

Together, Are We Greater Than the Sum of Our Parts?

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ABSTRACT

Energy efficiency program implementation and evaluation is increasingly expanding beyond individual utility territories. Numerous statewide and regional entities already implement programs on behalf of or in coordination with utilities. Targets under the Clean Power Plan¹ point towards a need for a broader perspective on generating and measuring energy efficiency. The Northwest Energy Efficiency Alliance (NEEA) recently launched a strategic plan to coordinate regional intervention in the non-residential lighting market. This effort seeks to synchronize regional and local program efforts with the goal of maximizing impact on the market. This strategic plan challenges programs to bring collaboration to a new level and also raises unique evaluation questions. How can regional players coordinate approaches in shared markets, and how do we measure the effects of this coordination? Can we gain efficiencies from collaborating on evaluation activities as well?

This paper discusses several aspects of the region's evaluation efforts for NEEA's initiatives and regional plan:

- Coordinating evaluation efforts across existing market transformation initiatives in the region: Can we achieve efficiencies in data collection and provide the same value to program implementers and planners? Can a streamlined and coordinated approach help preserve or even bolster market actor relationships?
- Applying program logic and market transformation evaluation principles to a regional strategy: How can we measure improvements in collaboration activities and the energy efficiency resources they aim to generate? What can top-down, market-based evaluations tell us about the strengths and weaknesses of component initiatives?

Introduction

Markets are not bound by program administrators, utility territories, individual states, or other geographic regions. Upstream market partners in manufacturing and distribution may find larger initiatives more enticing, and consistent requirements ease the burden on market actors

¹ The Clean Power Plan, finalized by the U.S. Environmental Protection Agency on August 3, 2015, is the first set of national standards for limiting carbon pollution from power plants.

looking to participate in programs across such boundaries. Furthermore, program administrators cover varying types of jurisdictions (e.g., regional, state), sometimes with overlapping geographies, and similar initiatives with varying designs may act within the same markets. In all of these cases, there is potential for confusion in the market should initiatives—or their evaluators—fail to present a unified front in the name of energy efficiency.

This paper explores NEEA’s activity in the non-residential lighting market as an example of a coordinated market-wide effort, both in implementation and evaluation. This includes discussing the importance of collaboration between evaluation teams and how these lessons may apply to evaluating collaborative implementation efforts: Not only does NEEA have multiple active initiatives in this market, they must coordinate with other program administrators in the region doing work in the same market. NEEA’s market research and evaluation (MRE) contractors must assess success on three levels: 1) individual initiatives, 2) how the initiatives are working together on the market as a whole and 3) to what extent the initiatives, other program efforts and additional regional activities are working together to transform the market.

Why do we need to collaborate?

The rise of LED product adoption is causing several shifts in the non-residential lighting market: longer lifetimes and new controls capabilities in integrated lighting solutions mean changes for the entire supply chain from manufacturers to distributors to contractors and end users (BPA 2015). The progression of LEDs is unlike previous lighting technologies, with adoption curves more akin to consumer electronics than T8 lamps. In such a quickly changing market, the energy efficiency community must find ways to stay ahead of or leverage this change and maintain initiatives and programs that will effect meaningful change in the market. The challenge becomes conducting research that is both nimble enough to provide efficient feedback yet still deep enough to capture significant shifts in the market that affect program design. NEEA saw that collaboration between evaluation and market research on specific components of the lighting market could be a way to achieve this combination—and that it could also support monitoring the strength of NEEA’s collaborative of program administrators in the region.

Currently, NEEA is active in the non-residential lighting market with three initiatives and a coordination role in regional collaboration. NEEA’s three initiatives are designed to work in harmony with other energy efficiency programs in the region while addressing specific market needs in three areas:

- The Reduced Wattage Lamp Replacement (RWLR) initiative offers incentives to lighting distributors for sales of reduced wattage linear fluorescent lamps, targeting increased efficiency in the maintenance market.
- The NXT Level initiative (formerly Top Tier Trade Ally) provides advanced trade ally training to improve lighting skill retention and reward incorporation of advanced lighting retrofit techniques.
- The Luminaire Level Lighting Controls (LLLC) initiative aims to accelerate the adoption of advanced networked lighting control systems in the region.

Figure 1 illustrates the interaction of these initiatives with each other and the non-residential lighting supply chain.

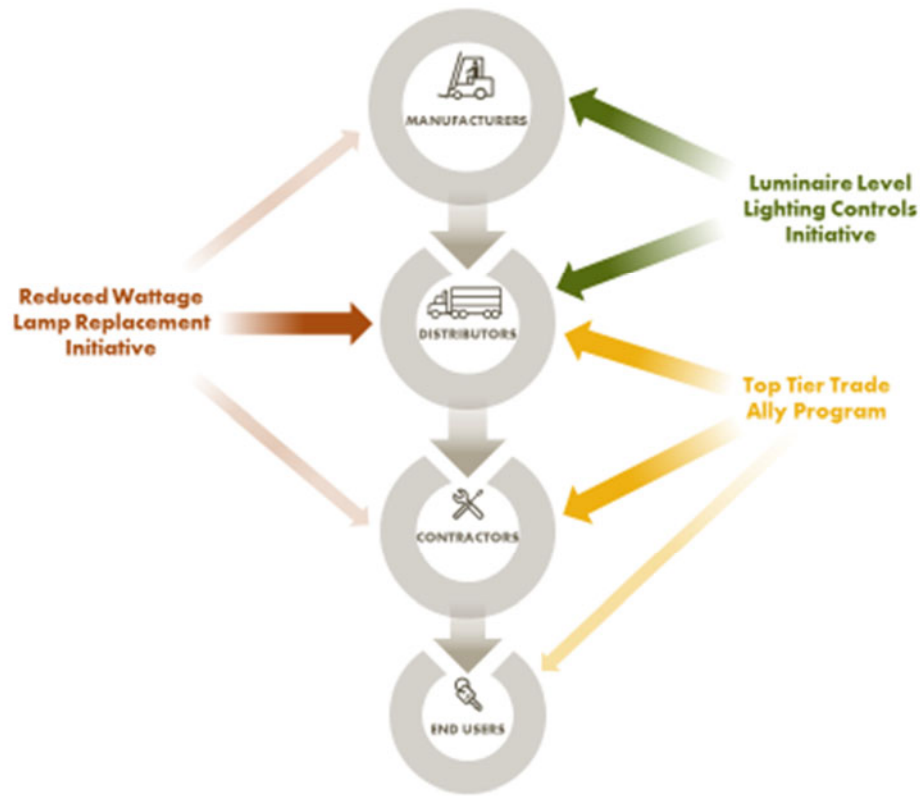


Figure 1. Influence of NEEA’s Initiatives on Actors in the Non-Residential Lighting Supply Chain (*Large arrows = strong and/or direct influence; small arrows = lesser and/or indirect influence*)

NEEA is also working with other lighting program administrators across the region to develop and implement a Commercial and Industrial (C&I) Lighting Regional Strategic Market Plan (RSMP). This collaborative includes utilities around the region and other program administrators such as the Energy Trust of Oregon. The mission of the RSMP is to “maximize cost effective, long-term commercial and industrial lighting energy efficiency, opportunities, prevent conflicting overlap of roles and improve coordination to the NW.” (Moore et al 2016)

NEEA selected two teams—comprised of four firms in total—to conduct market research and evaluation (MRE) activities for these initiatives and the C&I Lighting RSMP. Both teams brought specific expertise essential to each initiative’s place in the market and stage in NEEA’s initiative life cycle:

- NEEA selected the Navigant team (Navigant and Cadeo Group) to evaluate the Reduced Wattage Lamp Replacement Initiative (RWLR) and support and evaluate NEEA’s C&I Lighting Regional Strategic Market Plan (RSMP).
- NEEA selected the Research Into Action team (Research Into Action and Energy 350) to support the Luminaire Level Lighting Controls (LLLC) and the NXT Level Lighting

Training (NXT Level) Initiatives as NEEA was finalizing their designs, and to evaluate both initiatives' implementation.

Collaboration between evaluators: What's the counterfactual?

Multiple teams evaluating multiple initiatives and seeking information from the same limited set of market actors creates a challenge: Each initiative needs specific information from market actors, many of whom play critical roles in maintaining the success of the initiatives and broader regional efforts. For example, distributors participating in the RWLR initiative were already providing NEEA with monthly linear lamp sales data extracts, and providing more extensive data to NEEA and regional utility program operators annually—at around the same time both evaluation teams hoped to interview them about all three of NEEA's separate initiatives. Absent collaboration and communication, each team might develop interview guides specific to each initiative and begin calling already busy market actors according to their own research schedule. This poses three risks:

Market Actor Relationship Damage and Fatigue. In the Northwest and in other regions, programs are working to build longer-term relationships with market actors. This ranges from downstream programs targeting contractors or builders, to midstream and upstream partners in distribution and retail, all the way to manufacturers. These partnerships are critical to market transformation success and must be carefully formed, maintained, and not overburdened. A constant barrage of interview and data requests from different individuals on behalf of one or more efficiency program administrators would be like throwing a rock through a half-spun spider's web: the delicate relationship may be ruined and the evaluation teams will likely end up with insufficient data.

***Solution:** Coordinate research efforts to minimize requests to each market actor group by assigning one initiative to “lead” each interview.*

Unfocused Interview Guides. Even the best evaluations are often guilty of trying to ask too much in an interview: consultants and clients alike seek to get as much information as possible, taking advantage of time on the phone. Having a full 30 or 60 minute interview to ask about one initiative can lead to asking unnecessary questions, or in the worst case, failing to focus on the critical evaluation needs specific to that initiative.

***Solution:** Use a single interview guide, combining questions relevant to all three initiatives, and using an iterative and collaborative process to give priority to the initiative(s) most dependent on information from each market actor. This process requires each team doing an internal prioritization of which questions are most important for the individual initiatives to limit interview length. This results in a streamlined guide, but may leave some lower-priority questions unanswered.*

Sample Frame Carelessness. When a group of market actors is assigned to a single interviewing team, it is easy to make a list based on individual firm knowledge and start calling—with a target number of completes that may or may not be rooted in statistical significance.

***Solution:** Compare proposed sample frames in advance and assess overlap, necessary completes, and stratification needs. Use initial “lead” initiative contacts to identify proper*

contacts for other initiatives as appropriate. Having multiple teams involved in this effort also increased the number of known contacts and relationships for each market actor sample frame.

By focusing on these solutions, the teams were able to avoid conducting separate research that could result in disjointed or conflicting findings and recommendations, and could damage market actor relationships. Each research team obtained enough primary data through this approach to draw meaningful conclusions about the individual initiatives.

Making collaboration work

Any team—and especially a team of teams—takes time to form, develop and coalesce into a well-functioning operation. Good coordination requires putting in work up front to lay a framework for communication and operations over the course of an effort, but this initial development work often feels burdensome, cumbersome, and like far too many cooks in the kitchen. Several factors allowed NEEA and its MRE teams to coalesce and move past this phase relatively efficiently:

- 1) **Recognition and agreement of where priorities lie.** One of the first steps was for the teams to get together and agree on which initiatives were most reliant on interview findings from each market actor group. This allowed the group to select one team to lead the interview guide development, recruiting, and timeline management for each market actor group. Having a clear lead for each group helped to streamline the process, avoided confusion over the boundaries of each team’s responsibilities, and helped each team prioritize which questions to include in the final interview guides.
- 2) **Single coordination summary document.** The teams used a coordination workbook on NEEA’s SharePoint site to compare timelines, interview targets, and evaluation objectives. This workbook eventually served as a resource for NEEA as well, providing a single go-to document that summarizes all research activities.
- 3) **Easy access to shared documents.** The teams saved all working and final versions of interview guides, survey instruments, and other initiative documents on NEEA’s SharePoint site, ensuring all team members could readily review and revise the most current versions.
- 4) **Regular check-ins.** The teams held bi-weekly check-ins to address any upcoming deliverable coordination and iron out new wrinkles that arise from each stage of the process. On alternating bi-weeks, each firm held independent check-ins with NEEA evaluation staff to clarify needs for their individual initiative and to review any issues that arose during the collaborative check-in the week prior.
- 5) **Information sharing.** The teams shared interview notes and findings, via email and on bi-weekly coordination calls, to ensure each evaluation effort had the most complete information possible. The teams also informed one another as soon as they posted a draft or final deliverable on NEEA’s SharePoint. Due to the staging of interviews with different market actors throughout the evaluation period, findings from one market actor interview often prompted revisions in questions for upcoming market actor interviews. This created a more comprehensive set of findings as important information gaps from some market actors were filled by interviews with others.

- 6) **Flexible timing.** Since several market actors were being interviewed by one firm for multiple initiatives, NEEA had to be flexible in their timing for data to be collected, analyzed, and synthesized. Allowing the group to function cohesively and have time to analyze data from one another meant allowing deliverable dates to fluctuate depending on interview dates or follow-up requests.

NEEA and the teams have observed the following benefits and lessons learned to date:

- Selecting multiple teams with specialized expertise allows clients to be flexible in choosing contractors
- Each of the teams have had to shift expectations around the level of inter-team communication and account for other initiative's schedules in the planning process
- It is in everyone's best interest to get together up front and agree on where each team will take the lead on overlapping tasks, based on client and initiative priorities
- Regular and open communication across teams and with the client is critical for maintaining smooth collaboration
- Initiatives' research efforts can support each other and provide more comprehensive findings with enough planning and coordination up front
- Identifying a single contractor to coordinate collaboration efforts is critical to keeping the effort together over time

How does this apply to evaluating a collaboration?

The goals of this MRE evaluation collaboration parallel NEEA's broader role in coordinating and evaluating collaboration of the C&I Lighting RSMP's implementation. The regional strategy combines many other Northwest activities with the NEEA's initiatives under a common umbrella, and uses collaborative strategies to reach mutual goals. NEEA's evaluators must work together to fill in details specific to each initiative that also flesh out the broader picture of how these initiatives are acting together on the market—and whether that updated picture still supports the direction of each initiative. In evaluating the RSMP effort, Navigant must conduct a similar analysis of how other regional efforts are affecting the market—and whether they together support the overall RSMP collaboration strategy.

NEEA will need to incorporate the MRE findings with findings from throughout the region to assess the effectiveness of the collaborative RSMP approach and offer suggestions for enhancing specific RSMP strategies. Much as NEEA relies on its collaborating evaluation teams to connect the dots across individual initiative evaluations, a key component of evaluating the RSMP will be to review individual evaluation and market research efforts conducted by RSMP participants: What have individual program administrators achieved and learned, and how do those achievements and learnings shape the region's understanding of its collective market progress? In order to stay relevant, this review and sharing must occur not just in final reporting and annual updates, but also through ongoing discussion—and collaboration—between program

administrators and their evaluators across the region. Thus, the collaborative lessons learned to date among NEEA’s initiative evaluators can provide relevant insights to the future and ongoing success of the RSMP collaborative and its evaluation.

Guiding principles for evaluating collaboration

Evaluating collaboration effectively requires three elements: Assessing how effectively collaborative members are working together, determining whether the collaborative is meeting its larger goals for market change, and assessing the collective impact of this market change (energy savings). Much like a market transformation initiative, collaboratives can use a logic model and theory of change to document goals and market progress indicators (MPIs). This theory of change (Figure 2) is that **effective collaboration** leads to the ability to drive **market progress**, which results in **collective impacts** (efficient product adoption and energy savings).

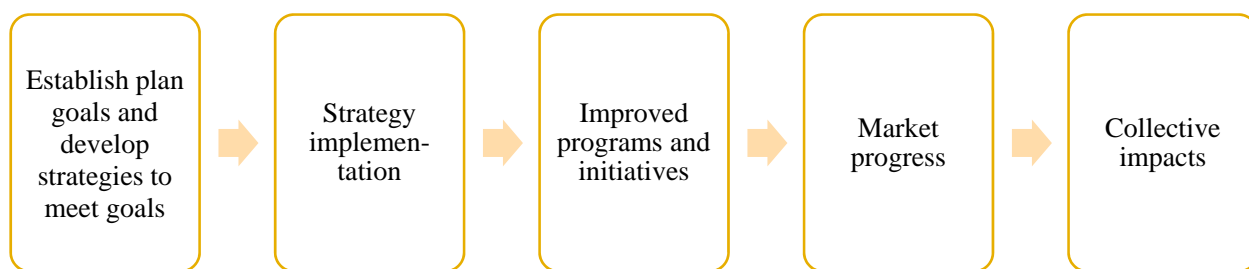


Figure 2. Theory of Change for RSMP Collaboration

While it is likely impractical to attribute energy savings specifically to collaboration, NEEA can use research on the health of the collaborative, examples of collaboration success and broader market indicators and trends to infer whether the RSMP has a positive role supporting changes observed in the market that create energy savings. To this end, Navigant’s evaluation approach for the RSMP has three main components focused on each of these areas:

- 1) **Evaluating the progress and effectiveness of regional collaboration on the plan.** This task has two parts: First, Navigant is reviewing detailed notes from the RSMP steering committee meetings as well as strategy working group meetings to capture anecdotal evidence of successful (or unsuccessful) collaboration and document these and any recommendations for NEEA in real time. Second, the team is interviewing a subset of RSMP participants to understand the state of collaboration in the region before the RSMP and how these dynamics have changed over time since NEEA launched the RSMP. These interviews and the ongoing note review will leverage an existing framework for assessing barriers to collaboration developed by Morten T. Hansen, adapting the framework to probe into underlying barriers specific to the Northwest efficiency industry. (Morton 2009)
- 2) **Evaluating the market progress resulting from plan strategies and implementation activities.** Navigant is working with NEEA to define MPIs for the high-level RSMP goals and individual strategy groups are defining their own MPIs.

The team will leverage the rich body of regional research on the lighting market to assess these MPIs and determine whether NEEA should conduct any additional research.

- 3) **Tracking trends in overall regional impact over time.** Regional resources again play a role here: the team will review and analyze existing research on energy savings in and out of regional programs and assess other quantitative trends such as program cost-effectiveness. This effort will not include any attribution to collaboration and will instead focus on recognizing the collective effort of all participants in moving the needle on these trends.

The RSMP has established five long-term goals and NEEA has begun drafting a logic model for the RSMP to outline how the ongoing strategies and activities will support collective achievement of these goals. Navigant will work with NEEA to refine MPIs for these goals and review each strategy planning and implementation team's MPIs. As noted above, assessing these MPIs will require pulling together extensive existing research and potentially collaborating with other evaluation teams to collect additional primary data (e.g. through market actor interviews).

Conclusions

The strengths of the collaboration among NEEA's evaluation teams are all elements that NEEA must look for in assessing the strength of its own RSMP collaborative. These strengths include consistent and clear communication, agreement up front on member responsibilities and priorities, acceptance of expanded communication and schedule accommodation, and effective data sharing. The evaluation teams' experience has shown that together—with the right ingredients and commitment—we can be greater than the sum of our parts. The challenge will be for the region to follow the same path and take this collaboration to the next level.

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