

**GE 19-002 – In the Matter of the Filing By MidAmerican Energy Company for the Approval of its Reconciliation and Annual Report for 2018 and 2018 Reconciliation for the Energy Efficiency Cost Recovery Factor Compliance Filing**

On May 28, 2019, MidAmerican Energy Company was ordered to file a supplemental filing outlining the expected Total Resource Cost (TRC) cost-effectiveness test results of its gas and electric energy efficiency programs utilizing the new Iowa Technical Reference Manual (TRM). This document provides those TRC results and details actions MidAmerican proposes to take related to energy efficiency programs offered in South Dakota in 2020 and after.

**OVERVIEW**

**Benefit/Cost Analysis of Electric Programs**

Table 3 shows the 2018 results of five traditional benefit/cost tests for the electric programs. Overall, MidAmerican’s electric energy efficiency programs were demonstrated to be cost effective.

<b>Table 3 2018 Electric Program Benefit/Cost Test Results</b>					
<b>Program</b>	<b>TRC</b>	<b>PART</b>	<b>RIM</b>	<b>UTILITY</b>	<b>SOCIETAL</b>
Residential Equipment	1.24	1.78	0.68	1.19	1.60
Residential Appliance Recycling	5.35	6.79	1.83	5.35	6.45
Nonresidential Equipment	1.19	1.51	0.81	2.94	1.73
<b>Total Electric</b>	<b>1.29</b>	<b>1.70</b>	<b>0.78</b>	<b>1.75</b>	<b>1.74</b>
Residential Load Management	1.48	1.00	0.80	8.00	1.63

**Benefit/Cost Analysis of Gas Programs**

Table 4 shows the 2018 results of the same benefit/cost tests for the gas programs.

<b>Table 4 2018 Gas Program Benefit/Cost Test Results</b>					
<b>Program</b>	<b>TRC</b>	<b>PART</b>	<b>RIM</b>	<b>UTILITY</b>	<b>SOCIETAL</b>
Residential Equipment	0.70	1.10	0.63	2.22	1.15
Nonresidential Equipment	1.30	1.63	0.81	3.87	2.15
<b>Total Gas Program</b>	<b>0.75</b>	<b>1.70</b>	<b>0.78</b>	<b>1.75</b>	<b>1.74</b>

All measures included in the gas program passed the TRC test threshold, except for one. The residential equipment – furnace measure reported a TRC score of only 0.64<sup>1</sup>. The primary driver of the reduction in furnace savings is the transition of the energy savings calculation from the MidAmerican Appendix A formula to the Iowa Technical Resource Manual formula. There are three primary differences between the two calculations that drive lower benefits overall. The TRM:

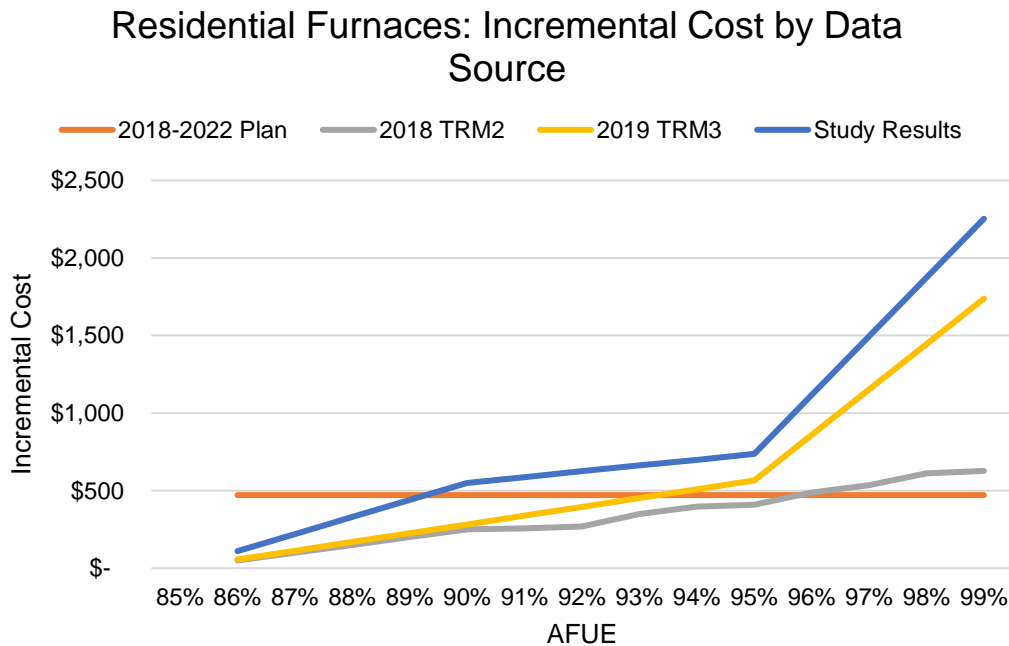
<sup>1</sup> See Exhibit E, Page 15 of 20, included in MidAmerican’s initial filing

- algorithm results in lower assumed savings per Annual Fuel Utilization Efficiency (AFUE) increment improvement
- uses a baseline of 85 AFUE instead of federal minimum 80 AFUE
- assumed incremental costs are significantly higher than Appendix A

### Incremental Cost Study Results

In 2018, the Iowa TRM residential gas furnace’s incremental cost were higher than MidAmerican’s Appendix A incremental cost, as well as the incremental cost used when developing the 2018-2022 Plan. Using the 2018 TRM (V2) incremental cost resulted in TRC scores less than 1.0 for 2018 results. To further validate the incremental cost being used in the 2019 TRM V3, MidAmerican requested its evaluation contractor, Tetra Tech, to conduct a cost study to better understand the inputs and underlying assumptions in the TRM given the drastic shift in incremental costs.

The graph below shows the results and the potential change to the incremental cost in the next version of the Iowa TRM based on the results of this cost study.



The study results were shared with the TRM contractor, Vermont Energy Investment Corporation (VEIC), in June 2019. However, no changes were made to the incremental cost for furnaces included in the Iowa 2020 TRM (V4) due to the level of change in the proposed incremental cost for furnaces and the limited time to review the results from the study by the TRM oversight committee prior to the submittal to the Iowa Utilities Board.

## 2020 Impacts to MidAmerican's Energy Efficiency Programs

Given the gas Residential Equipment program and the residential furnace measure failed to pass the TRC test in 2018 under the current TRM and no changes to incremental cost are proposed for the 2020 TRM, MidAmerican cannot report that this measure or the program will be cost effective on a TRC basis in 2019 or beyond. Therefore, MidAmerican agrees with Staff's recommendation that the residential gas furnace measure and the residential equipment program should be eliminated at the end of 2019.

Therefore, MidAmerican's intends to discontinue the residential gas furnace measure and program as of December 31, 2019. MidAmerican will accept 2019 residential gas equipment applications for equipment installed in 2019 through January 31, 2020 assuming program funding is still available. All eligible applications received by that date will be processed by February 29, 2020. MidAmerican will then draft its 2019 Annual Report and Energy Efficiency Cost Recovery (EECR) Reconciliation no later than March 31, 2020. MidAmerican will evaluate the results of the gas EECR reconciliation and develop a refund or collection plan for the residential gas customer class to be discussed with SDPUC Staff prior to MidAmerican's anticipated filing date of March 31, 2020.

## Additional 2020 Impacts for Consideration by the Commission

1. The elimination of the residential gas furnace measure and program requires that MidAmerican assign unavoidable administrative costs solely to its electric residential equipment program, where these costs were previously split between gas and electric programs. MidAmerican's analysis of the cost reassignment indicates that the electric residential equipment program would then no longer be cost-effective in 2020 and after as shown in the table below.

### Residential Equipment:

Description	2018	Adjusted
Societal Cost Test	1.60	1.38
Total Resource Cost Test	1.24	0.90

Note: Central air conditioners, smart thermostats and air source heat pumps fail the TRC test when they are evaluated with their new share of overhead costs.

2. The nonresidential furnace measure and Nonresidential Equipment program were cost-effective in 2018 primarily due to the significant number of 2017 applications received and processed in 2018 for furnaces installed in 2017. These 2017 furnaces record a significantly higher level of savings, based appropriately on the 2017 Appendix A, than 2018 installed furnaces due to the differences in the algorithms discussed above. In 2019 and beyond, the nonresidential furnace measure and program will also be impacted by the incremental cost changes in a similar manner as the residential furnace measure depending on the mix of furnaces actually rebated. MidAmerican's preliminary analysis of the 2019 nonresidential furnace measure and program cost-effectiveness through August 30, 2019 indicates that the gas nonresidential furnace is currently not cost-effective using the TRC with a 0.82 and is not expected to improve in 2019 or

beyond. The nonresidential program as a whole is not expected to be cost effective without furnaces.

3. Without the gas Nonresidential Equipment program, a similar fixed overhead cost shifting would take place between the gas and electric Nonresidential Equipment programs as described in item 1 above. Either immediately in 2020 or shortly thereafter, this program too would fail TRC cost effectiveness depending on the measures rebated. Re-analyzing the 2018 data with the known overhead shifts described above would result in a TRC of 1.03. A mere \$1,500 in additional expenses, a small reduction in TRM savings per LED fixture or a decrease in activity of 3% would result in a TRC below 1.0. Any of these events individually is reasonable to occur, but taken together it is a reasonable assumption that this program would also fail the TRC test in the near future.