

TO: COMMISSIONERS AND ADVISORS
FROM: DARREN KEARNEY AND AMANDA REISS
SUBJECT: STAFF RECOMMENDATION FOR DOCKET GE16-004
DATE: DECEMBER 16, 2016

STAFF MEMORANDUM

1.0 OVERVIEW

Since 2009, MidAmerican Energy Company (MEC) offered energy efficiency programs to both electric and natural gas customers located within their South Dakota service territory. On November 27th, 2012 the Commission approved MEC's 5-year Energy Efficiency Plan¹ for years 2013 through 2017. In this docket, GE16-004, MEC filed an updated Energy Efficiency Plan for 2017, requesting the Commission approve the following:

1. the continued offering of rebates for high efficiency natural gas furnaces and ground source heat pumps (GSHPs) in the residential equipment programs for 2017, with rebates set at 2016 plan levels;
2. a proposed budget increase to the electric residential equipment program of \$32,000 (rebates for GSHPs) for budget year 2017;
3. a proposed budget increase to the electric nonresidential equipment program of \$5,340 (rebates for lighting) for budget year 2017;
4. a proposed budget increase to the gas residential equipment program of \$510,000 (to continue furnace rebates) for budget year 2017; and
5. a proposed budget increase to the gas nonresidential equipment program of \$100,500 (rebates for furnaces) for budget year 2017.

After reviewing the filing, and as discussed in the following sections, Staff makes the recommendation that the Commission approve the MEC's proposed Energy Efficiency Plan for 2017.

¹ See Docket GE12-005, "In the Matter of the Filing by MidAmerican Energy Company for the Approval of Energy Efficiency Plan for 2013-2017."

2.0 2017 ENERGY EFFICIENCY PLAN CHANGES AND BUDGET INCREASE

Similar to past filings, MEC requests in this docket that the Commission approve the continued offering of ground source heat pump and furnace rebates for the Energy Efficiency Plan in 2017. As background information, the following is a timeline of approvals for MEC's Energy Efficiency Plan:

November 2012: Energy Efficiency Plan for Years 2013 – 2017 Approved

(The original Energy Efficiency Plan for 2013-2017 did not include furnaces due to the fact that federal furnace efficiency standards were scheduled to begin in May of 2013 and those standards made the furnace programs not cost effective. The original filing also did not include Ground Source Heat Pumps.)

April 2013: Revised Energy Efficiency Plan for 2013 Approved

(Furnaces added back into the Energy Efficiency Plan because of a court case that delayed the federal furnace efficiency standards. Ground Source Heat Pumps also added to the program because the program became cost effective. Approval to include furnaces and GSHPs was only for 2013 plan year.)

May 2014: Revised Energy Efficiency Plan for 2014 Approved

(Furnaces and GSHPs once again added back into the Energy Efficiency Plan. Nonresidential electric equipment budget was increased for lighting. Approval of plan modifications was only for 2014 plan year.)

October 2014: Budget Increase for 2014 Residential Gas Equipment Program Approved

(Mid-year budget increase for the residential gas equipment program was approved in order to meet demand for furnace rebates.)

April 2015: Revised Energy Efficiency Plan for 2015 Approved

(Furnaces and GSHPs once again added back into the Energy Efficiency Plan; however, the Commission limited residential furnace rebates to \$300 and nonresidential furnace rebates at 50% of the proposed rebate amounts. Nonresidential electric equipment program budget also increased for lighting. Approval of plan modifications was only for 2015 plan year.)

December 2015: Revised Energy Efficiency Plan for 2016 Approved

(Furnaces and GSHPs once again added back into the Energy Efficiency Plan, with rebate amounts set at 2015 plan levels. Nonresidential electric equipment program budget also increased for lighting.)

In this filing, MEC is requesting budget changes to capture the proposed modifications to its Energy Efficiency Plan for 2017. The budget changes are explained in the following sections.

2.1. Electric Program Budget Changes

Table 1, below, shows MEC’s proposed electric program budget changes for 2017 relative to the 2017 budget that is currently approved by Commission order in docket GE12-005. Budget increases are proposed for the residential equipment program (\$32,000) to include ground source heat pump rebates and the nonresidential equipment program (\$5,340) to increase the number of lighting rebates awarded. Similar increases were approved by the Commission in dockets GE14-001, GE15-001, and GE 15-004.

The table also shows the year to year change for the budget approved in docket GE15-004 and the proposed budget for 2017. In this case, year to year changes reflect an increase (or decrease) in the 2017 budget from the 2016 budget approved in GE15-004.

Program	2017 Budget			2016/17 Budget Comparison			
	Approved ³	Proposed	Difference	2016 Approved ⁴	2017 Proposed	Difference	YTY Change
Residential Equipment ¹	\$ 50,181	\$ 82,181	\$ 32,000	\$ 82,179	\$ 82,181	\$ 2	0%
Residential Audit	\$ 2,019	\$ 2,019	\$ -	\$ 1,997	\$ 2,019	\$ 22	1%
Residential Load Management	\$ 18,191	\$ 18,191	\$ -	\$ 17,241	\$ 18,191	\$ 950	6%
Appliance Recycling	\$ 7,632	\$ 7,632	\$ -	\$ 7,133	\$ 7,632	\$ 499	7%
Total Residential	\$ 78,023	\$ 110,023	\$ 32,000	\$ 108,550	\$ 110,023	\$ 1,473	1%
Nonresidential Equipment ²	\$ 14,214	\$ 19,554	\$ 5,340	\$ 19,553	\$ 19,554	\$ 1	0%
Nonresidential Custom	\$ 16,901	\$ 16,901	\$ -	\$ 16,887	\$ 16,901	\$ 14	0%
Small Commercial Energy Audit	\$ 2,206	\$ 2,206	\$ -	\$ 2,174	\$ 2,206	\$ 32	1%
Total Nonresidential	\$ 33,321	\$ 38,661	\$ 5,340	\$ 38,614	\$ 38,661	\$ 47	0%
Total All Electric Programs	\$ 111,344	\$ 148,684	\$ 37,340	\$ 147,164	\$ 148,684	\$ 1,520	1%

1) Proposed budget includes \$32,000 for ground source heat pumps

2) Proposed budget includes \$5,340 for lighting

3) As currently approved in docket GE12-005

4) As updated and approved in docket GE15-004

Staff agrees with MEC’s proposed budget changes to the electric programs shown in Table 1. The \$32,000 increase for ground source heat pumps results from a 2017 forecast of 16 individuals obtaining a \$2,000 rebate on average. Staff believes MEC’s estimate for participants is reasonable based on historical participation levels in the program.² Further, the 2017 electric residential equipment program is forecasted to have a Total Resource Cost³ (TRC) test of 1.67.⁴ Turning to the nonresidential equipment program, Staff believes the additional \$5,340 will help meet demand for the lighting

² Historic GSHP participation levels: 2011 - 14 units, 2012 - 6 units, 2013 - 12 units, 2014 – 6 units, 2015 – 11 units, and 2016 to date – 16 units (2017 demand estimate – 16 units).

³ Staff uses the Total Resource Cost (TRC) test to determine if programs are cost effective. TRC scores greater than 1.0 demonstrate the expected program benefits are greater than the expected program costs.

⁴ See MEC response to Staff DR 1-2.

measures in 2017.⁵ In addition, the 2017 TRC test for the electric nonresidential equipment program is forecasted to have a TRC test of 4.81,⁶ showing the program is forecasted to be cost effective at the higher budget.

2.2 Gas Program Budget Changes

Table 2, below, shows MEC’s proposed gas program budget changes for 2017 relative to the 2017 budget that is currently approved by Commission order in docket GE12-005. Budget increases are proposed for the residential equipment program (\$510,000) to include furnaces and the nonresidential equipment program (\$100,500) for furnace rebates. Similar increases were approved by the Commission in docket GE14-001, GE15-001, and GE15-004.

The table also shows the year to year change from the budget approved in docket GE15-004 and the proposed budget for 2017. Year to year changes reflect increases (or decreases) in the 2017 budget when compared to the 2016 budget approved by the Commission.

Program	2017 Budget			2016/17 Budget Comparison			
	Approved ³	Proposed	Difference	2016 Approved ⁴	2017 Proposed	Difference	YTY Change
Residential Equipment ¹	\$ 47,206	\$ 557,206	\$ 510,000	\$ 587,158	\$ 557,206	\$ (29,952)	-5.1%
Residential Audit	\$ 307,289	\$ 307,289	\$ -	\$ 304,700	\$ 307,289	\$ 2,589	0.8%
Total Residential	\$ 354,495	\$ 864,495	\$ 510,000	\$ 891,858	\$ 864,495	\$ (27,363)	-3.1%
Nonresidential Equipment ²	\$ 37,151	\$ 137,651	\$ 100,500	\$ 152,652	\$ 137,651	\$ (15,001)	-9.8%
Nonresidential Custom	\$ 31,219	\$ 31,219	\$ -	\$ 31,232	\$ 31,219	\$ (13)	0.0%
Small Commercial Energy Audit	\$ 45,683	\$ 45,683	\$ -	\$ 44,865	\$ 45,683	\$ 818	1.8%
Total Nonresidential	\$ 114,053	\$ 214,553	\$ 100,500	\$ 228,749	\$ 214,553	\$ (14,196)	-6.2%
Total All Gas Programs	\$ 468,548	\$ 1,079,048	\$ 610,500	\$ 1,120,607	\$ 1,079,048	\$ (41,559)	-3.7%

1) Proposed budget includes \$510,000 for continuing furnace rebates

2) Proposed budget includes a \$100,500 increase for furnaces

3) As approved in docket GE12-005

4) As approved in docket GE15-004

Staff agrees with MEC that furnaces should be included in both the residential and nonresidential equipment program and also agrees with the proposed budgets. For the residential equipment program, MEC supports the budget amount based on estimated participation of 1,700 and an average rebate of \$300 per participant.⁷ Further, MEC forecasts the TRC test will be 2.02 in 2017 with the inclusion of residential furnace rebates.⁸ Turning to the nonresidential equipment program, Staff believes the proposed budget is reasonable based on MEC’s expected participation for

⁵ Historic Lighting participation levels: 2011 - 97 units, 2012 – 36 units, 2013 - 593 units, 2014 – 196 units, and 2015 – 83 units (2017 demand estimate – 142 units).

⁶ See MEC response to Staff Data Request 1-2

⁷ Historic residential furnace participation levels: 2011 – 1,418 units, 2012 – 994 units, 2013 – 1,541 units, 2014 – 2,251 units, 2015 – 824 units, and 2016 to date – 1,618 units (2017 demand estimate – 1,700 units).

⁸ See MEC response to Staff Data Request 1-2

nonresidential furnace rebates in 2016.⁹ In addition, the program is forecasted to be cost-effective in 2017 with a TRC test result of 2.05.¹⁰

2.3 Historic TRC Scores for Programs with Proposed Changes for 2017

Table 3 provides the historical TRC scores for the programs MEC proposes to amend in this filing. It should be noted that the TRC scores for 2013 through 2015 reflect actual results that included the offering of GSHPs and furnaces in the Energy Efficiency Plan.

Program	2013	2014	2015	2016 Est.	2017 Est.
Electric Residential Equipment	1.66	1.3	1.48	1.68	1.67
Electric Nonresidential Equipment	3.45	2.47	23.35	4.81	4.81
Gas Residential Equipment	1.23	1.22	1.15	1.92	2.02
Gas Nonresidential Equipment	1.57	1.67	1.92	2.01	2.05

2.4 Bill Impact of Proposed 2017 Energy Efficiency Plan

Table 4 provides the estimated bill impact of MEC’s proposed Energy Efficiency Plan for 2017. This table is informational only since the actual Energy Efficiency Cost Recovery (EECR) factors for 2017 will be determined in the next MEC filing (in spring of 2017). The purpose of the table is to provide the Commission with the cost/unit of the proposed Energy Efficiency Plan and estimated bill impacts that result from the 2017 plan costs. Again, the actual EECR factors for 2017 will be adjusted for the 2016 plan year true-up and 2017 budget as approved.

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Program	Class	Proposed Budget	Estimated Incentive ¹	5-Yr Average Sales	Sales Unit	Cost/Unit	5-Yr Average Annual Cust Usage	Cust Monthly Bill Impact	Cust Annual Bill Impact
Electric	Residential	\$ 110,023	\$ 7,614		kWh			\$ 2.66	\$ 31.98
	Nonresidential	\$ 38,661	\$ 2,675		kWh			\$ 4.69	\$ 56.29
Gas	Residential	\$ 864,495	\$ 59,823		therm			\$ 0.96	\$ 11.56
	Nonresidential	\$ 214,553	\$ 14,847		therm			\$ 2.03	\$ 24.39

1) Incentive is calculated by multiplying the WACC of 6.92% to the proposed budget - WACC was approved in dockets EL14-072 and NG14-005

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⁹ Historic nonresidential furnace participation levels: 2011 - 36 units, 2012 - 56 units, 2013 - 105 units, 2014 – 144 units, 2015 – 75 units, and 2016 to date – 123 units (2017 demand estimate – 160 units)

¹⁰ See MEC response to Staff Data Request 1-2

3.0 STAFF RECOMMENDATION

Based on the discussion above, Staff makes the following recommendations to the Commission:

1. That the Commission approve the continued offering of rebates for high efficiency natural gas furnaces and ground source heat pumps (GSHPs) in the residential equipment programs for 2017, with rebates set at 2016 plan levels, and
2. That the Commission approve the proposed budget changes as requested by MidAmerican.