MA ENERGY EFFICIENCY ADVISORY COUNCIL

SUBCOMMITTEE EXAMINING PANDEMIC EFFECT ON C&I VENTILATION

K-12 Schools Update

▶ February 24, 2021

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BACKGROUND

- **Ventilation identified as a key health and safety element for safe reopening of schools and rapid changes in ventilation practices limited time to conduct studies**
- **In August 2020, a group of stakeholders was assembled to develop interim policy guidelines for energy savings calculations that support K-12 school efforts**
  - PA Implementers
  - PA evaluators and engineers
  - Evaluation Contractors
  - EEAC Consultants
- **Core Objectives**
  - Ensure impact accounting rules didn't form an undue barrier to proactively responding to urgent needs posed by pandemic
  - Provide PAs ability to offer K12 schools additional cost-effective energy efficiency opportunities that improve indoor air quality

SIMPLE MEASURES

- **Portable Air Purifiers**
  - Existed as a residential measure, modified to C&I to meet high demand from K-12 schools
  - Point of sale, per-unit incentive
  - Shortened measure life to 3yrs for C&I (vs. 9yr for Res)
- **Electronically commutated (EC) motors and Classroom Unit Ventilators**
  - EC motors already a C&I measure, but concerns about age of existing classroom unit ventilators limiting ability to support measure
  - Recognizing that many K-12 school's unit ventilators run well past useful life:
    - Extended treatment of "retrofit" for units <20yrs old
    - Blended baseline "end-of-useful-life" for units >20yrs old

CUSTOM BASELINES

- **Guidelines developed for custom projects w/ site specific baselines to reduce some amount of PA uncertainty and EM&V risk**
- **Allows for site-specific changes in emergency baseline operational characteristics, some of which will not be subject to ex-post EM&V risk**
- **Applies to projects developed prior to December 31, 2021**
- **Emergency period assumed to last until December 31, 2022**
  - consistent w/ other EMC decisions
  - agreements to be revisited Fall 2021 as w/ other EMC decisions made in response to COVID

CUSTOM BASELINES

- **Varying treatment for different operational changes**
  - Easily-Reversible
    - Assumed to be removed after emergency period
    - Example - opening windows or extending ventilation schedules
  - Hard-to-Reverse
    - May persist past emergency period but subject to normal EMV
    - Example - increase mechanical ventilation by adjusting air intake damper positions
- **Portable vs. permanent measure**
  - For plug in equipment - assume equipment will be removed after the emergency period.
  - For hardwired equipment - assume equipment will be used for full measure life with a standard efficiency baseline
- **Established default of ASHRAE 62.1 ventilation post pandemic**

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THANK YOU

Questions?

- June 17, 2020

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K-12 Schools – Activity Facts/Figures

K-12 School HVAC Projects

- Cape Light Compact
  - 2 completed, 19 in process
- Eversource
  - 20 audits - 7 completed, 13 in process
  - ~ 6,500 Energy Star Air Purifiers incentivized for 19 cities/towns
- National Grid
  - 41% increase in # of projects in 2020 compared to 2018/19 (29 versus 21)
  - 2021 project pipeline already at 70% of 2020 total
  - Savings up 16% in 2020 to 1.8 Mil KWh

Common Project Types

- Portable Air Purifiers
- Motor Upgrades to compensate for higher MERV filters
- Ionization as substitute to air purifiers

K-12 Schools – Activity Notes/Comments

Installer/Contractor Feedback and Challenges to Address

- Cost considerations/concerns are really acute – no/or limited capital budget to invest – being consumed by more immediate health & safety cost increases – "biggest complaint"…the funding they do have has to be reallocated to these unexpected COVID-related costs
- Not seeing material uptick in HVAC/ventilation projects thus far despite expectations – interest, but little action to date
- Municipalities/schools most focused on Green Communities grant process/program
- Sense that customers are overwhelmed with other priorities due to COVID-19 and "trying to just keep up with everything"
- Vast majority of interest is in operational changes – increasing outside air, increasing MERV of filters, installing portable air filtration
- Controls contractors overloaded – making adjustments to existing systems – barrier to incremental EE work

K-12 Schools – Looking Ahead for 2021

- Notwithstanding customer and contractor challenges, we are looking to capture additional EE opportunities in 2021
- PAs and Consultants continue to explore additional adjustments to EM&V/program accounting to make available more cost-effective energy efficiency HVAC opportunities for K-12 schools
- PAs to continue working closely with K-12 Schools on all cost-effective opportunities – air purifiers, filters, operational improvements, etc. – including those identified via audits / assessments
- As other ventilation related capital priorities are addressed, PAs want to be ready with EE options
- Wherever and whenever available, leverage PA expertise to assist K-12 schools identify additional/new sources of funding to move projects forward