
MEMORANDUM

TO: TECHNICAL ADVISORY COMMITTEE

FROM: KEITH CRONIN, PROJECT LEAD; GABRIELLE RAINVILLE, PROJECT MANAGER; and JAKE AHRENS, TECHNICAL LEAD - VEIC

SUBJECT: IOWA TRM VERSION 11 – FINAL DELIVERABLE

DATE: 07/31/2026

Cc: CHAZ ALLEN - IUA

VEIC has submitted the final version 11.0 Iowa TRM to the Technical Advisory Committee and uploaded to SharePoint. This final version includes both redline changes to existing measures and new measures (also in redline) proposed to be included for the first time in this version. Changes have been made to all three volumes:

- Iowa_TRM_V11_Vol_1_Overview_and_User_Guide_Draft.docx
- Iowa_TRM_V11_Vol_2_Residential_Measures_Draft.docx
- Iowa_TRM_V11_Vol_3_Nonresidential_Measures_Draft.docx

Presented below is a summary table documenting the measures found in this first submitted group with a brief description of what has changed and whether it is being considered an errata.

Measure # and Name		Errata?	Brief description of what changed
Volume 1 Overview and User Guide			
N/A	Throughout	N	Note the tables detailing v11 updates and measure sunset dates will be completed in the final version.
6.3	Baseline Assumptions	N	Added clarifying language around federal code adoption dates when used as baseline.
Volume 2 Residential Measures			
N/A	Throughout	N	Data collection is in-progress on all HVAC Tune-Up measures. A number of measure and savings impact variables, such as existing equipment operating efficiency, are being tracked and collected. Collection will continue throughout the year on actual participating projects, sites, and equipment. Customer data will be used to inform measure updates for next year, version 12, development cycle.
N/A	Throughout	N	Updated default heating efficiency variable (COP) and unknown assumptions for waste heat savings with M1 conversions for the following measures: 2.1.2 Clothes Dryer; 2.1.3 Refrigerators; 2.1.4 Freezer; 2.1.5 Refrigerator and Freezer Recycling; 2.3.2 Heat Pump Water Heater.

Measure # and Name		Errata?	Brief description of what changed
N/A	Throughout	N	To maintain consistency throughout the TRM, updated all annual hours and days per year values to 8,760 hours and 365 days, respectively.
N/A	Throughout	N	To maintain consistency throughout the TRM, aligned example savings calculations better with default measure assumptions and provided example savings calculations where previously missing.
2.1.8	ENERGY STAR Air Purifier/Cleaner	N	Updated measure algorithm to better align with ENERGY STAR metrics. Refreshed deemed assumptions with updated ENERGY STAR qualified products list (QPL).
2.2.1	Tier 1 Advanced Power Strip (APS)	N	Reliability review performed. No changes recommended at this time.
2.2.2	Tier 2 Advanced Power Strips (APS) – Residential Audio Visual	N	Reliability review performed. Updated measure cost and baseline energy variables with more recent study data resulting in an update to default energy savings.
2.3.1	Gas Water Heater	N	Reliability review performed. Updated incremental measure costs.
2.3.2	Heat Pump Water Heaters	N	Reliability review performed. Updated measure life and incremental measure cost. Updated default heating efficiency variable (COP) and unknown assumptions for waste heat savings with M1 conversions.
2.3.3	Water Heater Temperature Setback	N	Reliability review performed. Updated measure savings example.
2.3.4	Low Flow Faucet Aerators	N	Reliability review performed. No changes recommended at this time.
2.3.5	Low Flow Showerheads	N	Reliability review performed. No changes recommended at this time.
2.4.1	Central Air Source Heat Pump	N	Reliability review performed. Minor text changes and an update to incremental measure cost.
2.4.2	Central Air Conditioner	N	Reliability review performed. Updated early replacement language to better incorporate system cooling efficiencies (SEER2). Added language surrounding ENERGY STAR program sunset. Updated incremental measure cost.
2.4.6	Geothermal Source Heat Pump	N	Reliability review performed. Updated energy savings algorithm and incremental measure cost. Updated to prioritize M1 conversion efficiencies as baseline metrics (EER2 and HSPF2).

Measure # and Name		Errata?	Brief description of what changed
2.4.7	Ductless Heat Pumps	N	Reliability review performed. Added language surrounding ENERGY STAR program sunset. Updated incremental measure cost.
2.4.9	Gas Fireplace	N	Reliability review performed. Corrected Sunset Date. No other changes recommended at this time.
2.4.11	Central Air Source Heat Pump Tune-Up	N	Reliability review performed. No changes recommended at this time. Data collection is in-progress. A number of measure and savings impact variables, such as existing equipment operating efficiency, are being tracked and collected. Collection will continue throughout the year on actual participating projects, sites, and equipment. Customer data will be used to inform measure updates for next year, version 12, development cycle.
2.4.12	Central Air Conditioner Tune-Up	N	
2.4.14	Furnace Tune-Up	N	
2.4.15	Geothermal Source Heat Pump Tune-Up	N	
2.4.17	Programmable Thermostats	N	Reliability review performed. No changes recommended at this time.
2.4.21	Gas Fired Heat Pump	N	Reliability review performed. Updated measure description language with further references to absorption units. Updated measure life, incremental measure cost, and included DHW savings approach.
2.5.3	LED Lamp - Standard	N	Reliability review performed. Minor text edits and removal of non-direct install references.
2.5.4	LED Lamp - Specialty	N	Reliability review performed. Minor text edits and removal of non-direct install references.
2.5.7	LED Holiday Lights	N	Measure removed due to market saturation of LED Holiday Lights.
2.6.8	Efficient Windows	N	Reliability review performed. Incremental measure costs updated.

Measure # and Name		Errata?	Brief description of what changed
2.7.2	Level 2 Electric Vehicle Charger	N	Reliability review performed. Updated variables in the energy savings algorithm based on an updated ENERGY STAR QPL.
Volume 3 Non-Residential Measures			
N/A	Throughout	N	Data collection is in-progress on all HVAC Tune-Up measures. A number of measure and savings impact variables, such as existing equipment operating efficiency, are being tracked and collected. Collection will continue throughout the year on actual participating projects, sites, and equipment. Customer data will be used to inform measure updates for next year, version 12, development cycle.
N/A	Throughout	N	In order to maintain consistency throughout the TRM, updated all annual hours and days per year values to 8,760 hours and 365 days, respectively.
N/A	Throughout	N	To maintain consistency throughout the TRM, aligned example savings calculations better with default measure assumptions and provided example savings calculations where previously missing.
3.1.7	Heat Lamp	N	Reliability review performed. Minor formatting and text edits.
3.1.9	Heat Mat	N	Reliability review performed. Updated heat mat wattages.
3.1.10	Grain Dryers	N	Updated measure life. Revised measure savings analysis from a deemed savings approach to an engineering algorithmic approach.
3.1.12	Low Pressure Irrigation	N	Due for reliability review, however since measure not currently active in any utilities' 2024-2028 energy efficiency plans, note provided after sunset date that measure needs review before use.
3.1.16	Grain Bin Fan Aeration Controls	N	Included savings estimates for electric supplemental heaters. Revised midstream tiers/bins to align with program implementation structure. Corrected minor exponent error in the grain bin volume formula.
3.1.20	Thermal Curtains for Greenhouses	N	New measure
3.1.21	Infrared Film for Greenhouses	N	New measure

Measure # and Name		Errata?	Brief description of what changed
3.2.3	Hot Water Heater	N	Reliability review performed. Recommending delaying adoption of new federal standards that go into effect in October 2026. As this is a manufacturing and import standard, recommending delaying adoption by one year to allow for existing inventory to clear shelves. Recommending updates to the baseline assumptions and incremental measure costs be made in the next iteration of the TRM (v12).
3.3.1	Boiler	N	Included incremental costs for units >300 MBH to measure characterization.
3.3.4	Heat Pump Systems	Y	Updated baseline full load efficiency value (EER2) to better align with efficient condition. Updated baseline EER2 is based on the average of the bottom quartile of the least efficient non-qualifying units.
3.3.5	Geothermal Source Heat Pumps	Y	
3.3.6	Single-Package and Split System Unitary Air Conditioners	Y	
3.3.7	Electric Chiller	N	Incremental measure costs restructured and updated. Added missing sunset date.
3.3.8	Packaged Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	N	Reliability review performed. Corrected footnote errors. Re-arranged example calculation to better align with algorithm default recommendations. Added derating factor from residential TRM for existing equipment efficiency assumptions.
3.3.10	Boiler Tune-Up	N	Reliability review performed. No changes recommended at this time. Data collection is in-progress. A number of measure and savings impact variables, such as existing equipment operating efficiency, are being tracked and collected. Collection will continue throughout the year on actual participating projects, sites, and equipment. Customer data will be used to inform measure updates for next year, version 12, development cycle.
3.3.11	Furnace Tune-Up	N	Reliability review performed. No changes recommended at this time. Data collection is in-progress. A number of measure and savings impact variables, such as existing equipment operating efficiency, are being tracked and collected. Collection will continue throughout the year on actual participating projects, sites, and equipment. Customer data will be used to inform measure updates for next year, version 12, development cycle.

Measure # and Name		Errata?	Brief description of what changed
3.3.12	Small Commercial Thermostats	N	Added clarifying language around code baseline, and electric heating efficiency.
3.3.23	Electric HVAC Tune-Up	N	Reliability review performed. No changes recommended at this time. Data collection is in-progress. A number of measure and savings impact variables, such as existing equipment operating efficiency, are being tracked and collected. Collection will continue throughout the year on actual participating projects, sites, and equipment. Customer data will be used to inform measure updates for next year, version 12, development cycle.
3.3.25	Gas Heat Pump	N	Reliability review performed. Updated measure description language with further references to absorption units. Updated measure life, incremental measure cost, and included DHW savings estimates.
3.3.26	Variable Refrigerant Flow (VRF) Systems	N	VRF energy savings estimates were remodeled with updated TMYx weather data and energy modeling software, and the results are included in the TRM.
3.3.27	Demand Controlled Ventilation	N	Reliability review performed. Minor formatting and text edits. Updated energy savings estimates by incorporating TMYx weather data.
3.3.28	HVAC Economizer	N	Conditional review of a recently developed new measure. No changes recommended at this time.
3.3.30	Condensing Unit Heaters	N	Conditional review of a recently developed new measure. Minor formatting and text changes.
3.3.31	Energy Recovery Ventilator	N	New measure
3.3.32	Stack Economizer for Boilers Serving HVAC Loads	N	New measure
3.3.33	Oxygen Trim Controls for Space Heating Boilers	N	New measure
3.3.34	Advanced Rooftop Controls	N	New measures

Measure # and Name		Errata?	Brief description of what changed
3.4.5	LED Fixtures	N	Reliability review performed. Incorporated a 14% adjustment to the efficient LED efficacy based on review of the updated Design Lights Consortium (DLC) data. A more thorough evaluation of the DLC QPL will be conducted next year, version 12, development cycle. Additionally, included a baseline existing LED option.
3.4.9	Commercial LED Exit Sign	N	Reliability review performed. No changes recommended.
3.4.10	LED Street Lighting	N	Reliability review performed. No changes recommended.
3.4.12	Lighting Controls	N	Reliability review performed. Data collection requested for customer/project data to inform and update the “watts controlled” variable for increased savings accuracy. Postponing further updates to this measure until V12 pending review of the data.
3.5.2	Clothes Washer	N	Continuing to monitor codes and standards that impact this measure, but as none have a 2026 effective date, postponing reliability review to a later date to coincide with the codes and standards effective date. No changes recommended at this time.
3.6.5	Infrared Salamander Broiler	N	Reliability review performed. No changes recommended.
3.6.7	Convection Oven	N	Reliability review performed. No changes recommended.
3.6.10	Commercial Steam Cooker	N	Reliability review performed. Updated incremental measure cost.
3.7	Shell Measures	N	Updated shell measure to incorporate equivalent full load hours and design day temperatures rather than the previous methodology which employed load hour estimates.
3.7.1	Infiltration Control	N	Reliability review performed. Updated measure to incorporate equivalent full load hours and design day temperatures rather than the previous methodology which employed load hour estimates. Updated HVAC efficiency values in the energy savings algorithm
3.7.2	Roof Insulation	N	Reliability review performed. Updated measure to incorporate equivalent full load hours and design day temperatures rather than the previous methodology which employed load hour estimates.

Measure # and Name		Errata?	Brief description of what changed
3.7.3	Foundation Wall Insulation	N	
3.7.4	Wall Insulation	N	
3.7.5	Efficient Windows	N	Reliability review performed. Updated measure to incorporate equivalent full load hours and design day temperatures rather than the previous methodology which employed load hour estimates. Updated HVAC efficiency values in the energy savings algorithm
3.7.6	Insulated Doors	N	Reliability review performed. Updated measure to incorporate equivalent full load hours and design day temperatures rather than the previous methodology which employed load hour estimates.
3.8.13	Auto-Closers for Walk-In Doors	N	Due for reliability review, however since measure not currently active in any utilities' 2024-2028 energy efficiency plans, note provided after sunset date that measure needs review before use.
3.8.14	Refrigeration Tune-Up - Remote Condensing Unit	N	Reliability review performed. No changes recommended at this time. Data collection is in-progress. A number of measure and savings impact variables, such as existing equipment operating efficiency, are being tracked and collected. Collection will continue throughout the year on actual participating projects, sites, and equipment. Customer data will be used to inform measure updates for next year, version 12, development cycle.
3.8.15	Refrigeration Tune-Up - Self-Contained Unit	N	
3.8.16	Vending Machine Controllers	N	Reliability review performed. Incremental measure costs and wattage estimates updated.
3.8.18	High-Speed Roll Up Doors	N	New measure
3.9.9	Efficient Desiccant Dryer	N	New measure

Measure # and Name		Errata?	Brief description of what changed
3.9.10	Dew Point Demand Controls for Desiccant Dryer	N	New measure
3.9.11	Reduced Pressure Setpoint	N	New measure

The following Tracker Items have not resulted in any changes to the TRM volumes at this time. They are listed together with the status of or outcome of TAC discussions.

Tracker Item	Provided by:	Status
Possible new measure idea?	VEIC	High-Speed Roll Up Doors, Efficient Desiccant Dryer, Dew Point Demand Controls for Desiccant Dryer, Reduced Pressure Setpoint, Energy Recovery Ventilator, Oxygen Trim Controls for Boilers, Stack Economizers for Boilers, Infrared Films for Greenhouses, Thermal Curtains for Greenhouses, and Advanced Rooftop Controls were characterized and added to the TRM. No other proposed measures were developed due to limited stakeholder interest.
Weather Sensitive Variable Update to TMYx	VEIC	Non-modeling weather updates to weather-sensitive variables to the TMYx data set. This update is comprehensive and all weather-dependent measures and variables utilize the TMYx data set.
Data File Correction – Residential Advanced Thermostat	VEIC	Corrected EER2 error in the residential data file, version 10. Updated data file was uploaded and is now stored on the external SharePoint.
ENERGY STAR Specifications for Residential Gas Furnaces	VEIC	As discussed in TAC on March 11, 2026, programs will continue to maintain their own efficient equipment qualifications rather than adopt ENERGY STAR specifications.
2.1.6 and 3.3.20 Room A/C Federal Standards Review and Updates	VEIC	New federal standards go into effect in May 2026 that far exceed current ENERGY STAR efficiency standards. ENERGY STAR drafted new efficiency standards for adoption in conjunction with the new federal standards, however, as ENERGY STAR is experiencing budgetary and staffing constraints, the effective date for their new efficiency standards has been paused. As a result, VEIC is requesting delay in adoption of the new federal standards and ENERGY STAR specifications until 1/1/2028 to account for existing inventory to clear shelves and for the new ENERGY STAR specification to be re-launched.
RTU – Investigate Incremental Costs	MidAmerican Energy	Discussed with MidAmerican and it was determined that there are no necessary updates relating to this item.
Power Protection Units	Alliant Energy	This measure was reviewed and discussed with the TAC on April 8, 2026. It was determined that this measure will have difficulty in measure characterization based on the following: Outside of manufacturer literature, there is a lack of available information concerning the effectiveness, and quantifiable energy savings compared to conventional power factor correction methods. Also unclear if utility rate structure (relating to power factor) would reward customers for energy savings. Additionally, in benchmarking research, it was identified that this measure has not been found in any other state's TRM. As a result, no changes were made to the TRM as a result of this Tracker item request.
In Vol. 3 Nonresidential Measures, Update References of ASHRAE 90.1 to the 2022 Version	MidAmerican	Discussed with the TAC on March 11, 2026, this reference is used to determine a ratio based on the difference between minimum IEER & EER, which goes into a formula that is used to estimate EER. VEIC's recommendation is to continue referencing the 2010 version, as later versions would have very different values that would significantly change the formula, potentially making it inaccurate.