Measure Review, Calibration, and Statewide EWR Enhancement Research

EWR Collaborative
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Agenda

Calibration and EWR Research Update

- Measure calibration and EWR research process
- Summary of research completed to date
- Future statewide calibration and EWR research

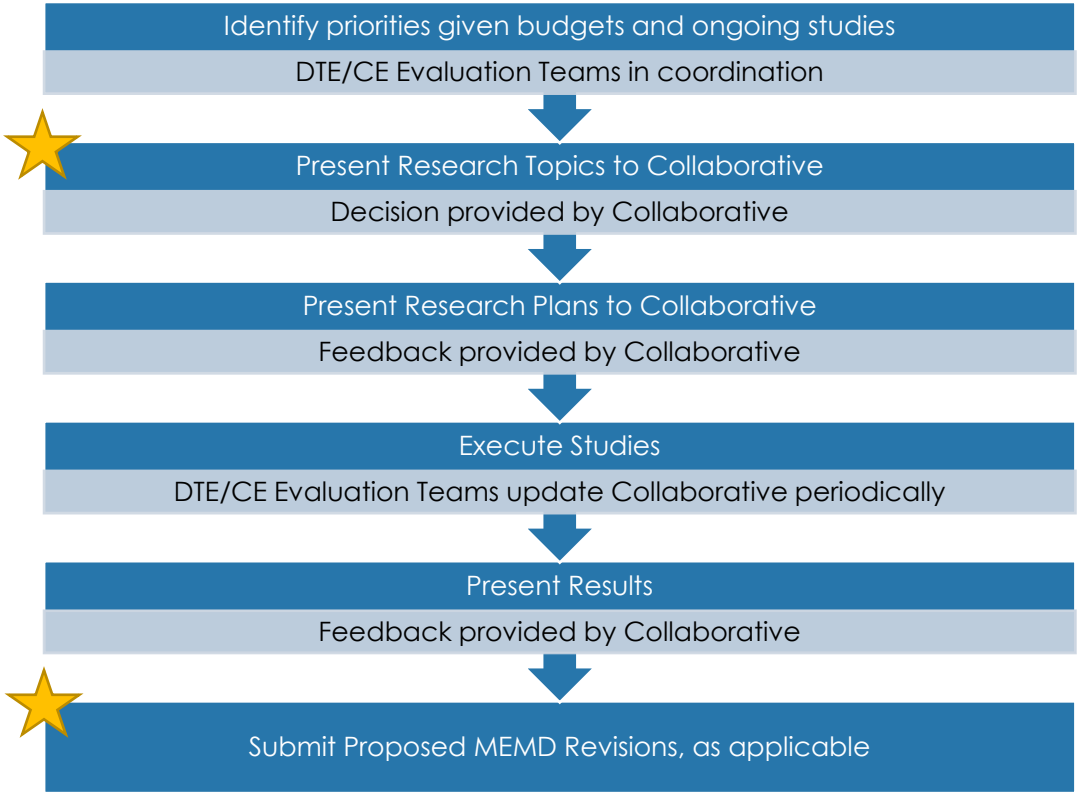
Measure Review, Calibration, and Statewide EWR Research

The Existing Measure Review and Calibration Research Process supports updates and improvements to MEMD savings estimates.

Parallel to this process, utilities propose additional statewide research to advance EWR in Michigan.

Existing Measure Review	Calibration Research	Additional Statewide Research
• New code/standard changes the measure baseline • Credible evidence supports a different value	Credible evidence challenges the existing value but does not suggest a definitive new value applicable to Michigan	Utility-proposed, collaborative-approved research that advances EWR in Michigan

Statewide Research Process



Collaborative Decision Points

Source: MEMD Overview Maintenance Process Manual, March 2018

Calibration Research History – since 2012

Study Name	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Water Heating Metering Study												
C&I Lighting Controls Factor Study												
C&I Hours of Use												
Upstream Lighting Saturation												
Appliance Recycling Savings												
Behavior Modification Report Review												
C&I Programmable Thermostats												
Building Energy Management System Market Study												
HER Calibration (2018, 2021, 2023 MEMD)												
Baseline Housing Study												
Tier 3 Thermostat Study												
Upstream Lighting Attribution (NTG/EUL)												
Lighting NTG/EUL Update												
Furnace Calibration - Res												
Load Shapes - Res												
Load Shapes - C&I												
C&I Boiler Tune Up & HVAC Controls												

Completed and Current Planned

2021-2022 Calibration Research Highlights, 2023 Planned research

- **Baseline Housing Study (completed):** Updated savings values for residential HVAC, envelope, and thermostats. Updates approved for 2023 MEMD.
- **Furnace Calibration (completed):** Calibrated savings values for furnaces. Updates approved for 2023 MEMD.
- **HER/BRM Review (ongoing):** Updating BRM savings values for HERs
- **Load Shape Research (ongoing):** Calibrating coincidence factors to end-use load shapes, updating utility-specific cost effectiveness inputs. 2023 will be the final year of these ongoing residential, commercial and industrial studies.
- **Tier 3 Thermostat Calibration (slated for 2023):** Update savings values for residential smart thermostats – methodology currently being refined.

Potential Future Research

Evaluators completed measure calibration prioritization and identified select measures for consideration in future years. In addition, evaluators and utilities have identified additional studies that will help advance EWR in Michigan.

Based on investment into recently completed, ongoing and planned studies, the utilities do not anticipate authorizing additional measure calibration studies until 2023 at the earliest. The utilities and evaluators will consider relative priorities and present the recommended studies to the collaborative in 2023.

Thank You

Appendix

Potential Future Research

Additional EWR Studies	Description
Early Retirement/Dual Baseline	Develop an MEMD mechanism to allow claiming savings for replacement before EUL
C&I Lighting Waste Heat Factors	Quantify interactive waste heat factors for MEMD C&I building types
Advanced Networked Lighting Controls	Develop an MEMD value for integrated lighting controls in addition to Luminaire Level Lighting Controls or Networked Lighting Controls

Calibration Studies	Description
Residential Appliance Recycling	Update baseline for recycled appliances based on utility program tracking data
Residential Showerheads	Update inputs for measure parameters based on findings from recent housing baseline study (water heater efficiency, number of occupants)
C&I HVAC Controls and Measures	Conduct measure calibration research using MI-specific field data focusing on programmed settings in Building Energy management systems (EMS), focusing on Optimal Start Stop and web-based BMS measures

Measure Prioritization Process

MEMD Measures are clustered by end use or category (e.g., cooling) and prioritized for measure review and calibration research, based on four key criteria:

Expected contribution to stakeholder portfolio savings estimates (i.e., a large share of current or future planned savings)

Savings calculation uncertainty

Expected data availability and timing (from updated codes, ongoing studies, etc.)

Length of time since the last modification, review, or calibration activity for a given measure