

WORKSHOP #3: C&I EXISTING BUILDINGS

▶ December 1, 2020

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C&I EXISTING BUILDINGS OVERVIEW



- ▶ **Focus is on initiatives that help existing medium and large non-residential customers make energy efficiency upgrades that reduce electricity and fossil fuel use.**
- ▶ **Existing C&I customers are responsible for 38% of total energy consumed in MA and, as a group, are one of the largest contributors to greenhouse gas emissions in the Commonwealth.**
- ▶ **C&I retrofits are a source of significant savings in the 2019-2021 plan.**
 - 79% of total electric and 34% of total gas savings across the entire portfolio
 - For the C&I sector retrofits are expected to deliver 93% of electric, 77% of gas savings

BACKGROUND/CURRENT STATUS

- ▶ **The C&I lighting market is expected to complete its transformation to LEDs in the next several years.**
 - New lighting products installed in C&I buildings without controls reduce opportunity for deeper energy savings.
- ▶ **Significant HVAC opportunities exist for electric and gas. The custom and interactive nature of HVAC systems makes capturing savings challenging, requiring a more holistic approach.**
- ▶ **More savings opportunities from industrial process projects have been identified than implemented, indicating barriers remain to achieving potential.**
- ▶ **As our electric grid becomes cleaner, CHPs net greenhouse gas emissions will produce net increases in emissions.**

WORKSHOP TOPICS



- ▶ **Four topics will be addressed in the workshop to focus on ways in which C&I retrofit initiatives can lead and innovate in 2022-2024:**
 - I. Transition support for lighting to controllable technologies
 - II. Increase HVAC savings for all commercial customers
 - III. Invest in new opportunities for industrial/process savings
 - IV. Re-assess CHP incentives to align with long term climate goals

C&I RECOMMENDATIONS: TRANSITION SUPPORT FOR LIGHTING TO CONTROLLABLE TECHNOLOGIES

- 1. End support for non-dimmable TLEDs starting in 2022 across all program pathways;** To receive support, dimmable TLEDs should be installed and commissioned to deliver some combination of initial wattage tuning, daylight harvesting, occupancy controls and dimming capabilities. Refocus upstream product offerings on “smart” dimmable and controllable TLEDs and DLC qualified luminaire-level lighting controls.

C&I RECOMMENDATIONS: TRANSITION SUPPORT FOR LIGHTING TO CONTROLLABLE TECHNOLOGIES

- 2. Push customers towards luminaire-level lighting controls** wherever possible using performance lighting and other more comprehensive pathways. Improve the ease of participation for the Performance Lighting Plus program, particularly for existing buildings.

C&I RECOMMENDATIONS: TRANSITION SUPPORT FOR LIGHTING TO CONTROLLABLE TECHNOLOGIES

- 3. Continue to invest in lighting controls training for contractors/installers and customers;** expand training efforts to include commissioning for contractors/installers, sales strategies for distributors/contractors, operation and maintenance best practices for facility managers, and customer education on energy and non-energy benefits of controls.

C&I RECOMMENDATIONS: EMPHASIZE HVAC SAVINGS FOR ALL COMMERCIAL CUSTOMERS

- 4. Increase electric and gas HVAC savings from existing buildings by improving realization rates, increasing participation, addressing system optimization, providing benchmarking services, commissioning projects from concept through operations and including envelope upgrades.**

C&I RECOMMENDATIONS: EMPHASIZE HVAC SAVINGS FOR ALL COMMERCIAL CUSTOMERS

- 5. Promote electrification projects**, including conversions to Variable Refrigerant Flow (VRF) and/or ground-source heat pump systems paired with Dedicated Outdoor Air Systems (DOAS).

C&I RECOMMENDATIONS: EMPHASIZE HVAC SAVINGS FOR ALL COMMERCIAL CUSTOMERS

- 6. Undertake a Deep Energy Retrofit Pilot including working with customers to leverage planned replacements to achieve cost effective deep energy retrofits. Engage customers with significant real estate portfolios to identify potential buildings and undertake integrated design with scenario modeling, lifecycle and financial analysis to identify the optimum investments. Use the pilot to identify market actors with the skills best suited to delivering successful projects and document project characteristics in promotional materials.**

C&I RECOMMENDATIONS: EMPHASIZE HVAC SAVINGS FOR ALL COMMERCIAL CUSTOMERS

- 7. Expand delivery of services and savings relating to building automation and energy management information systems including legacy system upgrades and replacements and portfolio optimization. Increase the use of independent third-party commissioning in the existing building sector to improve savings.**

C&I RECOMMENDATIONS: EMPHASIZE HVAC SAVINGS FOR ALL COMMERCIAL CUSTOMERS

8. **Undertake an EMIS pilot** to demonstrate the costs and benefits of EMIS and monitoring-based commissioning.

C&I RECOMMENDATIONS: INVEST IN NEW OPPORTUNITIES FOR INDUSTRIAL/PROCESS SAVINGS

- 9. Continue to identify and eliminate barriers that are preventing the implementation of projects and savings already identified through the Industrial Initiative including project following up on opportunities, sales training and using cash flow analysis.**

C&I RECOMMENDATIONS: INVEST IN NEW OPPORTUNITIES FOR INDUSTRIAL/PROCESS SAVINGS

- 10. Expand Strategic Energy Management (SEM) to a full program offering for all industrial customers.**

C&I RECOMMENDATIONS: INVEST IN NEW OPPORTUNITIES FOR INDUSTRIAL/PROCESS SAVINGS

- 11. Identify niche customer segments where there are still appreciable non-lighting savings opportunities and construct targeted initiatives to address these markets.**

C&I RECOMMENDATIONS: RE-ASSESS CHP INCENTIVES TO ALIGN WITH LONG TERM CLIMATE GOALS

- 12. Re-asses incentives for natural gas fueled CHP and consider reducing or eliminating all but the most energy-intensive market segments as necessary to meet long term climate goals.**

C&I RECOMMENDATIONS: RE-ASSESS CHP INCENTIVES TO ALIGN WITH LONG TERM CLIMATE GOALS

- 13. Complete a dedicated CHP impact evaluation no later than 2022** that also includes an update to free-ridership, spill-over and net to gross ratios. Study new and replacement systems separately. Implement programmatic changes based on study results.

C&I RECOMMENDATIONS: RE-ASSESS CHP INCENTIVES TO ALIGN WITH LONG TERM CLIMATE GOALS

- 14. For all CHP projects, conduct detailed lifecycle emissions analysis** using an impartial and agreed upon forecast of ISO New England's emissions intensity between now and 2050. Also conduct a project-by-project economic analysis that determines whether a given CHP project needs Mass Save support to generate a 5-year positive cash-flow.

THANK YOU

Questions?

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