South Dakota Public Utilities Commission
Docket GE19-002
MidAmerican Energy Company
First Data Request

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1-10 South Dakota Data Request

Please verify the accuracy of the reported TRC of the Residential Equipment Gas – Smart Thermostat measure and associated costs reported.

Response:

There are several things that affect the cost effectiveness of smart thermostats and lead to the counterintuitive mathematical results.

Whenever there is a small amount of any technology the results can be misleading because the Technical Resource Manual (TRM) algorithms are based on the "average" installation. When a sample size is too small to reach a critical mass of the average being relevant, results can get skewed both high and low. We have experienced this problem consistently in South Dakota on the electric side because of the small program size.

Some of these measures are split measures between gas and electric. The gas TRC results are quite high and the electric results are lower than would be expected if the program had large numbers of units. Taken together, the TRC results are still relatively high to other measures but more in line with expectations. It should not be expected in future years, as adoption of smart thermostats increases, for the electric measure to fail the TRC and the gas measure to pass in such a large manner.

MidAmerican does not report per technology cost effectiveness anywhere but in South Dakota. Because of that, we have developed simple methods to allocate overhead costs to measures based on their relative share of incentives. The result for a small sample size measure is it received less overhead costs than it may otherwise deserve if independently tracked. MidAmerican doesn't have the ability to track administrative costs on a measure basis. A change in overhead or incremental costs of just a few thousand dollars can swing the TRC results heavily.

The TRM calculations used to derive energy savings, peak savings, incremental costs, useful life and non-energy benefits are very much in flux. The 2018 TRM was written in early 2017 based on data from at best 2016 and before. At this time smart thermostats were in their beginning stages. The algorithms used have changed are expected to be further refined. As the market matures cost effectiveness results should stabilize at a reasonable level.