• Higher first cost • Longer lead times due to limited stocking • Unfamiliarity of contractors/engineers with product • Split incentive between building owner (pays utility bills) and contractor (purchases pump) • Customers generally don't spend a great deal of time on calculating for optimized product	• Significant investment and promotion by pump manufacturers and industry trade association (Hydraulic Institute) • New deemed measures (Planning) by RTF • Utility interest in opportunity for deemed pump measures • Leverage new Federal standard and pump efficiency metric (PEI) • Codes require variable speed pump systems in many new construction HVAC applications	• Availability of incentives to make more efficient pumps cost competitive • Multiple decision-makers make it difficult to target incentives and manage perceived risk

Competing Alternative #1 Minimum efficiency pump system	• Low cost • Industry familiarity • Replace like for like/"Drop-In" replacement of old system • Availability/short lead times	• Higher energy cost • Limited control options; requires add-on sensors	• Identical to old pump being replaced (replacement) • Efficiency not typically specified in design basis for new construction	• Growing awareness of more efficient options • Limited controllability and performance monitoring • Federal standard • Codes already pushing efficient pump systems (variable speed) in many new construction HVAC applications
Competing Alternative #2 Repair existing pump	• Lower cost than purchasing new replacement pump • Quickest option	• Reduced lifetime of repaired pump • Higher energy costs	• Familiarity of engineering staff with old system • Repair of large/specialized systems very cost effective	• Growing awareness of more efficient options • Greater reliability of new pump system

4.4 Market Definition

Target Market	
Who Purchases? *(Purchase Decision Makers)*	• Commercial new construction: Mechanical contractor/plumber • Commercial replacement: Building engineering, operations, and maintenance staff • Industrial/municipal: Industrial engineering, operations, and maintenance staff • Agricultural: farmers, irrigation districts, irrigation vendors • Contractors: supporting high end homes or long distance from water heaters to end use
Who are the End Users?	• Commercial: commercial building owners/operators • Industrial: plant operators, municipalities/cities water utilities • Agricultural: farmers, irrigation districts • Residential: home owners with large homes or long plumbing runs; multifamily building managers
Who Influences the Purchase Decision?	• Manufacturers sales reps • Distribution sales associates • Specifier(s) (engineering firms, HVAC contractors, plumbers, mechanical contractors, process design specialists, irrigation specialists) • Contractor/installer (general contractor, plumber, HVAC contractor)

Market Size		Data Source
Current Market Size	• **Clean water C&I Pumps, 1-50 HP:** ~25,000 shipments annually in NW • **Circulators (≤5 HP):** ~49,000 shipments annually in NW	• DOE 2016 Pumps Final Rule Technical Support Document[4]; NEEA Commercial & Industrial Pumps Standards Savings Model[5]; RTF Commercial & Industrial Efficient Pumps Savings Analysis v1.1[6] • DOE ASRAC Circulator Pump Working Group materials;[7] RTF Circulator Pump Savings Analysis v1.1[8]; Frost and Sullivan 2006 Market Report[9]
Potential of Market *(What is the size we are going after?)*	Initially targeting 1-50 HP clean water pumps and all circulator pumps up to 5 horsepower: ~70,000 pump shipments annually in the PNW.	• RTF Commercial & Industrial Pumps Savings Analysis v1.1 Same as above

5. Roles: NEEA, Market Contributors, and Utilities

(complementary approach)

NEEA'S ROLE:		
Aggregate data and create analytics to inform the market (utilities, manufacturers, distributors, trade associations). Design and test per-pump incentive levels and stocking incentive levels in coordination with utilities to shift market toward labeled energy efficient pumps and circulators. Provide training, education, and marketing support to participating distributors, leveraging manufacturer support to do so wherever possible. Work with funding utilities closely to keep XMP coordinated with all local utility programs. Facilitate development of an online midstream marketplace. The transformed market will be managed by the trade association (in the case of pumps, the Hydraulic Institute) with incremental improvements implemented by the DOE increasing performance standards.		
MARKET CONTRIBUTORS	**WHAT ARE THEY DOING?**	**HOW ARE WE ENGAGING WITH THEM?**
Hydraulic Institute (HI) and its pump manufacturer members	Pump Energy Rating label database, certified test labs, producing and marketing efficient pumps, educating pump distributors and pump buyers about labeled energy efficient pump systems	Attending and speaking at HI meetings; participating with them in ACEEE convened EMPLI initiative
Pump Original Equipment Manufacturers	Training and educating sales channels on labeled efficient pump systems	Regular meetings and building education and awareness campaign materials with their branding

[4] U.S. Department of Energy, Docket No. EERE-2011-BT-STD-0031, No. 56. Available at: https://www.regulations.gov/document?D=EERE-2011-BT-STD-0031-0056

[5] Prepared by Cadeo Group.

[6] https://rtf.nwcouncil.org/measure/efficient-pumps

[7] https://www.regulations.gov/docket?D=+EERE-2016-BT-STD-0004

[8] https://rtf.nwcouncil.org/measure/circulator-pumps

[9] http://www.frost.com/sublib/display-report.do?id=F572-01-00-00-00

Pump Distributors and manufacturers reps	Tracking US DOE rule change and impacts to customers, selling existing inventory, accepting HI and manufacturer support	Educating them on XMP program and developing business case for them to participate in our value exchange platform
Pump Specifiers (mechanical engineers, etc.)	Specify, define, calculate, and recommend pump system selections. Represent pump owner purchasing decision and approve final pump selections	Educating them (in partnership with pump manufacturers and manufacturers reps) on the XMP program and the benefits of more efficient, labeled pump offerings. Encouraging them to list Pump Energy Index (PEI) or Energy Rating label values in spec. and awareness campaign on the value of using performance labels and how to compare products.
Pump purchasers and end users (Building owners and maintenance support trades)	Selecting pump and maintaining pump in the field, paying energy costs of pumping.	Awareness campaigns to educate them on the value of using the label to better understand the energy performance of the pump systems. Educating them on opportunities for improved performance and reduced maintenance costs through integrated sensors and monitoring (BOMA, SEM, 50001, BETTER BUILDINGS, BETTER PLANTS)

UTILITY ROLE: *(What is needed from the alliance to ensure the success of this program?)*
Continue to provide incentives on large packaged pump systems. Integrate the PEI label to encourage the market to use it as a guide. Partnership on research to bring Planning measures to Proven status. Collecting pump data that supports pump research. Support field research and guide market interventions through participation in XMP Technical Work Group. Dissemination of information and assistance coordinating regional education, outreach, and marketing efforts. Leverage existing utility relationships with marketplace actors with trade allies and distribution channel to communicate value. Participation in incentives to midstream marketplace, and coordination of regional and local incentives.

6. Funder Coordination Plan

Who	What	When
Sector Advisory Committee	**ILC Milestone Doc (Business Case)** • Review of program concept with CAC and IAC pre-Initiative Start milestone • Deep-dive consult with both CAC and IAC for Initiative Start milestone • Ongoing quarterly updates via CAC and IAC meetings	Q3 2017 Q1 2018 Q2 2018-Q4 2019
	Evaluation • Consult CAC and IAC on Market Characterization Report findings	Q2/Q3 2019
	Other • Consult CAC and IAC on Marketing Strategic Plan via quarterly meetings • Consult CAC and IAC on Annual Marketing Plan via program team 1:1s and annual Marketing team visits • Consult CAC and IAC members through 1:1s to assess interest/value of forming XMP program work group	Q2 2018-Q4 2019 2018 2018
WORK GROUP (WG)	**ILC Milestone Doc (Business Case)** • Form and convene XMP Technical Work Group	Q2 2018 – Q4-2019
RPAC	**ILC Milestone Doc (Business Case)** • Deep-dive review and RPAC vote on Initiative Start milestone • Updates as appropriate via quarterly RPAC meetings	Q1 2018 Q2 2018-Q4 2019
	Other • Consult RPAC on Market Characterization Report findings as available	Q2/Q3 2019
Cost Effectiveness Adv. Comm. (CEAC)	**Evaluation** • Inform CEAC on Market Characterization Report findings as available	Q2/Q3 2019
Individual Funder Needs	**ILC Milestone Doc (Business Case)** • Engage in 1:1s to ensure funder awareness of XMP and understanding of needed commitment	2018-2019
BPA	**ILC Milestone Doc (Business Case)** • Engage relevant BPA staff to ensure coordination on BPA Implementation Manual	2018-2019
Regional Groups	**ILC Milestone Doc (Business Case)** • Engage RTF as needed for alignment on UES measures	2018-2019

7. Program Risk Summary

Program Risk Assessment					
Risk No.	**Risk and Potential Consequences** *"IF" this happens, "THEN" this will occur (impact)*	**Level**	**Response[i] Type** *(Accept, Mitigate, Transfer, etc.)*	**Response Plan**	**Owner**
1	IF NEEA is unable to validate estimated savings based on PEI and the Hydraulic Institute's ER label, THEN we will need to explore other strategies for raising the energy efficiency of the NW's pump market	M	Mitigate	Conduct pumps research plan and field research in coordination with regional utilities to establish NW-specific load profile and operating hours data where possible	Program Manager
2	IF NEEA is unable to prime the market with incentive dollars for customers and distributors transacting through the XMP platform, THEN our impact on moving the market will be minimal	H	Accept	Work collaboratively with NW utilities to design, test, and remain coordinated on downstream/midstream incentives for pumps and circulators	Program Manager
3	IF we don't move quickly to effectively leverage the work of the DOE and HI Labeling, THEN we'd lose our first-mover advantage and risk that participation with OEMs, distributors and utilities would shift to other alternatives	M	Mitigate	We will work quickly, flexibly, and iteratively to develop the XMP initiative in partnership with those it intends to serve	Program Manager

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

When assessing these risk categories NEEA must consider the whole market transformation timeframe, meaning initiative teams must assess the potential for the conditions either improve or worsen compared to present conditions.

Overall Risk	Cost Effectiveness	Measurability	Unproven Technology	Unproven Market Approach	Late Life Savings Delivery
2.2	2	2	3	3	1

8. Equity Metrics

These metrics are intended to measure of how equitably NEEA will facilitate access to and generate benefits for an initiative offering across a dimension of equity. It ultimately answers the question "What is the potential for a) each state or b) rural vs. urban markets to benefit from this program over the long term (20 year) transformation horizon?"

Regional Equity

This is assigned by determining the efficiency opportunity in the target market by state and comparing that to NEEA's funding mix across the states. 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.

Regional Equity	10 Points Distributed Across States			
	ID	MT	OR	WA
	2	1	3	4

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	5 Points Distributed Between Urban and Rural	
	Urban	Rural
	3	2

9. Appendices

ILC Milestone Appendices

Milestone	Deliverable Name and Link	Owner	Approved by:	Status	Notes/Link to the deliverable
Initiative Start (IS)	Milestone Checklist	Warren Fish	NA	In Review	Milestone Checklist
Initiative Start (IS)	Program Plan	Warren Fish	Emily Moore	In Review	
Initiative Start (IS)	Implementation Plan (deep dive) - Optional	Warren Fish	Emily Moore	In Review	NA
Initiative Start (IS)	Transition Strategy	Warren Fish	Emily Moore	In Development	Transition Strategy
Initiative Start (IS)	Communication Plan	Warren Fish	Emily Moore	In Development	Communication Plan
Initiative Start (IS)	Risk Assessment & Management Plan	Warren Fish	Emily Moore	In Review	Risk Assessment & Management Plan
Initiative Start (IS)	Resource Allocation Plan	Warren Fish	Emily Moore	In Development	Resource Allocation Plan
Initiative Start (IS)	MS Project Schedule	Anne Swanson	Warren Fish	Approved	Sharepoint List on Program site
Initiative Start (IS)	Product Readiness Plan	Warren Fish	Emily Moore	In Development	In Milestone Document
Initiative Start (IS)	Program Strikezone	Warren Fish	Emily Moore	In Development	Strike Zone
Initiative Start (IS)	Updated Product Definition	Geoff Wickes	Mark Rehley	Approved	In Milestone Document
Initiative Start (IS)	Logic Model	Geoff Wickes	Mark Rehley	Approved	Logic Model
Initiative Start (IS)	Research and Evaluation Plan	Steve Phoutrides	Corinne McCarthy	Approved	Evaluation Plan
Initiative Start (IS)	Program Assessment Template	Kathryn Bae	Stephanie Rider	In Review	Katherine will provide link
Initiative Start (IS)	Stakeholder Engagement Plan	BJ Moghadam	NA	Approved	Funder Engagement Plan
Initiative Start (IS)	Advisory Committee Feedback Report	BJ Moghadam	NA	Not Started	BJ will provide link after AC Mtg.
Initiative Start (IS)	Marketing Strategic Plan	Josh Pelham	Stacy Blumberg	Approved	Marketing Plan
Initiative Start (IS)	Operational Considerations Checklist	Warren Fish	NA	In Review	Operational Considerations Deliverable

To access the document appendices, please use this link to SharePoint.
https://neeanet.neea.org/sites/programs/xmp/ILC%20Deliverables/ILC%20Appendices.xlsx

INTEGRATED DESIGN LAB
at the CENTER for INTEGRATED DESIGN

UNIVERSITY of WASHINGTON
COLLEGE of BUILT ENVIRONMENTS

1501 E. Madison Street, Suite 200
Seattle, WA 98122

Memorandum – *Agenda Item (Tier 1)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Christopher Meek and Heather Burpee, Associate Professors and Integrated Design Lab Co-Directors, University of Washington

SUBJECT: Overview of Integrated Design Lab Recent Work and Dynamic Glazing Case Study

The University of Washington Integrated Design Lab (UW IDL) is one of four regional IDLs that partner with NEEA and work closely with practitioners to promote and evolve the practice of integrated design. NEEA invited us to speak at the upcoming CAC meeting in order to increase the group's familiarity with the role and benefits of the UW IDL.

The presentation will include:

- An overview of the UW IDL and the Northwest's IDL network.
- A brief description of how we are currently engaging with NEEA initiatives.
- An overview of the work in dynamic glazing. We will talk about our findings on this research project; and talk about how this emerged from a confluence of activities related to NEEA's commercial real-estate initiative, NEEA's emerging technology demonstration/evaluation install at the Rainier Tower, and an NSF-funded technology development project.

Contact: **Christopher Meek**, AIA, IESNA, Associate Professor and Director
University of Washington Integrated Design Lab
1501 E. Madison St. Suite 200
Seattle, WA 98122
cmeek@uw.edu/206-465-1441

Memorandum – *Agenda Item (Tier 1)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

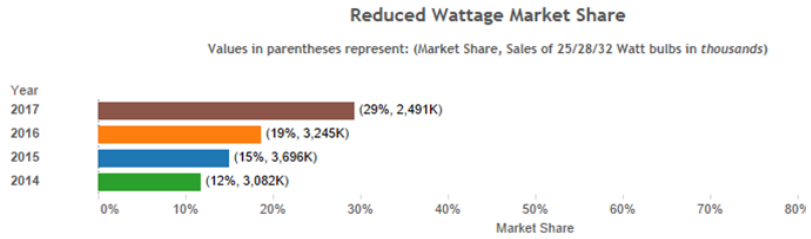
FROM: Elaine Miller, Senior Program Manager

SUBJECT: Reduced Wattage Lamp Replacement (RWLR) 2017 Results and 2018 Plans

This memo summarizes the success of the RWLR Program in 2017 and plans for 2018 to prepare for Long Term Monitoring and Tracking (LTMT).

RWLR Update and Overall Lamp Sales:

- Overall, 2017 has been the strongest year for the program with December reaching **38%** LW market penetration and **29%** cumulative for the year. This has largely been driven by our largest partners, Platt and CED divisions, converting their stock to low wattage lamps and making 32W lamps more difficult to get.



- We currently have **13 distributors** enrolled that touch over **250 branches** throughout the region and we are adding the last Consolidated Electrical Distributor (CED) division in March 2018, CED Puget Sound Division, which primarily deals with large national accounts. We estimate that we are touching **over 3 million lamps** and this represents over **43% of the Northwest lamp sales**.
- TLEDs and LED fixtures continue to erode the fluorescent market at an increasing rate. For RWLR participants is jumped from 12% decline in 2016 to 22% in 2017. Yet opportunity remains for 2018 with 54% of all 4ft linear lamp sales remaining 32W lamps.

RWLR 2018 Plans:

- Utilize the latest Federal Standard bump in efficacy to drive greater LW adoption with RWLR participants. **Almost 70% of all 32W lamps sold in 2017** cannot be manufactured as of January 26, 2018. This present a prime opportunity for distributors to switch customers to LW lamps as most of them do comply with the standard.
- Work with each distributor on their business case to transition to data collection for 2019 and beyond along and ensure leverage for other programs like LLLC, XMP and local utility programs.

Seeking CAC Member Guidance: What is your advice on how best to maximize value of what the RWLR program has built and how best to provide for a smooth transition to Long Term Monitoring and Tracking (LTMT).

Contact: Please contact Elaine Miller for questions: emiller@neea.org or 503-688-5461.

Memorandum – *Agenda Item (Tier 1)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Neil Grigsby, Portfolio Program Manager

SUBJECT: Commercial Code Enhancement (CCE) Q1 CAC Update

Neil Grigsby will present at the Q1 CAC meeting and provide an overview of the Commercial Code Enhancement (CCE) program, an update on current activities, and next steps.

Our Ask of You: Please review the memo and bring any questions, recommendations, feedback or concerns to the Q1 CAC meeting. For WA stakeholders: Please consider attending the February 5th webinar for more detail on CCE's support in the 2018 code process.

The Commercial Code Enhancement program initiated state collaborative meetings toward the end of 2017 to kick-off the State Coordination Development (SCP) process. SCP's will document the current code situation in each state and identify opportunities and challenges for code advancement. Referencing the SCP for guidance, CCE along with state collaboratives will set long term code goals and identify proposals to support for upcoming code opportunities.

CCE is currently supporting four measures for the 2018 Washington State code process:

1. Performance Path Using ASHRAE 90.1 Appendix G
2. HVAC System Performance Requirement
3. C406 Options Parity Method
4. DOAS Enhancement and Market Preparedness

The Q1 CAC presentation will not provide in-depth updates on these individual proposals. Instead, CAC members are encouraged to attend a webinar on February 5th with the Washington collaborative to review and provide input on recent developments.

For more information, please contact Neil Grigsby at ngrigsby@neea.org or 503-688-5417.

PROGRAM LIFECYCLE STATUS

Memorandum – *Informational (Tier 2)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Maria Alexandra Ramirez, Stakeholder Relations Manager

SUBJECT: Annual CAC Charter Review

Our Ask of You:
Review the CAC charter, including one change under "Membership" to reflect the seats designated for Indirect Funders, and come to the February 1 CAC meeting with any edits you'd like the Committee to consider. Otherwise, we'll go with this revised draft.

CAC Charter Revised February 1, 2018:

COMMERCIAL ADVISORY COMMITTEE CHARTER

Review process:

Advisory Committee → Governance → Executive → Board

HISTORY			
Source	**Date**	**Action/Notes**	**Next Review Date**
Board	December, 2014	Approved.	2020
CAC	Q2, 2015	Reviewed, no changes	2016
Governance Committee	November 3, 2015	Recommended Board approval.	2020
Executive Committee	November 19, 2015	Recommended Board approval.	Q2 2020
Board Decision	December 3, 2015	Board approval.	Q2 2020
CAC	Q1, 2018	TBD	Q1 2019

Purpose
The purpose of the Commercial Advisory Committee (Advisory Committee) is to provide NEEA with broad based advice, experience and feedback. This guidance will be used to influence NEEA's work toward achievement of the organization's strategic goals, priorities and objectives. Advisory Committees provide stakeholders the opportunity to give meaningful input into the design and implementation of NEEA programs.

This Advisory Committee is a management advisory committee, providing support to the work of NEEA managers and other staff in its program development and implementation responsibilities. As such, it ultimately reports to NEEA's Executive Director.

Responsibilities
1. Review sector operations plan and budget on an annual basis.
2. Advise NEEA sector strategies, including future direction of program development and yearly implementation activity.

3. Share experiences and advance understanding of how NEEA and utilities/public benefits administrators and key stakeholders best work together to leverage resources and results.
4. Inform the member's organization on NEEA Commercial sector strategies.
5. Review NEEA programs and provide recommendations to RPAC prior to an RPAC full consent vote.
6. Inform and coordinate with RPAC representative in advance of an RPAC Portfolio-Consent Vote on NEEA programs.
7. Provide a forum for information exchange within the region on Commercial sector program activities and interests, and opportunities for collaboration.
8. Develop an annual work plan.

Membership
The Executive Director will delegate the option to appoint a member to any Advisory Committee to each direct funder. In addition, the Executive Director may appoint member(s), such as Indirect Funders, Northwest Power and Conservation Council staff, public utility commission staff and state energy office staff.

Open Meetings and Closed Sessions
All Advisory Committee meetings shall be open to in-person participation by members of the public. With the exception of sensitive information not appropriate for public dissemination, meeting materials (including but not limited to meeting packets, slide presentations and summary notes) will be posted for public access. A closed session for part or all of any Advisory Committee meeting may be called at any time to discuss sensitive information such as competitive or proprietary information that should not be publicly shared. Any member of the Advisory Committee can request a closed session.

Meeting Schedule
This Advisory Committee will meet on a quarterly basis, and conduct additional meetings and/or webinars as needed.

Shared Commitment
Advisory Committee members and NEEA Staff share a commitment to communicate and coordinate with the intent of operating with no surprises.

Review schedule:
The Board will review this charter during the first year of the funding cycle, or at other times as needed.

Memorandum – *Informational (Tier 2)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Maria Murphy, Program Manager

SUBJECT: Update on VHE DOAS Initiative Start (IS) Milestone Delay

Technology and Status Overview

Very High Efficiency Dedicated Outside Air Systems (VHE DOAS) have been identified as an enabling HVAC practice that could result in significant energy savings throughout the region. Like conventional DOAS, it is based on the concept of separating ventilation from the heating and cooling system. NEEA's program concept for VHE DOAS improves upon this by including a very high efficiency heat recovery ventilator (VHE HRV) coupled with a high efficiency, 'right-sized' heating and cooling system. This configuration has been shown to yield substantial whole building energy savings in existing small to medium-sized commercial buildings while providing better indoor air quality and greater occupant comfort.

NEEA's VHE DOAS effort will move into the next phase of its program lifecycle (illustrated below) in Q2 2018, pending a 'yes' vote from RPAC on Initiative Start (IS). If achieved, VHE DOAS will transition from an emerging technology in our Concept Opportunity Assessment phase, into a program, and the team will begin design and development based on gathering additional market and product intelligence to inform strategy. VHE DOAS was originally scheduled for a Q1 2018 RPAC vote. However, the team wanted to do some additional analysis to better estimate electric savings opportunity, so we'll be **delaying the IS vote until Q2 2018.**

Our Ask of You

As we look toward future refinements of energy savings assumptions, we are collecting usage data on base cases and need assistance to get real-world examples where possible:

- ***Do you know of any customers with a heat pump RTU or other electric resistance heated RTU, that would allow sub-metering? OR***
- ***Do you have any metered data on these units that you're willing to share?***

Please contact Maria Murphy at mmurphy@neea.org or 503-688-5486.

PROGRAM LIFECYCLE STATUS

Memorandum – *Informational (Tier 2)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

FROM: Dulane Moran, NEEA Staff

SUBJECT: Commercial Building Stock Assessment

CBSA Status

The next phase of the CBSA will kick off on January 31. NEEA has selected Cadmus as prime contractor, with a team of field audit staff distributed throughout the region through subcontractors McKinstry, Energy 350, and DNV GL. This round of the CBSA will strive to overcome some challenges of prior studies by using geographically based sampling to develop a population frame from which the sites selected for field work will be sampled.

Key Dates and Next Steps:

- Kickoff Phase 2 project (January 31, 2018)
- Stage 1 catalog task (February – May 2108)
- **Finalize oversample participants (March 2018)**
- Convene customer contact work group to support building recruitment efforts (March – August 2018)
- Begin site recruitment (June – July 2018)
- Begin field data collection (August – September 2018)

Oversample Commitment

Regional stakeholders have an opportunity to request a commercial building oversample for their service area. If your organization is considering oversampling please contact Dulane Moran for information about how to engage with the CBSA contractor directly. Oversample contracts are developed outside of the core project and are typically contracted directly, with no NEEA involvement. To minimize cost and project disruption, the oversample should be specified in tandem with overall project planning, which means that decisions about oversampling must be made by **April 1, 2018** to ensure sufficient sample for both stages of the study.

If you do not already receive information on the CBSA and want to be included on distribution lists for webinars and other information about study progress, please email Dulane Moran (dmoran@neea.org).

Memorandum – *Informational (Tier 2)*

January 25, 2018

TO: Commercial Advisory Committee (CAC)

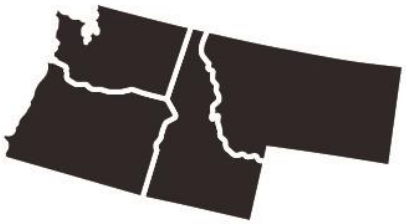
FROM: Warren Fish, Program Manager

SUBJECT: Certified Practitioner in Energy Management Systems – Online Version Now Available

Have you or members of your SEM program delivery team been wanting to obtain your Certified Practitioner in Energy Management Systems (CP EnMS), but have been reluctant to travel to Georgia Tech and spend a week in Atlanta doing it?

If that is the case for you or one of your staff colleagues, or for a contractor supporting your program, or for a customer at one of your SEM participants, we have good news. Georgia Tech is now offering an online version of this course. The course does still have a significant registration fee, but a discount is likely available through US DOE as they have helped develop this program and are assisting in its promotion. More information and a link to register is available here: https://pe.gatech.edu/courses/cp-enms-online-training

Please reach out at wfish@neea.org or 503-688-5402 if you have any questions for any additional support.



COMMERCIAL + INDUSTRIAL LIGHTING
REGIONAL STRATEGIC MARKET PLAN UPDATES

1st Quarter, 2018

OUR FOCUS

VISION

Our customers choose quality, adaptable lighting that uses every kWh to its best advantage.

MISSION

As a result of our collaboration, we maximize cost effective, long-term commercial and industrial lighting energy efficiency opportunities, prevent conflicting overlap of roles and improve coordination in the NW.

GOALS

- Efficient, quality lighting products and services dominate the market.
- Customers choose the most appropriate, efficient lighting system solution for their needs.

OUR PROGRESS

HIGHLIGHTS

1. Toward our goal of "better informed customers," a regional work group completed Good-Better-Best LED retrofit guidance for customers and trade allies that may be leveraged by all funders.
2. Completed first prototype of lamp and fixture pricing data dashboard, with an end goal of providing more real-time information to support program decision-making in this fast-moving market.
3. In Q1, the Steering Committee will lead a process to update the Regional Plan for 2018, selecting new priority strategies and actions with input from regional stakeholders and the Commercial Lighting Program Managers' Work Group.

2017 PRIORITY STRATEGIES & ACTIONS

Create and leverage tools and resources to build customer demand.

In response to the lack of consistent information to inform customers' decision-making process, the region prioritized customer guidance development for 2017. Program Managers and lighting experts from across the region, led by Michael Lane of PSE, recently completed good, better, best guidance for common LED retrofits to inform customer purchase decisions. The guidance is available for rebranding by any utility to inform customers on many aspects of LED retrofits and the many options available.

Create and begin to implement a data plan for the region.

In an increasingly data-driven world, programs often miss opportunities to leverage data to adjust strategies, drive uptake, and provide greater value to customers. The priority action for this year is to collect and communicate timely and granular lamp pricing data to inform utility programs. A data user group, composed of program managers, planners and representatives from BPA, NEEA and the RTF, developed use cases, requirements, and then reviewed a NEEA's first prototype in Q4 2017. A second prototype with expanded functionality is expected on January 31, 2018, with plans to launch version 1 for regional use by the end of Q1 2018.

Identify synergies and complementary approaches to align upstream and coordinate midstream and downstream interventions.

Supply chain leverage: The region expressed a need for greater understanding of the lighting market and the rapidly evolving market for connected lighting. NEEA developed and shared a presentation at the annual Lighting Summer Summit, revealing trends in where and how lamps are sold, how the supply chain is evolving, and implications for programs. With a more complete common understanding of supply chain dynamics, the region aims to gain better alignment on the most effective market interventions.

Midstream coordination: Multiple midstream programs operate in the region simultaneously, at times resulting in mixed market signals, overlapping efforts and administrative complexities. Since 2016, the region has prioritized midstream program refinement and implementation of midstream coordination concepts, particularly as new midstream programs launch. Seattle City Light is

nearing the launch of a midstream program that builds on many of the ideas initially developed via the 2016 midstream planning effort, and has worked in close coordination with other Puget-area funders to ensure alignment. The program design allows for low cost upstart and management, and will be available for replication by other utilities across the region. Snohomish PUD is also considering a new midstream offering. They are staying in close communication with neighboring programs to coordinate and invite participation. Once a skeleton concept is complete, the concept (and later, the results) will be shared via the Lighting PM Work Group for any other funder across the region interested in pursuing a similar offering.

CONTINUING STRATEGIES

Coordinate efforts to prioritize, advance and promote emerging technologies.

In July 2017, the Regional Emerging Technology Advisory Committee (RETAC) extracted its first analytics from the regional pipeline housed on ConduitNW, a database that allows users to see what emerging technology products and projects are underway in our region, and what outstanding questions/needs exist. The pipeline database now includes nearly 100 products and over 100 projects. Functionality and fidelity is continually being added, with most recent upgrades including refined savings estimates and descriptions of project outcomes. Several research questions were added for Advanced Lighting Integrated Controls, related to market adoption barriers, costs and savings. The RETAC is well-positioned to provide regional leaders with recommendations of actions they could take to encourage a stronger R&D pipeline in lighting and beyond.

Create and leverage tools and resources to build customer demand.

Lighting Resource Exchange: Developed in 2016, this resource is prominently featured on Conduit, but has seen low use to date.

Customer-facing Guides: Also developed in 2016, this collection of brandable trade ally sales tools will also be highlighted in the NW Lighting Network's Tools & Resources page.

Coordinate advancement of codes, including development, adoption and compliance.

Through February 5, 2018, the Oregon Building Codes Division is accepting new commercial energy code proposals. Through a NEEA coordinated energy code collaborative, several code change provisions were agreed upon. Four of these are lighting specific:
1) Reduced lighting power densities (LPDs) for multifamily (high rise) dwelling units
2) Parking lot light controls in climate zones 5 and 6 (coastal areas are CZ4)
3) lower exterior lighting power density
4) a new option path with 10% reduction of prescriptive LPDs.
In addition, the proposal takes prescriptive lighting levels to those prescribed in ASHRAE 90.1, 2016.

Washington code proposal development is progressing. There will certainly be a proposal for lighting power reduction. Proposals are now due on April 10, 2018 to the State Building Code Council. Anyone can submit a proposal. There will be two public hearings, to be announced.

Develop a pool of committed, highly trained market actors to meet demand.

Trade allies can play a critical role in driving more comprehensive, energy efficient lighting projects – including the adoption of advanced lighting systems – yet many trade allies do not have the expertise to effectively sell and install these projects. NXT Level training was developed to train lighting trade allies who design, sell and install lighting retrofits in commercial and industrial applications. The program implemented a marketing and outreach campaign in Q4 2017 in collaboration with Northwest utilities which resulted in an increase of applications by trade allies. Q4 saw 27 individuals designated for a total of 115 program to date and 5 companies designated for a total of 36 program to date.

To strengthen market capabilities related to luminaire level lighting controls (LLLC), the LLLC program is partnering with Northwest utilities to rollout Design Lights Consortium's newly developed Networked Lighting Controls training in locations throughout the Northwest in 2018. Snohomish PUD already hosted a session for its trade allies in Q4 2017.

Establish utility priorities for open standards, influence standards through regionally coordinated effort, and increase adoption of lighting control systems that employ open standards.

The Steering Committee asked NEEA to track the need for action on open standards in support of advanced lighting controls. At this point NEEA does not see interoperability as a major barrier for the adoption of advanced lighting controls. NEEA will continue to monitor compatibility and interoperability barriers to energy efficiency, as related to the adoption of advanced lighting controls.