

Village of Paw Paw 2011 Biennial Energy Optimization Plan MPSC Case No. U-16716

Introduction

This Biennial Energy Optimization Plan Review filing by the Village of Paw Paw complies with Public Act 295 of 2008 (the Act) and the related March 17, 2011 Michigan Public Service Commission Order (MPSC Case No. U-16716. This filing serves as an application for review and revision of the 2012 program and a new plan review for the years 2013, 2014 and 2015. This Energy Optimization (EO) Plan was developed in three sections consistent with the Village of Paw Paw 2009 EO Plan filing:

- Section 1 will address each requirement under PA 295 Section 71, Subsection 3 (a-i).
- Section 2 will address the requirements under Attachment E of the MPSC Temporary Order U-15800
- Section 3 has additional information under MPSC Temporary Order U-15800

The 2012-15 programs were developed utilizing the same methodology that the MPSC approved on July 1, 2009 for the Village of Paw Paw 2009-12 EO plan.

SECTION 1: PA 295 SECTION 71 SUBSECTION 3 REQUIRMENTS

Section 71 (3) (a) The EO plan shall offer programs to each customer class including low-income customers;

The table below shows the total incremental kilowatt hour savings required by PA 295 for the Village of Paw Paw Energy Optimization programs for years 2012-2015.

<i>Savings is reported in Kilowatt hours</i>			Total Savings Required KWH
Program Year	% Saving	Sales Year	
2012	1.00%	2011	480,330
2013	1.00%	2012	481,000
2014	1.00%	2013	485,000
2015	1.00%	2014	490,000

The Village of Paw Paw developed its Energy Optimization programs to serve all customer classes, including residential low-income. The Village of Paw Paw Plan for 2012-2015 is based on allocating approximately 8.7% of its EO budget to low-income program, 19.2% to residential, 63.1% to commercial and industrial, and 9.0% to evaluation and administration. Program allocations will be revised on an annual basis in order to continue meeting the goals under PA 295.

Programs that will be offered to each rate class are listed below and are categorized into Low-Income Services, Residential Solutions and Business Solutions. A detailed list of budget amounts and the associated kilowatt savings for each customer class can be found in Attachment A. Program descriptions with budgets and estimated participation levels of the programs that will be offered are included in Attachment B.

Residential Low-income Services

The Village of Paw Paw will spend 8.7% of the program budget on low-income programs. Target market for this program continues to be residential customers whose income is estimated to be below 200% of poverty level as defined by the U.S. Department of Health and Human Services. Services will be targeted to diverse segments of the population including those living in single family and multi-family buildings, home owners and renters, and to the extent possible – age and geographic diversity. This program provides funding to upgrade the electric energy efficiency of customers living on limited incomes, thereby lowering their energy bills.

Residential Solutions

The programs below will be available to all Village of Paw Paw general service residential customers.

- Residential Services (appliance recycling, lighting, HVAC, etc)
- Residential Education Services

Business Solutions

The programs below will be available to all Village of Paw Paw commercial and industrial customers who are general service rate customers.

- Business Services (prescriptive and custom)
- Business Education Services

Section 71 (3) (b) The EO plan shall specify the necessary funding level;

In order to achieve the mandatory energy savings targets, the Village of Paw Paw Energy Optimization Plan will require the estimated funding levels shown in the table below.

<i>Expenditures Percentage of Retail Sales</i>			Total Spending \$
Program Year	% Spending	Sales Year	
2012	2.0%	2010	\$74,657
2013	2.0%	2011	\$76,588
2014	2.0%	2012	\$81,976
2015	2.0%	2013	\$82,820

Note: Expenditures for 2013, 2014 & 2015 are estimates and may be revised as actual data becomes available.

Section 71 (3) (c) Describe how EO program costs will be recovered from customers;

All costs associated with the implementation of the Village of Paw Paw Energy Optimization Plan will be recovered consistent with Section 89 (2) of Public Act 295. Residential customers will be charged on a volumetric basis; primary and secondary customers will be charged on a per meter basis. The costs for primary customers will not exceed 1.7% of total retail revenues for that customer class and for residential and secondary will not exceed 2.2% of total retail revenues for those customer classes. [PA 295 Section 89 (3)]

The Village of Paw Paw surcharges for the EO programs are listed in the table below. These surcharges will be evaluated on a periodic basis and revised as needed to ensure adequate funding of the proposed programs. The estimated monthly charges are shown in the table below.

Levelized Surcharges		2012-15
Residential	Per kWh	\$0.001199
Secondary	Per meter	\$46.07
Primary	Per meter	\$46.07

Section 71 (3) (d) Ensure, to the extent feasible, that charges collected from a particular customer rate class are spent on EO programs for that rate class;

Charges for each customer class were developed based on the approximate percentage of programs budget allocations that will be offered for that customer class to the extent feasible.

Section 71 (3) (e) Demonstrate that proposed EO funding is sufficient to ensure achievement of EO savings standards;

The Village of Paw Paw Program Portfolio was prepared by Janet Brandt from Morgan Marketing Partners to outline goals, budgets, and programs that have the potential to achieve the targets identified in PA 295. The programs described in this plan were modeled based on typical measure characteristics used in similar “best practice” programs across the country, along with specific savings estimates from the new Michigan Deemed Savings Database.

Section 71 (3)(f) Specify whether electric energy savings will be based on weather normalized sales or the average megawatt hours of electricity sold by the provider annually during the previous 3 years to retail customers;

The incremental energy savings for the Village of Paw Paw Energy Optimization Plan will continue to be calculated utilizing the average number of megawatt hours of electricity sold annually during the previous three years to retail customers.

Section 71 (3) (g) Demonstrate that the providers EO programs, excluding low-income programs, are collectively cost-effective;

The Village of Paw Paw programs were designed to meet the cost-effective tests as required under PA 295 Sec. 73 (2). The two primary tests that were used to determine if the programs are reasonable and prudent are the Utility System Resource Cost Test and the Cost of Conserved Energy. The definitions according to the California Standard Practices Manual for each of these tests are as follows:

Utility System Resource Cost Test

The Utility System Resource Cost Test measures the net costs of an energy efficiency program as a resource option based on the costs incurred by the utility (including incentive costs) and excluding any net costs incurred by the participant.

Cost of Conserved Energy

The Cost of Conserved Energy is the average lifecycle cost of an efficiency measure or program expressed in cents per kWh saved over the life of the installed measures.

A table of each program with the Utility Cost Test results and the estimated Cost of Conserved Energy is shown below.

Portfolio Category	Program	UCT Results	CCE Results*
	Low-income	N/A	N/A
Residential	Residential Services	3.0	\$0.02
	Education Services	4.2	\$0.01
Business	Business Services	4.3	\$0.01
	Education Services	4.2	\$0.01
Projected Annual Totals		3.8	\$0.01

*The CCE is the present value of the program costs divided by the lifetime savings (\$/kWh).

Section 71 (3) (h) Provide for practical and effective administration of the EO programs;

The overall administration of the Village of Paw Paw Energy Optimization Plan will continue to be the responsibility of Village of Paw Paw personnel with implementation contractors selected in 2012-2015 as needed. The Village of Paw Paw will make use of experienced Village of Paw Paw in-house personnel who will assure quality and compliance by providing oversight, guidance and direction to the outside implementation contractors. Village of Paw Paw personnel may also work with the implementation contractors who have qualified and experienced staff with the technical capabilities and data tracking systems necessary to deliver the programs effectively. This combination will assure effective and efficient program administration.

Section 71 (3) (i) include a process for obtaining independent expert evaluation of the actual EO savings;

The Village of Paw Paw contracted with KEMA Inc. as the independent third-party for the expert evaluation of the EO programs for 2009 through 2011. This contractor was responsible for verifying the incremental gross energy savings from each EO program and providing an annual report of such findings. An evaluation contractor will be selected to provide these same services for the 2012-2015 programs.

SECTION 2: REQUIREMENTS UNDER ATTACHMENT E of MPSC Temporary Order U-15800

MPSC Attachment E Section 3 (a) Plan Elements; Energy Optimization Plan Development Methodology

The Village of Paw Paw 2012–2015 Energy Optimization Program Portfolio outlines goals, budgets and programs that are designed to achieve the energy conservation targets identified in Michigan legislation Public Act 295 (PA 295). The programs in this plan were based on typical measure characteristics used in similar “best practice” programs across the country, along with specific savings estimates from the new Michigan Deemed Savings Database.

The programs were developed utilizing the same methodology that was used in the 2009-2012 Village of Paw Paw plan that were approved by the MPSC on July 1, 2009. Specifically, the programs were selected based on the following objectives:

- To provide electric energy savings for residential and commercial/industrial customers through a portfolio of proven “best practice” energy efficiency programs that are cost-effective from a Utility System Resource Cost perspective;
- To develop program designs that can achieve the required energy savings goals within the specified budget caps identified in PA 295;
- To recommend potential opportunities to leverage program funding with other state, regional, and national efforts.
- Incentives are only offered on measures that exceed current codes and standards and are often “tiered” to encourage customers to implement the highest level of efficiency available.

The DSMore model was used to conduct the benefit-cost analysis, using the Village of Paw Paw projected avoided costs. The model calculates benefit-cost results for each of the major and nationally-defined perspectives: Participant Test, Rate Impact Test, Total Resource Cost Test, and the Utility System Resource Cost Test, as well as the Cost of Conserved Energy.

MPSC Attachment E Section 1 (e) Plan Requirements;

Other cost-effective tests were utilized to determine cost effectiveness of the Village of Paw Paw programs. Brief definitions of those tests according to the California Standard Practices Manual are:

Utility System Resource Cost Test (UCT)- The Utility System Resource Cost Test measures the net costs of an energy efficiency program as a resource option based on the costs incurred by the utility (including incentive costs) and excluding any net costs incurred by the participant.

Total Resource Cost Test (TRC)-The Total Resource Cost Test measures the net costs of an energy efficiency program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. This test incorporates both the utility's costs and the customers costs associated with purchasing and installing an energy efficiency measure. For DSM programs, those that pass the TRC test with a ratio of greater than 1 is viewed as beneficial to the utility and its customers because the savings in electric costs outweigh the DSM costs.

Participant Test (PCT)-The Participants Test is the measure of the quantifiable benefits and costs to the customer due to participation in a program.

The Ratepayer Impact Measure Test (RIM)-The Ratepayer Impact Measure (RIM) test measures what happens to customer rates due to changes in utility revenues and operating costs caused by the program. This test indicates the direction and magnitude of the expected change in customer rate level for both participating and non-participating customers.

A table with the multiple cost-effectiveness tests required for each program is shown below:

Portfolio Category	Program	Utility System Resource Cost Test	Total Resource Cost Test	Participant Test	Rate Impact Measure
Residential	Low-income	N/A	N/A	N/A	N/A
	Residential Services	3.2	2.4	4.4	0.7
	Educational Services	4.2	4.2	No Cost	0.7
	Residential Portfolio	3.1	2.5	4.8	0.7
Business	Business Services	4.3	1.9	2.1	0.7
	Educational Services	4.2	4.2	No Cost	0.7
	Business Portfolio	4.3	1.9	2.1	0.7
Total Portfolio (with administrative \$)		3.8	1.9	2.4	0.7

MPSC Attachment E Section 3 (b-f) Plan Elements;

a) The EO portfolio summary (MPSC Table 2) can be found in Attachment A and a summary of each program (MPSC Table 1) is shown in Attachment B. Savings estimates for all measures are based on the Michigan Deemed Savings Database. The Village of

Paw Paw will reserve 20% of overall budget (by customer class) which will ensure program flexibility and allow for reallocation of funding to other programs that are more cost-effective or where technology or market participation impacts require additional resources, but will respect spending criteria among customer classes.

b) Three percent of the EO budget will be used on education programs. These budget expenditures will communicate and educate customers on the benefits of energy efficiency, conservation and load management. Budget funds for education will be deemed to generate a proportional amount of the required energy savings for each program year in which the money is spent. Village of Paw Paw programs are designed to include an education component for both the Residential and Business customers.

c) The Village of Paw Paw Plan includes a residential low-income program and costs for this program will be recovered from each customer rate class in proportion to that rate class' funding of all programs.

d) The Village of Paw Paw has set aside no more than 8% of program budget for program evaluation, measurement and verification activities to determine actual program energy savings.

SECTION 3: ADDITIONAL INFORMATION

Comment Proceedings;

An opportunity to convey public comments for the Village of Paw Paw 2011 Biennial Energy Optimization Plan for 2012-2015 will be communicated to customers as an agenda item at the January 2012 Village Council meeting. All public comments received on the Biennial Energy Optimization Plan will be submitted to the MPSC prior to February 28, 2012.

Michigan Saves Program;

The Village of Paw Paw supports the financing programs that are offered under the Michigan Saves Program that help customers invest in high-efficiency equipment and improvements to their homes and businesses.

Coordination of Energy Optimization Programs;

The Village of Paw Paw has been and will continue to participate in the EO Collaborative monthly meetings organized by the MPSC through its membership with MMEA. These meetings allow for the evaluation of program development and delivery options that may improve program administration and delivery efficiencies.

Attachment A: Paw Paw's Energy Optimization Program Portfolio

Portfolio Category	Program Portfolio	USRCT Results	CCE Results	2012		2013		2014		2015	
				Gross First Year kWh Savings	Program Budget	Gross First Year kWh Savings	Program Budget	Gross First Year kWh Savings	Program Budget	Gross First Year kWh Savings	Program Budget
Residential	Low Income Services	N/A	N/A	38,186	\$ 6,799	38,240	\$ 6,809	38,558	\$ 6,865	38,955	\$ 6,936
	Residential Services	3.0	\$ 0.02	81,896	\$ 11,666	82,010	\$ 12,702	82,692	\$ 15,676	83,545	\$ 15,838
	Educational Services	4.2	\$ 0.01	7,205	\$ 1,120	7,215	\$ 1,149	7,275	\$ 1,230	7,350	\$ 1,242
	Subtotal - Residential Solutions	3.1	\$ 0.02	127,287	\$ 19,586	127,465	\$ 20,659	128,525	\$ 23,771	129,850	\$ 24,016
Commercial & Industrial	Business Services	4.3	\$ 0.01	345,838	\$ 47,233	346,320	\$ 47,887	349,200	\$ 49,597	352,800	\$ 50,108
	Educational Services	4.2	\$ 0.01	7,205	\$ 1,120	7,215	\$ 1,149	7,275	\$ 1,230	7,350	\$ 1,242
	Subtotal - Business Solutions	4.3	\$ 0.01	353,043	\$ 48,353	353,535	\$ 49,036	356,475	\$ 50,827	360,150	\$ 51,350
Total Program Portfolio				480,330	\$ 67,938	481,000	\$ 69,695	485,000	\$ 74,598	490,000	\$ 75,366
Portfolio-Level Costs	Utility Administration				\$ 3,733		\$ 3,829		\$ 4,099		\$ 4,141
	Evaluation				\$ 2,986		\$ 3,064		\$ 3,279		\$ 3,313
	Subtotal - Portfolio Level Costs				\$ 6,719		\$ 6,893		\$ 7,378		\$ 7,454
Projected Annual Totals		3.8	\$ 0.01	480,330	\$ 74,657	481,000	\$ 76,588	485,000	\$ 81,976	490,000	\$ 82,820

Village of Paw Paw's

Energy Optimization Plan

2012-2015

Program Descriptions



Village of Paw Paw's Proposed Energy Optimization Programs - Table 1

Program Element	Services for Residential Customers with Limited Incomes												
Objective	<ul style="list-style-type: none"> • Provide recommendations, financial assistance and education to customers with limited income to assist them in reducing their electric energy use and managing their utility costs. • Coordinate low-income services with local weatherization providers and other agencies in order to provide comprehensive assistance at lower administrative costs. 												
Target Market	<ul style="list-style-type: none"> • Residential customers whose income is estimated to be below 200% of poverty level. Services will be targeted to diverse segments of the population including those living in single family and multi-family buildings, homeowners and renters, and to the extent possible – age and geographic diversity. 												
Program Duration	Services for customers with limited income will be an ongoing element of the program portfolio.												
Program Description	Services for customers with limited income will be closely coordinated with local weatherization agencies and other applicable State and municipal programs. In an ongoing effort, the utility intends to work with the agencies responsible for implementing the Federal LIHEAP program to leverage their funding by subsidizing the installation of all cost-effective electric measures, thereby increasing the number of homes served through the program.												
Eligible Measures	Cost effective electric measures that will be permissible for this program include replacement of inefficient lighting/equipment with ENERGY STAR labeled products including CFL's, refrigerators, dehumidifiers, room air conditioners, and furnaces with high-efficiency motors. Other eligible measures include smart power strips to reduce the energy use of computers, printers, TVs, and other electronic equipment.												
Implementation Strategy	This program will be coordinated with the local weatherization agencies to subsidize the installation of all cost-effective electric measures.												
Marketing Strategy	<p>Marketing will be closely coordinated with the local weatherization agencies. Key elements of the marketing strategy include:</p> <ul style="list-style-type: none"> • Targeted outreach through local agencies • Municipal website and newsletter • Press release 												
EM&V Requirements	Evaluation activities for the residential low-income program will focus on verification and assessment of electric energy impacts for the installed measures.												
Estimated Participation	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="4">Participation (in Units of Installed Measures)</th> </tr> <tr> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>827</td> <td>828</td> <td>835</td> <td>843</td> </tr> </tbody> </table>	Participation (in Units of Installed Measures)				2012	2013	2014	2015	827	828	835	843
Participation (in Units of Installed Measures)													
2012	2013	2014	2015										
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<i>Estimated Budget</i>	Annual Budgets			
	2012	2013	2014	2015
	\$6,799	\$6,809	\$6,865	\$6,936
<i>Savings Targets</i>	Energy Savings (Gross Annual kWh)			
	2012	2013	2014	2015
	38,186	38,240	38,558	38,995

Program Element	Residential High Efficiency Products Program
Objective	Produce long-term coincident peak demand reduction and annual energy savings in the residential sector by promoting high-efficiency lighting, appliances, and HVAC equipment.
Target Market	Residential customers seeking to purchase and install new central air conditioning units, furnaces, heat pumps, setback thermostats, refrigerators, freezers, dishwashers, room air-conditioners, dehumidifiers, clothes washers and dryers, water heaters, and/or lighting products.
Program Duration	Ongoing element of the program portfolio.
Program Description	<p>The High-Efficiency Products program will leverage the nationally-recognized ENERGY STAR brand, when applicable, to promote products that can reduce electric energy use. Energy efficient choices can save families about a third on their energy bill, without sacrificing features, style or comfort. The ENERGY STAR brand helps consumers make the most energy efficient choice.</p> <p>The program will focus on three major markets:</p> <ul style="list-style-type: none"> • contractor-installed heating, cooling, and water-heating equipment • retail sales of appliances • retail sales and direct marketing of lighting products <p>The High-Efficiency Products Program will promote premium efficiency furnaces that have high-efficiency motors (electrically commutated motors – ECMs). ECM motors save electric energy during the heating and cooling seasons. Since the primary type of heating system in the utility’s service area is natural gas forced air, this program will closely coordinate with the local natural gas provider so that incentives can be coordinated on units that have the high-efficiency motors. Incentives for the installation of setback thermostats will also be available.</p> <p>Although federal efficiency standards for central air-conditioning have recently increased, there are still opportunities to promote units that exceed the current standards and thus achieve additional energy savings. The program will provide incentives for high-efficiency central air-conditioners with an SEER rating > 14.</p> <p>The program will also offer incentives for high-efficiency electric water heaters, heat pump water heaters, and solar water heating systems. Incentives will also be provided for contractor-installed, residential-sized, photovoltaic systems.</p> <p>The High-Efficiency Products Program will also provide incentives to customers to encourage them to replace their older, inefficient appliances with high-efficiency units.</p> <p>The High-Efficiency Products Program will also provide opportunities for customers to use</p>

	<p>efficient lighting by receiving the products directly and/or by providing market incentives and market support through retailers to build market share and usage of ENERGY STAR lighting products. The program targets the purchase of lighting products through in-store promotion as well as special sales events. The program will also provide convenient recycling for CFL's at local retailers and customer service outlets.</p> <p>Finally, the program will also educate customers on the energy use of electronic entertainment and office equipment in the home and encourage customers to utilize an advanced power strip to turn off equipment when not in use.</p>
<p>Eligible Measures</p>	<p>Eligible measures include:</p> <ul style="list-style-type: none"> • Central Air Conditioners (SEER > 14) • Furnaces with ECM Motors • Air-Source, Dual-Fuel, and Ground Source Heat Pumps (SEER > 14) • Electric Water Heaters (EF >=.95) • Heat Pump Water Heaters (EF >= 2.0) • Setback Thermostats • High-Efficiency Pool Pumps • ENERGY STAR Room Air Conditioners, Dehumidifiers, Refrigerators, Freezers • Clothes Dryers (with moisture sensor) • ENERGY STAR lighting products (CFLs, CFL Specialty Bulbs, Fixtures, LED Holiday Lights, and Ceiling Fans.) • Advanced Power Strips
<p>Implementation Strategy</p>	<ul style="list-style-type: none"> • Contractor/retailer recruitment, education and outreach. The utility's implementation contractor will utilize a field representative to facilitate the recruitment of local HVAC/plumbing contractors and appliance/lighting retailers to participate in the program. • Planning coordination with local natural gas provider. The utility's implementation contractor will work closely with the natural gas utility to coordinate incentive levels, eligibility requirements, marketing materials, and contractor outreach. • Lighting Product distribution. The utility will distribute lighting products through special mailings and/or community groups and events. • Bulb recycling: The utility will deploy recycling bins for bulb collection at area businesses. Participants will be given training on proper sealing, labeling, and transportation for the bins. • Application processing: The utility's implementation contractor will coordinate processing of all rebate applications.

<p>Marketing Strategy</p>	<p>The HVAC and water heater components of the program will be primarily marketed through local contractors, the most direct influencers of customer purchase decisions. Contractors will receive educational materials to share with their customers as well as access to cooperative advertising dollars.</p> <p>The appliance and lighting components of the program will be marketed through local retailers. All marketing materials will carry a strong consumer education message emphasizing the cost of operating older, inefficient appliances and the benefits of early replacement with ENERGY STAR qualified models (lifetime dollar savings, energy savings, lower noise, etc.). Marketing materials will leverage the ENERGY STAR brand, which enjoys a high level of consumer recognition and favorable associations.</p> <p>Key elements of the marketing strategy include:</p> <ul style="list-style-type: none"> • Direct consumer marketing through website and newsletter • Press release • Point-of-purchase displays • Cooperative advertising with contractors/retailers 												
<p>EM&V Requirements</p>	<p>Savings values were based on documented values from the Michigan Energy Measures Database. Evaluation activity will focus on verification of installation and estimates of deemed savings.</p>												
<p>Estimated Participation</p>	<table border="1" data-bbox="472 926 1239 1115"> <thead> <tr> <th colspan="4">Participation (in Units of Installed Measures)</th> </tr> <tr> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>1,393</td> <td>1,395</td> <td>1,406</td> <td>1,421</td> </tr> </tbody> </table>	Participation (in Units of Installed Measures)				2012	2013	2014	2015	1,393	1,395	1,406	1,421
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Program Element	Appliance Turn-In and Recycling Program
Objective	Produce long-term coincident peak demand reduction and annual energy savings in the residential sector by removing operable, inefficient refrigerators, freezers, dehumidifiers, and room air conditioners from the power grid and recycling them in an environmentally safe manner.
Target Market	Residential customers who are currently operating older, inefficient refrigerators, freezers, dehumidifiers, and/or room air conditioners either as primary or secondary units.
Program Duration	Ongoing element of the program portfolio.
Program Description	The average household replaces a refrigerator every ten years. However, many of the refrigerators being replaced are still functioning, so they often become backup appliances – energy guzzlers in basements and garages – or sold in a used-market. The Turn-In Program targets those “second” refrigerators and freezers, as well as encouraging the early retirement of older inefficient appliances that are still operable. The program provides the dual benefit of cutting energy consumption and keeping the appliances out of the used-market.
Eligible Measures	Eligible measures include refrigerators, freezers, dehumidifiers, and room air conditioners. Units must be operable at the time of disposal.
Implementation Strategy	<ul style="list-style-type: none"> • Turn-key appliance pick-up/recycling: The utility will select a qualified recycling service subcontractor to provide comprehensive, turn-key implementation services from eligibility verification and scheduling of pick-ups to proper disposal and recycling of turned-in appliances. • Drop-off events for dehumidifiers and room air conditioners to be coordinated and managed by local recycling specialists. • Incentive coordination and processing: The utility will coordinate prompt processing of incentive payments.
Marketing Strategy	<p>All marketing materials will carry a strong consumer education message emphasizing the cost of operating older, inefficient appliances, the benefits of early replacement with ENERGY STAR qualified models, and the importance of proper disposal and recycling of older units. Key elements of the marketing strategy include:</p> <ul style="list-style-type: none"> • Direct consumer marketing through website and newsletter • Press release • Website links to EPA’s new “ENERGY STAR Recycle My Old Fridge Campaign” at www.recyclemyoldfridge.com. Includes calculators to estimate savings. • Point-of-purchase displays • Cooperative advertising with retailers • Posters in area businesses

EM&V Requirements	Deemed savings values were based on documented values from the Michigan Energy Measures Database (MEMD). Evaluation activity will focus on verification of recycled units and estimates of deemed savings.															
Estimated Participation	<table border="1"> <thead> <tr> <th colspan="4" data-bbox="521 291 1248 348">Participation (in Units of Installed Measures)</th> </tr> <tr> <th data-bbox="521 348 711 415">2012</th> <th data-bbox="711 348 894 415">2013</th> <th data-bbox="894 348 1078 415">2014</th> <th data-bbox="1078 348 1248 415">2015</th> </tr> </thead> <tbody> <tr> <td data-bbox="521 415 711 478">19</td> <td data-bbox="711 415 894 478">19</td> <td data-bbox="894 415 1078 478">19</td> <td data-bbox="1078 415 1248 478">19</td> </tr> </tbody> </table>				Participation (in Units of Installed Measures)				2012	2013	2014	2015	19	19	19	19
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Estimated Budget	<table border="1"> <thead> <tr> <th colspan="4" data-bbox="521 495 1248 552">Annual Budgets</th> </tr> <tr> <th data-bbox="521 552 711 619">2012</th> <th data-bbox="711 552 894 619">2013</th> <th data-bbox="894 552 1078 619">2014</th> <th data-bbox="1078 552 1248 619">2015</th> </tr> </thead> <tbody> <tr> <td data-bbox="521 619 711 682">\$4,930</td> <td data-bbox="711 619 894 682">\$4,936</td> <td data-bbox="894 619 1078 682">\$4,977</td> <td data-bbox="1078 619 1248 682">\$5,029</td> </tr> </tbody> </table>				Annual Budgets				2012	2013	2014	2015	\$4,930	\$4,936	\$4,977	\$5,029
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Energy Savings (Gross Annual kWh)																
2012	2013	2014	2015													
21,193	21,223	21,399	21,620													

Program Element	Residential Multi-Family In-Unit Efficiency															
Objective	Produce immediate annual energy savings in multi-family buildings through direct installation of CFL's and low-flow, water-saving devices in units with electric water heating.															
Target Market	Property owners of multi-family buildings (both apartments and condominiums) with electric water heating.															
Program Duration	Ongoing element of the program portfolio.															
Program Description	The Multi-Family In-Unit Efficiency Program provides a turn-key service for helping customers reduce their electric energy use in multi-family buildings. The utility's implementation contractor will send out a crew of installers to retrofit targeted buildings that currently have electric water heaters. The crew will install 6-8 CFL's, along with several low-flow water-saving devices. Educational information about the energy savings associated with these devices is left behind in all units. The service is provided to property owners and occupants at no cost.															
Eligible Measures	Eligible measures include CFLs, low-flow showerheads, kitchen and bath faucet aerators, and pipe wrap.															
Implementation Strategy	<ul style="list-style-type: none"> • Targeted outreach to property owners. The utility's implementation contractor will promote the program to interested property owners with electric water heating. • In-unit direct installs. The utility's implementation contractor will schedule installation appointments with interested property owners. The contractor will oversee a crew of installers who will complete the in-unit installation of CFL's and low-flow devices. The crew will be trained on the most appropriate applications for CFL's. The crew will leave behind educational materials in each unit, to describe for the resident the work that has been done and to promote the energy-saving benefits. <p>All measures under this program will be free to the customer.</p>															
Marketing Strategy	A targeted marketing strategy will be employed for the multi-family program. Initially, eligible property owners will be identified from the utility's information system.															
EM&V Requirements	Savings values were based on documented values from the Michigan Energy Measures Database. Evaluation activity will focus on verification of installation and estimates of deemed savings.															
Estimated Participation	<table border="1"> <thead> <tr> <th colspan="4">Participation (in Units of Installed Measures)</th> </tr> <tr> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>7</td> <td>7</td> <td>8</td> </tr> </tbody> </table>				Participation (in Units of Installed Measures)				2012	2013	2014	2015	7	7	7	8
Participation (in Units of Installed Measures)																
2012	2013	2014	2015													
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<i>Estimated Budget</i>	Annual Budgets			
	2012	2013	2014	2015
	\$666	\$667	\$673	\$680
<i>Savings Targets</i>	Energy Savings (Gross Annual kWh)			
	2012	2013	2014	2015
	3,819	3,824	3,856	3,896

Program Element	Residential Education Services												
Objective	<ul style="list-style-type: none"> To develop broad consumer awareness of the benefits of energy efficiency. To provide educational materials and services that motivate customers to participate in the utility's energy optimization programs and to motivate behavior change that can further reduce energy consumption. 												
Target Market	All residential customers												
Program Duration	Ongoing element of the program portfolio.												
Program Description	The municipal utility will implement educational outreach initiatives to build and expand consumer awareness of energy efficiency and energy conservation opportunities. Paw Paw will allocate 1.5% of the total energy optimization budget for residential educational activities, with a 1.5% contribution to the residential energy savings goal.												
Eligible Measures	Not applicable for this program.												
Implementation Strategy	<p>The following types of initiatives will be considered for implementation:</p> <ul style="list-style-type: none"> Develop, produce, and distribute energy efficiency tips and information about the energy efficiency portfolio through bill inserts and newsletters. Enhance the website to facilitate easy access to educational materials/programs. Provide energy education/awareness booths at scheduled community fairs. Promote and deliver special energy workshops for targeted groups of participants, including distribution of free energy-saving products. 												
Marketing Strategy	See implementation strategy for a list of marketing activities.												
EM&V Requirements	Educational activities will be documented and number of customers reached recorded.												
Estimated Participation	To be determined.												
Estimated Budget	<table border="1"> <thead> <tr> <th colspan="4">Annual Budgets</th> </tr> <tr> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>\$1,120</td> <td>\$1,149</td> <td>\$1,230</td> <td>\$1,242</td> </tr> </tbody> </table>	Annual Budgets				2012	2013	2014	2015	\$1,120	\$1,149	\$1,230	\$1,242
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Energy Savings (Gross Annual kWh)													
2012	2013	2014	2015										
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Program Element	Comprehensive Business Solutions
Objective	<p>There are three primary objectives for the Comprehensive Business Solutions Program:</p> <ol style="list-style-type: none"> 1) Increase the market share of a targeted group of commercial high-efficiency electric technologies sold through market channels. 2) Increase the installation rate of a targeted group of high-efficiency electric technologies in commercial facilities by businesses that would not have done so in the absence of the program. 3) Affect the installation of site-specific and unique energy efficiency technologies and process improvements (that do not fit the parameters of the targeted incentive offerings) by business customers that would not have done so in the absence of the program.
Target Market	<p>All business customers are eligible to participate in the Comprehensive Business Solutions Program when they purchase qualifying equipment. However, the program will utilize a targeted outreach strategy to influence specific markets.</p> <ol style="list-style-type: none"> 1) Market Providers (wholesalers, distributors, engineering and architectural firms, developers, and builders) that will promote the qualifying technologies 2) High-impact/high-need customer sectors (such as schools, municipal buildings, hospitals, food service, and hospitality)
Program Duration	Ongoing element of the program portfolio.
Program Description	<p>The utility is interested in providing a seamless set of energy efficiency services to its business customers. Therefore, the Comprehensive Business Solutions Program will provide both a prescriptive and a custom approach, depending on the business' needs.</p> <p>The program will affect the purchase and installation of high-efficiency technologies through a combination of market push and pull strategies that stimulate market demand while simultaneously increasing market provider investment in stocking and promoting them.</p> <p>The program will increase demand by educating business customers about the energy and money saving benefits associated with efficient products and equipping market providers to communicate those benefits directly to their customers. To address the first-cost barrier for customers, the program will utilize financial incentives (i.e. cash-back mail-in rebates) averaging 20% to 40% of the incremental cost of purchasing qualifying technologies.</p> <p>The program will stimulate market provider investment in stocking and promoting efficient products through a targeted outreach effort. The implementation contractor will employ field sales representatives to proactively train and equip market providers to convey the energy and money saving benefits to consumers. Further, the existence of cash-back incentives will elevate efficiency to a competitive issue that will naturally motivate market providers to stock and promote targeted products.</p> <p>The custom component of the program helps customers and market providers identify more complex energy savings projects, analyze the economics of each project, and complete a customized incentive grant application. Over the long term, the custom solutions approach will allow the utility to develop and enhance the assistance they can provide to businesses with unique opportunities – including industrial process improvements, emerging</p>

	<p>technologies, and new facility design and/or modernization.</p> <p>The Business Services program will also include a new construction/renovation component that will assist customers in specifying and installing high efficiency measures and establishing effective commissioning on the long term performance of the building.</p> <p>Finally, the program will also offer a “direct-install” component to a targeted group of small businesses, offering free or subsidized installation of lighting upgrades and setback thermostats.</p>
Eligible Measures	Eligible measures are listed in Table 2.
Implementation Strategy	<ul style="list-style-type: none"> • Outreach to market providers. The implementation contractor will inform and recruit participating market providers. Outreach will include orientation meetings and conducting in-person visits aimed at training and equipping market providers to communicate program information to customers. The Contractor will ensure that providers have an updated stock of program materials. Key market providers that will be targeted include: <ul style="list-style-type: none"> • Lighting distributors, wholesalers, • HVAC distributors and retail contractors • Motors/compressed air vendors • Food service equipment distributors and retailers • Engineering and Architectural firms • Developers and Builders in the commercial market • Outreach to targeted customers. The implementation contractor will personally contact energy managers and decision makers within the targeted customer sectors. The Contractor will assist business customers in determining whether the prescriptive incentives or the custom approach would be most appropriate for their operations. The utility’s business account representatives will assist with outreach within the course of their regular contacts with business customers.
Marketing Strategy	<p>The Comprehensive Business Solutions Program will employ the following marketing strategies:</p> <ul style="list-style-type: none"> • Engage market providers. Outreach and training will be provided to a targeted group of providers that have business motivations for promoting incentives to their customers. • Outreach to targeted customers. The utility’s implementation contractor will work closely with the utility to identify and conduct face-to-face meetings with key end-use customers to recruit their participation. The contractor will target decision makers within the customer’s organization including: energy managers, facility managers, financial and operations managers, chief engineer and facility/property managers, maintenance supervisors, and building operators. • Outreach to key influencers. The implementation contractor’s energy advisor(s) will work to generate awareness of the program through presentations and seminars with appropriate trade associations (ASHRAE, BOMA, school administrators, etc.). • Provide complete website presence. The program will be comprehensively outlined on the utility website. Customers and market providers will be able to review qualifying measures and download incentive applications.
EM&V Requirements	The utility’s implementation contractor will be responsible for implementing the following types of measurement and verification activities to facilitate the utility’s third-party evaluation work:

	<ul style="list-style-type: none"> • Collect and track all customer, measure installation, and incentive data. • Verify that each product on which incentives are paid meets the prescribed efficiency standards using third party databases (e.g. ENERGY STAR, GAMA, ARI). Products that cannot be verified using a credible third party database will be considered on a case-by-case basis; product performance information will be requested from the contractor or manufacturer and efficiency will be verified by a qualified engineer. • Provide engineering support to identify and analyze the cost-effectiveness of energy saving opportunities. The energy advisor will work with the customer and/or market provider to complete custom engineering calculations that assess the energy savings potential, payback horizon, project eligibility, and incentive amount. If the project is deemed eligible, the advisor will assist the customer or market provide in completing a custom incentive grant application. • Conduct on-site inspections of 2% to 5% of equipment for which customers receive incentives to verify that products were installed and that the model and serial numbers match those provided on the incentive claim. Any inconsistencies will be researched and the resolution recorded. Market providers associated with inconsistencies will receive follow up inspections on projects that they are associated with. 												
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2012	2013	2014	2015										
345,838	346,320	349,200	352,800										

Program Element	Commercial & Industrial Educational Services															
Objective	<ul style="list-style-type: none"> To develop broad business awareness of the benefits of energy conservation and efficiency. To provide educational materials and services that motivate business customers to participate in the utility's energy optimization programs and to motivate energy management practices that can further reduce energy consumption. 															
Target Market	All commercial and industrial customers.															
Program Duration	Ongoing element of the program portfolio.															
Program Description	In addition to the Comprehensive Business Solutions programs, the utility plans to implement educational outreach initiatives to build and expand the business customer's awareness of the benefits of efficient energy management. Paw Paw will allocate 1.5% of the total energy optimization budget for business customer educational activities, with a 1.5% contribution to the total energy savings goal.															
Eligible Measures	Not applicable for this program.															
Implementation Strategy	<p>The following types of initiatives will be considered for implementation:</p> <ul style="list-style-type: none"> Develop, produce, and distribute energy efficiency tips, fact sheets and case studies that promote the benefits of energy efficiency. Enhance the utility website to facilitate easy access to educational materials and program offerings. 															
Marketing Strategy	See implementation strategy for a list of marketing activities.															
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TABLE 2 – ELIGIBLE MEASURES

<i>Residential Measures</i>	<i>Proposed Incentive</i>	<i>Unit</i>
CFL bulbs (or other new high efficiency lighting technology)	\$1.50-\$3.00	Lamp
CFL bulbs specialty	\$2.50	Lamp
CFL bulbs high wattage	\$5.00	Lamp
CFL fixtures	\$15.00	Fixture
LED task light	\$5.00	Fixture
LED holiday lights	\$3.50	25 string
ENERGY STAR ceiling fan with light	\$15.00	Unit
Advanced power strip plug outlet	\$10.00	Unit
High efficiency electric clothes dryer (w moisture sensor)	\$25.00	Unit
ENERGY STAR clothes washers	\$50.00	Unit
ENERGY STAR dehumidifier	\$25.00	Unit
ENERGY STAR room AC	\$30.00	Unit
ENERGY STAR refrigerator/freezer	\$25.00	Unit
Refrigerator and/or freezer turn-in and recycling	\$60.00	Unit
Room AC turn-in and recycling	\$15.00	Unit
Dehumidifier turn-in and recycling	\$15.00	Unit
High efficiency electric water heater (EF \geq .95)	\$25.00	Unit
High efficiency heat pump water heater (EF \geq 2.0)	\$150.00	Unit
Low flow showerheads/aerators (electric water heaters)	Free	Unit
Furnace with ECM blower	\$150.00	Unit
Central air-conditioning tune-up	\$50.00	Unit
CAC - SEER 15	\$150.00	Unit
CAC - SEER 16	\$250.00	Unit
CAC - SEER 17/18	\$250.00	Unit

<i>Residential Measures</i>	<i>Proposed Incentive</i>	<i>Unit</i>
High Efficiency Heat Pumps (air source, dual-fuel, ground source)	\$150-\$250	Unit
Setback thermostat	\$15.00	Unit
Weatherization measures (central air conditioning savings)	\$50-\$150	Per measure
Multifamily in-unit measures	Free	Unit
High-efficiency pool pump	\$30-\$50	Unit
Solar attic fan	\$125.00	Unit
Solar water heating system	\$450.00	Unit
Photovoltaic system	\$1,600.00	Per kW

<i>C&I Measures - Lighting</i>	<i>Proposed Incentive</i>	<i>Unit</i>
Central Lighting Control	\$600	10,000 sq. ft.
CFLs (or other new high efficiency lighting technology)	\$1.50	Lamp
CFL High Wattage	\$8.00	Lamp
CFL Specialty Lamp	\$4.00	Lamp
CFL Fixture	\$20.00	Lamp
CFL Reflector Flood	\$8.00	Lamp
Cold Cathode	\$3.00	Lamp
LED Recessed Downlight – Energy Star Qualified	\$20.00	Fixture
Daylight Sensor controls	\$900.00	10,000 sq ft
De-lamping	\$3.00-\$10.00	Lamp
Exterior Lighting Bi-level Cont with override 150 to 1000 HID	\$50.00	Fixture
Exterior HID replacement to 175W HID retrofit	\$45.00	Fixture
Exterior HID replacement above 175W to 250W HID retrofit	\$65.00	Fixture
Exterior HID replacement above 250W to 400W HID retrofit	\$120.00	Fixture
Garage HID replacement to 175W HID retrofit	\$100.00	Fixture
Garage HID replacement above 175W to 250W HID retrofit	\$150.00	Fixture
Garage HID replacement above 250W to 400W HID retrofit	\$180.00	Fixture
High Bay 3L T5HO Replacing 250W HID	\$35.00	Fixture
High Bay 4LT5HO Replacing 400W HID	\$70.00	Fixture
High Bay 6L T5HO Double fixture replace 1000W HID	\$120.00	Fixture
High Bay 6L T5HO replacing 400W HID	\$30.00	Fixture
High Bay Fluorescent 4ft Replacing 400W HID	\$50.00	Fixture
High Bay Fluorescent 6ft Replacing 400W HID	\$75.00	Fixture
High Bay Fluorescent 8ft Replacing 400W HID	\$50.00	Fixture
High Bay Fluorescent 8ft Replacing 1000W HID	\$160.00	Fixture

<i>C&I Measures - Lighting</i>	<i>Proposed Incentive</i>	<i>Unit</i>
42W 8 Lamp Hi Bay CFL	\$35.00	Fixture
HPT8 4ft 1 lamp, replace T8	\$2.00	Fixture
HPT8 4ft 2 lamp, replace T8	\$3.00	Fixture
HPT8 4ft 3 lamp, replace T8	\$4.00	Fixture
HPT8 4ft 4 lamp, replace T8	\$5.00	Fixture
LED Exit Signs Electronic Fixtures -Retrofit Only	\$12.50	Fixture
Low Watt T8 lamps	\$.75	Lamp
LW HPT8 4ft 1 lamp, replace T8	\$5.00	Fixture
LW HPT8 4ft 2 lamp, replace T8	\$10.00	Fixture
LW HPT8 4ft 3 lamp, replace T8	\$15.00	Fixture
LW HPT8 4ft 4 lamp, replace T8	\$20.00	Fixture
Occupancy Sensors over 500 W	\$30.00	per sensor
Occupancy Sensors under 500 W	\$50.00	per sensor
Pulse Start Metal Halide retrofit only	\$30.00	Fixture
T8 2ft 1 lamp	\$3.00	Fixture
T8 2ft 2 lamp	\$4.00	Fixture
T8 2ft 3 lamp	\$6.00	Fixture
T8 2ft 4 lamp	\$8.00	Fixture
T8 3ft 1 lamp	\$3.00	Fixture
T8 3ft 2 lamp	\$4.00	Fixture
T8 3ft 3 lamp	\$5.00	Fixture
T8 3ft 4 lamp	\$7.00	Fixture
T8 4ft 1 lamp	\$4.00	Fixture
T8 4ft 2 lamp	\$7.00	Fixture

<i>C&I Measures - Lighting</i>	<i>Proposed Incentive</i>	<i>Unit</i>
T8 4ft 3 lamp	\$10.00	Fixture
T8 4ft 4 lamp	\$13.00	Fixture
T8 8ft 1 lamp	\$4.00	Fixture
T8 8ft 2 lamp	\$7.00	Fixture
Switching Controls for Multilevel Lighting	\$600.00	10,000 sq. ft.

<i>C&I Prescriptive Measures - HVAC</i>	<i>Proposed Initial Incentive</i>	<i>Unit</i>
AC < 65,000 (1ph 14 SEER Min; 3ph 11.6 EER Min)	\$6.00	Ton
AC 65,000 – 134,000, 11 EER	\$15.00	Ton
AC 135,000-239,000, 11 EER	\$15.00	Ton
AC 240,000-759,000, 10 EER	\$10.00	Ton
Air Cooled Chiller	\$30.00	Ton
ASHP < 65,000 (1ph 14 SEER Min; 3ph 11.6 EER Min)	\$20.00	Ton
ASHP 65,000 – 134,000, 11 EER	\$20.00	Ton
ASHP 135,000-239,000, 11 EER	\$25.00	Ton
ASHP 240,000-759,000, 10 EER	\$30.00	Ton
Anti Sweat Heater Control	\$80.00	door
Economizer	\$8.00	Ton
GSHP < 135,000, 17 EER	\$50.00	Ton
GSHP < 135,000, 19 EER	\$50.00	Ton
Water Cooled Chiller < 150 Ton	\$25.00	Ton
Water Cooled Chiller 150-300 Ton	\$40.00	Ton
Water Cooled Chiller > 300 Ton	\$40.00	Ton
Efficient Condenser	\$100.00	Ton
Energy Management System	\$5.00	1,000 sq ft
High Performance Glazing	\$30.00	100 sq ft glazing
PTAC – 10% Improvement	\$5.00	Ton
PTAC-HP – 10% Improvement	\$10.00	Ton
Window Film	\$.30	100 sq ft glazing
ENERGY STAR Room AC > 14,000 BTU/hr	\$25.00	Unit
Setback Thermostat	\$20.00	Unit

<i>C&I Prescriptive Measures – Other</i>	<i>Proposed Initial Incentive</i>	<i>Unit</i>
Variable Frequency Drives	\$60.00	HP
Vending Equipment Controller	\$50.00	Unit
ENERGY STAR Commercial Solid Door Freezers less than 20ft3	\$75.00	Unit
ENERGY STAR Commercial Solid Door Freezers 20 to 48 ft3	\$100.00	Unit
ENERGY STAR Commercial Solid Door Freezers more than 48ft3	\$150.00	Unit
ENERGY STAR Commercial Solid Door Refrigerators less than 20ft3	\$75.00	Unit
ENERGY STAR Commercial Solid Door Refrigerators 20 to 48 ft3	\$100.00	Unit
ENERGY STAR Commercial Solid Door Refrigerators more than 48ft3	\$150.00	Unit
ENERGY STAR Hot Holding Cabinets Full Size	\$600.00	Unit
ENERGY STAR Hot Holding Cabinets Half Size	\$300.00	Unit
ENERGY STAR Hot Holding Cabinets Three Quarter Size	\$400.00	Unit
ENERGY STAR Ice Machines less than 500 lbs per 24 hrs	\$300.00	Unit
ENERGY STAR Ice Machines 500 to 1000 lbs	\$450.00	Unit
ENERGY STAR Ice Machines more than 1000 lbs	\$1,000.00	Unit
ENERGY STAR Steam Cookers 3 Pan	\$450.00	Unit
ENERGY STAR Steam Cookers 4 Pan	\$600.00	Unit
ENERGY STAR Steam Cookers 5 Pan	\$750.00	Unit
ENERGY STAR Steam Cookers 6 Pan	\$900.00	Unit
Pre Rinse Sprayers	\$25.00	Unit
Guestroom Energy Management Control	\$65.00	Room
Engineered Nozzles – Compressed Air	\$100.00	Unit
Barrel Wraps Injection Mold and Extruders	\$1.00	Unit
ECM Cooler and Freezer Motors	\$60.00	Unit
ECM Case Motors	\$30.00	Unit

ENERGY STAR Clothes Washer	\$50.00	Unit
<i>C&I Prescriptive Measures – Other</i>	<i>Proposed Initial Incentive</i>	<i>Unit</i>
Smart Strip plug outlet	\$10.00	Unit
Heat Pump Water Heater 10-50 MBH	\$1,500.00	Unit
Heat Pump Water Heater 50-100 MBH	\$3,000.00	Unit
Heat Pump Water Heater 100-300 MBH	\$5,000.00	Unit
Photovoltaic system	\$1,600.00	Per kW
Solar Water Heating System	\$450.00	Unit