

Memo

To: **EEAC**
From: **Eric Belliveau and the EEAC Consultant Team**
Date: **October 10, 2019**
Subject: **2019 Q2-Q3 Consultant Team Summary Report**

The Consultant Team is pleased to provide a summary to the Council of our activities.

This report serves as a summary of key activities, accomplishments, and deliverables completed by the Consultant Team during the 2019 Q2 (April-June) and 2019 Q3 (July-September) timeframes. It also provides a description of work expected to take place in the last quarter of the year (October-December).

SUMMARY OF MAIN TASKS COVERED IN EACH SECTION OF THE REPORT

EM&V

- Developing specific studies responding to language in the Three-Year Plan term sheets
- Planning for studies of the 2019 Active Demand Response programs, C&I On-site study, C&I Lighting Market Model, and Residential Baseline study
- Finalizing EM&V reports and posting to the EEAC website
- Presenting at the April Council meeting

PLANNING & ANALYSIS

- Reviewing Q1 2019, Q2 2019, and KPI Results
- Reviewing 2016-2018 Term Report results and Presenting to the Council
- Drafting a document describing the EEAC Consultant Team Role
- Participating in ongoing discussions with ISO New England's Energy Efficiency Forecast Working Group and FCM Forecasting Group
- Reviewing PA Demand Demonstration projects
- Participating in ongoing strategic planning discussions

RESIDENTIAL AND LOW INCOME

- Reviewing residential Key Performance Indicator data
- Preparing and delivering presentations to the EEAC on Low Income and Residential topics
- Discussing progress on implementing Plan commitments with the Residential Management Committee
- Reviewing and commenting on draft residential EM&V work products and ongoing coordination with EM&V Advisory Group members

COMMERCIAL AND INDUSTRIAL

- Reviewing C&I Key Performance Indicator data
- Calculating potential stranded saving in the linear lighting market and developing a whitepaper on the future of C&I lighting
- Reviewing and refining C&I Key Performance Indicators
- Working with PAs and Evaluators to redesign the C&I New Construction program

TECHNICAL SERVICES

- Continuing regular administrative functions, including EEAC meeting minutes and website maintenance and document uploads

EVALUATION, MEASUREMENT & VERIFICATION

Oversee EM&V Planning

The EM&V Group focused much of its planning activity during Q2 on the development of specific studies responding to language in the Three-Year Plan term sheets calling for EM&V to research non-participants, winter peak issues, and passive house impact accounting methods. These study-specific planning efforts followed the formation of a working group and strategic planning in the first quarter. By the end of Q2, the majority of the planned individual studies had reached the implementation stage.

The EM&V Group also continued to move individual studies called for by the SEP through the detailed study planning process and toward the implementation stage.

Finally, the EM&V Group planned studies of the 2019 Active Demand Response programs.

Key planning activities in Q3 included the development of a major new C&I on-site study intended to meet a variety of information needs including the potential studies to be performed in connection with the 2022-2024 Three-Year Plan; planning of updates to the C&I lighting market model, which helps both to drive savings claims and to provide insights into the timeline for transformation of the C&I lighting market; and laying the groundwork for the latest phase of the residential baseline study.

Oversee EM&V Implementation

Roughly 40 studies were in the implementation stage during the course of Q2. These included a mix of studies laid out in the Strategic Evaluation Plan or called for by the term sheets, evaluations of 2019 ADR efforts, impact evaluations intended to support the Term Year Report, and process evaluations intended to support program implementation efforts. A comprehensive status report on the current status of the Massachusetts EM&V program can be found at <http://ma-eeac.org/studies/>.

Roughly 45 studies were in the implementation stage during Q3.

Key activities for the EM&V group that are anticipated for Q4 include overseeing the completion of the studies conducted in response to the Term Sheets, and overseeing miscellaneous other in-progress studies.

Oversee EM&V Reporting

Around 15 EM&V reports were finalized and posted on the website during Q2, including several major impact evaluations intended to support the 2016-2018 term year report filing, and evaluations of the summer 2018 Active Demand Reduction demonstration projects.

A key EM&V reporting activity in Q3 was the completion of numerous reports (both impact evaluations and other types of studies) timed to feed into the Term-Year filing in August.

In Q4, the Group will oversee reporting on the evaluations of Summer 2019 ADR activities.

Council and Stakeholder Engagement

The EM&V Group's Council engagement activities focused on two presentations for the April Council meeting, providing a broad update on the status and results from recent EM&V activities. We also engaged with DOER through monthly overall check-in calls and discussions on issues regarding individual studies and managed the process of posting completed EM&V studies on the Council's website.

During Q3, the EM&V Group engaged with DOER through monthly overall check-in calls and discussions on issues regarding individual studies, and also managed the process of posting completed EM&V studies on the Council's website.

PLANNING AND ANALYSIS

Participate in EEAC Meetings; Brief and Support the Council

In Q2 and Q3, the P&A Advisory Group prepared for, attended, and provided technical support during the meetings of the EEAC and coordinated through Executive Committee each month. The Group coordinated with DOER as chair of the Council on a weekly basis and briefed individual Councilors in advance of the EEAC meetings and as needed during the periods between meetings. Also, the P&A Advisory Group assisted with the development, planning, and coordination of potential topics for future EEAC meetings. EEAC Meeting and Council support is an on-going and regular monthly task area.

Provide Technical Analysis

In Q2, the Consultant Team reviewed the PAs' Q1 report and analyzed results. The Team developed a presentation for the May and June EEAC meeting that discussed the new quarterly report format, reporting observations related to Council priorities, and the new KPI metrics which were reported for the first time.

In Q3, the Planning and Analysis Group spent a significant amount of time reviewing the results of the 2016-2018 Term report and the PAs' Q2 report and associated KPI data. The Group developed a presentation for the August EEAC meeting on our findings. In Q4, the Group will develop a memo that summarizes the information provided in the presentation as well as lessons learned from the 2019-2021 planning process. This memo will serve as a leave-behind for the Council and will inform the next Three-Year Plan.

Other Q3 tasks included, participating in ongoing discussions with ISO New England's Energy Efficiency Forecast Working Group, developing a Consultant Team Work Plan for the remainder for 2019, reviewing the Demand Demonstration projects as they were implemented, and developing a draft document summarizing the role of the Consultant Team within the Council structure.

This document will be presented to the Council in Q4. This will be an on-going task in Q4.

In Q4, many of these tasks will be on-going. We expect to continue our work with ISO New England's Energy Efficiency Forecast Working Group, and to present the Consultant Team role document to the Council. The Group will also work with the PAs to better understand the results of the demand demonstration projects and, due to the long lead times, work with the PAs on meeting the MW goals associated with demonstration project slated for the summer of 2020.

The Planning and Analysis Group also expect to support the Council with developing priorities for 2020 in Q4.

RESIDENTIAL AND LOW INCOME SECTORS

Planning, Technical, Analytical, and Strategic Support for Implementation of the 2019-2021 Plan

In Q2, Caroline Hazard joined the Residential Advisory Group. She brings more than 20 years of energy efficiency program consulting experience to her work for the EEAC, including work advancing the initiatives of the U.S. Environmental Protection's ENERGY STAR program and the U.S. Department of Energy's Building Technologies Program. Caroline's work with the Group will focus on analysis, research, and presentation of best practices and implementation solutions for residential program delivery and engagement of heating and cooling supply chain actors.

During Q2, the PAs reported the first set of quarterly key performance indicator (KPI) data pursuant to commitments in the 2019-2021 Plan Term Sheet. There are three residential KPIs, one of which was not agreed to in time to support reporting in Q1. The team reviewed the data and conducted follow up discussions with the PAs that confirmed that the data collection mechanisms for the new KPIs for the PAs and their vendors are still evolving for the measure level KPI#2 and energy optimization KPI#3.

The Group also participated in regular discussions with representatives from the PAs and MAPC regarding development of the PAs' Municipal and Community Strategy. We also attended the stakeholder meeting the PAs hosted in June to collect input for the strategy.

At a meeting in May, the Consultants, DOER, PAs and LEAN met to discuss status of efforts to increase participation by moderate income customers. The Group analyzed opportunities to increase heating equipment incentives and provided the information to the PAs. The PAs have indicated they are assessing this strategy further.

The Group's Low Income Sector work included meetings with LEAN and initial work to develop an internal work plan specific to this sector. We also compiled best practice suggestions for serving customers with limited English proficiency.

The Group also reviewed the PAs' Q1 report and data dashboards for this period, met regularly with DOER staff, and provided support to Councilors on an as needed basis.

In Q3, the PAs reported two sets of residential data: the quarterly KPI data for Q2 data and the biannual data for moderate income participation, heat pumps and participation by zip code reported pursuant to the Term Sheet. The Group spent some time reviewing these data, but is still waiting for responses from PAs to questions we posed to the PAs before conducting a more complete analysis.

The PAs published their draft Municipal and Community Partnership strategy in Q3, and we continued to participate in regular meetings with the PAs and MAPC to discuss progress toward rollout.

The Group also finished drafting its Low Income Sector work plan for the remainder of the year.

The primary focus of the Group in Q4 will be developing a white paper articulating our vision for the residential program moving forward. We will also contribute to the full Consultant Team's 2016-2018 Term Report analysis.

Participate in Residential Management (RMC) and Council Meetings

In Q2, the Residential Advisory Group researched, developed, and delivered significant presentations to the EEAC at its May (on Income Eligible/Low Income Sector) and June (Residential Sector) meetings. Preparations for these meetings also included review and comments on LEAN and PA presentations and Councilor briefings. The Group also contributed to the larger Consultant team's presentation on the PAs' Q1 report and KPI data.

The Group prepared for and participated in five RMC meetings in Q2, which included discussions of the PAs' progress in meeting Plan commitments regarding increasing services for customer intake and program enrollment, the status of the PAs' assessment of use of alternative financing methods, the use of contractor lists to assist customers seeking to install new efficient heating equipment, goals for the PAs' workforce development plan, and heat pumps.

In Q3, the Group devoted significant time to preparing for the PAs' residential update to the EEAC at its September meeting. This included reviewing the PAs' drafts, preparing comments, and preparing for and participating in Councilor briefings.

RMC meetings this quarter included discussions between the Group and PAs related to behavior programs, the Multifamily Census evaluation report, New Homes Program, and the PAs' EEAC presentation.

In Q4, the Group will continue to discuss various topics with the RMC twice each month. The Group will also contribute as requested by DOER to work related to the November and December EEAC meetings.

Coordinate with EM&V Efforts and Incorporate Feedback from EM&V Studies into the Programs

In Q2 and Q3, the Group continued its monthly coordinating calls with the EM&V Advisory Group to exchange information and discuss priority evaluation issues and implications for implementation. It also reviewed and provided comments on drafts of several in-progress residential evaluation outputs, including on Passive House, Lighting Delta Watts, HES realization rates, review of HARDI scope of work, Residential Customer Profile Study, and finalization of the Low Income Process Evaluation.

In Q4, the Group will continue its coordination with the EM&V Advisory Group. It will review draft EM&V work products as they become available, including those related to the Non-Participation Study.

COMMERCIAL AND INDUSTRIAL SECTOR

Technical support for program strategies and segmentation

The C&I Advisory Group provided program support in several ways during Q2 quarter of 2019, in addition to normal program and savings monitoring, and EEAC support. These included:

- Developed a framework for Energy Optimization for small, medium and large customers.
- Reviewed and refined the Key Performance Indicators data from the PAs concerning lighting controls, small business comprehensiveness, and custom HVAC projects.
- Participated in the redesign of the new construction program to make it more performance focused.
- Shared strategy maps with the PAs to encourage visualization of a transformed market, and how to lay out a path to get there.
- Reviewed the unsolicited proposal process, which does not appear to have been used for three years.
- Discussed the effectiveness of the Eversource Customer Engagement Platform (CEP).
- Reviewed materials, performed research and analysis, and shared comments regarding: ESPO, SEM/CEI, stranded lighting savings, Illuminate Mass, lighting strategy, energy/lighting as a service.

In both Q2 and Q3, these activities included:

- Reviewed 2017 C&I Customer Profile Study (published April 18, 2019) to identify key trends in C&I market relevant to current 3-year plan efforts.

In Q3 these activities included:

- Drafted a whitepaper on the future of C&I lighting.
- Met with Power Options to advise how they may better collaborate with the PAs.
- Reviewed a report on energy storage.
- Reviewed progress on PA's Energy Optimization savings tools (small commercial, custom express).
- Informed C&I PA staff of relevant evaluation studies underway that they may want to provide input on.

In Q4, the C&I Group will contribute to the following activities:

- Complete the future of C&I lighting white paper for the EEAC.
- Work on a 2016-2018 Three-Year Term Report memo.
- Work on data and KPI issues.
- Continued work on the Energy Optimization framework.

Identify and Review New Technologies

The C&I Advisory Group identified several opportunities that could increase savings and overall program performance in Q2. These include a packaged air exchange and heat pump technology, a liquid desiccant dehumidification technology, and a rooftop heating/cooling controls retrofit technology. The Consultants also worked on review of appropriate baselines for energy optimization measures.

Coordinate with EM&V Efforts and Incorporate Feedback from EM&V Studies into the Programs

There was a significant amount of activity in the EM&V area during the Q2 timeframe. The C&I Advisory Group reviewed and provided feedback on several studies, including review of evaluation studies on custom electric projects, lighting on-site results, new construction baselines, and baselines for upstream occupancy sensors. In addition, the consultants reviewed workplans for planned studies on energy optimization and non-energy impacts. The consultants participated in the monthly Baseline Advisory Group (BAG) calls.

Participate in CIMC and Council Meetings

The purpose of these meetings is to gather relevant program information and to share best practices from other states and countries. The C&I Advisory Group has discussed the following topics with the PAs at the CIMC meetings:

- **Q2**
 - Energy Management Information Systems (EMIS); EMIS, consisting of one or more meters with software to make sense of and provide context for the meter data, has been a proven to help save energy by making energy use more visible. The consultants asked what the PAs were doing

- with respect to support for EMIS, and shared information from other states.
 - Upstream lighting preapproval limits: The previous limits favored the installation of TLEDs over fixtures, so the Consultant Team suggested changing the limits to flatten the playing field. The PAs changed the limits for TLEDs and LED fixtures as the result of these discussions.
 - Workforce development efforts by the PAs: The consultants asked for an update on current offerings to the workforce, but also what was being done to educate C&I customers.
 - Equipment and Systems Performance Optimization (ESPO): ESPO is the new name for the former Pay for Performance program, which focusses on retro-commissioning. As part of the new ESPO initiative, there is a progression of deeper engagement from prescriptive tuning measures to full retro-commissioning. The Consultants asked for an update on how the program was designed to work and provided suggestions.
 - KPIs: Discussion of the first set of Key Performance Indicators from the 1st Quarter of 2019.
 - Stranded lighting savings: The Consultants calculated the potential for stranded lighting savings should a TLED be installed instead of a linear LED fixture or a LED Fixture with integrated controls. KPI #4 is designed to track the number of projects that include controls. The Consultants shared the calculations of the potential for stranded savings with the PAs and solicited feedback.
 - Heat Pumps and Variable Refrigerant Flow heat pumps: Discussion of the PAs current thinking and activities with respect to promotion, education, baselines and fuel switching, incentives, and other funding streams.
 - Vendor engagement: Discussion of marketing and communications, how the PAs monitor vendor performance and create feedback loops to share best practices and new knowledge, the Main Streets approach, and how vendor effectiveness is measured and tracked.
- **Q3**
 - Mass Save interactions with Municipalities: discussion of how PAs integrate city/town efforts through Green Communities, Mass Energy Insights, Main Streets events and other program activities.
 - Financing: Discussion on making the business case for EE to customers and discussion of various financing options for C&I customers.
 - Updates on gas programs: review of what gas measures are successful and sharing of gas measures being implemented in other jurisdictions.
 - HVAC savings: Discussion on how the PAs are driving additional HVAC savings through new program offerings (Ex – ESPO), and how the PAs can build on the positive momentum of HVAC gas savings through Upstream and other pathways.
 - Upcoming Main Streets Events: Discussion on the range of Main Streets Events planned for National EE Day (Oct 2nd), as well as a review of effectiveness from past Main Streets Events compared to standard Turnkey program savings.
 - C&I Lighting: Review of key studies and data points used in the Consultants' draft C&I lighting white paper including – the DNV GL C&I lighting market model, Outyear Factors and Equivalent Measure Life, and examples from Southern California Edison's Sustainable Office Lighting Pilot Program Evaluation.

In October of Q4, the C&I Advisory Group will develop and deliver a presentation to the EEAC summarizing the analysis and discussion included its whitepaper on the future of C&I lighting.

TECHNICAL SERVICES

Produce Minutes from all EEAC Meetings

The Consultant Team is charged with producing draft and final meeting minutes for each EEAC monthly meeting. The Team produced draft minutes for the April, May, June, July, and August EEAC meetings and forwarded them to the EEAC Chair. These minutes along with all documents and presentations distributed at the April-September meetings have been posted on the EEAC website.

EEAC Website Upgrades, Revisions & Maintenance

Consultant Team staff continue to manage the updated website on a day-to-day basis. In April-September this included posting materials for EEAC meetings and other meetings that occurred during the month.

For the April-June time period, there were:

- 3,827 sessions
- 1,860 users: 72% new visitors and 28% returning visitors
- 10,219 page views with an average of 2.7 page views per session

For the July-September time period, there were:

- 3,745 sessions
- 1,762 users: 74% new visitors and 26% returning visitors
- 9,720 page views with an average of 2.6 page views per session

Consultant Team Quarterly Reports

In April, the Consultant Team produced a report of its activities from January 1, 2019 to March 31, 2019.

In October, the Consultant Team will produce a report of its activities from April 1, 2019 to September 30, 2019.