Vermont Energy Investment Corporation

MEMORANDUM

TO: IOWA TRM Oversight Committee

FROM: Kalee Whitehouse, Project Manager, Jake Ahrens and Sam Dent, Technical Leads, and the VEIC TRM Team

SUBJECT: Iowa TRM v7.0 Recommended Evaluation Priorities

DATE: August 5, 2022

Cc: Chaz Allen, IUA

In an effort to increase the accuracy of the Iowa Statewide TRM, VEIC offers the following list of measures and parameters from the v7.0 Iowa TRM that we believe will benefit the most from investment in evaluation. These recommendations and qualitative priority are provided in measure number order and are based on consideration of the relative importance of the parameter within a particular measure savings estimate, as well as the degree of uncertainty or confidence we have in a deemed value.

This list is not meant to be exclusive or imply that other evaluation priorities should not be executed based on overall evaluation priorities.

Priority Data Elements for Future Evaluation

Measure #	Measure Name	Parameter(s)	Priority
Residential Measures			
2.1.5	Refrigerator and Freezer Recycling	Recycling program evaluation. Supplement characterization with program data.	Medium
2.1.7	Room AC Recycling	Replacement rate; efficiency and capacity of retired units	Low
2.2.1 2.2.2	Tier 1 Advanced Power Strip (APS) Tier 2 Advanced Power Strip (APS) – Residential Audio Visual	In service rates and persistence study; evaluation of additional product savings percentage.	Low
	Multiple domestic hot water measures	Baseline and market study - Percentage breakdown of DHW fuels, average capacities, and efficiencies; DHW set point temperatures	Medium
2.4.1 2.4.2 2.4.6 2.4.7	Central Air Source Heat Pump Central Air Conditioner Geothermal Source Heat Pump Ductless Heat Pump	Market survey – regression analysis on the old vs. new rated efficiencies from the DOE test procedures. Analysis between actual vs. tested efficiency performance.	High
2.4.3	Boiler	Incremental cost study	High
2.4.6	Geothermal Source Heat Pump	Full Load Hours assumptions for ground source heat pumps;	High

Measure #	Measure Name	Parameter(s)	Priority
		part load v Full load operation; TRM v metering study	
2.4.7	Ductless Heat Pumps	Percent Load Displaced – evaluation of real-world installs	Medium
2.4.18	Advanced Thermostats	Continued studies on impact, baseline, and persistence. Interactions between heat pump thermostats, auxiliary system thermostats, and integrated thermostats.	Medium
2.6.1 – 2.6.7	Infiltration Control and all Insulation measures	TRM v metering/billing study – realization rates	Medium
	Multiple Residential Measures	Baseline study update. Many measures leverage market baseline study results from a 2016 Dunsky and Opinion Dynamics Baseline Study. Statewide residential energy use survey for more recent results.	High
Nonresidential Measures			
3.1	Multiple Agriculture Measures	Market assessment of standard equipment at Iowa farms, possible disaggregated by size and farm type (e.g., dairy, grain). Assessment of gas usage in agricultural heat measures.	Medium
3.1.5	Automatic Milker Take Off	Market assessment to determine baseline standard practice. Potential metering study to support claimed savings.	Low
3.1.15	Agriculture LED Grow Lights	Study into the potential HVAC interactive effects. Evaluated impacts of linear replacement horticultural LED lamps	Medium
3.1.18	ECM Ventilation Fan and Staging Controls	Actual project data and information on typical control schedules and staging parameters.	Medium
3.2.3	Gas Hot Water Heater	Market billing analysis – hot water fuel consumption by building type	Low
3.3.2	Furnace	Full and incremental cost study	High
3.3.5	Geothermal Source Heat Pump	Commercial operation. Part load v Full load operation; TRM v metering study	Medium
3.3.14	Variable frequency Drive for HVAC fans	Metering data on fan run hours and load pre- and post- VFD	High
3.3.22	Steam Trap Replacement or Repair	Potentially a high savings measure based on algorithm; compare resulting savings with metered savings.	High
3.5.1	Variable Frequency Drive for Process	Metering data on pre- and post- VFD installation to indicate actual kWh and	High

Measure #	Measure Name	Parameter(s)	Priority
		kW savings; data to be used to inform savings factor	
3.6	Food Service Measures	Market assessment to determine baseline equipment and operating hours of restaurants and equipment	Low
3.7	Multiple shell measures	Market assessment to determine baseline R values for building assemblies; TRM v metering/billing study – realization rates	High
3.8.3	ECM Motors	Percent of shaded pole and PSC motors found in Iowa refrigeration equipment	Medium