
MEMORANDUM

TO: STAKEHOLDER ADVISORY GROUP

FROM: CHERYL JENKINS, PROJECT MANAGER on Behalf of VEIC TRM Team

SUBJECT: PROPOSED EVALUATION PRIORITIES FOR THE TRM

DATE: FEBRUARY 22, 2017

Cc: JENNIFER MORRIS, ICC; JONATHON JACKSON, AMEREN

In an effort to increase the accuracy of the IL Statewide TRM, VEIC offers the following list of measures and details of the specific parameter for which we believe investment in evaluation may be most beneficial to the accuracy of the TRM saving estimates. We have also provided a qualitative measure of priority and an explanation of this assignment, such that those parameters with the least confidence or highest impact rise to the top.

The qualitative prioritization is based upon a number of metrics:

- Importance of measure(s) now and anticipated importance in the future
- Impact of particular assumption(s) within the measure – i.e., some assumptions within an algorithm can have a significantly greater impact to the final savings value than others
- Source of existing assumption
- Confidence in existing assumption

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

High Priority Recommendations

The following list provides VEIC’s assessment of the highest priority parameters for evaluation.

Measure #: Measure Name	Parameter Recommended for Evaluation	Reason for Concern in Parameter	Priority Level	Reason for Priority Assignment	Year added
4.5.3: High Performance and Reduced Wattage T8 Fixtures	Baseline	Measure assumes T12 is still a valid baseline for retrofit. A baseline study for Illinois would provide greater clarity on this issue.	High	This assumption has been deferred a number of years and the legislation is now many years old.	2015
4.4.1: Air Conditioner Tune-up	Deemed savings percentages	Deemed assumptions were added for v6, when testing in and out is not performed. To provide greater confidence in deemed approach – an IL	High	Likely high volume measure and key input to deemed savings assumption.	2017

Measure #: Measure Name	Parameter Recommended for Evaluation	Reason for Concern in Parameter	Priority Level	Reason for Priority Assignment	Year added
		based study would be beneficial.			
4.4.16: Steam Trap Replacement or Repair	Savings verification	High volume/savings measure based on algorithm. Would be good to compare the resulting savings with metered savings.	High	Potentially high savings measure without real application grounding.	2016
4.4.17: Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	Measure cost	Assumption is from 2008	High	Likely high volume measure and low confidence in assumption. If actual costs are always/mostly used then less of a priority.	2017
4.4.18: Small Commercial Programmable Thermostat	Savings verification	Measure is based on complex regression equation. Would be good to compare the resulting savings with metered savings.	High	Potentially high savings measure without real application grounding.	2014
4.4.19: Demand Controlled Ventilation	Savings Factors	Measure is based on savings factors derived from modeling. Would be good to compare the resulting savings with metered savings.	High	Potentially high savings measure without real application grounding.	2017
4.5.4 LED Bulbs and Fixtures	Incremental costs	Rapidly changing market and costs are multiple years old now	High	High savings measure and key assumption for cost effectiveness	2017
4.6.10: High Speed Rollup Doors	Savings verification	High volume/savings measure based on algorithm. Would be good to compare the resulting savings with metered savings.	High	Potentially high savings measure without real application grounding.	2017
5.2.2: Advanced Power Strip Tier 2	AV consumption. ISR / Persistence studies. Additional product evaluation. C&I application for potential new measure	New growing product. Reliance on CA studies for assumptions. We have not yet been able to develop deemed C&I assumptions due to lack of evaluation.	High	Ongoing controversy over savings claims.	2017
Multiple HVAC measures	Quality Installation impacts	An independent evaluation of savings is highly recommended to support field measurements.	High	VEIC found a lack of independent evaluations of HVAC SAVE QI programs.	2017
5.3.6: Gas High Efficiency Boiler and 5.3.7: Gas High Efficiency Furnace	Baseline efficiency	Particularly furnaces – significant evidence that 80% is not a valid baseline.	High	High impact measures	2015
5.3.16 Advanced Thermostats	Lifetime / Persistence	Characterization currently depends upon a number of studies that only lasted a single year or less.	High	High impact measure and key assumptions for cost effectiveness	2017

Measure #: Measure Name	Parameter Recommended for Evaluation	Reason for Concern in Parameter	Priority Level	Reason for Priority Assignment	Year added
	Savings Factors	Additional evaluation on key savings factors welcome.			
5.5.6 LED Specialty Lamps and 5.5.8 LED Screw Based Omnidirectional Lamps	Lifetime cap	Rated life of LED bulbs are significantly longer than the lifetime cap imposed on these measures. This decision should be reviewed.	High	High impact measure and key assumption for cost effectiveness	2017
5.6.1-5.6.4: Shell measures	Savings verification	Additional evaluation for TRM algorithms v metered savings, particularly in the northern part of the State.	High	Algorithms now have significant downward adjustments based on Ameren service territory only.	2014
6.1.1: Adjustments to Behavior Savings to Account for Persistence	Persistence levels, duration, and shape of multiyear persistence curve; Peak-specific persistence; Impact of weather on cross-year savings	More accurate information on IL-specific persistence levels, duration, and decay function will provide better cost-effectiveness calculations. Little information is currently available for peak persistence. Year-to-year differences in weather, if material, would affect cross-year savings impact.	High	Assumptions of persistence levels, duration, and decay function affect cost-effectiveness and are likely to be significant. Peak persistence should be better understood. Need to understand the impact of weather on cross-year savings to determine if it is material enough to require adjustment.	2016

Additional ideas for evaluation are provided below:

Measure #: Measure Name	Parameter Recommended for Evaluation	Reason for Concern in Parameter	Priority Level	Reason for Priority Assignment	Year added
4.2.16: Kitchen Demand Ventilation Controls	Deemed electric savings and CFM/HP	Savings are based upon CA workpaper.	Medium	Low confidence in assumption. May be opportunities to make more of a custom calculation.	2017
4.3.1: Storage Water Heater and, 4.3.5: Tankless Water Heater	Measure cost	Measure cost assumptions are out of date	Medium	Costs do not have a recent or good reference.	2017
4.3.6: Ozone laundry	Savings verification	Relatively new measure with assumptions based upon a small number of projects.	Medium	Evaluate whether metered savings consistent with assumptions.	2014
4.4.14: Pipe Insulation and 4.4.14: Small Business Pipe Insulation	Thermal Regain Factor	Assumptions are based upon Residential assumptions. Would be good to investigate commercial applications.	Low	May be difficult to evaluate and may vary significantly.	2014

Measure #: Measure Name	Parameter Recommended for Evaluation	Reason for Concern in Parameter	Priority Level	Reason for Priority Assignment	Year added
Commercial Lighting Fixtures	Reference tables with wattage and cost assumptions	Tables were based upon VEIC determined values for Efficiency Vermont. Evaluation of assumptions and appropriateness for Illinois could be performed.	Medium	While it would be a worthwhile exercise, review and evaluation may be lengthy to perform.	2017
5.1.2: ENERGY STAR and ENERGY STAR Most Efficient Clothes Washers and 5.1.10: Residential ENERGY STAR Clothes Dryer	Number of cycles, average capacity	Number of cycles is based upon RECS data, and capacity is an average of available product. Both multipliers within the algorithms	High	Clothes dryers could be a growing measure. IL specific data would improve the assumptions	2015
5.1.7 ENERGY STAR Room Air Conditioner	FLH _{RoomAC}	Current assumption is based upon applying the Central AC to Room AC ratio from RLW North Easter study. This multiplier assumption could benefit from IL study	Medium	While we don't have great confidence in the assumption, the savings per unit is low. If significant volume it could be a worth exercise to improve the assumption.	2017
5.1.8 Refrigerator and Freezer Recycling	Regression equation	Last performed in 2014. Each year you would expect the efficiency of the units being retired to increase, and so savings decrease. Evaluation should be repeated at regular intervals.	Medium	Unless very high volume, suggest considering this again after 5 years – so 2019.	2017
5.2.1: Advanced Power Strip Tier 1	Savings assumptions	Would benefit an updated and more local savings assumption.	Low	Suspect this measure is significantly reducing in support/volume.	2017
5.3.8: Ground Source Heat Pump	Savings verification	Algorithms are very complex. An exercise to compare TRM estimates to actual would help strengthen the measure.	Medium	Potentially growing savings measure without real application grounding.	2017
5.4.6 Water Heater Temperature Setback	Pre and post temperature. ISR for kit programs	Suggestion during v6 development that actual setback may be less than defaulted.	Medium	Low savings measure but If evaluation already exists this would be a good update.	2017
6.1.1: Adjustments to Behavior Savings to Account for Persistence	Cost of behavior change; Move-out rates – to be applied to cost-effectiveness calculations	Little information available for cost of behavioral actions; Move-out rates needed to provide further accuracy for Cost-Effectiveness.	Low	Unclear that these will affect savings materially	2016
Loadshapes		Developed during first round of development. Would be worthwhile reviewing	Medium	Loadshapes generally have a smaller impact on cost effectiveness than	2017

Measure #: Measure Name	Parameter Recommended for Evaluation	Reason for Concern in Parameter	Priority Level	Reason for Priority Assignment	Year added
		particularly the most used loadshapes.		coincidence factors applied to demand savings.	