



**Annual Report on the
Implementation of PA 295
2017 Utility Energy Waste
Reduction Programs**

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**Sally A. Talberg, Chairman
Norman J. Saari, Commissioner**

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Executive Summary

Michigan's Energy Waste Reduction (EWR) standard, created under Public Act 295 of 2008, as amended by Public Act 342 of 2016 (Act 295 or the Act), also known as *the clean and renewable energy and energy waste reduction act*, requires all natural gas and electric utility providers in the state to implement programs for their customers to reduce overall energy usage by specified targets, in order to reduce the future cost of service to utility customers. This report complies with Section 97 of the Act.

For 2017, the Commission approved 11 EWR annual reconciliation case filings. The Commission received 64 annual reports from investor-owned utilities, cooperatives and municipal utilities and the EWR staff found them to be compliant with the Act. Michigan utility providers have consistently reached their annual required EWR targets, and in most cases continue to exceed the statutory requirement. Providers met a combined weighted average of 145 percent of their electric energy savings targets and 139 percent of their natural gas energy savings targets. EWR programs across the state accounted for electric savings totaling over 1.55 million MWh (megawatt hours) and natural gas savings totaling over 5.5 million Mcf (thousand cubic feet) for program year 2017.

PA 295 requires that all programs be cost effective by meeting the Utility System Resource Cost Test (USRCT). All programs offered during 2017 had a USRCT of 1.00 or greater.

Introduction

Section 97(4) of the Act requires that the Michigan Public Service Commission (MPSC or Commission) submit to the standing committees of the Senate and House of Representatives with primary responsibility for energy issues an annual report that evaluates and determines whether Subpart C of the Act has been cost-effective. The report may include any recommendations of the MPSC for energy waste reduction legislation.

In 2017, there were 6 natural gas investor-owned utilities (IOU), 8 electric investor-owned utility providers, 10 electric cooperatives, and 40 municipal electric utilities with approved plans, for a total of 64 natural gas and electric EWR Plans. For the 2017 program year, 55 of the 64 utilities in Michigan formally coordinated the design and implementation of their EWR programs through a collaborative process in order to reduce costs, create consistency, and improve understanding of program offerings. The remaining 9 utilities independently administered their own programs. To the extent feasible, the utility providers that independently administered their programs tried to align with the program design offered by the collaborated utility providers' programs to improve customer and contractor participation.

Program Offerings

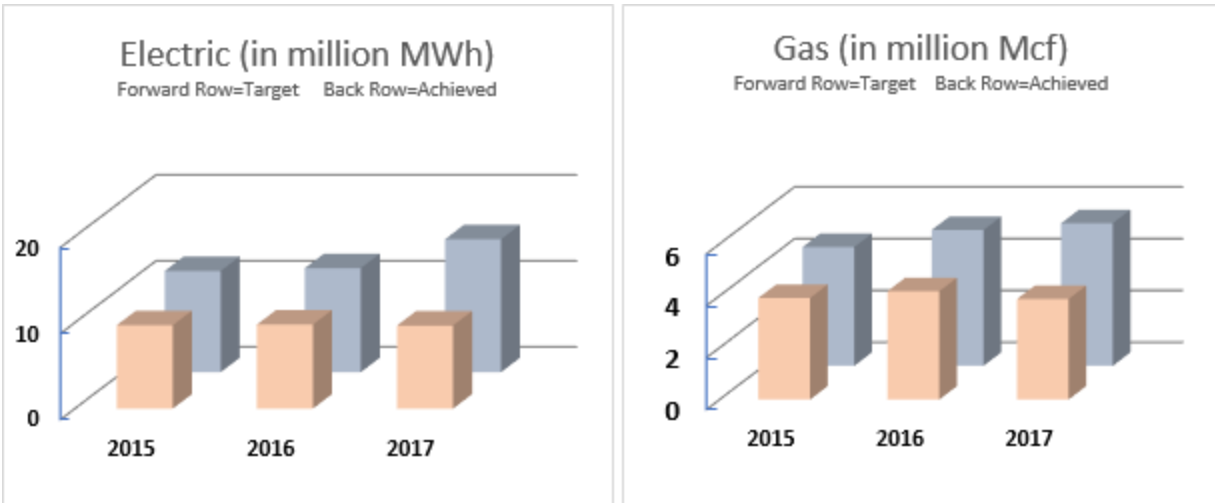
All natural gas and electric utility customers in Michigan are able to participate in energy efficiency programs offered by their local utility. New programs and emerging technologies are continuously being introduced as pilot programs which enable utilities to phase in the implementation of new programs, expand existing programs and offer new features. In general, individual programs are divided into two broad categories: residential and commercial/industrial. Residential programs consist of six major categories: lighting; heating, ventilating and air conditioning (HVAC); weatherization; energy education; appliance recycling; and pilot programs. Commercial/Industrial offerings include prescriptive and custom programs. Prescriptive programs provide rebates for specific equipment replacement such as lighting, boilers, pumps, and compressors. Custom programs generally provide a rebate per kWh of electricity savings or per Mcf of natural gas savings for a comprehensive system or industrial process improvement.

Energy Savings Targets

Section 77 of PA 342 provides annual energy savings targets for electric and natural gas utilities. The minimum savings targets are based upon a percentage of previous calendar-year retail sales for each utility. Utility providers successfully complied with the energy savings targets laid out in the Act. EWR programs across the state accounted for annual electric savings totaling 1.54 million MWh, and natural gas savings totaling 5.5 million Mcf. Energy waste reduction expenditures of \$308 million equates to a lifetime savings benefit of \$1.081 billion for electric and gas customers. Because in 2017 electric EWR programs and measures had an average measure life of 12.61 years, the lifetime savings realized for those programs and measures equates to 19,487,042 MWh. The average measure life of gas programs and measures was 12.46 years. This equates to 68,526,323

Mcf savings over the life of those programs and measures. *Figure 1* below depicts the electric and gas savings target versus the achievements for the past 3 years.

Figure 1
Electric and Gas Targets vs. Savings Achieved



EWR Surcharges and Program Funding

The Act requires utilities to specify necessary funding levels for the activities being proposed. Commission-regulated utility providers are able to recover their EWR program expenditures through a customer surcharge approved by the Commission. Surcharges approved by the Commission are assessed on either an energy usage basis or a per meter basis. Residential customers are charged based on their energy usage. The average electrical residential customer pays around \$2 per month for the EWR surcharge. Generally, commercial and industrial electric or natural gas customer's EWR surcharge is based on a per meter charge. *Figure 2* depicts the actual expenditures for the past 3 years by utility provider type.

Figure 2
Energy Waste Reduction Program Funding

Utilities	Annual Expenditures			
	2015	2016	2017	3 Year Total
Electric Companies				
Electric IOUs	\$171,544,091	\$163,357,222	\$202,597,489	\$537,498,802
Electric Cooperatives	\$5,823,828	\$7,819,506	\$7,100,348	\$20,743,682
Electric Municipalities	\$10,599,852	\$10,904,752	\$10,748,347	\$32,252,951
Total Statewide Electric	\$187,967,771	\$182,081,480	\$220,446,184	\$590,495,435
Gas Companies				
Total Statewide Gas	\$74,280,800	\$81,176,496	\$88,114,977	\$243,572,273
Total Gas and Electric	\$262,248,571	\$263,257,976	\$308,561,161	\$834,067,708

Program Benefits

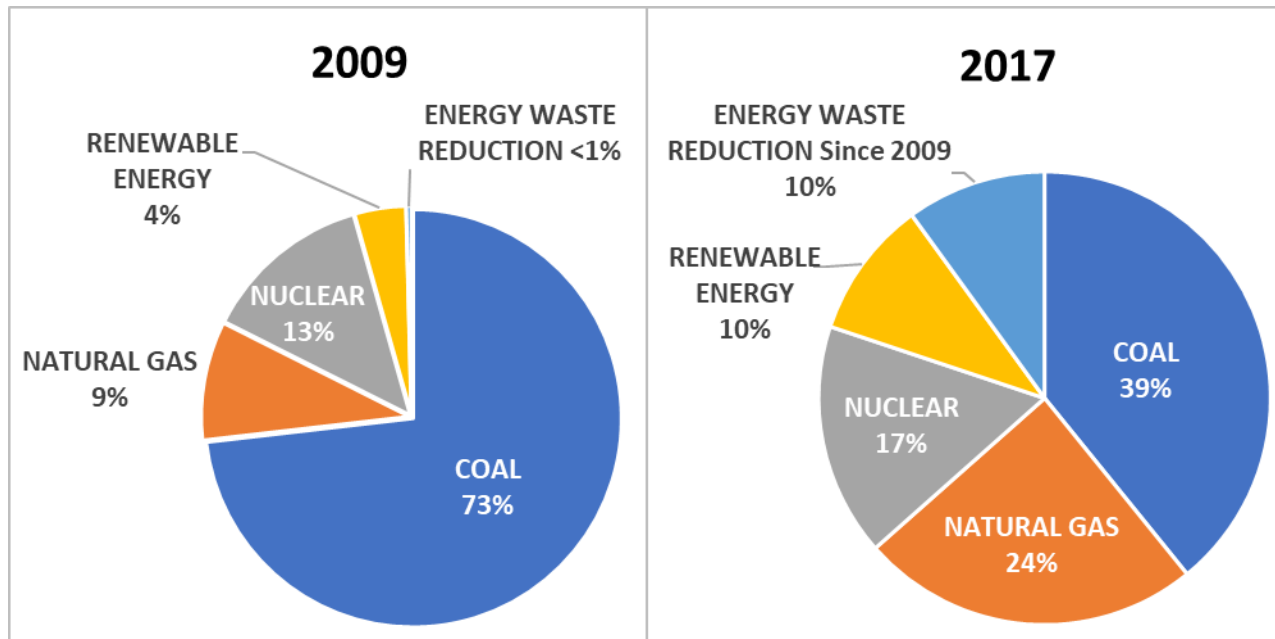
In 2017, aggregate EWR program expenditures of \$308 million by all natural gas and electric utilities in the state were estimated to result in lifecycle savings to customers of \$1.08 billion. For every dollar spent on EWR programs in 2017, customers should realize benefits of \$3.51. Data provided to the Commission in EWR provider annual reports indicated that EWR resources were obtained at a cost of \$16.23/MWh, significantly cheaper than supply side options such as new natural gas combined cycle generation of around \$55/MWh.¹

The benefits of the EWR program will flow to customers over the lifespan of the efficiency measures implemented during the year. The direct benefits are reduced utility costs, which would otherwise be recovered in utility rates. These savings are the avoided costs to utilities and are calculated based on the energy savings identified for individual energy efficiency measures as reflected in the Michigan Energy Measures Database. The cumulative reduction in customer demand for electricity is expected to result in the reduction in the need to build new electric generation plants. Since the passing of the Act in 2008, the use of coal in the state has reduced greatly through power plant closures. EWR helps to fill the gap in meeting customer needs.

¹Source: [U.S. Energy Information Administration Annual Energy Outlook 2016](#)

According to the goal described in the Act, not less than 35% of this state’s electric needs should be met through a combination of energy waste reduction and renewable energy by 2025.² The charts in *Figure 3* show that the state is well on its way to achieving that goal.

Figure 3
Michigan’s Electric Resource Mix - 2009 vs. 2017



There are other benefits of electric EWR programs besides delaying the need for building new generation: they also reduce emissions of environmental pollutants from existing generation. Both the electric and natural gas EWR programs also result in hundreds of millions of dollars in fuel cost savings that would have otherwise been spent in order to import energy into Michigan. EWR programs also increase demand for equipment and installations from local businesses. In addition, the benefits flowing to Michigan utility customers via the EWR program should help reduce utility uncollectible expenses and lower operating costs for Michigan businesses and institutions. Other non-energy benefits for Michigan residents are improvements in health and safety, and increased comfort in their homes and businesses.

² Source: [PA 295 as amended by PA 342](#)

Cost Effectiveness

There are many ways to calculate the cost effectiveness of utility energy efficiency programs. Simply stated, the overall benefits should outweigh the overall costs. The Act requires providers to meet the Utility System Resource Cost Test (USRCT or UCT).

Section 97 of the Act requires the Commission to evaluate and determine whether the energy waste reduction programs were cost-effective on an overall portfolio level. The electric utility providers programs collectively had an average UCT score of 4.8, while the gas utility providers programs averaged a score of 4.4.

State Administrator: Efficiency United

The Act created an option for electric and natural gas providers to offer energy waste reduction services collectively through a program administrator. Section 91(6) requires the administrator to be a 'qualified nonprofit organization' selected by the MPSC through a competitive bid process. To fund the program the administrator is paid directly by the participating providers using funds collected from customers.

Michigan Community Agency (MCA) is under contract as the State Administrator and its team of contractors operate under the name of Efficiency United (EU). This contract runs through December 31, 2021. Services and offerings are similar to, and coordinated with, those of other providers around the State. The EU program has successfully been able to provide programs and achieve savings target equivalent to those implemented by independent utility providers.

Programs for Low Income Customers

The Act speaks about EWR program offerings for low income residential customers. All customer classes must contribute proportionally to low income program costs based on their allocation of the utility's total EWR budget. Low income EWR programs are excluded from the requirement to meet the cost-benefit test. In 2017, \$25,945,161 was spent on programs for income qualified customers. Most Michigan customers at or below 200% of the federal poverty level qualify for these programs. Implementation of these programs generate different challenges. The uniqueness of homes and multi-family housing, along with the funding necessary to achieve savings for these customers requires the utilities to continually assess and redesign the program offerings, including working collaboratively with other low income stakeholder organizations.

Energy Waste Reduction Low Income Workgroup

In 2017, the Energy Waste Reduction section began exploring the idea of creating an EWR Low Income Workgroup with the idea of bringing together EWR staff with other state agencies, utilities, and other stakeholder groups to better address low income specific energy waste reduction approaches and create new initiatives that can reduce the cost of the energy burden on Michigan's low income customers and communities.

The EWR Low Income workgroup began in early 2018 and details will be contained in the 2018 report.

Self-Directed EWR Program

Under Section 93 of the Act, large electric customers that meet certain eligibility requirements may create and implement a customized EWR plan, and thus be exempt from paying an EWR surcharge except for a portion of income qualified program costs. Electric customer eligibility to participate in the self-directed EWR plans is determined by the customer’s annual peak demand. The Act allows customers with at least 1 MW aggregated annual peak demand in the preceding year at all of the customer’s sites within a service provider’s territory to participate. The number of customers enrolled to self-direct their own EWR program has continued to drop, with 16 customers self-directing in 2017, as shown in *Figure 4*. Energy savings for these self-directed large commercial and industrial customers are reported to their utility provider and the utility provider includes these savings in their annual savings achievements.

Figure 4

Number of Self-Directed Large Commercial and Industrial Customers

Provider	Peak Year 2010	Previous Year 2016	Current Year 2017
DTE Electric	26	6	6
Consumers Energy	30	7	5
Efficiency United	11	5	5
Cooperatives	3	0	0
Municipals	9	Not Available	0
TOTAL	79	18	16

MPSC Energy Waste Reduction Collaborative

In Case Numbers U-15805 and U-15806, the Commission directed the MPSC Staff to establish a statewide energy waste reduction collaborative which requires the participation of all natural gas and electric providers and allows the opportunity for a variety of additional stakeholders to participate. A key goal of the collaborative is to reduce the extent and cost of the formal contested hearing process through stakeholder consensus and industry peer review of standards and procedures. The collaborative identifies recommendations for improving EWR plans for all providers, offers program evaluation and support, and develops any necessary redesign

improvements to energy efficiency programs. Selective members of this group meet to serve as the Michigan Energy Measures Database Technical Subcommittee.

Michigan Energy Measures Database

Measurement and verification are essential tools in improving Energy Waste Reduction programming. In 2009, Michigan began with a foundation database of projected energy savings that was derived from other states' experience. By incorporating data derived from Michigan weather stations, program implementation, and specialized evaluation studies, the database evolved into the Michigan Energy Measures Database (MEMD).

The objective of the MEMD is to provide users with accurate information on energy savings associated with technologies or measures that could be used in energy efficiency programs. The MEMD is also used to prioritize the allocation of funding toward these possible measures. For this critical function, it is important to utilize Michigan-specific data in the MEMD. Thus, under the direction of Commission Staff, stakeholders are participating in monthly collaborative meetings developing recommendations to update this database. The collaborative has developed an annual process for selecting the highest priority measures to update with Michigan specific data. For the selected measures, field studies are undertaken in customer homes and businesses using data collection equipment, such as light loggers and sub-metering, and engineering analysis to obtain reliable measurement of the actual energy consumption.

EWR Credit Tracking System

Section 87 of the Act states, "(T)he commission shall establish an energy waste reduction credit certification and tracking program. The certification and tracking program may be contracted to and performed by a third party through a system of competitive bidding." Because there was already an established program for tracking renewable energy credits through MIRECS, a credit tracking program established and contracted with APX, implementing a tracking program for EWR credits was efficiently and effectively implemented by the end of 2018. All regulated electric and natural gas utility providers were able to input their credits earned and utilized to meet compliance for 2017 into the system. This system will now provide for a more formal process to track EWR credits earned, utilized, and, if a balance exists, carried-forward to be used if needed to meet 1/3rd of the subsequent year's compliance.

Revenue Decoupling

PA 295 authorizes the Commission to establish a revenue decoupling mechanism (RDM) upon request by those natural gas utilities that have implemented an Energy Waste Reduction program. The Commission may authorize an alternative mechanism that it deems to be in the public interest.

In 2016, PA 341 gave authorization to the Commission to approve an appropriate RDM, for an electric utility with less than 200,000 customers in this state, that adjusts for decreases in actual sales compared to the projected levels used in that utility's most recent rate case that are the

result of implemented energy waste reduction, conservation, demand-side programs, and other waste reduction measures.

Financial Incentive Mechanism

Section 75 of PA 342 allows Commission-regulated utilities to request a financial incentive payment for exceeding the energy savings targets in a given year. There are currently four utilities that have requested and received approval for a financial incentive mechanism. The Act allows for an incentive of up to 20 percent of program spending for exceeding the statutory requirements. Each utility must first exceed the required savings level plus meet a set of utility specific program metrics to receive their award. An example of a program metric is meeting a required level of lifetime savings which requires the utilities to focus on measures that have longer lives for their customers, such as high-efficiency furnaces, sealing leaks, and insulation. Other metrics involve greater low income savings targets or spend, and multi-family home initiatives.

On Bill Financing (OBF)

In 2016, PA 295 was amended to allow utilities with rates regulated by the Commission to establish residential “on-bill financing” programs. These programs will allow a customer to pay back the cost of energy efficiency improvements over time on their utility bill. In December 2018, the Commission finalized the formal rulemaking process to amend the Commission’s Consumer Standards and Billing Practices for Electric and Natural Gas Service to include on-bill financing provisions (MPSC Case No. U-20152).

Conclusion

Energy Waste Reduction programs have seen many successes due to continued efforts by utilities and their EWR contractors and implementation allies. The 2017 program year was no exception, with utilities meeting or exceeding energy savings targets. The amendment of PA 295 in 2016 supports and acknowledges that utility EWR programs provide value to Michigan residents and businesses.

The work of the EWR Collaboratives and the ongoing pilots and evaluation activities provide strong support for the evolution of the EWR programs and the ability to continue to achieve the statutory requirements in a cost-effective manner. The EWR programs continue to attract a wide range of customers from low income residential to large scale industrial customers. Increasingly large customers are relying on the utility programs instead of operating their own self-direct program.

There are broad benefits of the EWR programs. The cost of reducing energy waste is much lower than other energy sources. Customers who participate in the program directly benefit by seeing reduced energy use and lower bills. Other benefits, such as reduced emissions and fuel cost savings, provide value to all Michigan customers. The EWR programs have led to the creation of jobs in Michigan, by companies that implement the programs for utilities and energy

efficiency contractors that install improvements for customers. The EWR programs have also prompted the increased availability of higher efficiency equipment such as LED lighting for homes and businesses. EWR can also increase the comfort, health, and safety of homes and businesses, and help energy providers reliably meet the energy needs of their customers.

The Commission continues to explore ways to improve the savings and increased benefits of the programs for large and small utilities and to adapt the scope of the programs to meet the needs of all customers. The utilities and other parties maintain an active pursuit of better and more efficient EWR plans. The Commission makes no recommendations for legislation at this time.