

**MECA Electric Cooperative Collaborative
Energy Waste Reduction Annual Report for 2017
MPSC Case Numbers U-18271, U-18274, U-18275, U-18276, U-18277,
U-18278 and U-18280**

INTRODUCTION:

Pursuant to 2016 Public Act 342 (PA 342), the Alger Delta Cooperative Electric Association, Cloverland Electric Cooperative, Great Lakes Energy Cooperative, Midwest Energy Cooperative, Ontonagon County Rural Electrification Association, Presque Isle Electric & Gas Co-Op, and HomeWorks Tri-County Electric Cooperative (collectively, “Applicants”), excluding Cherryland Electric Cooperative and Thumb Electric Cooperative, are filing this annual energy waste reduction (EWR) report with the Michigan Public Service Commission (MPSC).

PA 342 SECTION 97 SUBSECTIONS 1-3 REQUIREMENTS:

Section 97 (1) Each provider shall submit to the commission an annual report that provides information relating to the actions taken by the provider to comply with the energy waste reduction standards.

The Applicants have taken the following actions to comply with the EWR standards:

- Filed a 4-year Energy Optimization plan with the MPSC on August 3, 2015 as required by PA 295 (See MPSC Docket Nos. U-17778, U-17781, U-17782, U-17783, U-17784, U-17785, and U-17787).
- The 2016 – 2019 EO Plan was approved by the MPSC on December 22, 2015.
- Overall administration of the EO programs was the responsibility of the Michigan Electric Cooperative Association (MECA).
- Began implementing the 2016 – 2019 EO Plan on January 1, 2016.
 - WECC was selected to implement all Residential, Commercial, and Industrial Programs, the Applicant’s Energy Optimization (EWR) website www.michigan-energy.org, the Tracking System, and Rebate Processing Center.
- Contracted with DNV-GL as the independent 3rd party evaluation contractor for the certification of kWh savings.
- Contracted with Morgan Marketing Partners (MMP) to design the Energy Optimization Programs and perform the cost effectiveness test calculations.
- Filed a 2018 – 2019 Energy Waste Reduction Biennial Plan on September 14, 2017 (see MPSC Docket Nos. U-18271, U-18274, U-18275, U-18276, U-18277, U-18278, and U-18280).
- The 2018 – 2019 EWR Biennial Plan was approved by the MPSC on December 1, 2017.
- Began implementing the 2018 – 2019 EWR Plan on January 1, 2018.

Section 97 (2) An annual report under subsection (1) shall include the following information: (a) the amount of energy waste reduction achieved during the reporting period. (b) Expenditures made in the past year and anticipated future expenditures to comply with this subpart. (c) Any other information that the commission determines necessary.

The report is attached as Exhibit A consisting of 8 pages. Also attached is DNV-GL 2017 Certification of achieved kWh dated March 12, 2018 consisting of 2 pages.

Section 97 (3) Concurrent with the submission of each report under subsection (1), a cooperative electric utility shall submit a summary of the report to its members in a periodical issued by an association of rural electric cooperatives and to its board of directors.

Alger Delta Cooperative Electric Association, Cloverland Electric Cooperative, Great Lakes Energy Cooperative, HomeWorks Tri-County Electric Cooperative, Midwest Energy, Ontonagon County Rural Electrification Association, and Presque Isle Electric & Gas Co-Op will publish a summary of this report in the September issue of the Michigan Country Lines Magazine to be mailed on Tuesday September 4, 2018.

Separately in a direct mailing or in person, each cooperative will provide a copy of the annual report to its Board of Directors. This report will be posted to the MECA EO Collaborative website at www.michigan-energy.org.

Section 71 (4) (i) Include a process for obtaining an independent expert evaluation of the actual energy waste reduction programs to verify the incremental energy savings from each energy waste reduction program for purposes of section 77.

On December 28, 2010, MECA issued a Request for Proposal to 32 evaluation contractors for the independent 3rd party evaluation of the MECA EO Collaborative Programs for 8 cooperatives and 4 Upper Peninsula municipals. On January 22, 2011, MECA received bids from 4 of those contractors, (2 contractors submitted 1 bid with the other working as a subcontractor) resulting in 3 viable bids from which DNV-GL was selected. The contract has since been amended to include 6 municipals and 7 cooperatives.

2017 kWh ACHIEVEMENTS, GOALS, CARRY-FORWARD FROM 2016 INTO 2017:

The MWh achieved in 2017 for the Cooperatives was 29,044 (reference DNV-GL Certificate of Savings dated March 12, 2018) compared to the 2017 goal of 33,052 MWh (reference 2016 – 2019 EO Plan approved by the MPSC on December 22, 2015). Additionally, there was 7,335 MWh carried into 2017 from the 2016 over-achievement resulting in a combined 2017 achievement of 36,379 MWh representing 110% MWh savings achieved compared to goal.

The Settlement Agreement dated December 22, 2015 states that “For purposes of determining compliance with the minimum energy savings found in Section 77 of Subpart B of PA 295 of 2008, MCL § 460.1077, each member of the Collaborative may be collectively treated as one provider. In other words, in determining whether incremental energy savings in a year are equivalent to

1% of total annual retail electricity sales in megawatt hours in the preceding year, the Collaborative shall have the option to be treated as one provider”.

The Municipals are included in Table 1 below for informational purposes only, but also to illustrate the goals and kWh achievements for the MECA EO Collaborative as a whole.

Table 1: kWh Savings Goals, Achievements, and Carry Forward:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	2017					2018		
	MW Goal	MW Achieved In 2017	2016 MW Carry Forward	Total MW	Percent of Goal	MW Goal	Budget \$	
(1)	Alger Delta	730	625	250	875	120%	745	\$284,483
(2)	Cloverland Electric	6,623	4,614	2,106	6,720	101%	6,272	\$1,439,952
(3)	Great Lakes Energy	13,526	11,773	2,908	14,681	109%	13,246	\$3,758,424
(4)	HomeWorks Tri-County	3,364	3,248	807	4,056	121%	3,362	\$977,544
(5)	Midwest Energy	6,139	6,153	616	6,769	110%	6,183	\$1,687,327
(6)	Ontonagon	254	202	61	263	104%	252	\$114,404
(7)	Presque Isle Electric	2,417	2,429	585	3,014	125%	2,418	\$788,754
(8)	Total Cooperatives	33,052	29,044	7,335	36,379	110%	32,478	\$9,050,888
	Note: Municipals are included in this table for informational purposes only							
(9)	Daggett	11	7	4	12	105%	11	\$4,399
(10)	Escanaba	1,410	1,730	407	2,138	152%	1,409	\$257,492
(11)	Marquette	3,020	2,495	530	3,025	100%	3,003	\$523,709
(12)	Newberry	174	180	2	182	105%	171	\$31,722
(13)	South Haven	1,352	1,513	261	1,774	131%	1,374	\$247,967
(14)	Stephenson	60	50	17	66	111%	60	\$11,999
(15)	Total Municipals	6,027	5,976	1,221	7,197	119%	6,028	\$1,077,288
(16)	Total EO Collaborative	39,079	35,020	8,556	43,576	112%	38,505	\$10,128,176

Additional details on individual electric cooperative program kWh savings and expenses are contained in Exhibit A, pages 1 – 8.

MARKET TRANSFORMATION MULTIPLIERS:

Market transformation multipliers were discontinued in 2016. There are no transformational multipliers used or included in the 2017 EWR kWh reductions.

SOLAR PROGRAM CONTRIBUTION TO THE EO PROGRAM PORTFOLIO:

The MECA EO Collaborative Plan approved on December 22, 2015 included a component for community solar and individual solar programs. The primary goal of the Residential Solar Program is to encourage residential members/customers to install energy-saving solar equipment. The installation of energy-saving solar equipment is made through contractors specializing in solar equipment technologies. The program is designed to lower the use of electricity and lower energy bills of the member/customer. The program encourages solar contractors to use the program to promote solar technologies as a viable electric energy alternative. The program's target market is residential member/customers. At the electric provider's option, the program offers member/customers the opportunity to participate individually or collectively. The target markets include the member/customer and contractors who specialize in solar technology installations. This program is offered at the electric provider's option. The Solar Program represents a very small proportion of the overall EO kWh savings achievements. The energy generated by solar PV represents less than 1% of the total EO portfolio's savings.

The MECA EO Collaborative is discontinuing the Solar Program and will no longer be a component of the MECA EO Collaborative program portfolio after November 2018.

Michigan Public Service Commission
Michigan Electric Cooperative Association (MECA) All Cooperatives
Energy Optimization Plan
Program Costs Portfolio Summary
for the year ended December 31, 2017

Case No's. U-18271, 18274 -18278, 18280
 Witness: John E. Fought
 Exhibit No. A, Page No. 1 of 8

Line No.	(Col. 1)	(Col.2)	(Col. 3)	(Col. 4)	(Col. 5)	(Col.6)	(Col. 7)	(Col. 8)	(Col. 9)	(Col. 10)	(Col. 11)
				2017 Actual			2017 Plan			(O) U: Plan-Actual	
	Program Portfolio	USRC T Result s(1)	CEE Result ct./kwh (2)	KWh Savings (3)	Cost	Number of Applica- tions	KWh Savings (3)	Cost	Number of Applica- tions	KWh Savings Actual "O" "(U)" Plan	Cost Actual "O" "(U)" Plan
1	Residential KWH savings and cost										
2	Income qualified			655,758	\$ 198,920	2,827	818,094	\$ 339,810		(162,336)	\$ (140,890)
3	High efficiency products			9,880,772	1,921,917	289,735	9,555,439	2,990,251		325,333	(1,068,334)
4	Appliance recycling			2,082,511	410,936	1,817	2,006,643	564,182		75,868	(153,246)
5	Efficient HVAC equipment			1,685,406	759,324	3,134	1,631,789	906,006		53,617	(146,682)
6	Audit/WX/new const/behavior			777,378	334,301	8,437	11,105	510,942		766,273	(176,641)
7	Farm services			473,959	100,699	637	2,238,769	131,887		(1,764,810)	(31,188)
8	Solar program			306,465	56,585	1	868,227	7,419		(561,762)	49,166
9	X Educational services			534,581	135,125	-	592,475	169,046		(57,894)	(33,921)
10	X Pilot programs			956,537	211,617	-	896,901	281,743		59,636	(70,126)
11	Total residential KWH savings and cost			17,353,367	4,129,424	306,588	18,619,442	5,901,286		(1,266,075)	(1,771,862)
12	Commercial & industrial KWH savings and cost										
13	General business services			10,532,019	1,506,612	26,496	13,278,075	2,025,537		(2,746,056)	(518,925)
14	X Educational services			434,451	93,535		432,980	91,128		1,471	2,407
15	X Pilot programs			724,086	131,949		721,633	151,882		2,453	(19,933)
16	Total C & I KWH savings and cost			11,690,556	1,732,096	26,496	14,432,688	2,268,547		(2,742,132)	(536,451)
17	Portfolio-level costs										
18	MECA overall administration				197,044			227,520			(30,476)
19	Member overhead / indirect				402,168			613,668			(211,500)
20	Tracking				(216)			-			(216)
21	Evaluation				47,392			75,325			(27,933)
22	Total portfolio-level costs				646,388			916,513			(270,125)
23	Total, all costs				\$ 6,507,908	333,084		\$ 9,086,346			\$ (2,578,438)
27	Total KWH savings			29,043,923			33,052,130			(4,008,207)	
28	KWH carryover excess (shoprtfall)			7,334,620							
29	KWH savings after carryover			36,378,543							
30	BTU equivalents for KWH amounts:										
31	Residential			59,212,152,382.1			63,532,180,064.8			(4,320,027,682.7)	
32	Commercial & industrial			39,889,837,131.0			49,246,380,897.7			(9,356,543,766.7)	
33	Total BTU equivalents			99,101,989,513.1			112,778,560,962.5			(13,676,571,449.4)	

X Only charges from WECC are to be recorded for these programs.

Y Only direct co-op EO costs are to be charged to these programs.

**Alger Delta Cooperative Electric Association
for Michigan Electric Cooperative Association (MECA)
Energy Optimization Report
for the year ended December 31, 2017**

**Case Number U-18271
Witness: John E. Fought
Exhibit A, Page 2 of 8**

Line No. (Col. 1) (Col. 2) (Col. 3) (Col. 4) (Col. 5) (Col. 6) (Col. 7) (Col. 8) (Col. 9) (Col. 10) (Col. 11)

Line No.	Program Portfolio	USRC T Results (1)	CEE* Results ct./kwh (2)	2017 Actual			2017 Plan			Variance: Plan-Actual	
				KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings Actual "O" "(U)" Plan	Revenue & Cost Actual "O" "(U)" Plan
1	Revenues										
2	Residential				\$ 145,423		\$ 193,866				\$ (48,443)
3	Income qualified at 3.74 % of residential and C & I revenue				6,976		10,359				(3,383)
4	Plus self-directed low income fees				-		-				-
5	Total low income revenue				6,976		10,359				(3,383)
6	Commercial & industrial				34,132		72,751				(38,619)
7	Total surcharge revenue				186,531		276,976				(90,445)
8	Residential KWh savings and cost										
9	Income qualified			5,180	3,533	9	19,305	8,019		(14,125)	(4,486)
10	High efficiency products			316,304	92,459	9,018	303,540	94,468		12,764	(2,009)
11	Appliance recycling			88,486	18,364	94	60,972	17,191		27,514	1,173
12	Efficient HVAC equipment			23,144	8,681	33	15,293	6,489		7,851	2,192
13	Audit/Wx/new const/behavior			16,394	4,835	27	99	7,243		16,295	(2,408)
14	Farm services			1,131	1,827	15	24,386	3,089		(23,255)	(1,262)
15	Solar program			4,603	112	-	20,337	66		(15,734)	46
16	X Educational services			13,745	4,608	-	14,480	6,042		(735)	(1,434)
17	X Pilot programs			24,988	7,680	-	24,133	10,070		855	(2,390)
18	Total residential KWH savings and cost			493,975	142,099	9,196	482,545	152,677		11,430	(10,578)
19	Commercial & industrial KWH savings and cost										
20	General business services			111,120	29,785	447	227,520	30,659		(116,400)	(874)
21	X Educational services			7,444	2,218	-	7,419	2,267		25	(49)
22	X Pilot programs			12,407	3,696	-	12,365	3,779		42	(83)
23	Total C & I KWH savings and cost			130,971	35,699	447	247,304	36,705		(116,333)	(1,006)
24	Portfolio-level costs										
25	MECA overall administration				14,698			15,431			(733)
26	Member overhead & indirect costs				25,859			74,914			(49,055)
27	Tracking				-			-			-
28	Evaluation				2,135			2,340			(205)
29	Total portfolio-level costs				42,692			92,685			(49,993)
30	Total, all costs				220,490	9,643		282,067			(61,577)
31	Total KWH savings & revenue less costs			624,946	\$ (33,959)		729,849	\$ (5,091)		(104,903)	\$ (28,868)
32	KWH carryover excess (shortfall)			250,406							
33	KWF savings after carryover			875,352							
34	BTU/hr equivalents for KWH amounts:										
35	Residential			1,685,512,844.5			1,646,512,061.4			39,000,783.1	
36	Commercial & industrial			446,891,649.9			843,836,365.2			(396,944,715.3)	
37	Total BTU/hr equivalents			2,132,404,494.4			2,490,348,426.6			(357,943,932.2)	

X Only charges from WECC are to be recorded for these programs
Y Only direct co-op EO costs are to be charges to these programs.

**Cloverland Electric Cooperative
for Michigan Electric Cooperative Association (MECA)
Energy Optimization Report
for the year ended December 31, 2017**

**Case Number U-18274
Witness: John E. Fought
Exhibit A, Page 3 of 8**

Line No. (Col. 1) (Col. 2) (Col. 3) (Col. 4) (Col. 5) (Col. 6) (Col. 7) (Col. 8) (Col. 9) (Col. 10) (Col. 11)

Program Portfolio	USRC T Result s(1)	CEE* Result s ct./kwh (2)	2017 Actual			2017 Plan			Variance: Plan-Actual	
			KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings Actual "O" "(U)" Plan	Revenue & Cost Actual "O" "(U)" Plan
Revenues										
Residential				\$ 496,427			\$ 596,573			\$ (100,146)
Income qualified at 3.74 % of residential and C & I revenue				45,324			55,841			(10,517)
Plus self-directed low income fees				-			-			-
Total low income revenue				45,324			55,841			(10,517)
Commercial & industrial				670,113			840,673			(170,560)
Total surcharge revenue				1,211,864			1,493,087			(281,223)
Residential KWH savings and cost										
Income qualified			151,226	39,869	235	113,652	47,207		37,574	(7,338)
High efficiency products			1,410,867	373,626	40,869	1,691,965	335,429		(281,098)	38,197
Appliance recycling			443,367	99,268	421	366,288	101,688		77,079	(2,420)
Efficient HVAC equipment			190,430	96,083	345	170,849	79,673		19,581	16,410
Audit/Wx/new const/behavior			80,700	13,889	104	-	14,970		80,700	(1,081)
Farm services			32,896	17,511	67	85,487	28,075		(52,591)	(10,564)
Solar program			-	-		184,824	-			-
X Educational services			80,854	14,172		85,173	18,593		(4,319)	(4,421)
X Pilot programs			146,986	23,652		141,955	30,988		5,031	(7,336)
Total residential KWH savings and cost			2,537,326	678,070	42,041	2,840,193	656,623		(118,043)	21,447
Commercial & industrial KWH savings and cost										
General business services			1,772,949	425,232	12,855	3,480,000	547,028		(1,707,051)	(121,796)
X Educational services			113,864	22,320		113,478	22,847		386	(527)
X Pilot programs			189,773	37,200		189,130	38,079		643	(879)
Total C & I KWH savings and cost			2,076,586	484,752	12,855	3,782,608	607,954		(1,706,022)	(123,202)
Portfolio-level costs										
MECA overall administration				57,129			57,000			129
Member overhead & indirect costs				53,810			102,575			(48,765)
Tracking				-			-			-
Evaluation				8,997			11,885			(2,888)
Total portfolio-level costs				119,936			171,460			(51,524)
Total, all costs				1,282,758	54,896		1,436,037			(153,279)
Total KWH savings & revenue less costs			4,613,912	\$ (70,894)		6,622,801	\$ 57,050		(1,824,065)	\$ (127,944)
KWH carryover excess (shortfall)			2,106,008							
KWH savings after carryover			6,719,920							
BTU/hr equivalents for KWH amounts:										
Residential			8,657,716,612.3			9,691,141,823.4			(1,033,425,211.1)	
Commercial & industrial			7,085,606,307.2			12,906,795,626.3			(5,821,189,319.1)	
Total BTU/hr equivalents			15,743,322,919.5			22,597,937,449.7			(6,854,614,530.2)	

X Only charges from WECC are to be recorded for these programs
Y Only direct co-op EO costs are to be charges to these programs.

**Great Lakes Energy Cooperative
for Michigan Electric Cooperative Association (MECA)
Energy Optimization Report
for the year ended December 31, 2017**

Case Number U-18275
Witness: John E. Fought
Exhibit A, Page 4 of 8

Line No. (Col. 1) (Col. 2) (Col. 3) (Col. 4) (Col. 5) (Col. 6) (Col. 7) (Col. 8) (Col. 9) (Col. 10) (Col. 11)

Line No.	Program Portfolio	USRC T Result s(1)	CEE* Result s ct./kwh (2)	2017 Actual			2017 Plan			Variance: Plan-Actual	
				KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings Actual "O" "(U)" Plan	Revenue & Cost Actual "O" "(U)" Plan
1	Revenues										
2	Residential				\$ 1,576,742			\$ 2,445,702			\$ (868,960)
3	Income qualified at 3.74 % of residential and C & I revenue				96,152			138,657			(42,505)
4	Plus self-directed low income fees				-			-			-
5	Total low income revenue				96,152			138,657			(42,505)
6	Commercial & industrial				897,995			1,123,037			(225,042)
7	Total surcharge revenue				2,570,889			3,707,396			(1,136,507)
8	Residential KWh savings and cost										
9	Income qualified			240,460	59,825	1,333	305,825	127,030		(65,365)	(67,205)
10	High efficiency products			4,687,913	765,801	137,593	3,745,573	1,457,374		942,340	(691,573)
11	Appliance recycling			852,892	130,239	838	624,754	176,148		228,138	(45,909)
12	Efficient HVAC equipment			710,230	290,079	1,095	718,486	414,032		(8,256)	(123,953)
13	Audit/Wx/new const/behavior			356,190	127,642	4,466	6,520	265,436		349,670	(137,794)
14	Farm services			198,131	41,847	317	1,297,669	50,868		(1,099,538)	(9,021)
15	Solar program			299,246	54,994	-	334,869	4,356		(35,623)	50,638
16	X Educational services			217,720	43,578	-	229,351	76,222		(11,631)	(32,644)
17	X Pilot programs			395,800	72,711	-	382,252	127,036		13,548	(54,325)
18	Total residential KWH savings and cost			7,958,582	1,586,716	145,642	7,645,299	2,698,502		313,283	(1,111,786)
19	Commercial & industrial KWH savings and cost										
20	General business services			3,342,037	478,941	8,067	5,410,470	808,529		(2,068,433)	(329,588)
21	X Educational services			177,028	25,641		176,428	35,000		600	(9,359)
22	X Pilot programs			295,046	42,732		294,047	58,334		999	(15,602)
23	Total C & I KWH savings and cost			3,814,111	547,314	8,067	5,880,945	901,863		(2,066,834)	(354,549)
24	Portfolio-level costs										
25	MECA overall administration				46,252			63,685			(17,433)
26	Member overhead & indirect costs				127,187			149,721			(22,534)
27	Tracking				-			-			-
28	Evaluation				19,209			31,810			(12,601)
29	Total portfolio-level costs				192,648			245,216			(52,568)
30	Total, all costs				2,326,678	153,709		3,845,581			(1,518,903)
31	Total KWH savings & revenue less costs			11,772,693	\$ 244,211		13,526,244	\$ (138,185)		(1,753,551)	\$ 382,396
32	KWH carryover excess (shortfall)			2,908,230							
33	KWH savings after carryover			14,680,923							
34	BTU/hr equivalents for KWH amounts:										
35	Residential			27,155,811,902.6			26,086,845,820.5			1,068,966,082.1	
36	Commercial & industrial			13,014,288,335.8			20,066,619,434.2			(7,052,331,098.4)	
37	Total BTU/hr equivalents			40,170,100,238.4			46,153,465,254.7			(5,983,365,016.3)	

X Only charges from WECC are to be recorded for these programs
Y Only direct co-op EO costs are to be charges to these programs.

**HomeWorks Tri-County Electric Cooperative
for Michigan Electric Cooperative Association (MECA)
Energy Optimization Report
for the year ended December 31, 2017**

Case Number U-18280
Witness: John E. Fought
Exhibit A, Page 5 of 8

Line No. (Col. 1) (Col. 2) (Col. 3) (Col. 4) (Col. 5) (Col. 6) (Col. 7) (Col. 8) (Col. 9) (Col. 10) (Col. 11)

Line No.	Program Portfolio	USRC T Result s(1)	CEE* Result s ct./kwh (2)	2017 Actual			2017 Plan			Variance: Plan-Actual	
				KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings Actual "O" "(U)" Plan	Revenue & Cost Actual "O" "(U)" Plan
1	Revenues										
2	Residential				\$ 357,108		\$ 612,080				\$ (254,972)
3	Income qualified at 3.74 % of residential and C & I revenue				20,925		33,818				(12,893)
4	Plus self-directed low income fees				-		-				-
5	Total low income revenue				20,925		33,818				(12,893)
6	Commercial & industrial				181,443		258,316				(76,873)
7	Total surcharge revenue				559,476		904,214				(344,738)
8	Residential KWh savings and cost										
9	Income qualified			38,424	19,116	111	89,003	36,969	(50,579)	(17,853)	
10	High efficiency products			1,441,019	261,592	42,771	1,152,988	339,836	288,031	(78,244)	
11	Appliance recycling			218,458	53,415	216	284,688	80,267	(66,230)	(26,852)	
12	Efficient HVAC equipment			191,292	100,142	363	211,745	117,777	(20,453)	(17,635)	
13	Audit/Wx/new const/behavior			61,662	41,229	726	-	55,873	61,662	(14,644)	
14	Farm services			47,388	11,222	97	213,647	14,425	(166,259)	(3,203)	
15	Solar program			2,616	975	1	94,959	-	(92,343)	975	
16	X Educational services			63,353	14,544	-	66,737	19,076	(3,384)	(4,532)	
17	X Pilot programs			115,171	24,264	-	111,229	31,793	3,942	(7,529)	
18	Total residential KWh savings and cost			2,179,383	526,499	44,285	2,224,996	696,016	(45,613)	(169,517)	
19	Commercial & industrial KWh savings and cost										
20	General business services			977,592	168,470	2,576	1,047,578	155,338	(69,986)	13,132	
21	X Educational services			34,276	7,860	-	34,160	8,051	116	(191)	
22	X Pilot programs			57,127	13,104	-	56,934	13,418	193	(314)	
23	Total C & I KWh savings and cost			1,068,995	189,434	2,576	1,138,672	176,807	(69,677)	12,627	
24	Portfolio-level costs										
25	MECA overall administration				22,587			23,475		(888)	
26	Member overhead & indirect costs				28,300			67,100		(38,800)	
27	Tracking				-			-		-	
28	Evaluation				6,062			8,050		(1,988)	
29	Total portfolio-level costs				56,949			98,625		(41,676)	
30	Total, all costs				772,882	46,861		971,448		(198,566)	
31	Total KWh savings & revenue less costs			3,248,378	\$ (213,406)		3,363,668	\$ (67,234)	(115,290)	\$ (146,172)	
32	KWh carryover excess (shortfall)			807,254							
33	KWh savings after carryover			4,055,632							
34	BTU/hr equivalents for KWh amounts:										
35	Residential			7,436,364,268.4			7,592,002,301.4		-155,638,033.0		
36	Commercial & industrial			3,647,562,737.3			3,885,310,555.4		(237,747,818.1)		
37	Total BTU/hr equivalents			11,083,927,005.7			11,477,312,856.8		(393,385,851.1)		

X Only charges from WECC are to be recorded for these programs
Y Only direct co-op EO costs are to be charged to these programs.

**Midwest Energy Cooperative
for Michigan Electric Cooperative Association (MECA)
Energy Optimization Report
for the year ended December 31, 2017**

**Case Number U-18276
Witness: John E. Fought
Exhibit A, Page 6 of 8**

Line No. (Col. 1) (Col. 2) (Col. 3) (Col. 4) (Col. 5) (Col. 6) (Col. 7) (Col. 8) (Col. 9) (Col. 10) (Col. 11)

Line No.	Program Portfolio	USRC T Result s(1)	CEE* Result s ct./kwh (2)	2017 Actual			2017 Plan			Variance: Plan-Actual	
				KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings Actual "O" "(U)" Plan	Revenue & Cost Actual "O" "(U)" Plan
1	Revenues										
2	Residential				\$ 616,347		\$ 936,839				\$ (320,492)
3	Income qualaified at 3.74 % of residential and C & I revenue				44,002		58,018				(14,016)
4	Plus self-directed low income fees				-		-				-
5	Total low income revenue				44,002		58,018				(14,016)
6	Commercial & industrial				516,133		556,416				(40,283)
7	Total surcharge revenue				1,176,482		1,551,273				(374,791)
8	Residential KWh savings and cost										
9	Income qualified			112,811	55,605	387	176,422	73,280		(63,611)	(17,675)
10	High efficiency products			1,113,993	233,973	32,963	1,766,188	421,443		(652,195)	(187,470)
11	Appliance recycling			234,357	67,655	237	449,658	126,780		(215,301)	(59,125)
12	Efficient HVAC equipment			419,675	200,969	839	334,446	186,026		85,229	14,943
13	Audit/Wx/new const/behavior			200,478	119,754	3,000	2,920	96,993		197,558	22,761
14	Farm services			138,530	21,497	89	364,994	22,783		(226,464)	(1,286)
15	Solar program			-	360	-	149,985	1,951		(149,985)	(1,591)
16	X Educational services			100,426	46,830	-	105,791	29,197		(5,365)	17,633
17	X Pilot programs			182,568	64,311	-	176,319	48,662		6,249	15,649
18	Total residential KWH savings and cost			2,502,838	810,954	37,515	3,526,723	1,007,115		(1,023,885)	(196,161)
19	Commercial & industrial KWH savings and cost										
20	General business services			3,440,668	300,463	1,968	2,402,879	362,692		1,037,789	(62,229)
21	X Educational services			78,621	31,374	-	78,355	17,341		266	14,033
22	X Pilot programs			131,035	28,350	-	130,591	28,902		444	(552)
23	Total C & I KWH savings and cost			3,650,324	360,187	1,968	2,611,825	408,935		1,038,499	(48,748)
24	Portfolio-level costs										
25	MECA overall administration				42,485			31,065			11,420
26	Member overhead & indirect costs				144,770			192,457			(47,687)
27	Tracking				(216)			-			(216)
28	Evaluation				10,371			13,800			(3,429)
29	Total portfolio-level costs				197,410			237,322			(39,912)
30	Total, all costs				1,368,551	39,483		1,653,372			(284,821)
31	Total KWH savings & revenue less costs			6,153,162	\$ (192,069)		6,138,548	\$ (102,099)		14,614	\$ (89,970)
32	KWH carryover excess (shortfall)			616,127							
33	KWH savings after carryover			6,769,289							
34	BTU/hr equivalents for KWH amounts:										
35	Residential			8,540,038,659.0			12,033,679,670.7			-3,493,641,011.7	
36	Commercial & industrial			12,455,423,834.0			8,911,917,779.2			3,543,506,054.8	
37	Total BTU/hr equlvanents			20,995,462,493.0			20,945,597,449.9			49,865,043.1	

X Only charges from WECC are to recorded for these programs
Y Only direct co-op EO costs are to be charges to these programs.

**Ontonagon County Rural Electrification Association
for Michigan Electric Cooperative Association (MECA)
Energy Optimization Report
for the year ended December 31 , 2017**

**Case Number U-18277
Witness: John E. Fought
Exhibit A 7 of 8**

Line No. (Col. 1) (Col.2) (Col. 3) (Col. 4) (Col. 5) (Col.6) (Col. 7) (Col. 8) (Col. 9) (Col. 10) (Col. 11)

Line No.	Program Portfolio	USRC T Result s(1)	CEE* Result s ct./kwh (2)	2017 Actual			2017 Plan			Variance: Plan-Actual	
				KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings Actual "O" "(U)" Plan	Revenue & Cost Actual "O" "(U)" Plan
1	Revenues										
2	Residential				\$ 36,512			\$ 99,782			\$ (63,270)
3	Inocme qualified at 3.74 % of residential and C & I revenue				1,884			4,650			(2,766)
4	Plus self-directed low income fees				-			-			-
5	Total low income revenue				1,884			4,650			(2,766)
6	Commercial & industrial				8,845			19,891			(11,046)
7	Total surcharge revenue				47,241			124,323			(77,082)
8	Residential KWh savings and cost										
9	Income qulaified			7,904	2,028	9	12,121	5,035		(4,217)	(3,007)
10	High efficiency products			98,698	22,043	3,329	81,512	36,532		17,186	(14,489)
11	Appliance recycling			11,912	2,059	11	5,200	1,466		6,712	593
12	Efficient HVAC equipment			11,479	5,572	11	16,810	10,081		(5,331)	(4,509)
13	Audit/Wx/new const/behavior			1,595	6,020	3	169	20,069		1,426	(14,049)
14	Farm services			-	276	-	65,433	659		(65,433)	(383)
15	Solar program			-	18	-	4,337	113		(4,337)	(95)
16	X Educational services			5,738	1,782	-	6,044	3,110		(306)	(1,328)
17	X Pilot programs			10,431	2,970	-	10,074	5,183		357	(2,213)
18	Total residential KWH savings and cost			147,757	42,768	3,363	201,700	82,248		(53,943)	(39,480)
19	Commercial & industrial KWH savings and cost										
20	General business services			49,840	5,073	112	47,719	7,176		2,121	(2,103)
21	X Educational services			1,561	459	-	1,556	620		5	(161)
22	X Pilot programs			2,602	756	-	2,593	1,033		9	(277)
23	Total C & I KWH savings and cost			54,003	6,288	112	51,868	8,829		2,135	(2,541)
24	Portfolio-level costs										
25	MECA overall administration				9,540			13,468			(3,928)
26	Member overhead & indirect costs				-			8,227			(8,227)
27	Tracking				-			-			-
28	Evaluation				618			940			(322)
29	Total portfolio-level costs				10,158			22,635			(12,477)
30	Total, all costs				59,214	3,475		113,712			(54,498)
31	Total KWH savings & revenue less costs			201,760	\$ (11,973)		253,568	\$ 10,611		(51,808)	\$ (22,584)
32	KWH carryover excess (shortfall)			61,274							
33	KWH savings after carryover			263,034							
34	BTU/hr equivalents for KWH amounts:										
35	Residential			504,167,865.5			688,229,041.4			-184,061,175.9	
36	Commercial & industrial			184,265,904.4			176,980,981.3			7,284,923.1	
37	Total BTU/hr equlvanents			688,433,769.9			865,210,022.7			(176,776,252.8)	

X Only charges from WECC are to be recorded for these programs
Y Only direct co-op EO costs are to be charges to these programs.

**Presque Isle Electric & Gas Co-op
for Michigan Electric Cooperative Association (MECA)
Energy Optimization Report
for the year ended December 31 , 2017**

Case Number U-18278
Witness: John E. Fought
Exhibit A, Page 8 of 8

Line No. (Col. 1) (Col. 2) (Col. 3) (Col. 4) (Col. 5) (Col. 6) (Col. 7) (Col. 8) (Col. 9) (Col. 10) (Col. 11)

Line No.	Program Portfolio	USRC T Result s(1)	CEE* Result s ct./kwh (2)	2017 Actual			2017 Plan			Variance: Plan-Actual	
				KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings (3)	Revenue & Cost	Number of Applica- tions	KWh Savings Actual "O" "U" Plan	Revenue & Cost Actual "O" "U" Plan
1	Revenues										
2	Residential				\$ 285,400			\$ 539,259			\$ (253,859)
3	Income qualified at 3.74 % of residential and C & I revenue				15,054			27,188			(12,134)
4	Plus self-directed low income fees				-			-			-
5	Total low income revenue				15,054			27,188			(12,134)
6	Commercial & industrial				102,086			160,507			(58,421)
7	Total surcharge revenue				402,540			726,954			(324,414)
8	Residential KWh savings and cost										
9	Income qualaified			99,753	18,944	743	101,766	42,270		(2,013)	(23,326)
10	High efficiency products			811,978	172,423	23,192	813,673	305,169		(1,695)	(132,746)
11	Appliance recycling			233,039	39,936	229	215,083	60,642		17,956	(20,706)
12	Efficient HVAC equipment			139,156	57,798	219	164,160	91,928		(25,004)	(34,130)
13	Audit/Wx/new const/behavior			60,359	20,932	111	1,397	50,358		58,962	(29,426)
14	Farm services			55,883	6,519	52	187,153	11,988		(131,270)	(5,469)
15	Solar program			-	126	-	78,916	933		(78,916)	(807)
16	X Educational services			52,745	9,611	-	84,899	16,806		(32,154)	(7,195)
17	X Pilot programs			80,593	16,029	-	50,939	28,011		29,654	(11,982)
18	Total residential KWH savings and cost			1,533,506	342,318	24,546	1,697,986	608,105		(164,480)	(265,787)
19	Commercial & industrial KWH savings and cost										
20	General business services			837,813	98,648	471	661,909	114,115		175,904	(15,467)
21	X Educational services			21,657	3,663	-	21,584	5,002		73	(1,339)
22	X Pilot programs			36,096	6,111	-	35,973	8,337		123	(2,226)
23	Total C & I KWH savings and cost			895,566	108,422	471	719,466	127,454		176,100	(19,032)
24	Portfolio-level costs										
25	MECA overall administration				4,353			23,396			(19,043)
26	Member overhead & indirect costs				22,242			18,674			3,568
27	Tracking				-			-			-
28	Evaluation				-			6,500			(6,500)
29	Total portfolio-level costs				26,595			48,570			(21,975)
30	Total, all costs				477,335	25,017		784,129			(306,794)
31	Total KWH savings & revenue less costs			2,429,072	\$ (74,795)		2,417,452	\$ (57,175)		11,620	\$ (17,620)
32	KWH carryover excess (shortfall)			585,321							
33	KWH savings after carryover			3,014,393							
34	BTU/hr equivalents for KWH amounts:										
35	Residential			5,232,540,229.9			5,793,769,346.0			-561,229,116.1	
36	Commercial & industrial			3,055,798,362.4			2,454,920,156.2			600,878,206.2	
37	Total BTU/hr equivanents			8,288,338,592.3			8,248,689,502.2			39,649,090.1	

X Only charges from WECC are to be recorded for these programs
Y Only direct co-op EO costs are to be charges to these programs.

Memo to: Art Thayer, MECA

From: Tim Hennessy, DNV GL.
Santosh Lamichhane,
DNV GL

Date: Monday, March 12, 2018

Certificate of Savings from the 2017 Energy Optimization Programs of the Michigan Electric Cooperative Association Energy Optimization Collaborative

1 CERTIFICATION

We, DNV GL, as an independent evaluation contractor, certify that the Michigan Electric Cooperative Association Energy Optimization Collaborative's (MECA-EOC) incremental energy saving for its 2017 Energy Optimization (EO) programs is **35,019,625 kWh**.

2 BACKGROUND

DNV GL conducted an annual independent expert study of the 2017 EO programs to certify the incremental energy savings. The study was completed in accordance with the "Clean, Renewable, and Efficient Energy Act (Act 295 of 2008)" and the EO Plans Settlement Agreements approved by the Michigan Public Service Commission (MPSC).

The certification of savings is for programs implemented on behalf of seven cooperative utilities: Alger Delta, Cloverland, Great Lakes Energy, HomeWorks Tri-County, Midwest Energy, Ontonagon County REA, and Presque Isle Electric and Gas and six municipal utilities; Daggett Electric, City of Escanaba, Marquette Board of Light and Power, Newberry Water and Light Board, City of Stephenson, and City of South Haven.

DNV GL verified proper documentations and reviewed tracking data of the claimed energy savings to certify the incremental energy savings. The certification of savings for the specific programs and utilities in the collaborative are presented in Table 1 and Table 2.

Table 1: Savings by Program

Program	kWh Savings
Residential Low Income Services	733,053
Residential High Efficiency Products	11,114,588
Residential Appliance Recycling	2,176,812
Residential HVAC Equipment	1,823,538
Residential Audit/Wx/New Construction/Behavior	793,947
Residential Educational Services	592,050
Residential Pilot Programs	1,061,012
Residential Farm Services	473,958
Residential Solar Program	349,334
C&I General Business Services	14,421,942
C&I Educational Services	554,771
C&I Pilot Programs	924,619
Portfolio Total	35,019,625

Table 2: Savings by Member

Cooperative Utilities	kWh Savings
Alger Delta	624,946
Cloverland	4,613,913
Great Lakes Energy	11,772,692
HomeWorks Tri-County	3,248,378
Midwest Energy	6,153,162
Ontonagon	201,759
Presque Isle	2,429,072
Cooperative Utilities Total	29,043,922
Municipal Utilities	kWh Savings
Daggett	7,223
Escanaba	1,730,364
Marquette	2,495,426
Newberry	179,940
South Haven	1,513,102
Stephenson	49,647
Municipal Utilities Total	5,975,703
Portfolio Total	35,019,625