

2021 Impact Statement

10 farm energy audits and 11 renewable energy assessments were completed. The economic hardship faced by Michigan agricultural operations and the on-field person-to-person restrictions were major contributor to a drop in energy audits requested. Energy audits amounted to a potential annual savings of \$195,917. This equates to 294,763 kWh and 25,080 MMBtu of energy. However and increased demand for renewable energy assessments amounted to a potential annual savings of \$113,098. This equates to 200,386 kWh and 16,575 MMBtu of energy.

Program Impact Statement

A. Michigan Agricultural Energy Council

- 1) MAEC is the premier technical resource, information and training entity for distribution and transmission line Earth-to-Neutral (Stray NEV) issues affecting Michigan Ag. operators.
- 2) Provides only Earth-to-Neutral investigative training in Michigan and the Mid-West.
- 3) Developed for the MPSC, Michigan's guidelines for Earth-to-Neutral detection and investigative procedures.

B. Michigan Farm Energy Program (MFEP)

- 1) Only State in the U.S. to have a State certified farm energy audit type 2 training and certification program using ASABE/ANSI S16 standards. Program recognized by USDA-REAP, USDA-NRCS, State agencies, Utility programs and peer institutions. Energy auditors in Wisconsin, Indiana, and Nebraska have been certified through our program. Advised and collaborated with others States as well.
- 2) Recognized by USDA-REAP and USDA-NRCS Michigan and in Washington, due to several of our farm energy auditing protocols have now been adopted by USDA as part of their national guidelines.
 - 3 years prior energy use documentation and analysis.
 - On-site auditor requirement
 - Software cooperator for USDA supported energy efficiency software (grain drying and greenhouse)
- 3) State Program Participation
 - Worked with Utilities in include over 40 ag. specific energy efficiency measures on the Michigan Public Service Commission's MEMD list of accepted energy efficiency measures adopted by Michigan Utilities.
 - Convinced and assisted the major MI Utilities in developing an agricultural component to their Waste Reduction Rebate Program.
 - Pushed for farm energy audit rebates currently adopted by most MI Utilities
 - Pushed for reduced cost burden for 3-Phase and natural gas line extension for agricultural operators
- 4) Developed the Michigan Farm Energy Program (MFEP) to train certified farm energy auditors to assist farms compete for federal and state energy efficiency as well as renewable energy programs. During the initial USDA farm energy funding period of 7 years, from 2003 to 2009 there were only a total 35 USDA energy efficiency projects in Michigan. Michigan's highest ranking during this period was 46th.

- After the establishment of the Michigan FEP Fall of 2009, Michigan's ranking rose to 5th by 2012 from a previous high-water mark of 46th. During that period (2010-2012) energy efficiency project numbers jumped by 757% and by 1,928% in funding resulting in millions of dollars annually now impacting the Michigan Economy. Michigan has maintained its top 10 ranking to the present, utilized all its state allocation and even gained unused funds from other states which was not the case before program inception.
USDA renewable energy projects from 2003-2009 totaled 31 in Michigan. From 2010-2012 USDA project numbers jumped by 803% and a 554% in funding.

Results:

Farm & Rural Energy Audits and Renewable Energy Audits (2010 – 2020)

No.	Operation	Savings (kWh)	% Savings	Total Annual Savings (\$)	Total Owner cost (\$)	Payback Time (years)	Potential Average Annual Savings (\$)	Energy usage (kWh)
134	Dairy Farms	11,521,413	35	1,248,508	283,105	0.2	9,317	32,480,476
65	Grain Drying	16,680,597	30	1,091,945	8,447,247	7.7	16,799	55,415,130
43	Greenhouse	41,113,058	35	1,347,834	6,712,282	5.0	31,345	116,611,164
29	Food/Fruit Process	2,876,595	41	401,030	2,145,748	5.4	13,829	7,018,786
20	Irrigation	4,777,314	53	434,741	1,643,685	3.8	21,737	9,019,826
12	Crops	375,529	4	53,583	130,250	2.4	4,465	9,311,834
5	Beef	69,076	14	9,913	19,476	2.0	1,983	508,483
4	Hogs	198,264	14	18,002	59,718	3.3	4,501	1,382,858
2	Poultry	12,618,901	62	567,365	2,053,625	3.6	283,683	20,245,372
46	Rural Business	14,839,248	36	872,945	2,517,355	2.9	18,977	40,692,666
1	Integrated Farm	11,358	94	1,693	3,480	2.1	1,693	12,136
1	Maple	4,192	7	3,639	42,700	11.7	3,639	56,065
6	Fish Hatcheries	2,537,557	14	142,378	255,338	1.8	23,730	17,617,861
368	Audit Total	107,623,100	35	6,193,576	24,314,009	3.9	\$ 16,830	310,372,655
163	Renewable Energy	33,279,833	71	1,901,976	16,177,459	8.5	\$ 11,669	46,667,484
531	Grand Total	140,902,933	39	8,095,552	40,491,468	5.0	\$ 15,246	357,040,139

Opinions about the Michigan Farm Energy Program:

1. *"I strongly endorse the MFEP as a farm energy audit model that should be adopted nationally by the board of directors of the Dairy Management Institute"* – Ken Nobis, President, Michigan Milk Producers Association (MMPA), 2010.

2. *“I believe MI Farm Energy Auditor Certification meets the intent of statements in (ASABE/ANSI) S612 regarding certification”* – Russell H. Hahn, P.E, former Director of Standards Development for ASABE and was brought in to facilitate/oversee ASABE S612 (Farm Energy Audit Standards) developed in 2009.
3. *“The MSU Farm Energy Program provided the leadership for the development of the Michigan Energy Priority Issues put forward for implementation by the major farm organizations (Farm Bureau, Ag Leaders of Michigan, Michigan Agribusiness Association, and commodity groups)”* – Dianne Byrum, Chairperson, Ag. Leaders of Michigan. This Issues list was the basis for the current energy based legislations being endorsed by agriculture. 2014.
4. *“The MI Farm Energy Audit Program has been an asset to growing the USDA-REAP Program in Michigan. In FY2012, Michigan was in the top five nationally”* – Rick Vanderbeek, Business Program Specialist, Rural Development, U.S. Department of Agriculture. 2015.
5. *“an organization that has overcome the barrier of communicating the benefits of energy efficiency by developing effective communication tools, marketing campaigns, and customer or behavioral engagement programs”* - State Representative Sam Singh (East Lansing), 2015.
6. *The program has made a difference in terms of increasing USDA Rural Development Rural Energy for America Program (REAP) funded energy efficiency and renewable energy projects coming to Michigan. Since the Michigan Farm Energy Program was established in 2009, Michigan has been a top ten state in receiving REAP funding. Looking at the program just in terms of the dollar value - not including information and as a resource base for farmers to ask questions and provide a third party reliable resource - speaks to the value of the program.* - Michigan Farm Energy Program: Gaps, Issues and Opportunities, Michigan Energy Office (EGLE), November 2018.
7. *“The Michigan Farm Energy Program is an important resource for Michigan’s agriculture industry and the program has exhibited success helping farmers identify and pursue necessary energy investments by increasing access to energy audits through its training and certification program. It also indicated that “MFEP faces operational challenges, the availability of energy audits for the state’s agriculture industry is an essential part of ensuring continued investment in efficiency and renewables.* - “Agriculture and Rural Communities Energy Roadmap”
(https://www.michigan.gov/documents/energy/Recommendations_ActionPlan_672483_7.pdf) developed by Public Sector consultants released late 2019 and funded by the Michigan Department of Environment, Great Lakes and Energy
8. *91% of the operations indicated they were satisfied with the auditor they worked with to complete the audit. One respondent reported the auditor was friendly and thoroughly explained the report after it was written. Another respondent reported the audit was very useful, the auditors did a great job, and the audit provided very close estimates on cost implementations.* – Michigan Farm Energy Program: Gaps, Issues and Opportunities, Michigan Energy Office (EGLE), November 2018.

9. *Every person who was interviewed (n=12) indicated the Michigan Farm Energy Program was a useful program and it should be continued. It should be noted that the manager of the Michigan Farm Energy Program was not asked this question due to his managerial oversight of the program. One respondent said “any program that can make a farm more efficient and put money in the farmer’s pocket to make it more viable is a positive program”. Another respondent characterized the program as a “most necessary program, both for our world and for our environment, for our farms and their continuity”. Another respondent gave the program a qualified yes. - Michigan Farm Energy Program: Gaps, Issues and Opportunities, Michigan Energy Office (EGLE), November 2018.*