

Missouri Technical Reference Manual

Project Update

July 2016

DELIVERABLES RECORDED BY END OF QUARTER 2:

- Completed collection and review of known available utility information
- Committed Stakeholder Engagement

Technical Advisory Committee:

- Confirmed common measure list
- Conducted measure prioritization
- Delivered 38 high impact draft measure characterizations
- TAC comments received, reviewed and incorporated in “redline”
- Additional TAC Missouri-data and input provided

Oversight Committee:

- Agreement on common measure list
- Review of TAC requests regarding cross-cutting/measure issues
- Continued engagement on TRM framework and policy guidance

ACCOMPLISHMENTS

The draft uniform measure list – that will inform the “table of contents” of the Missouri statewide-TRM – was confirmed by the Oversight Committee (OC) in early April. Subsequently, the second quarter of the Missouri TRM project has seen significant progress in the technical characterization and review of these measures.

Initial development efforts focused on the prioritization of uniform measure list by VEIC with input and revisions provided by the Technical Advisory Committee (TAC). Measures were ranked to determine which provided the most substantive savings contributions across all MO-utilities’ and other DSM program providers’ portfolios. Those “top” gas and electric measures that comprised at least 85% of net portfolio savings, alongside a small number of measures whose future savings potential were considered to be “significant” were highlighted. In total, 45 “high impact” measures were identified among the uniform measure list that included 15 electric-only, 22 gas-only, and 8 gas and electric measures; these were split by residential and commercial and industrial application—15/30.

Characterization began in earnest in May starting with this high-priority list of measures to ensure the robust review and addition of “what counts most first”. By the end of the second quarter VEIC had developed 38 of the 45 high-impact measures in the following end-use categories: Food Service, Refrigeration, Heating Ventilation and Air Conditioning (HVAC), and Lighting.

Measures were delivered over the course of the second quarter to the TAC for their consideration by these end-use categories specifically. In the instances in which multiple measures share inputs or baseline assumptions, they can be presented as a group, which aids in the development process. VEIC used this approach to help the TAC make informed decisions across each category; ensure comments and revisions to a group were captured effectively; and to help support the efficient engagement of stakeholders and technical experts in discussions.

Moving forward, VEIC will continue to work alongside the TAC in this manner to ensure that the Missouri statewide-TRM will continued to be developed in a manner that provides meaningful benefit and value to everyone by grounding the project’s work with Missouri-specific data, insights and existing efficiency program designs and considerations.

Parallel to the technical development of individual measures, TAC members were also engaged in the review of several key cross-cutting assumptions that will be used to support the appropriate characterization of measures throughout the TRM document and allow for a Missouri-wide application of the final document. Significant data points discussed and agreed upon included appropriate weather zones, loadshape-usage and modeling requirements for building and measure-specific values. VEIC modeling experts joined the lead VEIC technical advisors on the Missouri TRM team in hosting a series of supplemental meetings with TAC members to help examine the most appropriate calculations and assumptions to carry forward. The following outlines the key decisions reached by this group and corroborated by the broader TAC.

- **Weather Sites and Climate Zones:** Weather sites are used in the TRM to help establish the *default* Effective Full Load Heating and Cooling Hour (EFLH) values in the TRM and other weather sensitive assumptions when information is not known. The TAC reached consensus on 5 default weather sites to be specified in the TRM that will represent the NE, NW, SE, SW and State-average. In addition, the TAC added two weather sites to reflect the “Heat Islands” effect resulting from the densely populated areas in St. Louis and Kansas City.
- **Loadshapes/Peak Demand Coincidence:** Loadshapes represent the usage characteristics of a measure or group of measures and are used as a proxy

to help calculate avoided cost (savings) for equipment. Gas utilities confirmed that the Missouri TRM will not specify or assign loadshapes related to gas measures. For electric measures, stakeholder Ameren provided their 13 electric end-use loadshapes for Commercial/Business scenarios and 9 for Residential. These loadshapes will be specified where appropriate in the TRM. Approximately 50 additional loadshapes will be developed to capture and quantify the peak demand savings for the breadth of measures that will be included in the TRM, especially where savings may not be accurately reflected by a typical end-use loadshape (e.g., VFD Pumps).

- **Modeling:** Building prototype modeling is used for non-residential HVAC measures to support EFLH estimates and contribute to loadshape development. The energy modeling utilizes nationally recognized reference buildings developed by DOE and the national labs and applies regionally specific weightings to create averaged results that relate to MO building stock. The Missouri TRM will be basing its modeling efforts on the most advanced whole building energy analysis engine available in the market today – DOE’s EnergyPlus. This freely available software provides a robust sub-hourly energy calculation engine to support high quality TRM modeling. Using EnergyPlus also lays the groundwork for future expansion of modeling efforts that could be integrated into larger data systems (such as EM&V 2.0). It is also supported by ongoing efforts from DOE and the National Labs and is compatible with cloud-based simulation tools for utilities in the future.

While the technical review and development of measures predominated the work of the TAC during the second quarter, the Oversight Committee remained keenly focused on policy considerations. While the statewide TRM cannot be fully utilized until it is approved by the Public Service Commission (PSC) and the MEEIA rulemaking revisions to 4 CSR 240-20.094(8)(B) (that will include further guidance on the utilization of the TRM) are still in development, VEIC and MO-DE agreed that the OC meetings should continue to be used as an opportunity for Cost Share Partners to review numerous additional topics. Led and facilitated by MO-DE, this broader collaborative effort has been effective in capturing ideas from Cost Share Partners on how revisions and ongoing updates to the Missouri TRM could occur, as well as recommendations for the PSC on how and when an approved TRM could be implemented. The OC meetings have also offered educational and informative opportunities important to Cost Share Partners but not related to the TRM grant project (such as the review of CHP in Missouri) as well as consideration of TAC requests regarding specific measure development questions or cross-cutting assumptions. It is expected this type of joint-discourse will continue to help clarify issues of TRM usage as well as support Cost Share Partners’ commitment and engagement in the Missouri-TRM development.