

REPORT ON THE IMPLEMENTATION OF THE P.A. 295 RENEWABLE ENERGY STANDARD AND THE COST-EFFECTIVENESS OF THE ENERGY STANDARDS

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MICHIGAN PUBLIC SERVICE COMMISSION
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Introduction

Report Criteria

In October 2008, Public Act 295 of 2008 (PA 295 or the Act) was enacted. Section 51(5) (MCL 460.1051(5)) requires that by February 15, 2011, and each year thereafter, the Michigan Public Service Commission (MPSC or Commission) submit to the standing committees of the Senate and House of Representatives with primary responsibility for energy and environmental issues a report that does all of the following:

- a) Summarizes data collected under this section.
- b) Discusses the status of renewable energy and advanced cleaner energy in this state and the effect of Subparts A and B on electricity prices.¹
- c) For each of the different types of renewable energy sold at retail in this state, specifies the difference between the cost of the renewable energy and the cost of electricity generated from new conventional coal-fired electric generating facilities.
- d) Discusses how the Commission is ensuring that actions taken under this Act by electric providers serving customers in the same distribution territory do not create an unfair competitive advantage for any of those electric providers.
- e) Evaluates whether Subpart A has been cost-effective.
- f) Provides a comparison of the cost effectiveness of the methods of an electric utility with one million or more retail customers in this state as of January 1, 2008, obtaining renewable energy credits from renewable energy systems owned by the electric provider and from contracts that do not require the transfer of ownership of the renewable energy system.
- g) Describes the impact of Subpart A on employment in this state. The Commission shall consult with other appropriate agencies of the department of labor and economic growth in the development of this information.²
- h) Describes the effect of the 10 percent limit on using energy optimization credits or advanced cleaner energy credits to meet the renewable energy credit standards.

¹ Subpart A (MCL 460.1021-1053) deals with renewable energy standards. Subpart B (MCL 460.1071-1097) deals with energy optimization standards.

² A State government reorganization took place in 2011 which moved employment-related agencies outside the newly-formed Department of Licensing and Regulatory Affairs (LARA). Consultation with the appropriate agencies is continuing.

- i) Makes any recommendations the Commission may have concerning amendments to Subpart A, including changes in the 10 percent limits described in (h) or changes in the definition of renewable energy resource or renewable energy system to reflect environmentally preferable technology.

Additionally, Section 97 of the Act (MCL 460.1097) requires the following:

(6) By February 15, 2011 and each year thereafter and by September 30, 2015, the Commission shall submit to the standing committees described above a report that evaluates and determines whether Subpart B and Subpart A have each been cost-effective and makes recommendations to the legislature. The report shall be combined with any concurrent report by the Commission under section 51.

This is the third annual report and provides information on Commission renewable energy activities related to the Act through calendar year 2012 and summarizes data from the electric provider annual reports through the 2011 calendar year.³

Renewable Energy Plans and Commission Approval

Subpart A of the Act requires electric providers to meet a 10 percent renewable energy standard based on retail sales by the end of 2015. The Act includes interim compliance steps for 2012 – 2014. For 2016 and each year thereafter, the Act requires electric providers to maintain the same amount of renewable energy credits (RECs) needed to meet the standard in 2015.

The renewable energy standard is applicable to Michigan's investor-owned electric utilities, cooperative electric utilities, municipal electric utilities and alternative electric suppliers (AESs). The Act directed electric providers to file initial renewable energy plans (REPs) in 2009.⁴ The 74 initial REPs described how each electric provider intended to meet the renewable energy standard requirements. The Act also directs electric providers to file REPs biennially for Commission review.

³ See: the Commission's February 15, 2012 report:

http://www.michigan.gov/documents/mpsc/implementation_PA295_renewable_energy2-15-2012_376924_7.pdf .

⁴ There are currently a total of 84 electric providers. Of those 84, 13 are AESs not serving customers and therefore are not required to file annual reports or register in MIRECS, the REC tracking system. Seventy-one electric providers are required to meet the REC standard in the Act.

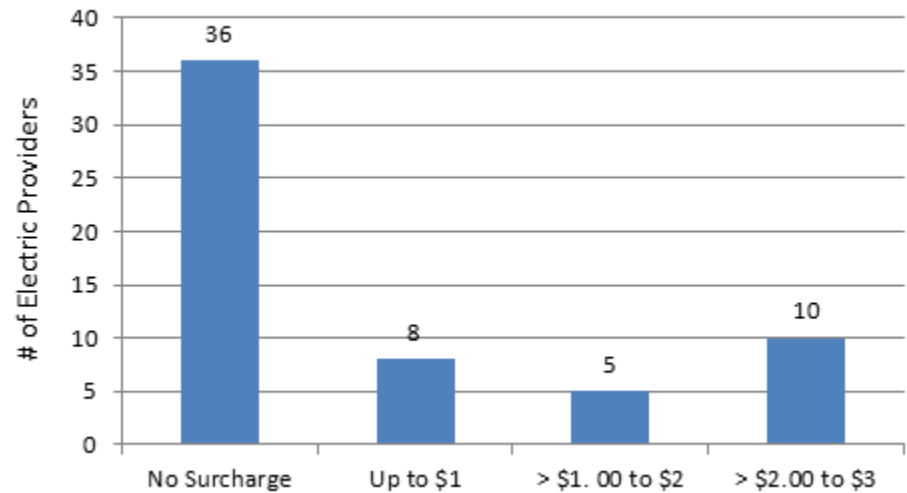
A listing of case numbers, electric provider names, and approval dates can be found in *Appendix A*. Commission Staff created a [website](#) with links to each electric provider’s REP case docket.

The Act allows providers to recover the incremental costs of compliance with the renewable energy standard requirements through a Commission-approved surcharge on customer bills. Section 45 of the Act limits the retail rate impact (surcharge amount) of the renewable energy standard to the following:

- (a) \$3.00 per month per residential customer meter.
- (b) \$16.58 per month per commercial secondary customer meter.
- (c) \$187.50 per month per commercial primary or industrial customer meter.

Through 2012, the Commission has established revenue recovery mechanisms for five rate-regulated providers to collect renewable energy surcharges on customer bills. Additionally, there are 18 non-rate-regulated electric providers with revenue recovery mechanisms. **Figure 1** summarizes the residential surcharges for all Michigan electric providers. Details about the surcharges can be found in *Appendix B*.

Figure 1: Residential Customer Renewable Energy Monthly Surcharge Summary



AES data not included as chart shows only residential surcharges.
(AESs do not currently serve residential customers.)
Source: Renewable energy plans filed with the MPSC

Based upon a review of REPs filed with the Commission, all providers are expected to be able to meet the 10 percent renewable energy standard in 2015, with the exception of Detroit Public Lighting Department.⁵ The Commission notes that this exception represents a total of less than one percent of Michigan's retail electricity total. This provider will not reach the 10 percent standard due to surcharge caps. At the same time, REC prices are particularly low, and the Commission anticipates that future REPs may show that all electric providers are able to obtain the needed renewable energy credits and stay within the retail rate impact limits.

Renewable Energy Cost Reconciliation Cases and Commission Approval

Per Section 49 (1) of PA 295 (MCL 460.1049(1)), the MPSC rate-regulated electric providers are required to file annual renewable energy cost reconciliation cases.⁶ For the 2011 reconciliation period, 13 cases were filed by the 14 rate-regulated electric providers. One electric cooperative became member-regulated prior to the filing date of its reconciliation. Two reconciliation cases were dismissed because the electric cooperatives became member-regulated after filing. After Staff review, the three remaining rate-regulated electric cooperatives and five investor-owned utilities have filed settlement agreements which have been approved by the Commission. The three other investor-owned utilities, Consumers Energy Company (Consumers Energy), Detroit Edison Company (Detroit Edison)⁷ and Wisconsin Electric Power Company, have cases currently in the contested case proceeding process to determine the reasonableness and prudence of expenditures and amounts

⁵ Wisconsin Electric Power Company's initial REP did not show the Company achieving the full 10percent standard. In the current pending REP case filed on September 5, 2012, in Case No. U-17072, the Company is able to reach the full 10 percent requirement. City of Eaton Rapids will meet the standard in 2015, but realizes a revenue deficiency starting in 2016 and may not maintain compliance levels through 2029.

⁶ Commission Staff audits the pertinent revenues and expenses along with other tasks. Staff analyzes and determines the electric provider's compliance with its filed REP per Act 295. Beginning with the first compliance year for the Renewable Energy Standard, the Commission will determine whether the provider has met its compliance targets. For renewable energy cost reconciliation case electronic dockets, see http://www.michigan.gov/mpsc/0,4639,7-159-16393_53570-240178-,00.html.

⁷ Effective January 1, 2013, The Detroit Edison Company changed its legal name to DTE Electric Company. Because this report covers 2011 and 2012, the company name of Detroit Edison will be used.

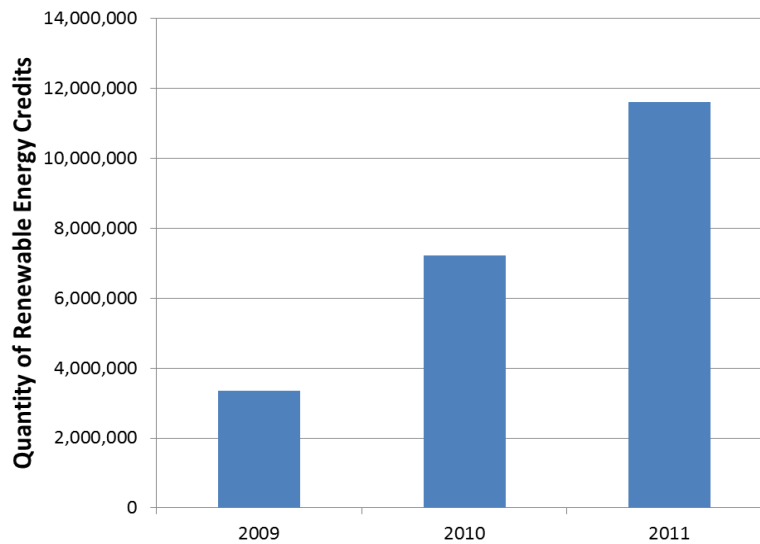
collected pursuant to the revenue recovery mechanism. Case numbers and order dates for each renewable energy cost reconciliation case can be found in *Appendix A*.

Summary of Renewable Energy Data Collected

Electric providers are directed by Section 51(1) of PA 295 (MCL 460.1051(1)) to file annual reports for each plan year beginning with 2009. Michigan electric provider annual reports for 2009 through 2011 are available on the [Commission's website](#).⁸ Commission Staff worked with electric providers to develop an annual report template based on Section 51 of the Act. In addition to the information specifically listed in the Act as being required in electric provider annual reports, the report template also requested information necessary to determine the total number of RECs in each electric provider's portfolio as shown in **Figure 2**. PA 295 allows RECs to be banked for up to 36 months after they are originated and also allows for the limited substitution of energy optimization credits, which is reflected in the REC totals. Thus, the 2011 REC total includes RECs from 2009, 2010 and 2011 electric generation. Since the first compliance reports are not due until 2013 (for the 2012 compliance year), the number of RECs reported by electric providers and used to create **Figure 2** continues to be based on each electric provider's estimates. Data from annual reports is shown in *Appendix C*.

⁸See: http://www.michigan.gov/mpsc/0,1607,7-159-16393_53570-240179--,00.html.

Figure 2: Estimated Cumulative Renewable Energy Credit Portfolio



Source: Renewable Energy Annual Reports:

http://www.michigan.gov/mpsc/0,4639,7-159-16393_53570-240179--,00.html

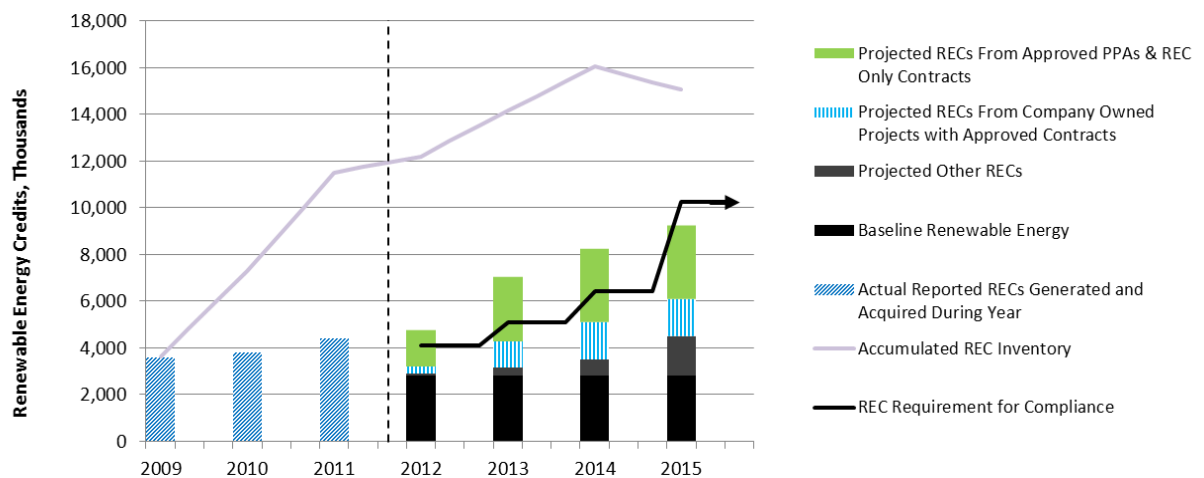
Status of Renewable Energy and Advanced Cleaner Energy

For 2011, electric providers reported a total portfolio of 11,501,525 RECs and 116,570 Advanced Cleaner Energy Credits (ACECs). The total portfolio figure also includes approximately 775,000 excess energy optimization credits and purchased green pricing program RECs that are available for compliance with the renewable energy standard. Based on the number of RECs generated or acquired during 2011 as reported by electric providers, Michigan's 2011 estimated renewable energy percentage is 4.4 percent as shown in *Appendix C*.

A projection of Michigan's renewable energy credits is shown in **Figure 3** for 2012 through 2015 along with the annual REC compliance requirement and quantity of accumulated RECs. In order to reflect only renewable energy generated or acquired in each year, accumulated RECs from previous years are not included in the renewable energy totals but are shown separately in the line representing accumulated RECs. The projected renewable energy includes baseline renewable energy (renewable

energy that was operational prior to the passage of PA 295); an estimate of RECs from PA 295 approved contracts for company-owned renewable energy projects, power purchase agreements and REC-only contracts; and a projection of other RECs from non-rate regulated providers and contracts that do not require Commission approval under PA 295. For 2015, Michigan's renewable energy percentage is projected to reach nine percent based on renewable energy generated during that year and the associated incentive renewable energy credits. Accumulated RECs from previous years that may be banked for up to 36 months and energy optimization credit substitutions for RECs provide additional resources to ensure meeting the 10 percent renewable energy standard. The amount of renewable energy generated during each year is expected to continue increasing after 2015 because electric providers' current renewable energy plans show continued development of additional renewable energy projects. The renewable energy projections shown for 2012 through 2015 clearly indicate that providers are on track to meet the renewable energy standard.

Figure 3: Status of Michigan Renewable Energy

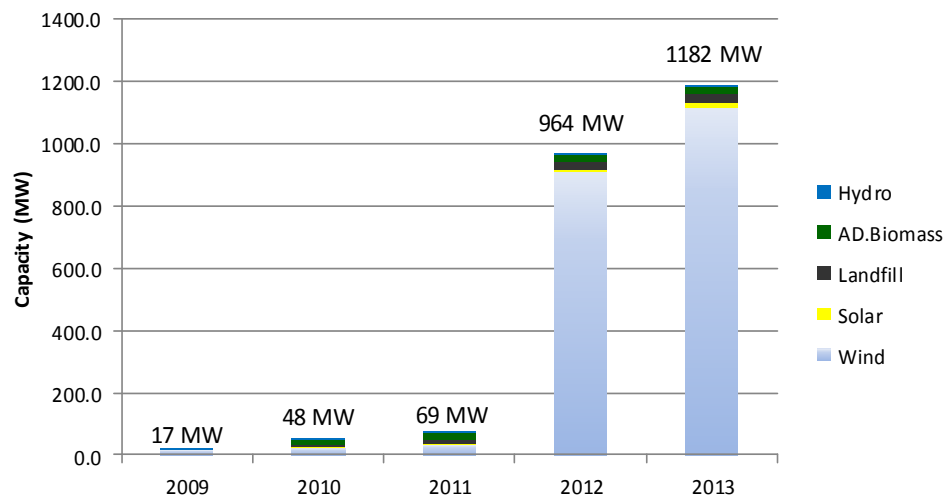


Source: Renewable energy credits generated or acquired during each year as reported in electric provider renewable energy annual reports, PA 295 contracts and Commission Staff projections.

As of January 2013, 49 renewable contracts and amendments have been filed with the Commission and all have been approved. **Figure 4** shows the expected commercial operation dates for renewable

energy projects based on the contracts and solar programs approved by the Commission through 2012.⁹

Figure 4: Cumulative Renewable Energy Capacity by Commercial Operation Date



The breakdown by renewable energy technology type for all renewable energy projects based on contracts and solar programs approved by the Commission through 2012 is shown in **Figure 5**.

Figure 5: Renewable Energy Capacity by Technology Type

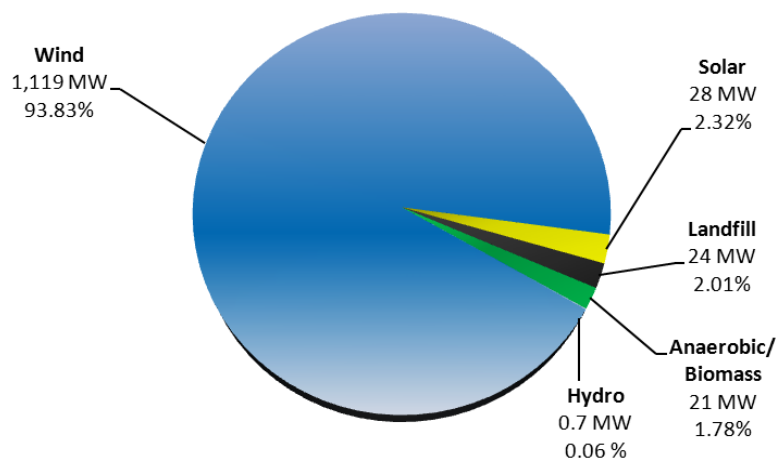


Figure 5 is based solely on contracts and projects approved by the Commission. It includes the incremental 11 MW of solar that was not included in **Figure 4** but is expected to become commercially operational in 2014 and 2015.

⁹ Assumes 17 MW of Detroit Edison Company's 22 MW SolarCurrents program and Consumers Energy Company's 5.25 MW Experimental Advanced Renewable Programs will be commercially operational by the end of 2013. Data corrected from the February 15, 2012 Report to account for Michigan's share (67.5 MW) of Indiana Michigan Power Company's wind farms. This resulted in a total reduction of 82.5 MW from last year's Report.

Additionally, Consumers Energy Company and Detroit Edison Company both continued to implement solar photovoltaic (PV) pilot programs. Consumers Energy's 3.25 MW expanded solar pilot program has resulted in more demand in each round than is available to award even with a substantial reduction in program price over the initial 2 MW pilot. Detroit Edison's customer-owned program met its goal of 5 MW in May 2011, but the Commission approved a 2 MW expansion of the customer-owned SolarCurrents program in November 2012. Additionally, Detroit Edison is continuing development under its 15 MW Company-owned SolarCurrents program. These PV pilots are discussed in more detail in *Appendix D*.

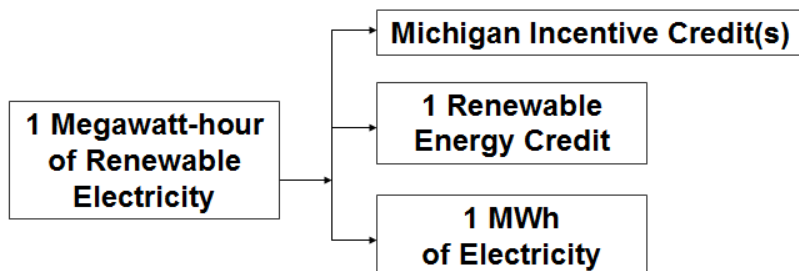
By the next biennial REP review cycle, which begins in the second quarter of 2013, electric providers will have made significant progress toward securing the majority of the renewable energy necessary for compliance with the Act. Based on the number of renewable energy projects shown in the Midwest Independent Transmission System Operator (MISO) queue and reported in press releases as being under development without purchase agreements, competition for utility power purchase agreements will be steep. The greater experience level of the construction, assembly and manufacturing companies that specialize in renewable energy should contribute to lower costs. Looking forward, the Commission finds that electric providers, with the exception of one, are on pace to hit the interim targets as well as the 10 percent by 2015 renewable energy standard.

Michigan Renewable Energy Certification System (MIRECS)

Compliance with the renewable energy standard is demonstrated through the use of RECs. One REC is created for each megawatt-hour (MWh) of renewable energy generated. Additionally, the Act provides for Michigan incentive renewable energy credits (IRECs) and the substitution of energy optimization credits (EOCs) and advanced cleaner energy credits (ACECs) for RECs. RECs may be

sold separately from the energy as shown in **Figure 6**.

Figure 6: Renewable Energy Credits



Section 41 of PA 295 (MCL 460.1041) directed the Commission to “establish a renewable energy credit certification and tracking program.” On August 11, 2009, the Commission approved the contract between the Department of Energy, Labor and Economic Growth (now Licensing and Regulatory Affairs or LARA) and APX, Inc., that designates APX, Inc. as the State of Michigan Administrator of the renewable energy credit and tracking program. MIRECS was launched on October 30, 2009, is fully functional and is being used by electric providers.¹⁰

MIRECS is designed to track and certify Michigan credits necessary for compliance with PA 295. The credits include RECs, ACECs, EOCs and IRECs (on-peak, solar, Michigan labor and manufacturing, etc.).¹¹ At this time, EOCs are not transferable from one electric provider to another, meaning that they cannot be sold or otherwise traded. This functionality is being considered.

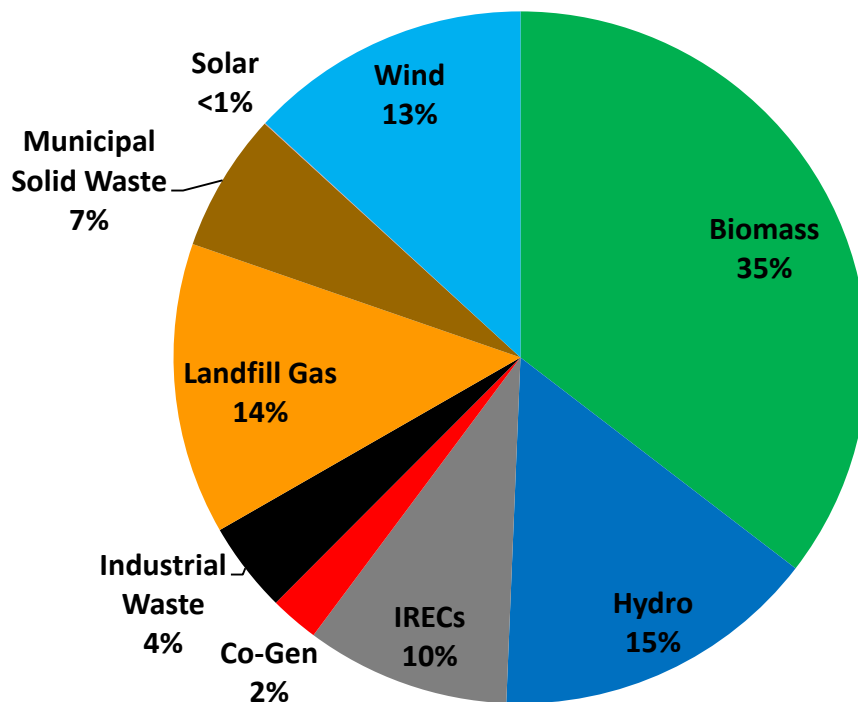
As of February 1, 2013, a total of 18,891,436 Michigan energy credits have been created in MIRECS from 2009 to 2012. **Figure 7** shows the categorization of Michigan’s energy credits by technology type. A yearly breakout of energy credits is available in **Appendix E**. Analysis of these breakouts shows the significant growth of wind in Michigan’s REC portfolio, from seven percent in

¹⁰ MIRECS may be accessed at <http://www.mirecs.org>.

¹¹ See: Section 39 (2) of the Act.

2009 to 24 percent in 2012. The 13 percent wind figure shown in **Figure 7** represents total credits created over the 2009 – 2012 period.

Figure 7: MIRECS 2009-2012 Vintage Energy Credits – 18,891,436 Total Credits



The number of generating units within MIRECS continues to grow. As of February 1, 2013, there were 194 registered projects (generators) in MIRECS. MIRECS has 130 account holders which include electric service providers, generator owners and others. Sixty-eight of Michigan's 71 electric providers ¹² established electric service provider accounts.

MIRECS is able to fully integrate with other tracking systems such as the Midwest Renewable Energy Tracking System (M-RETS) and North American Renewables Registry (NAR). This integration allows both businesses and individual citizens to sell their product to a wider market.

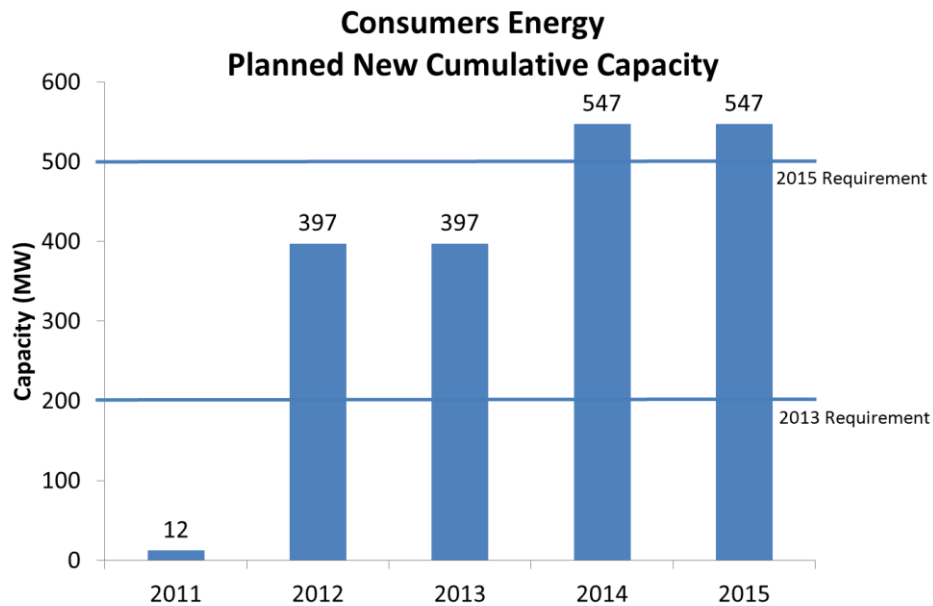
¹² Thirteen AESs not serving customers are not required to have a MIRECS compliance account.

Generators registered with other tracking systems as of February 1, 2013 have registered 35 projects that import RECs into MIRECS from other tracking systems. Commission Staff assists electric providers with the compliance process and will continue to hold training/information meetings.

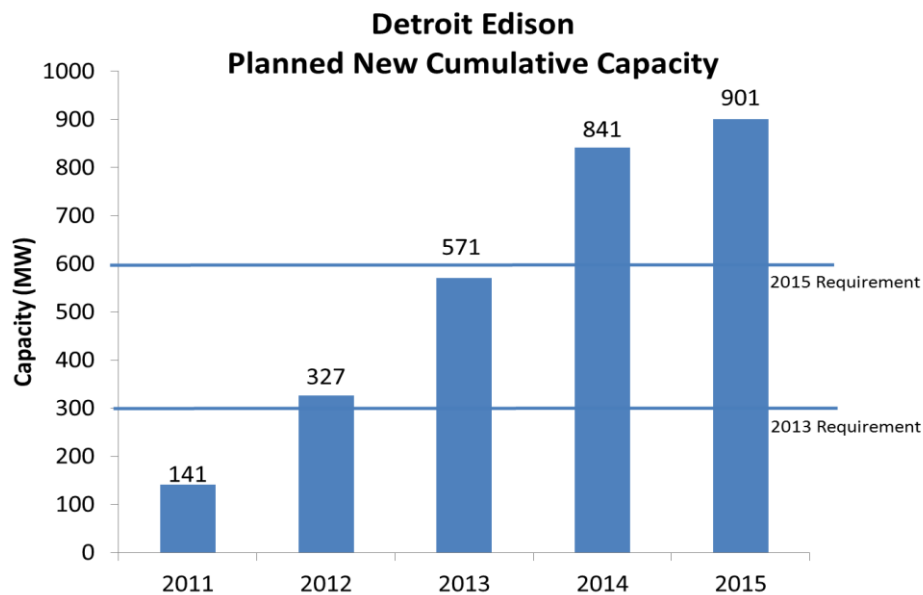
Competition in Areas Served by Multiple Providers

Consumers Energy and Detroit Edison have made substantial progress toward complying with the renewable energy standard. Consumers Energy has filed renewable energy contracts with the Commission totaling 397 MW and Detroit Edison totaling 720 MW, as shown in *Appendix F*. In addition to meeting the requirement in PA 295 for RECs that is applicable to all electric providers, both Consumers Energy and Detroit Edison have renewable capacity requirements pursuant to Section 27 of PA 295 (MCL 460.1027). The capacity requirements are only applicable to these two Companies as they serve the vast majority of electric load in Michigan. By the end of 2013, Consumers Energy is required to obtain 200 MW of nameplate capacity that was not in commercial operation before the effective date of the Act. Similarly, Detroit Edison's capacity portfolio requirement for 2013 is 300 MW. By the end of 2015, Consumers Energy's and Detroit Edison's total capacity portfolio requirement increases to 500 MW and 600 MW, respectively. Planned new cumulative capacity and capacity portfolio requirements are shown for each company in **Figure 8**.

Figure 8: Planned New Cumulative capacity through 2015 for Consumers Energy and Detroit Edison¹³



Source: MPSC Case No. U-16581, Renewable Energy Plan



Source: MPSC Case No. U-16582, Renewable Energy Plan

¹³ Actual capacity acquisition has deviated slightly from the 2011 Renewable Energy Plans to take advantage of economic conditions. Data shows planned capacity through 2015 only. Both companies expect to build or acquire additional capacity after 2015. Consumers Energy source data is from biennial REP Case No. U-16581. Detroit Edison source data is from biennial REP Case No. U-16582.

AESs are also required to meet the energy credit requirement contained in the Act. Almost all AESs have indicated through REPs and 2011 annual reports that they will purchase RECs to meet the 2012 renewable energy standard requirement. Customer choice participation levels for Detroit Edison and Consumers Energy are at the maximum amount allowed by law and both large electric providers currently have customers waiting to switch providers. The two largest utilities in Michigan have driven the expansion of renewable energy and have incurred most of the associated costs while the AESs have incurred little or no costs associated with complying with the statute at this time.

Cost-Effectiveness of Competitive Bidding and Owned Generation

Section 33 of PA 295 (MCL 460.1033) includes a provision for electric providers who serve more than 1,000,000 electric customers in this state as of January 1, 2008 with regard to competitive bidding. Consumers Energy and Detroit Edison (collectively, the Companies) fall under this provision.

Pursuant to Section 33, the Companies are required to obtain RECs necessary to meet the REC standard in 2015 by one or more of the following methods:

- (i) Renewable energy systems that were developed by and are owned by the electric provider. An electric provider shall competitively bid any contracts for engineering, procurement, or construction of any new renewable energy systems...
- (ii) Renewable energy systems that were developed by 1 or more third parties pursuant to a contract with the electric provider under which the ownership of the renewable energy system may be transferred to the electric provider, but only after the renewable energy system begins commercial operation. Any such contract shall be executed after a competitive bidding process conducted pursuant to guidelines issued by the commission.

Additionally:

- (b) At least 50 percent of the renewable energy credits shall be from renewable energy contracts that do not require transfer of ownership of the applicable renewable energy system to the electric provider or from contracts for the purchase of RECs without the associated renewable energy. A renewable energy contract or contract for the purchase of RECs under this subdivision shall be executed after a competitive bidding process conducted pursuant to guidelines issued by the commission.

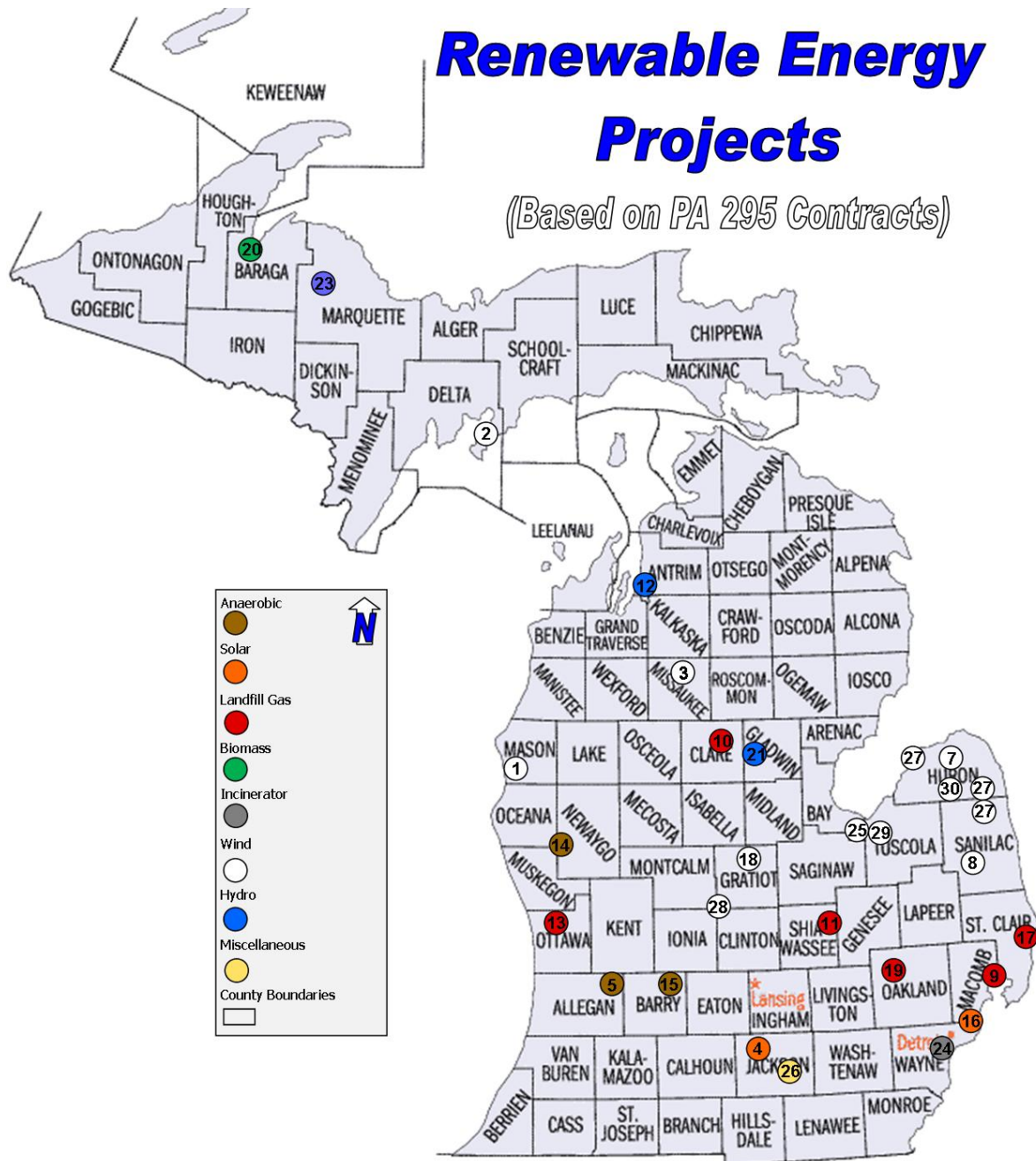
The Companies have conducted 19 requests for proposals (RFPs) in total. Consumers Energy has conducted five RFPs and two requests for qualifications. Detroit Edison has conducted 14 RFPs, two pre-qualification events, one solar solicitation of interest, a request for information, and an auction for 2009 and 2010 vintage RECs. In response to the majority of the Companies' RFPs, Commission Staff has reviewed competitive bidding activities through process audits. The purpose and design of the audits was to ensure that the Companies followed the processes and procedures outlined in the Commission's December 4, 2008 Temporary Order in [MPSC Case No. U-15800, Attachment D](#)¹⁴ and pursuant to Section 33 of PA 295. Details about each Company's competitive bidding activities are shown in *Appendix G*.

Pursuant to Section 37 of the Act (MCL 460.1037), renewable energy power purchase and REC-only agreements entered into by any electric provider whose rates are regulated by the Commission must be submitted to the Commission for determination of whether the terms are reasonable and prudent. *Appendix F* lists all renewable energy contracts that have been approved by the MPSC to date.

There has been significant renewable energy development as a result of PA 295. *Appendix H* lists all of the renewable energy projects that have approved PA 295 contracts. The *Appendix H* map key corresponds to the map in **Figure 9**. Wind energy has been the primary source of new renewable energy in Michigan. At the end of 2012, there were 978 MW of utility scale wind projects in operation in Michigan as indicated in *Appendix I*.

¹⁴ See: <http://efile.mpsc.state.mi.us/efile/docs/15800/0001.pdf>.

Figure 9: Locations of Renewable Energy Projects



Multiple Solar projects participating in Consumers Energy's Experimental Advanced Renewable Program are represented by a solar symbol placed at Jackson. Multiple Solar projects participating in Detroit Edison's SolarCurrents Program are represented by a solar symbol placed at Detroit. Alpena Power Company purchasing "bulk of RECs" from Consumers Energy represented by a yellow symbol placed at Jackson. Detroit Edison purchasing misc RECs from UPPCo represented by a blue symbol placed at UPPCo's headquarters. Map shows renewable energy projects based on PA 295 contracts filed at the Michigan Public Service Commission.

*Numbers shown on map correspond to the Map Key Column provided on *Appendix F and H*.

The MWh contract prices represented in *Appendix F* are levelized cost calculations and reflect the prices over the contract term for all power purchase agreements or, in the case of a Company-owned project, the useful life.¹⁵ The levelized cost value is used to compare multiple contracts with varying terms and conditions. It should be noted that the average levelized costs of the contracts continue to decline. Of the 49 contracts and amendments from four electric providers approved by the Commission to date, all but three have been from Consumers Energy or Detroit Edison and 10 have been unsolicited. All of the contracts filed are consistent with the electric providers' REPs and, with the exception of several early contracts for small renewable energy projects, the contract prices have been much lower than expected.

A comparison of the cost-effectiveness of the renewable energy competitive bidding resource acquisition methods described in Section 33 of the Act (MCL 460.1033) to Company-owned projects, shows that competitively bid Company-owned projects have been less costly than similar competitively bid power purchase agreements. Consumers Energy has filed one application for approval of a 100.8 MW Company-owned wind farm. Detroit Edison has filed three applications for approval of Company-owned wind farms totaling 322.8 MW and applications for 15 MW of Company-owned solar through its SolarCurrents program. Since no large scale solar installations have been contracted through power purchase agreements, only the above-mentioned wind contracts are compared for purposes of this section of the report.

Consumers Energy has filed contracts to purchase wind turbines from Vestas Wind Technology and utilize White Construction for the construction of its wind farm. The combined

¹⁵ MPSC Staff performed audits of the Companies' levelized cost calculations starting in the early part of 2011. Additionally, through RFP process audits, Staff reviewed actual costs of contracts obtained through most of the Companies' competitive solicitations. Staff was provided an opportunity to review the actual costs of all contracts listed in *Appendix F*.

levelized cost of these contracts is \$110 per MWh.¹⁶ Detroit Edison has filed contracts for a build-transfer arrangement with Gratiot County Wind that has an expected levelized cost of approximately \$91.43 per MWh.¹⁷ In addition, it has filed contracts to purchase wind turbines from General Electric and use Barton Malow for the construction of its second and third wind farms, Thumb Wind and Echo Wind, respectively. The combined levelized cost of the Thumb Wind contracts are approximately \$62.50 per MWh and the combined levelized cost of the Echo Wind contracts are approximately \$52.50 per MWh. To compare these costs, a weighted average of the levelized competitively bid wind contract costs equal to \$79.52 per MWh was calculated based on the six competitively bid wind contracts from non-Company-owned contracts filed by Detroit Edison and Consumers Energy. This cost was compared to the weighted average levelized cost of Company-owned wind projects of \$77.31 per MWh. The analysis shows that Company-owned projects have been three percent cheaper than similar competitively bid power purchase agreements.

Impact of the Renewable Energy Standard on Employment

One purpose of PA 295 is to “provide improved air quality and other benefits to energy consumers and citizens of this state.” An added benefit of the additional investment, manufacturing, installation, administration and development of clean and renewable energy has been the effect on jobs.

During 2011, the clean and renewable energy sector contributed to employment opportunities in Michigan. Generating facilities were constructed utilizing Michigan labor.

¹⁶ The contracts originally approved by the Commission stated a levelized cost of \$95 per MWh. Based primarily on the Company’s decision to substitute the Federal Cash Grant for the Production Tax Credit and the accounting treatment of the Grant, the levelized cost increased to \$110 per MWh as stated in the most recent biennial REP available at: <http://efile.mpsc.state.mi.us/efile/docs/16581/0008.pdf>.

¹⁷ Based on updated information provided by Detroit Edison to Commission Staff, the levelized price has been reduced from \$94.43 per MWh

Contracts for utility scale projects, which will employ Michiganders, were approved, and solar pilot programs that utilize Michigan labor in their installations continued and expanded.

Section 39 of PA 295 (MCL 460.1039) provides for Michigan Incentive Renewable Energy Credits for renewable energy systems that meet certain criteria. For renewable energy systems constructed using a threshold level of Michigan labor, the amount of the incentive is one-tenth of a REC for each MWh generated during the first three years of commercial operation. The incentive for Michigan equipment is calculated in a similar manner. **Table 1** shows the number of generators, resource technology, capacity of those generators and the Michigan incentive credits created in 2012.

Table 1: 2012 Michigan Equipment and Michigan Labor IRECs

Incentive	Incentive Renewable Energy Credits	Renewable Resource (Number of Generators) ¹	Generator Capacity
Michigan Equipment	920	Wind (2)	53 MW
Michigan Labor	114,943	Landfill Gas (7), Wind (10), Biomass (2), Solar (9)	592 MW
¹ The two generators eligible for Michigan Equipment IRECs are also eligible for the Michigan Labor IRECs.			

There are manufacturing companies located in Michigan that have recently obtained the necessary certifications to provide utility-scale wind towers and turbine blades. As an example, the Monroe-based Ventower Industries website describes the company as a full service fabricator and supplier of utility-scale, wind turbine towers.¹⁸ Michigan's WZZM News reported in

¹⁸ See: <http://ventower.com/ventower-news-ventower-medc-pilot-program.htm>

January 2013 that Energetx, located in Holland, Michigan, shipped its first utility-scale wind turbine blades.¹⁹ The towers and blades are major components of a wind turbine. In the future, the opportunity to incorporate these components into wind farms constructed to meet the renewable energy standard could increase the Michigan Equipment percentage of renewable energy projects and lead to more jobs in Michigan.

According to Consumers Energy, Mason County and the state of Michigan received an economic boost of nearly \$10 million from the development of Consumers Energy's first wind farm, the Lake Winds Energy Park. Michigan vendors (most based in Mason County) received more than \$4 million in direct payments for a variety of construction services and materials, such as concrete, aggregate, soil erosion materials, and culverts. The multiplier effect of those direct payments resulted in another \$4.8 million in indirect economic impact. Additionally, with more than 150 workers involved in the development and construction of the \$232 million project, area hotels, restaurants, and other commercial retailers realized more than \$1 million in additional economic benefits from the sales of goods and services related to the renewable energy project.²⁰

The Ludington & Scottville Area Chamber of Commerce said that the construction of the Consumers Energy Lake Winds Energy Park had a significant economic impact on the Ludington area in 2012. It was described as providing an economic boost at a time when many local businesses were struggling to recover from the downturn in the economy. The Chamber said that several restaurants and hotels reported having their best year ever due to the influx of people working on the project.

According to DTE Energy, the investment in three wind parks, one constructed per year through 2013, will contribute \$150 million in economic benefits to Michigan. The Gratiot Wind

¹⁹ See: <http://www.wzzm13.com/news/article/238885/14/Made-in-Michigan-Energetx-turbine-blades>

²⁰ Source: Correspondence with Consumers Energy Company

Park, constructed in 2011, provided over \$30 million in direct payments to Michigan construction contractors and material/equipment suppliers. An estimated \$750,000 was paid directly to local suppliers, primarily located within the local community for expenditures of food, lodging and expenses. The development and construction of the Company's wind parks in Huron and Sanilac Counties in 2012 contributed over \$60 million in direct payments into Michigan's economy for construction materials and equipment. Over 120 Michigan residents were employed during the construction of the park, again spending \$750,000 in food, lodging and expenses. The third wind project, Echo Wind Park, also located in Huron County, to be constructed this year, has already contributed over \$7 million in direct payments to Michigan contractors. The Company said that the direct spending and employment of 120 Michigan residents is expected to contribute approximately the same amount as in 2012, approximately \$60 million in payments throughout the year.²¹

Statewide, there has been significant investment in the renewable energy sector since the passage of PA 295 in 2008. Conservatively, assuming an installed cost of \$2,000 per kW²² for new renewable energy projects, over \$1.79 billion has been invested to bring 895 MW²³ of new renewable energy projects on-line through 2012 in Michigan. This figure includes both incremental cost of compliance and the portion of costs recovered as energy costs.

As noted in prior annual reports, the *Michigan Green Jobs Report 2009*²⁴ was optimistic about the job creation potential of the renewable energy industry and pointed to the renewable energy standard as a driver for growth in this field. Surveys were conducted in 2011

²¹ *Source:* Correspondence with Detroit Edison Company

²² DTE reported an installed cost of \$2,225 to \$2,438 per kW for its Echo Wind Park contract approval application filed on August 10, 2012. Subsequently, the Company provided a price of approximately \$52.50 per MWh.

²³ This number does not include 67.5 MW of wind generation attributable to contracts filed by Indiana Michigan Power Company as these projects are outside of Michigan or 1.05 MW of hydro and anaerobic bio-digestion projects that were commercially operational prior to PA 295.

²⁴ See: http://www.michigan.gov/documents/nwlb/GJC_GreenReport_Print_277833_7.pdf

to update the findings in the *Michigan Green Jobs Report 2009*, with results expected later this year.

The Commission is confident that Michigan has the potential to become a regional leader in development and manufacturing of renewable energy systems, building on the state's engineering expertise, modernized machining, and investment in renewable energy in coming years. It appears that the Michigan incentive REC provision is meeting its intended purpose to encourage developers to maximize utilization of Michigan equipment and labor. The Commission will continue to monitor data on the impact of the renewable energy standard on employment in Michigan, and expects to be able to provide more detailed information in future annual reports.

Impact of Percentage Limits on the Use of Advanced Cleaner Energy Credits

Advanced cleaner energy (ACE) is defined in PA 295 as any of the four following facilities: 1) gasification, 2) industrial cogeneration, 3) coal-fired electric generating if at least 85 percent of the carbon dioxide emissions are captured and permanently geologically sequestered, or 4) electric generating that uses technologies not in commercial operation on the effective date of PA 295.

Energy produced from these facilities is eligible for ACE credits (ACECs); the credits are tracked within MIRECS. Electric providers may substitute ACECs for RECs to use in meeting the renewable energy standard. However, there are conditions on the substitution and there is a statutorily imposed limit on the percentage of ACEC substitutions eligible to be used each year for the renewable energy standard.

Section 27(7) of PA 295 (MCL 460.1027(7)) describes the conditions and substitution limits. ACECs from industrial cogeneration may be substituted for RECs without Commission approval. For other types of ACECs, substitution may only be made if the ACE is both cost effective and provides a carbon dioxide emission benefit. Also, the combination of energy optimization credits and ACECs may not account for more than 10 percent of the total energy credits used to meet the standard in a given year. Further, older non-plasma arc gasification ACE systems (in existence on January 1, 2008) shall not be used to meet more than 70 percent of this 10 percent limit. The substitution ratio of plasma arc gasification or industrial cogeneration is one ACEC to one REC while the ratio for other forms of ACE is 10 ACECs to one REC.

The Commission has found no negative impact on ACE based on the above-described percentage limits. To better answer this question, the MPSC Staff added the question “Did the percentage limits in Section 27(7) affect development of advanced cleaner energy by the electric provider? How so?” to the annual reports required under Section 51. No electric provider indicated the percentage limits in Section 27(7) (MCL 460.1027(7)) affected development of ACE. ACE generation has decreased nearly six percent from 2010 to 116,570 MWh in 2011. Up from 2010, three electric service providers, using four facilities, are using ACE to meet their RPS. Given this, ACE continues to be a small percentage of the Michigan renewable energy portfolio (just greater than 2.5 percent in 2011). The percentage limits, which in all cases are far from being met, do not appear to be affecting the development of ACE in Michigan.

The Cost of Renewable Energy Compared to the Cost of New Coal Energy

Pursuant to Section 21(6)(b) (MCL 460.1021(6)(b)), rate-regulated electric providers’ REPs were required to show that the life cycle cost of renewable energy acquired, less the life

cycle net savings associated with Energy Optimization Plans, did not exceed the life cycle cost of electricity generated by a new conventional coal-fired facility. The Commission Staff filed a letter in MPSC Case No. U-15800 to provide the required life cycle cost of electricity generated by a new conventional coal plant:

The Commission's temporary order implementing 2008 PA 295, Case Number U-15800, directed the Staff to work with the providers to develop the required life cycle cost of electricity generated by a new conventional coal-fired facility in terms of a guidepost consisting of a levelized busbar rate, in \$/MWh, of an advanced-supercritical pulverized coal plant with a life cycle of 40 years. The Commission directed the Staff to submit the number to the Commission by January 30, 2009. The Staff has diligently worked with the providers to develop the guidepost rate and finds that the number is \$133 per MWh.²⁵

This guidepost rate was derived from consulting services provided to Consumers Energy as a result of the Company's inquiry into a new 830 MW coal fired power facility, and was adopted by all electric providers. In its amended REP in Case U-16543, Consumers Energy updated the levelized cost of a conventional coal plant to \$107 per MWh using the same construction cost estimates used in determining the \$133 per MWh rate. The decrease in cost was primarily due to updated emissions assumptions.²⁶ At the time of the updated Consumers Energy levelized coal plant assumption, the cost of coal had declined compared to the costs in 2008 when the original analysis had taken place. This had the effect of reducing the long-term fuel price projections. Additionally, federal legislation regarding carbon emissions was not enacted, resulting in emissions costs, factored into the original calculation, having less of an impact on the new Consumers Energy assumption. However, the Commission continues to believe there is merit in the \$133 per MWh guidepost rate as discussed below.

²⁵ Source: Excerpt from Commission Staff January 30, 2009 Guidepost Rate Letter, <http://efile.mpsc.state.mi.us/efile/docs/15800/0023.pdf>.

²⁶ See: <http://efile.mpsc.state.mi.us/efile/docs/16543/0010.pdf>.

In the later part of 2011, the U.S. Environmental Protection Agency (EPA) finalized the Mercury and Air Toxics Rule,²⁷ one of four proposed regulations that have the potential to dramatically impact electric providers' generation sources, primarily coal-fired plants. In December of 2011, the EPA supplemented its rulemaking under the Cross State Air Pollution Rule (CSAPR)²⁸ to require Michigan, along with four other states, to reduce summertime NOx emissions under an ozone season control program. At this point, the EPA is reviewing a Court of Appeals decision on CSAPR, and the Clean Air Interstate Rule (CAIR)²⁹ remains in effect. The remaining two regulations are still in draft form awaiting finalization.³⁰ These EPA regulations, should they become effective, could have a considerable impact on the price of electricity going forward, as electric providers will have to make the decision to either retire or retrofit existing generators with emissions controls and technology to regulate cooling water temperatures. Any new coal capacity would likely require significant capital costs (and potentially increase rates for customers) and make the cost of new renewable energy development even more competitive. The potential costs associated with these federal regulations provide support for the original guidepost rate approved by the Commission.

By comparing the calculated levelized cost of \$133 per MWh in 2008 dollars for a new conventional coal-fired power facility with the combined weighted average levelized contract prices in **Table 2**; the cost of all renewable energy technologies is less than the coal guidepost rate with the exception of two anaerobic digester contracts representing less than 4 MW of capacity. These contracts were the result of Consumers Energy's first solicitation for small

²⁷ Mercury and Air Toxics Standards: <http://www.epa.gov/mats/basic.html>

²⁸ Cross State Air Pollution Rule: <http://www.epa.gov/crossstaterule/>

²⁹ Clean Air Interstate Rule: <http://www.epa.gov/cair/>

³⁰ Clean Water Act: <http://www.epa.gov/lawsregs/laws/cwa.html>;

Coal Combustion Residuals: <http://www.epa.gov/wastes/nonhaz/industrial/special/fossil/ccr-rule/index.htm>.

(under 5 MW) facilities. Consumers Energy and Detroit Edison have since seen much lower prices for renewable energy. Using Consumers Energy's revised \$107 per MWh levelized cost, wind and biomass still compare favorably while landfill gas is competitive. As solar development in Michigan continues to include only small-scale projects or pilot programs, it was not compared for purposes of this section.

Table 2: Weighted Average Levelized Renewable Energy Contract Prices

Consumers Energy					
Technology	Wind	Digester	Biomass	Landfill	Hydro
Weighted Average	\$101.83	\$137.02	NA	\$105.81	\$121.31
Detroit Edison					
Technology	Wind	Digester	Biomass	Landfill	Hydro
Weighted Average	\$70.08	NA	\$98.94	\$98.97	NA
Combined Weighted Average	\$80.32	\$137.02	\$98.94	\$103.84	\$121.31

Additionally, Detroit Edison reported in its 2011 renewable energy cost reconciliation case (Case No. U-16656) that during a reverse auction procurement event that was held to acquire 2009 and 2010 RECs, the average price for the Company's purchase of 145,000 RECs was \$0.24 per REC. This is significantly lower than Detroit Edison's planned combined cost of RECs and ACECs of \$11.41 per REC.

Cost-Effectiveness of Renewable Energy and Energy Optimization Standards

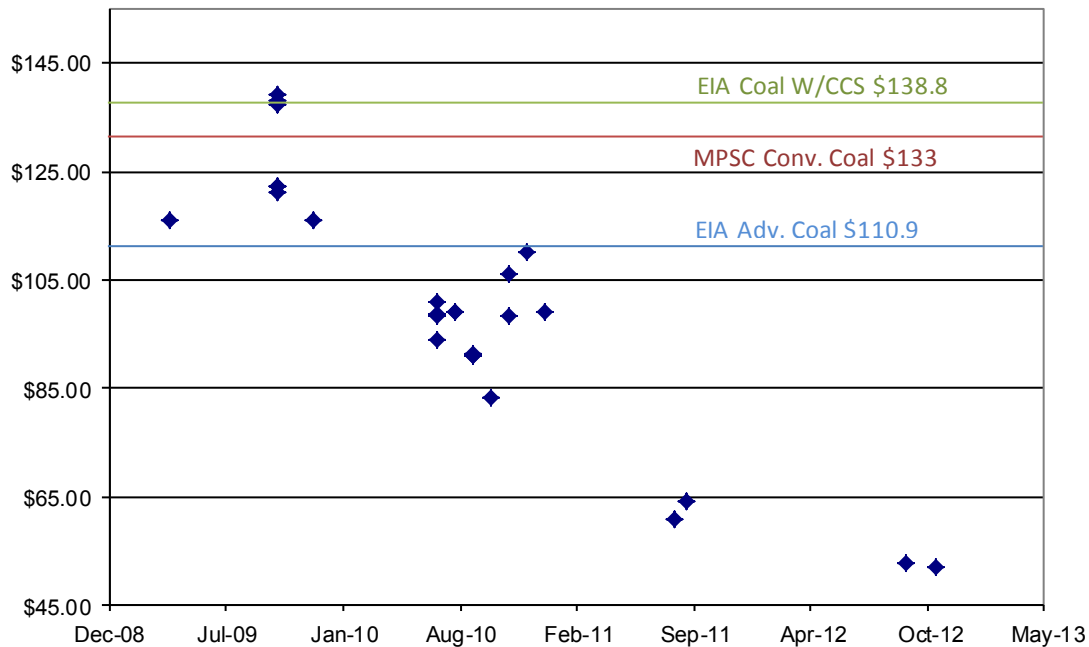
Section 51(5)(e) of PA 295 (MCL 460.1051(5)(e)) requires an evaluation of the cost-effectiveness of the renewable energy standard. In a similar vein, Section 97 of the PA 295

(MCL 460.1097) requires the Commission to evaluate and determine whether the energy optimization and renewable energy standards have been cost-effective.

The actual cost of renewable energy contracts submitted to the Commission to date continues to show a downward pricing trend. This was the case in the previous report, and continues to be true. The most recent contracts approved by the Commission for new wind capacity have levelized costs in the \$52 per MWh range which is about 10 percent less than the cheapest levelized contract prices from a year ago and half of the levelized cost of the first renewable energy contracts approved in 2009 and 2010. Contracts submitted to the Commission through 2012 total approximately 1,192 MW³¹ of renewable capacity. Weighting the levelized costs of these contracts by the generation in MWh results in an average cost of \$82.54 per MWh. Almost all renewable energy contract prices are lower than the coal guidepost rate as shown in **Figure 10**. This calculation does not include the Detroit Edison's and Consumers Energy's solar programs as these are considered pilot programs and make up less than two percent of the REC and IREC creation from contracts and projects approved by the Commission to date.

³¹ This includes Detroit Edison Company's 22 MW SolarCurrents program and Consumers Energy Company's 5.25 MW EARP programs. Additionally, this only accounts for Michigan's allocation (67.5 MW) of Indiana Michigan Power Company's two wind contracts.

**Figure 10: Levelized Cost of MPSC Approved Contracts Over Time
Compared to the Cost of New Coal Fired Facilities**



Factoring in the cost of conserved energy due to energy optimization efforts, as required by Section 21(6)(b) of the PA 295 (MCL 460.1021(6)(b)), **Table 3** demonstrates the cost-effectiveness of the renewable energy and energy optimization standards using the state's two largest electric providers. The levelized cost of conserved energy of the energy optimization programs was weighted by the life cycle present value energy savings, extrapolated through 2029, expected from the Companies' Energy Optimization Programs. For renewable energy, the levelized costs of all Detroit Edison and Consumers Energy contracts approved by the Commission (with the exception of the solar pilot programs) were weighted by the generation anticipated over the term of the contract. For Company-owned projects, the present value of the generation based on a 25-year life was used. These are modest calculations as IRECs were not factored into the weighting. When combined, the \$45.98 per MWh cost of both Subpart A (Renewable Energy Standard) and Subpart B (Energy Optimization Standard) of 2008 PA 295 is

approximately 34 percent of the cost of a new conventional coal plant, using \$133 per MWh as the coal plant cost. On its own the \$82.54 per MWh cost of the renewable energy standard is substantially lower than the cost of a new coal-fired plant, but combined, at a cost of \$45.98 per MWh, the two PA 295 standards cost less than any newly built generation including new natural gas combined cycle plants.³² Based on contract pricing trends and the January 2013 announcement that federal legislation extended the eligibility of the Production Tax Credit for projects that begin construction by December 31, 2013,³³ Commission Staff anticipates that the cost of renewable energy will continue to decline, while the benefits from energy optimization savings and emission reductions from offset generation will continue to increase. The extended tax credit will undoubtedly provide further opportunity for Michigan ratepayers to continue benefiting from reduced renewable energy costs.

Table 3: Cost Effectiveness of Energy Optimization and Renewable Energy Standards

Cost-Effectiveness of Energy Optimization and Renewable Energy Standards	
Energy Optimization Cost of Conserved Energy Weighted Average (\$/MWh)	\$20.00
Renewable Energy Weighted Average Cost (\$/MWh)	\$82.54
Combined Weighted Average Cost of Energy Optimization and Renewable Energy (\$/MWh)	\$45.98
<p>Source: Energy Optimization cost data from 2012 REPORT ON THE IMPLEMENTATION OF P.A. 295 UTILITY ENERGY OPTIMIZATION PROGRAMS.</p> <p>Renewable energy cost data is based on levelized costs provided as part of the renewable energy contract approval process.</p>	

³² See: http://www.eia.gov/forecasts/aeo/electricity_generation.cfm

³³ http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US13F&re=1&ee=1

Effect of the Renewable Energy and Energy Optimization Standard on Electricity Prices

For the 2011 calendar year, Michigan had four rate-regulated electric providers collecting revenue through a renewable energy surcharge. Alpena Power, Consumers Energy, and Detroit Edison all began collecting the surcharge in September 2009. Wisconsin Electric Power Company's renewable energy surcharge began during the January 2010 billing month (Indiana Michigan's surcharge began in 2012). A summary of renewable energy surcharge amounts, amounts collected, and copies of each rate-regulated electric provider's tariff sheets showing the surcharge amounts are shown in *Appendix B*. All investor-owned, cooperative and municipal electric providers (as well as Commission-regulated natural gas utilities) assess energy optimization surcharges. Specific surcharge amounts are detailed in the Commission's *2012 Report on the Implementation of the P.A. 295 Utility Energy Optimization Programs*, issued on November 30, 2012.³⁴

While these surcharges have an impact on electric rates, there are also economic benefits attributable to an increase in renewable energy generation sources and improved energy efficiency. As noted in previous sections, the cost of energy generated by renewable sources continues to decline and is cheaper than new coal-fired generation. Using the most recently approved cost of service data for Consumers Energy and Detroit Edison, Commission Staff calculated that \$64 per MWh³⁵ is the weighted average of overall power supply costs, including purchased power, which exceeds the combined cost of the renewable energy and energy efficiency standards of \$45.98 per MWh.

³⁴ See: http://www.michigan.gov/documents/mpsc/2012_EO_Report_404891_7.pdf

³⁵ The \$64 per MWh weighted average does not include transmission costs.

Wind generation has increased by 30 percent to 3 GW throughout the MISO footprint.³⁶ In June 2011, MISO introduced Dispatchable Intermittent Resource (DIR) provisions for wind resources to help control the intermittency by allowing wind generators to respond to economic market signals. DIR combined with tax incentives allowed wind resources to set wind market prices of negative \$20.00 per MWh on average.³⁷ Michigan's wind generation continues to contribute to MISO's overall wind capacity with 986 MW of operational wind generation currently. This is expected to increase to over 1,000 MW of operational wind generation in the state by the end of 2013. In addition, the Commission's *2012 Report on the Implementation of the P.A. 295 Utility Energy Optimization Programs* found that for every dollar spent on energy optimization, ratepayers see a return of over \$3.55 in avoided energy costs.³⁸ As implementation of the renewable energy and energy optimization standards continues, these broader economic benefits must be taken into account.

Recommendations

Progress toward the first compliance year in 2012 and the 10 percent renewable energy standard in 2015 is going smoothly. Michigan's electric providers are on track to meet the 10 percent renewable energy requirement. The renewable energy standard is resulting in the development of new renewable capacity and can be credited with the development of over 1,000 MW of new renewable energy projects becoming commercially operational since the Act became law. The weighted average price of renewable energy contracts is \$82.54 per MWh which is less than forecasted in REPs. Combined with the energy optimization standard, the weighted average cost of the companies' renewable energy and energy optimization standards is

³⁶ See: http://www.potomaceconomics.com/uploads/midwest_reports/2011_SOM_Report.pdf page ii

³⁷ See: http://www.potomaceconomics.com/uploads/midwest_reports/2011_SOM_Report.pdf page A-6

³⁸ See: http://www.michigan.gov/documents/mpsc/2012_EO_Report_404891_7.pdf

\$45.98 per MWh. which is lower than the cost of all new fossil fuel generation plants regardless of technology type. The Commission will continue to monitor electric provider progress toward meeting the requirements of the standards as provided under the Act.

The Commission intends to continue to monitor and participate in the 2013 public process for informing Michigan's energy future and subsequent report preparation related to renewable energy as outlined in the Governor's [Special Message](#) on Energy and the Environment in November 2012. A website has been launched to gather written feedback, and a series of Michigan Energy Public Forums will be held to help Michigan energy policy makers identify and gather information to enable them to make good energy decisions. The Commission looks forward to the results of this process and makes no recommendations at this time.

Appendix A - RE Filings: Case Numbers, Companies, Plan Approval Dates and Reconciliation Approval Dates

	COMPANY	2009 Initial RE Plan Case #	2011 RE Biennial Plan Case #	2011/2012 RE Plan Approval Date	2011 Reconciliation Case #	2011 Reconciliation Approval Date
IOUs						
1	Alpena Power Company	U-15804	U-16580	8/25/2011	U-16654	12/20/2012
2	Consumers Energy Company	U-15805	U-16581	5/1/2012	U-16655	Pending
	Consumers Energy Company AMENDED PLAN		U-16543	5/26/2012		
3	Detroit Edison Company	U-15806	U-16582	12/20/2011	U-16656	Pending
4	Indiana Michigan Power Company	U-15808	U-16584	12/6/2011	U-16658	11/16/2012
5	Northern States Power Company-Wisconsin	U-15809	U-16585	10/20/2011	U-16659	10/31/2012
6	Upper Peninsula Power Company	U-15810	U-16586	8/25/2011	U-16660	10/31/2012
7	Wisconsin Public Service Corporation	U-15811	U-16587	8/25/2011	U-16661	10/31/2012
8	Wisconsin Electric Power Company	U-15812	U-16588	See U-17072	U-16662	Pending
	Wisconsin Electric Power Company Revised Plan	U-15812	U-17072	Pending*		
Cooperatives - Rate Regulated						
9	Cloverland Electric Cooperative/Edison Sault*	U-15816	U-16592	7/12/2011	U-16663	11/16/2012
10	Midwest Energy Cooperative	U-15818	U-16594	7/12/2011	U-16665	11/16/2012
	Midwest Energy Cooperative AMENDED PLAN		U-16594	1/26/2012		
11	Thumb Electric Cooperative	U-15821	U-16597	7/12/2011	U-16668	12/6/2012
Cooperatives - Member Regulated					Not Required	
12	Alger Delta Cooperative Electric Association	U-15813	U-16589	8/11/2011		
13	Bayfield Electric Cooperative	U-15814	U-16590	8/25/2011		
14	Cherryland Electric Cooperative	U-15815	U-16591	8/11/2011		
15	Great Lakes Energy Cooperative (2012)	U-15817	U-16593	7/12/2011		
16	Homeworks Tri-County Electric Cooperative	U-15822	U-16598	8/11/2011		
17	Ontonagon Co. Rural Electrification Assoc. (2012)	U-15819	U-16595	7/12/2011		
18	Presque Isle Electric and Gas Co-op (2012)	U-15820	U-16596	7/12/2011		
Municipals					Not Required	
19	Village of Baraga	U-15848	U-16599	10/4/2011		
20	City of Bay City	U-15849	U-16600	10/4/2011		
21	City of Charlevoix	U-15850	U-16601	10/4/2011		
22	Chelsea Department of Electric and Water	U-15851	U-16602	10/4/2011		
23	Village of Clinton	U-15852	U-16603	10/4/2011		
24	Coldwater Board of Public Utilities	U-15853	U-16604	10/4/2011		
25	Croswell Municipal Light & Power Department	U-15854	U-16605	10/4/2011		
26	City of Crystal Falls	U-15855	U-16606	3/8/2012		
27	Daggett Electric Department	U-15856	U-16607	10/4/2011		
28	Detroit Public Lighting Department	U-15857	U-16608	10/4/2011		
29	City of Dowagiac	U-15858	U-16609	10/4/2011		
30	City of Eaton Rapids	U-15859	U-16610	10/4/2011		
31	City of Escanaba	U-15860	U-16611	12/16/2011		
32	City of Gladstone	U-15861	U-16612	10/4/2011		
33	Grand Haven Board of Light and Power	U-15862	U-16613	10/4/2011		
34	City of Harbor Springs	U-15863	U-16614	10/4/2011		
35	City of Hart Hydro	U-15864	U-16615	3/8/2012		
36	Hillsdale Board of Public Utilities	U-15865	U-16616	10/4/2011		
37	Holland Board of Public Works	U-15866	U-16617	10/4/2011		
38	Village of L'Anse	U-15867	U-16618	10/4/2011		
39	Lansing Board of Water & Light	U-15868	U-16619	10/4/2011		
40	Lowell Light and Power	U-15869	U-16620	Pending		
41	Marquette Board of Light and Power	U-15870	U-16621	10/4/2011		
42	Marshall Electric Department	U-15871	U-16622	10/4/2011		
43	Negaunee Department of Public Works	U-15872	U-16623	10/4/2011		
44	Newberry Water and Light Board	U-15873	U-16624	Pending		
45	Niles Utility Department	U-15874	U-16625	10/4/2011		
46	City of Norway	U-15875	U-16626	10/4/2011		
47	City of Paw Paw	U-15876	U-16627	3/8/2012		
48	City of Petoskey	U-15877	U-16628	10/4/2011		
49	City of Portland	U-15878	U-16629	10/4/2011		
50	City of Sebewaing	U-15879	U-16630	10/4/2011		
51	City of South Haven	U-15880	U-16631	10/4/2011		
52	City of St. Louis	U-15881	U-16632	10/4/2011		
53	City of Stephenson	U-15882	U-16633	10/4/2011		
54	City of Sturgis	U-15883	U-16634	12/6/2011		
55	Traverse City Light & Power	U-15884	U-16635	10/4/2011		
56	Union City Electric Department	U-15885	U-16636	10/4/2011		
57	City of Wakefield	U-15886	U-16637	Pending		
58	Wyandotte Department of Municipal Service	U-15887	U-16638	10/4/2011		
59	Zeeland Board of Public Works	U-15888	U-16639	10/4/2011		

*The Commission ordered company to file a revised 2011 REP

**AEP (formerly BlueStar) not required to file REP in 2011 and will file a case statement for the 2013 plan filing period.

Appendix A - RE Filings: Case Numbers, Companies, Plan Approval Dates and Reconciliation Approval Dates

	COMPANY	2009 Initial RE Plan Case #	2011 RE Biennial Plan Case #	2011/2012 RE Plan Approval Date	2011 Reconciliation Case #	2011 Reconciliation Approval Date
Alternative Electric Suppliers (AES) Serving Customers					Not Required	
60	CMS ERM Michigan LLC	U-15826	U-16640	7/12/2011		
61	Commerce Energy Inc	U-15828	U-16641	7/12/2011		
62	Constellation NewEnergy Inc	U-15829	U-16643	7/12/2011		
63	Direct Energy Business LLC	U-15845	U-15830	3/8/2012		
64	FirstEnergy Solutions Corp	U-15832	U-16644	7/12/2011		
65	Glacial Energy of Illinois	U-16007	U-16645	4/6/2012		
66	Integrays Energy Services Inc	U-15833	U-16646	7/12/2011		
67	MidAmerican Energy Company	U-15837	U-16647	7/12/2011		
	Noble Americas Energy Solutions LLC f/k/a Sempra					
68	Energy Solutions LLC	U-15843	U-16650	7/12/2011		
69	Spartan Renewable Energy Inc	U-15844	U-16651	7/12/2011		
70	U.P. Power Marketing LLC	U-16586	U-16652	8/25/2011		
71	Wolverine Power Marketing Cooperative Inc	U-15847	U-16653	7/12/2011		
Alternative Electric Suppliers (AES) Not Serving Customers					Not Required	
72	AEP Energy, Inc (formerly BlueStar Energy)	U-15825	U-15825	NR**		
73	Direct Energy Business LLC	U-15830	U-15830	7/12/2011		
74	Duke Energy Retail Sales, LLC		U-16767	10/20/2011		
75	Exelon Energy Company	U-15831	U-15831	12/6/2011		
	Energy Service Providers, Inc d/b/a Michigan Gas & Electric		U-17010	9/11/2012		
76	GearyEnergy LLC		U-16264	Not Complied		
77	Lakeshore Energy Services, LLC		U-16979	9/11/2012		
78	Liberty Power Delaware	U-15834	U-15834	1/12/2012		
79	Liberty Power Holdings LLC	U-15835	U-15835	1/12/2012		
80	Nordic Marketing LLC	U-15838	U-15838	Not Complied		
81	PowerOne Corporation	U-15840	U-15840	3/8/2012		
82	Premier Energy Marketing LLC	U-15841	U-16648	8/25/2011		
83	Quest Energy LLC	U-15842	U-16649	7/12/2011		

*The Commission ordered company to file a revised 2011 REP

**AEP (formerly BlueStar) not required to file REP in 2011 and will file a case statment for the 2013 plan filing period.

Appendix B - Estimate of Renewable Energy Credit Requirements and Renewable Energy Plan Summary

Company	Initial Plan	2011 Plan Docket	2012 Compliance Year Sales*	Retail Sales Method ¹	2007/2008 Baseline RECs	2012 REC Requirement	Estimated 2013 REC Requirement	Estimated 2014 REC Requirement	Estimated 2015 REC Requirement	2015 10% Standard Met	Current Residential Surcharge \$/Month
Rate Regulated Utilities											
Alpena Power	U-15804	U-16580	321,887	3Y	0	6,438	10,622	16,094	32,189	Yes	0.24
Consumers Energy	U-15805	U-16581 U-16543	33,336,014	3Y	1,549,840	1,906,592	2,138,481	2,441,721	3,333,601	Yes	0.52
Detroit Edison	U-15806	U-16582	41,715,637	W	566,819	1,287,768	1,756,385	2,369,191	4,171,564	Yes	3.00
Indiana Michigan	U-15808	U-16584	2,839,271	W	17,360	70,673	105,327	150,644	283,927	Yes	0.07
NSP-Wisc (Xcel)	U-15809	U-16585	142,223	3Y	16,211	14,222	14,222	14,222	14,222	Yes	0.00
Upper Peninsula Power	U-15810	U-16586	831,879	3Y	112,372	83,188	83,188	83,188	83,188	Yes	0.00
Wisc. PSC	U-15811	U-16587	273,320	3Y	37,569	27,332	27,332	27,332	27,332	Yes	0.00
Wisc. Elec Co	U-15812	U-16588	2,670,926	3Y	53,196	95,975	123,782	160,144	267,093	Yes*	3.00

*Revised Plan Pending Approval

Rate Regulated Cooperatives											
Cloverland Electric Coop	U-15816	U-16592	803,349	3Y	301,126	80,335	80,335	80,335	80,335	Yes	0.00
Midwest Energy Coop	U-15818	U-16594	599,228	3Y	0	11,985	19,775	29,961	59,923	Yes	0.00
Thumb Elec. Coop	U-15821	U-16597	152,604	3Y	1,562	4,302	6,082	8,411	15,260	Yes	0.00

Member Regulated Cooperatives											
Alger Delta Coop Elec	U-15813	U-16589	59,000	3Y	920	1,916	2,563	3,410	5,900	Yes	0.00
Bayfield Elec. Coop	U-15814	U-16590	199	3Y	4	7	9	12	20	Yes	0.00
Cherryland Elec Coop	U-15815	U-16591	364,483	3Y	18,767	22,303	24,602	27,608	36,448	Yes	0.00
Great Lakes Energy Coop	U-15817	U-16593	1,339,882	3Y	69,139	82,109	90,539	101,564	133,988	Yes	0.00
Homeworks Tri-County Elec. Coop	U-15822	U-16598	316,048	3Y	16,111	19,210	21,224	23,858	31,605	Yes	0.00
Ontonagon Co. Rural Elec.	U-15819	U-16595	28,118	3Y	2,246	2,359	2,433	2,529	2,812	Yes	0.00
Presque Isle Elec & Coop	U-15820	U-16596	237,036	3Y	12,405	14,665	16,134	18,054	23,704	Yes	0.00

Alternative Electric Suppliers											
CMS ERM Michigan	U-15826	U-16640		3Y	0					Yes	0.00
Commerce Energy	U-15828	U-16641		W	0					Yes	0.00
Constellation NewEnergy	U-15829	U-16642		W	0					Yes	0.00
Direct Energy Business	U-15845	U-16643		W	0					Yes	0.00
First Energy Solutions	U-15832	U-16644		W	0					Yes	0.00
Glacial Energy of Illinois	U-16007	U-16645		W	0					Yes	0.00
Integrus Energy Services	U-15833	U-16646		W	0					Yes	0.00
MidAmerican Energy Company	U-15837	U-16647		W	0					Yes	0.00
Noble Americas Energy Solutions f/k/a Sempra Energy Solutions	U-15843	U-16650		W	0					Yes	0.00
Spartan Renewable Energy	U-15844	U-16651		3Y	0					Yes	0.00
U.P. Power Marketing	U-15846	U-16652		W	0					Yes	0.00
Wolverine Power Marketing Cooperative	U-15847	U-16653		3Y	0					Yes	0.00
Aggregated Totals**			9,211,405		0	184,228	303,976	460,570	921,141		

Appendix B - Estimate of Renewable Energy Credit Requirements and Renewable Energy Plan Summary

Company	Initial Plan	2011 Plan Docket	2012 Compliance Year Sales*	Retail Sales Method ¹	2007/2008 Baseline RECs	2012 REC Requirement	Estimated 2013 REC Requirement	Estimated 2014 REC Requirement	Estimated 2015 REC Requirement	2015 10% Standard Met	Current Residential Surcharge \$/Month
Municipal Utilities											
Village of Baraga	U-15848	U-16599	18,391	3Y	0	368	607	920	1,839	Yes	0.00
City of Bay City	U-15849	U-16600	320,118	3Y	0	6,402	10,564	16,006	32,012	Yes	2.54
City of Charlevoix	U-15850	U-16601	61,313	3Y	0	1,226	2,023	3,066	6,131	Yes	1.83
Chelsea Dept. of Electric & Water	U-15851	U-16602	91,502	3Y	0	1,830	3,020	4,575	9,150	Yes	1.93
Village of Clinton	U-15852	U-16603	22,142	3Y	0	443	731	1,107	2,214	Yes	0.00
Coldwater Board of Public Utilities	U-15853	U-16604	280,710	3Y	0	5,614	9,263	14,036	28,071	Yes	0.00
Croswell Municipal Light & Power Dept.	U-15854	U-16605	35,391	3Y	0	708	1,168	1,770	3,539	Yes	0.47
City of Crystal Falls	U-15855	U-16606	16,227	3Y	4,400	1,623	1,623	1,623	1,623	Yes	0.00
Daggett Electric Department	U-15856	U-16607	1,370	3Y	0	27	45	69	137	Yes	0.00
Detroit Public Lighting Department	U-15857	U-16608	486,249	3Y	0	9,725	16,046	24,312	48,625	No	3.00
City of Dowagiac	U-15858	U-16609	64,982	3Y	0	1,300	2,144	3,249	6,498	Yes	0.00
City of Eaton Rapids	U-15859	U-16610	86,165	3Y	2,263	3,534	4,360	5,440	8,617	Yes	3.00
City of Escanaba	U-15860	U-16611	143,846	3Y	0	2,877	4,747	7,192	14,385	Yes	2.79
City of Gladstone	U-15861	U-16612	31,967	3Y	0	639	1,055	1,598	3,197	Yes	0.00
Grand Haven Board of Light & Power	U-15862	U-16613	267,333	3Y	0	5,347	8,822	13,367	26,733	Yes	0.85
City of Harbor Springs	U-15863	U-16614	37,197	3Y	0	744	1,228	1,860	3,720	Yes	1.81
City of Hart	U-15864	U-16615	39,429	3Y	804	1,432	1,840	2,373	3,943	Yes	2.75
Hillsdale Board of Public Utilities	U-15865	U-16616	121,172	3Y	0	2,423	3,999	6,059	12,117	Yes	0.00
Holland Board of Public Works	U-15866	U-16617	945,650	3Y	0	18,913	31,206	47,283	94,565	Yes	0.00
Village of L'anse	U-15867	U-16618	13,174	3Y	0	263	435	659	1,317	Yes	0.00
Lansing Board of Water & Light	U-15868	U-16619	2,149,614	3Y	8,675	49,932	76,750	111,818	214,961	Yes	2.50
Lowell Light & Power	U-15869	U-16620	61,596	3Y	0	1,232	2,033	3,080	6,160	Yes	3.00
Marquette Board of Light & Power	U-15870	U-16621	307,882	3Y	14,016	17,370	19,551	22,402	30,788	Yes	0.00
Marshall Electric Department	U-15871	U-16622	107,012	3Y	1,318	3,195	4,414	6,010	10,701	Yes	0.00
Negaunee Dept. of Public Works	U-15872	U-16623	22,057	3Y	0	441	728	1,103	2,206	Yes	0.00
Newberry Water and Light Board	U-15873	U-16624	18,520	3Y	4,931	1,852	1,852	1,852	1,852	Yes	0.00
Niles Utilities Department	U-15874	U-16625	125,745	3Y	0	2,515	4,150	6,287	12,575	Yes	0.00
City of Norway	U-15875	U-16626	29,377	3Y	21,080	2,938	2,938	2,938	2,938	Yes	0.00
Village of Paw Paw	U-15876	U-16627	40,784	3Y	0	816	1,346	2,039	4,078	Yes	0.25
City of Petoskey	U-15877	U-16628	105,474	3Y	0	2,109	3,481	5,274	10,547	Yes	2.92
City of Portland	U-15878	U-16629	36,040	3Y	1,746	2,118	2,359	2,675	3,604	Yes	0.92
City of Sebawaing	U-15879	U-16630	39,391	3Y	0	788	1,300	1,970	3,939	Yes	0.87
City of South Haven	U-15880	U-16631	131,330	3Y	0	2,627	4,334	6,567	13,133	Yes	0.00
City of St. Louis	U-15881	U-16632	37,528	3Y	680	1,295	1,694	2,216	3,753	Yes	1.29
City of Stephenson	U-15882	U-16633	6,068	3Y	0	121	200	303	607	Yes	0.00
City of Sturgis	U-15883	U-16634	219,917	3Y	11,232	13,384	14,783	16,612	21,992	Yes	0.00
Traverse City Light & Power	U-15884	U-16635	318,204	3Y	778	6,986	11,022	16,299	31,820	Yes	0.00
Union City Electric Department	U-15885	U-16636	15,165	3Y	1,625	1,517	1,517	1,517	1,517	Yes	0.00
City of Wakefield (from 2009 Annual Report	U-15886	U-16637	13,166	3Y	0	263	434	658	1,317	Yes	0.00
Wyandotte Dept. of Municipal Service	U-15887	U-16638	275,249	3Y	0	5,505	9,083	13,762	27,525	Yes	1.59
Zeeland Board of Public Works	U-15888	U-16639	302,830	3Y	0	6,057	9,993	15,142	30,283	Yes	0.00
**Total			102,689,787		2,849,195	4,104,105	5,105,897	6,415,933	10,268,979		
Estimated Renewable Energy %						4.0%	5.0%	6.2%	10.0%		

¹ 3Y = 3 Year Average W = Weather Normalized

*Sales from Annual Report

**AES totals are aggregated.

SURCHARGES
(continued from Sheet No. D-4.01)

<u>Rate Schedule</u>	<u>Renewable Energy Surcharge Effective January 2012 Bill Month</u>	<u>Energy Optimization Surcharge Effective January 2013 Bill Month</u>
Residential	\$0.24/meter/month	<i>\$0.00280/kWh</i>
General Service	\$2.47/meter/month	<i>\$2.83/meter/month</i>
Standard Power	\$3.95/meter/month	<i>\$40.82/meter/month</i>
Large Power (less than 13,200 volts)	\$3.95/meter/month	<i>\$330.49/meter/month</i>
Large Power (13,200 volts or higher)	\$28.00/meter/month	<i>\$330.49/meter/month</i>
Large Industrial (13,200 volts or lower)	\$28.00/meter/month	<i>\$1,232.17/meter/month</i>
Large Industrial (higher than 13,200 volts)	\$28.00/meter/month	<i>\$315.00/meter/month</i>
Alternative Energy Economic Development	\$28.00/meter/month	-
Outdoor Protective Lighting (100 watt)	\$0.10/light/month	<i>\$0.24/light/month</i>
Outdoor Protective Lighting (250 watt)	\$0.27/light/month	<i>\$0.41/light/month</i>
Street & Highway Lighting	\$0.10/light/month	<i>\$0.20/light/month</i>
Special Power Contracts	\$28.00/meter/month	<i>\$322.08/meter/month</i>

Issued December 18, 2012 by
Ann K. Burton, President
Alpena, MI 49707



Effective for services rendered on
and after January 1, 2013

Issued under authority of the
Michigan Public Service Commission
dated August 28, 2012 in Case
No. U-16735 and Case No. U-16580
dated August 25, 2011.

SURCHARGES

Rate Schedule	Renewable Energy Plan Surcharge (Case No. U-16581) Effective beginning the August 2012 Bill Month⁽⁵⁾	Energy Efficiency Electric Program Surcharge (Case No. U-16670) Effective beginning the June 2012 Bill Month⁽³⁾	Energy Efficiency Self-Directed Customer Surcharge (Case No. U-16670) Effective beginning the June 2012 Bill Month⁽²⁾
Residential Rates	\$ 0.52/billing meter	\$0.002280/kWh	NA
Rate GS and GSD ⁽¹⁾			
Tier 1: 0 – 1,250 kWh/mo.	\$ 0.90/billing meter	\$ 1.34/billing meter	\$ 0.04/billing meter
Tier 2: 1,251 – 5,000 kWh/mo.	\$ 3.60/billing meter	\$ 7.33/billing meter	\$ 0.20/billing meter
Tier 3: 5,001 – 30,000 kWh/mo.	\$ 7.20/billing meter	\$ 44.29/billing meter	\$ 1.17/billing meter
Tier 4: 30,001 – 50,000 kWh/mo.	\$ 10.80/billing meter	\$ 44.29/billing meter	\$ 1.17/billing meter
Tier 5: > 50,000 kWh/mo.	\$ 14.40/billing meter	\$ 44.29/billing meter	\$ 1.17/billing meter
Rate GP, GPD and MMPP ⁽¹⁾			
Tier 1: 0 – 5,000 kWh/mo.	\$ 3.60/billing meter	\$ 3.54/billing meter	\$ 0.10/billing meter
Tier 2: 5,001 – 10,000 kWh/mo.	\$ 10.80/billing meter	\$ 26.48/billing meter	\$ 0.72/billing meter
Tier 3: 10,001 – 30,000 kWh/mo.	\$ 18.00/billing meter	\$ 67.11/billing meter	\$ 1.80/billing meter
Tier 4: 30,001 – 50,000 kWh/mo.	\$ 36.00/billing meter	\$159.43/billing meter	\$ 4.26/billing meter
Tier 5: > 50,000 kWh/mo.	\$ 90.00/billing meter	\$743.82/billing meter	\$17.49/billing meter
Rate E-1	NA	NA	NA
Rate GSG-1	NA	NA	NA
Rate GSG-2	NA	NA ⁽⁴⁾	NA
Rate GML			
Tier 1: 0 – 1,250 kWh/mo.	\$ 0.90/billing meter	NA	NA
Tier 2: 1,251 – 5,000 kWh/mo.	\$ 1.80/billing meter	NA	NA
Tier 3: >5,000 kWh/mo.	\$ 2.70/billing meter	NA	NA
Rate GUL	\$ 0.25/luminaire	NA	NA
Rate GU-XL	\$ 0.25/luminaire	NA	NA
Rate GU			
Tier 1: 0 – 1,250 kWh/mo.	\$ 0.20/billed account	NA	NA
Tier 2: 1,251 – 5,000 kWh/mo.	\$ 0.80/billed account	NA	NA
Tier 3: >5,000 kWh/mo.	\$ 1.40/billed account	NA	NA
Rate PA	NA	NA	NA
Rate ROA-R, ROA-S, ROA-P	NA	As in Delivery Rate Schedule	As in Delivery Rate Schedule

All Surcharges shall be applied on a monthly basis. The customer's consumption will be reviewed annually in the January bill month. Following the annual review, the customer may be subsequently moved to the Surcharge level for their applicable rate for the next billing period based on the customer's average consumption for the previous year. In situations where no historical consumption is available, the monthly Surcharge level will be based on the lowest consumption category for the secondary rate schedules or the lowest consumption category for primary rate schedules. No retroactive adjustment will be made due to the application of the REP or EE Surcharges associated with increases or decreases in consumption.

⁽¹⁾ Customers taking the Municipal Pumping Service Provision shall be excluded from the Renewable Energy Plan Surcharge.

⁽²⁾ An eligible customer who files and implements a self-directed plan in compliance with Rule C12 is required to pay the Energy Efficiency Self-Directed Program Surcharge.

⁽³⁾ An Energy Efficiency Program Surcharge will be in effect for the period of the June 2009 Bill Month through the December 2015 Bill Month. The amount may vary during specific months as authorized by the Michigan Public Service Commission. Applicable cases include Case Nos. U-15805, U-16302, U-16303, U-16412 and U-16670. The Surcharge for the period of the June 2012 Bill Month through the May 2013 Bill Month includes a financial incentive award approved by the Michigan Public Service Commission in Case No. U-16303. The Company will file a new tariff sheet to reflect the change in surcharges once the financial incentive recovery period has been completed.

⁽⁴⁾ Rate GSG-2 Customers are eligible to opt-in to the Energy Efficiency Electric Program Surcharge for a two year pilot program beginning with the June 2012 bill month. A GSG-2 customer electing to participate in the Energy Efficiency Electric Program will be charged the GPD, Tier 5: > 50,000 kWh/mo rate of \$ 743.82 per billing meter per month.

⁽⁵⁾ A Renewable Energy Plan Surcharge will be in effect for the period of the September 2009 Bill Month through the August 2029 Bill Month. The amount may vary during specific months as authorized by the Michigan Public Service Commission. Applicable cases include Case Nos. U-15805, U-16543 and U-16581.

**Issued August 17, 2012 by
J. G. Russell,
President and Chief Executive Officer,
Jackson, Michigan**



**Effective for service rendered on
and after June 8, 2012**

**Issued under authority of the
Michigan Public Service Commission
dated June 7, 2012
in Case No. U-16794**

(Continued from [Sheet No. C-71.00](#))

C8 SURCHARGES AND CREDITS APPLICABLE TO POWER SUPPLY SERVICE (CONTD)

C8.2 HOLD FOR FUTURE USE

C8.3 Enhanced Security Cost Surcharge (ESCS)

On April 3, 2007 the MPSC issued an order in Case No. U-15160 authorizing the ESCS. This surcharge is to recover costs for enhanced security measures incurred at electric generating facilities before January 1, 2006 pursuant to federal or state regulatory security requirements issued after September 11, 2001. The authorized amount has been recovered and the ESCS will terminate on a bills rendered basis effective January 1, 2012.

C8.4 Renewable Energy Plan Surcharge (REPS)

On June 2, 2009, in Case No. U-15806, the MPSC authorized the implementation of the Renewable Energy Plan Surcharge (REPS) in accordance with the Clean, Renewable, and Energy Efficiency Act, 2008 PA295. The REPS is a 20-year levelized surcharge to recover the incremental cost of compliance of the Company's Renewable Energy Plan under 2008 PA295. For all full-service metered customers the REPS is a per meter per month charge which is based on monthly energy consumption as shown in the schedule below. See Sheet C-73.00 for unmetered service. The REPS is effective for bills rendered on and after September 1, 2009.

Residential Rate Schedule:

Metered Service	\$3.00 per meter per month
-----------------	----------------------------

Commercial Secondary and Governmental Rate Schedules:

Metered Service

Monthly Consumption	Customer Surcharge
0 – 400 kWh per month	\$4.00 per meter per month
401 – 850 kWh per month	\$8.00 per meter per month
851 – 1,650 kWh per month	\$12.00 per meter per month
Above 1,650 kWh per month	\$16.58 per meter per month

Primary & Industrial Rate Schedules:

Metered Service

Monthly Consumption	Customer Surcharge
0 – 11,500 kWh per month	\$16.58 per meter per month
11,501 – 41,500 kWh per month	\$140.00 per meter per month
Above 41,500 kWh per month	\$187.50 per meter per month

Notes:

- (1) The REPS does not apply to **Municipal Water Pumping Meters**.
- (2) The REPS does not apply to additional meters at a single site that were installed specifically to support interruptible air conditioning, interruptible water heating, net metering, or time-of-day tariffs.

(Continued on [Sheet No. C-72.01](#))

Issued January 27, 2012
D. G. Brudzynski
Vice President
Regulatory Affairs

Detroit, Michigan



Effective for bills rendered on
and after January 27, 2012

Issued under authority of the
Michigan Public Service Commission
Dated October 20, 2011
In Case No. U-16430

RENEWABLE ENERGY SURCHARGE

All customer bills subject to the provisions of this surcharge, including any bills rendered under special contract, shall be adjusted by the Renewable Energy Surcharge adjustment as follows:

Tariff	\$ / Month
RS, RS-TOD, RS-OPES/PEV, RS-SC, and RS-TOD2	0.07
SGS, SGS-TOD2, MGS-Sec, MGS-TOD, WSS-Sec, LGS-Sec, MS, EHG, EHS, IS, SLS, SLC, ECLS, and SLCM	0.24
MGS-Pri, MGS-Sub, LGS-Pri, LGS-Sub, LP, WSS-Pri, WSS-Sub, CS-IRP, and RTP	22.84

**ISSUED APRIL 13, 2012
BY PAUL CHODAK III
PRESIDENT
FORT WAYNE, INDIANA**



**EFFECTIVE FOR SERVICES RENDERED
BEGINNING WITH THE BILLING MONTH OF
MAY 2012**

**ISSUED UNDER AUTHORITY OF THE
MICHIGAN PUBLIC SERVICE COMMISSION
DATED DECEMBER 6, 2011
IN CASE NO. U-16584**

RENEWABLE ENERGY SURCHARGE

The following rate schedules shall receive a Power Supply Renewable Energy Surcharge per meter*, per day, as indicated below.

<u>RATE SCHEDULE</u>	<u>RATE</u>
Rg 1	\$0.09863
Rg 2	\$0.09863
Cg 1	\$0.54509
Cg 2	\$0.54509
Cg 3	\$0.54509
Cg3C	\$0.54509
Cg 5	\$0.54509
Cp 1	\$6.16438
Cp 2	\$6.16438
Cp 3	\$6.16438
Cp 4	\$6.16438
A	\$6.16438
Cp LC	\$6.16438
TssM	\$0.54509
TssU	\$0.54509

* Company assumes one meter per service.

The following rate schedules shall receive a Renewable Energy Surcharge as indicated above consistent with the rate schedule under which the customer is served. The Renewable Energy Surcharge is not prorated based on the level of participation selected under rate schedules ERER1, ERER2 or ERER3.

RATE SCHEDULE

ERER1
ERER2
ERER3
Ds1

CGS Category 1 (only when a net purchaser from the Company)

Issued **June 27, 2012**
R.A. Draba
Vice-President,
Milwaukee, Wisconsin



Effective for service rendered on and
after **June 27, 2012**

Issued under authority of
Michigan Public Service Commission
dated **June 26, 2012**
in Case No. U-16830

Appendix C - ELECTRIC PROVIDER RENEWABLE ENERGY ANNUAL REPORT SUMMARY

2011 Reporting Year

Company Name	Total Available Energy Credits Estimate at End of 2011 (RECs)	2011 Generated or Aquired (RECs)	2011 Generated or Aquired (ACECs)	Energy Credits Sold in 2011 (RECs)	2009-2010 Reported Incremental Cost of Compliance (\$)	2011 Reported Incremental Cost of Compliance (\$)	Remaining Anticipated Incremental Cost of Compliance (\$)	Total Plan Period Anticipated Incremental Cost of Compliance (Prior Years plus Anticipated) (\$)
Investor Owned Utilities:								
Alpena Power Company	0	0	0	0	1,115,994	0	0	1,115,994
Consumers Energy Company	5,216,708	1,633,526	0	0	9,517,002	3,412,987	516,400,000	529,329,989
Detroit Edison Company**	3,992,374	1,614,136	109,689		11,487,314	34,727,000	1,784,000,000	1,830,214,314
Indiana Michigan Power Company**	69,878	73,157	0	0		0	0	0
Northern States Power Company**	57,013	21,833	6,541	0		0		0
Upper Peninsula Power Company**	199,809	80,637	0	87,216		0	0	0
Wisconsin Public Service Corporation**	65,527	76,929	0	46,548		0	0	0
Wisconsin Electric Power Co**	111,059	111,059	0	0	79,240	74,255		153,495
	9,712,368	3,611,277	116,230	133,764	22,199,550	38,214,242	2,300,400,000	2,360,813,792
Rate Regulated Cooperatives:								
Cloverland Electric Cooperative**	871,347	271,130	0	156		N/A	N/A	N/A
Midwest Energy Cooperative**	55,534	31,103	0	0		0	0	0
Thumb Electric Cooperative**	3,052	0	0	0		0	0	0
	929,933	302,233	0	156		0	0	0
Member Regulated Electric Cooperatives:								
Alger Delta Cooperative Electric Association**	1,917	0	0	0		0	0	0
Bayfield Electric Cooperative**	7	7	0	0		N/A	50	N/A
Cherryland Electric Cooperative**	33,779	18,919	0	0		0	0	0
Great Lakes Energy Cooperative**	124,174	69,546	0	0		0	0	0
Homeworks Tri-County Electric Cooperative**	29,290	16,404		0		0	0	0
Ontonagon County Rural Electrification Association**	7,139	2,424		0		0	0	0
Presque Isle Electric and Gas Co-op**	21,968	12,304	0	0		0	0	0
	218,274	119,604	0	0	0	0	50	0

Appendix C - ELECTRIC PROVIDER RENEWABLE ENERGY ANNUAL REPORT SUMMARY

2011 Reporting Year

Company Name	Total Available Energy Credits Estimate at End of 2011 (RECs)	2011 Generated or Aquired (RECs)	2011 Generated or Aquired (ACECs)	Energy Credits Sold in 2011 (RECs)	2009-2010 Reported Incremental Cost of Compliance (\$)	2011 Reported Incremental Cost of Compliance (\$)	Remaining Anticipated Incremental Cost of Compliance (\$)	Total Plan Period Anticipated Incremental Cost of Compliance (Prior Years plus Anticipated) (\$)
Municipally-Owned Electric Utilities:								
City of Bay City	7,685	5,582	0	0	105,950	418,697	661,433	1,186,080
City of Charlevoix	1,533	1,114	0	0	21,190	0	156,185	177,375
City of Crystal Falls	4,984	5,024	0	4,011	0	0	0	0
City of Dowagiac	0	0	0	0	7,146	0	9,154	16,300
City of Eaton Rapids	6422	2,229	0	0	6,608	147,666	79,197	233,471
City of Escanaba	8,000	8,000	0	0	0	0	102,446	102,446
City of Gladstone	0	0	0	0	0	0	0	0
City of Harbor Springs	1,533	1,119	0	0	21,190	0	137,395	158,585
City of Hart Hydro	4,018	1,738	0	0	10,595	0	78,182	88,777
City of Norway	15,662	26,228	0	24,130	0	0	0	0
City of Petoskey	3,068	2,238	0	0	42,380	0	307,864	350,244
City of Portland	6,399	2,603	0	0	6,357	0	46,412	52,769
City of Sebewaing	935	935	0	0	0	0	5,550	5,550
City of South Haven	0	0	0	0	7,719	0	0	7,719
City of St. Louis	2,951	1,276	0	0	6,301	0	47,518	53,819
City of Stephenson	1,699	684	0	0	0	0	0	0
City of Sturgis	12,098	12,098	0	0	12,051	0	0	12,051
City of Wakefield	3,355	1,922	0	0	0	0	90,396	90,396
Chelsea Dept of Electric & Water	916	665	0	0	12,714	92,700	95,037	200,451
Coldwater Board of Public Utilities	5,444	1,741	0	0	0	0	0	0
Croswell Municipal Light & Power Dept	898	543	0	0	0	0	5,220	5,220
Daggett Electric Dept	203	132	0	0	0	1,905	581	2,486
Detroit Public Lighting Dep	0	0	0	0	23,598	0	6,849	30,447
Grand Haven Board of Light & Power	6,144	5,582	0	0	54,211	121,238	435,579	611,028
Hillsdale Board of Public Utilities	2,350	752	0	0	0	0	0	0
Holland Board of Public Works	108,322	45,423	0	0	4,220,814	2,131,814	4,080,207	10,432,835
Lansing Board of Water & Light	284,700	98,514	0	0	2,473,616	1,253,631	3,597,388	7,324,635
Lowell Light & Power	2,144	1,563	0	0	29,666	23,551	182,222	235,439
Marquette Board of Light & Power	23,568	8,491	0	0	0	0	850,432	850,432
Marshall Electric Dept**	2,075	664	0	0	0	0	0	0
Negaunee Dept of Public Works	442	0	0	0	0	0	0	0
Newberry Water & Light Board	10,119	4,937	0	0	0	2,173,289	2,629,850	4,803,139
Niles Utility Dept	0	0	0	0	7,529	0	0	7,529
Traverse City Light & Power	43,865	32,063	0	0	0	0	0	0
Union City Electric Dept	294	94	0	0	0	0	0	0
Wyandotte Dept of Municipal Service	3,111	2,238	0	0	32,737	77,431	188,333	298,501
Village of Baraga	0	0	0	0	0	0	0	0
Village of Clinton	429	137	0	0	0	0	0	0
Village of L'Anse	0	0	0	0	0	0	0	0
Village of Paw Paw**	0	0	0	0	2,505	0	0	2,505
Zeeland Board of Public Works	20,562	8,786	0	0	0	0	0	0
	595,928	285,115	0	28,141	7,104,877	6,441,921	13,793,430	27,340,229

Appendix C - ELECTRIC PROVIDER RENEWABLE ENERGY ANNUAL REPORT SUMMARY

2011 Reporting Year

Company Name	Total Available Energy Credits Estimate at End of 2011 (RECs)	2011 Generated or Acquired (RECs)	2011 Generated or Acquired (ACECs)	Energy Credits Sold in 2011 (RECs)	2009-2010 Reported Incremental Cost of Compliance (\$)	2011 Reported Incremental Cost of Compliance (\$)	Remaining Anticipated Incremental Cost of Compliance (\$)	Total Plan Period Anticipated Incremental Cost of Compliance (Prior Years plus Anticipated) (\$)
Alternative Electric Suppliers (AES):								
CMS ERM Michigan LLC								
Commerce Energy Inc								
Constellation NewEnergy Inc								
Direct Energy Business LLC								
FirstEnergy Solutions Corp								
Glacial Energy of Illinois, Inc.								
Integrus Energy Services Inc								
Midamerican Energy Company								
Noble Americas Energy Solutions LLC f/k/a Sempra Energy Solutions LLC								
Spartan Renewable Energy Inc								
UP Power Marketing LLC								
Wolverine Power Marketing Cooperative Inc								
	45,022	44,682	340	70,763	0	88,717	138,676	227,393
*Totals:	11,501,525	4,362,911	116,570	232,824	29,304,427	44,744,881	2,314,332,156	2,388,381,414
Michigan Estimated Energy %:	4.4% (Based on Appendix B Retail Sales Total)							
Source: PA 295 Annual Reports:								
http://www.michigan.gov/mpsc/0,4639,7-159-16393_53570-240179--,00.html								
*AES totals are aggregated								
**The MPSC is transitioning to a revised annual report form that includes additional information reporting. Use of the revised report form for the 2011 reporting year was voluntary. Non AES blank cells in the table indicate the provider used the previous annual report form.								

Appendix D

Experimental Advanced Renewable Program (EARP) and SolarCurrents Program

Consumers Energy's original EARP was a two-year pilot program for solar PV projects. Under the original program, customers received a firm price (residential: \$0.65 - \$0.525/kWh and commercial: \$0.45 - \$0.375/kWh) for each kWh generated by the customer's solar generation system over a 12 year period. The total program size was 2 MW (2,000 kW) where 1,500 kW of the total program size was reserved for commercial projects and the remaining 500 kW was allotted to residential projects. In June 2011 the Company announced the program was fully subscribed after completing 102 contracts.

After seeing the significant amount of interest in the original program the Company expanded the program by an additional 3 MW which is split equally between residential and non-residential customers. The Commission approved the expanded program in July of 2011. In its 2011 Biennial Renewable Plan Filing, the Company explained that the program should be capable of supporting an additional 250 kW for a total of 3.25 MW¹. The price range is set between \$0.20/kWh and \$0.26/kWh and the Company will offer a bonus of \$0.001/kWh for systems constructed using both Michigan labor and Michigan materials. System size will be limited to the customer's annual electricity use similar to the net-metering program. The program will continue to add new participants for three more years and contracts will be for a 15 year period or until the end of the Renewable Energy Plan period in 2029, whichever comes first.

Detroit Edison's SolarCurrents Phase I pilot program was comprised of a 5 MW customer-owned program and a 15 MW company-owned program. In May 2011, Detroit Edison announced that the customer-owned program was fully subscribed. The customer-owned SolarCurrents program provided an up-front REC payment equal to \$2.40/Watt of installed solar PV which is approximately half of the total system cost. The company purchases the remaining RECs through a monthly payment/on-bill credit equal to \$0.11/kWh for 20 years.

In May 2011, Detroit Edison announced that the original customer-owned program was fully subscribed. On October 8, 2012, Detroit Edison filed an Application for approval of a 2 MW Phase II expansion and revision of its fully subscribed 5 MW customer-owned SolarCurrents Program (Phase I). The Phase II program² will provide an upfront payment equal to \$0.20/W installed and an on-going payment of \$0.03/kWh for residential systems and an upfront payment equal to \$0.13/W installed and an on-going payment of \$0.02/kWh for non-residential systems. The energy component of the generation will be used on site and the net-generation will be delivered to the grid via a standard net-metering agreement.

Similar to the Phase I program, Phase II will provide for an up-front purchase of half the RECs that the Company anticipates will be generated over the life of the system. The remaining RECs will be purchased via monthly payments based on actual generation. This is done through \$/kWh payments starting on the contract execution date and ending

¹ <http://www.consumersenergy.com/content.aspx?id=4844>

² <http://www.dteenergy.com/residentialCustomers/productsPrograms/solarCurrents/solarCurrents.html>

Appendix D

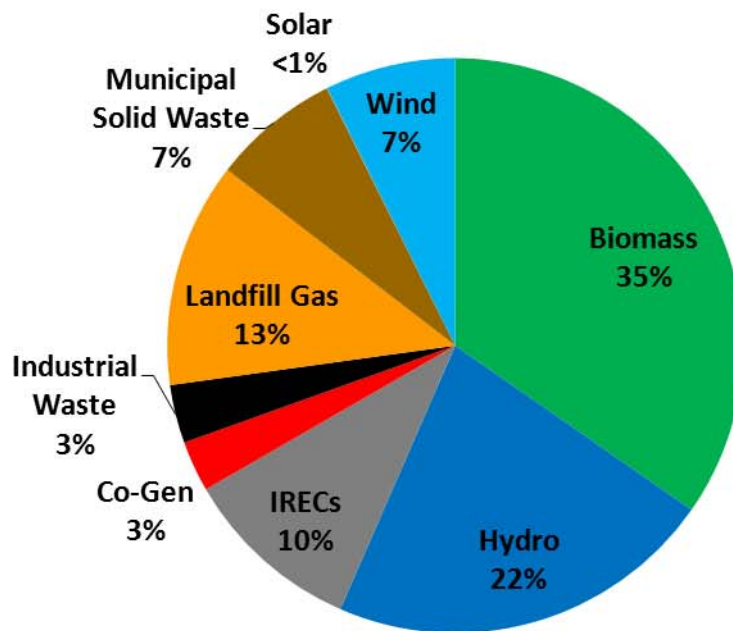
in August 31, 2029 for a maximum term of 17 years. The Company will be accepting applications for the 2 MW Phase II program from residential customers making up 1.5 MW of the program and non-residential customers making up the remaining 0.5 MW of the program through four 500 kW tranches. The contracts will be awarded using random selection events starting in 2013 with the last tranche being awarded in 2014.

Detroit Edison's company-owned SolarCurrents program³ includes larger (100 kW – 500 kW) solar PV projects that are either located on Detroit Edison or customer premises. Customers selected to host a solar PV project will receive a one-time, upfront construction payment to cover any inconvenience during installation and an annual easement payment. Currently, 14 projects are complete, totaling more than 5.1 MW of solar PV capacity. It is anticipated that an additional 3 projects will be online by the end of 2013 for a total of 6.3 MW of capacity. Pursuant to two separate competitive solicitations, the Company contracted with Nova Consultants to construct all 15 MW of solar PV. The panels will be provided by McNaughton-McKay Electric Company and Inovatus Solar, LLC.

³ <http://www.dteenergy.com/dteEnergyCompany/environment/renewableEnergy/solar.html>

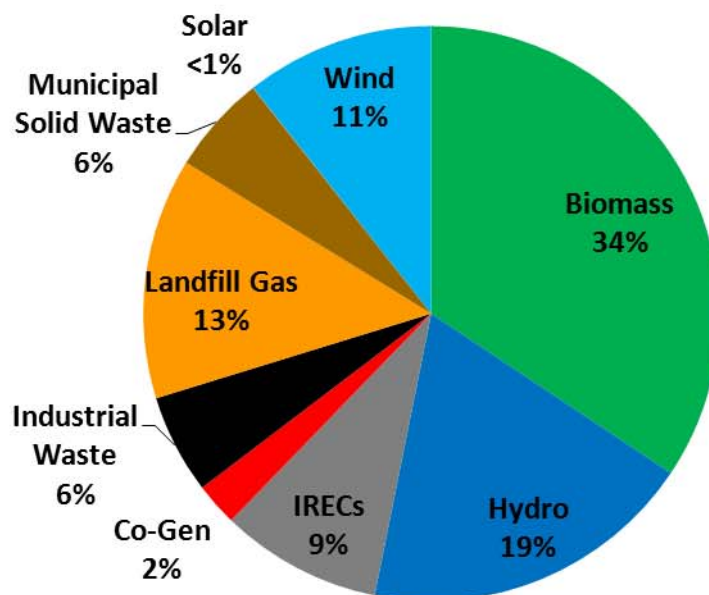
MIRECS 2009 Vintage Energy Credits

5,109,411 Total Credits

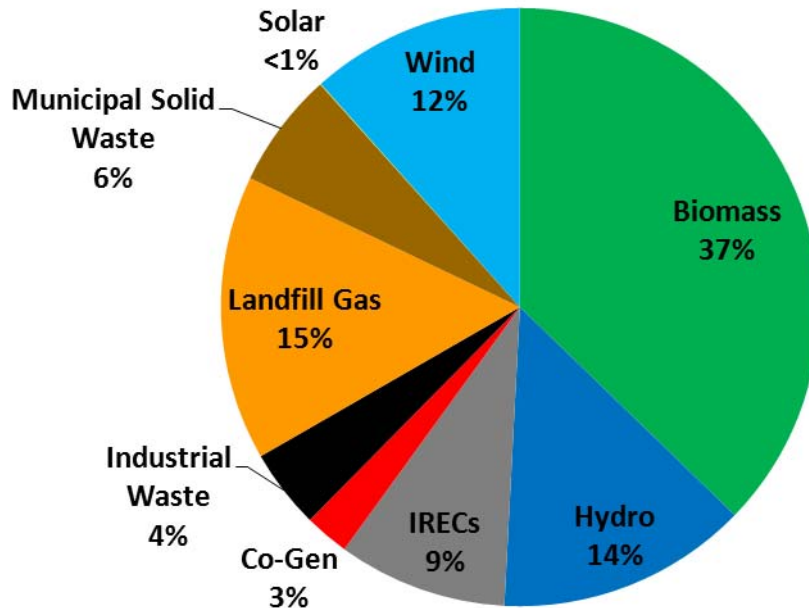


MIRECS 2010 Vintage Energy Credits

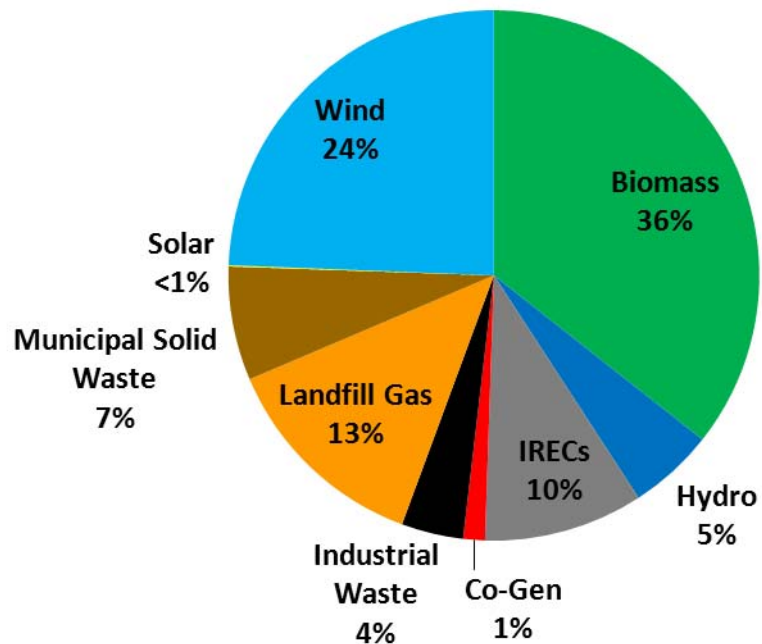
4,847,653 Total Credits



MIRECS 2011 Vintage Energy Credits
4,555,785 Total Credits



MIRECS 2012 Vintage Energy Credits
4,378,587 Total Credits



Appendix F – Contract Summary

Map	Consumers Energy : Contracts							
	Seller	Quantity	Cost*	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
28	Blissfield Wind (Beebe Wind)	Unchanged from original contract	Unchanged from original contract	20 Years	Wind	Amendment	01/26/2012	12/31/2012
2	Heritage Garden Wind Farm I	20 MW	Unchanged from original contract	20 Years	Wind	Amendment	01/26/2012	12/31/2012
3	Heritage Stoney Corners Wind Farm II	Unchanged from original contract	Unchanged from original contract	20 Years	Wind	Amendment	01/26/2012	1/1/2012
3	Heritage Stoney Corners Wind Farm I (Phase 3)	8.35 MW	\$106.20 MWh	20 Years	Wind	Result of Amendments	01/26/2012	1/1/2012
4	Experimental Advanced Renewable Program	987.7 KW	Commercial \$0.375/KWh Residential \$0.525/KWh	12 Years	Solar	Unsolicited	05/10/2011	5/1/2011
1	Vestas-American Wind Technology	56 V100 1.8 MW Turbines	\$110.00/MWh	Company Owned "Lake Winds"	Wind	1/15/2010	12/2/2010	12/31/2012
	White Construction, Inc. U-15805 edocket files # 251-256	Installation and construction				7/23/2010		
	GE Prolec Transformers, Inc.	2-125 KV transformers				7/27/2009		
2	Heritage Garden Wind Farm I	28.6 MW	\$106.20 MWh	20 Years	Wind	Unsolicited	11/19/2010	1/1/2012
3	Heritage Stoney Corners Wind Farm II	12.3 MW	\$98.50 MWh	20 Years	Wind	Unsolicited	11/19/2010	1/1/2012
4	Experimental Advanced Renewable Program	Commercial 836.6 KW Residential 200.1 KW	Commercial \$0.45/KWh Residential \$0.65/KWh	12 Years	Solar	Unsolicited	12/21/2010	5/1/2010
5	Scenic View Dairy**	0.35 MW	\$83.07/MWh	63 Months	Anaerobic	Unsolicited	10/26/2010	7/29/2010
28	Blissfield Wind (Now Beebe Wind)	81 MW	\$100.88/MWh	20 Years	Wind	5/7/2009	7/27/2010	12/31/2012
7	Harvest II Wind	59.4 MW	\$98.38/MWh	20 Years	Wind	5/7/2009	7/27/2010	12/31/2012
8	Michigan Wind 2	90 MW	\$94.00/MWh	20 Years	Wind	5/7/2009	7/27/2010	6/30/2012
9	WM Renewable Energy - Pine Tree Acres	12.8 MW	\$98.75/MWh	20 Years	Landfill Gas	5/7/2009	7/27/2010	6/30/2012
10	WM Renewable Energy - Northern Oaks Landfill	1.6 MW	\$122.39/MWh	20 Years	Landfill Gas	1/29/2009	10/13/2009	11/11/2010
11	NANR – Lennon	1.6 MW	\$137.27/MWh	20 Years	Landfill Gas	1/29/2009	10/13/2009	12/31/2010
12	Elk Rapids Hydro Electric** 1	0.7 MW	\$121.31/MWh	10 Years	Hydro	1/29/2009	10/13/2009	7/11/2009
13	Zeeland**	1.6 MW	\$122.20/MWh	7 Years	Landfill Gas	1/29/2009	10/13/2009	7/11/2009
14	Freemont Community Digester	3.1 MW	\$139.35/MWh	20 Years	Anaerobic	1/29/2009	10/13/2009	11/11/2012
15	Scenic View Dairy** 1 , 2	0.82 MW	\$138.17/MWh	7 Years	Anaerobic	1/29/2009	10/13/2009	7/11/2009
	Total	397 MW						

* Per MWh prices represent levelized costs.

** Pre-existing projects prior to 2008 PA 295 - The commercial operation date would refer to the effective date of the contract.

Appendix F – Contract Summary

	Detroit Edison Company : Contracts							
	Seller	Quantity	Cost*	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
16	SolarCurrents Phase II	0.5 MW Non-Residential 1.5 MW Residential	\$0.13/W \$0.02/kWh \$0.20/W \$0.03/kWh	Through 8/31/2029	Solar	Unsolicited	11/16/2012	2013
29	Tuscola Wind II, LLC	100 MW	Up to \$51.93/MWh***	20 Years	Wind	5/3/2012	10/31/2012	12/31/2013
	General Electric Company	1.6MW-100 model turbines up to 110 MW	\$52.50/MWh	Company Owned "Echo Wind"	Wind	10/12/2011	9/11/2012	12/31/2013
30	Barton Malow Company	Installation and construction				4/17/2012		
24	Michigan Waste Energy, Inc.	Up to 65,000 RECs/Year	\$7.00/REC	13 Years	Incinerator	Unsolicited	12/6/2011	1991
16	Nova Consultants, Inc.	Solar EPC	Up to \$48 Million	Company Owned	Solar	2/28/2011	11/10/2011	12/31/2015
16	McNaughton-McKay Electric Company	Supply up to 12 MW of Modules	Up to \$24 Million			3/24/2011		
16	Inovatus Solar, LLC	Supply up to 12MW						
	General Electric Company	Up to 69 1.6MW-100 Turbines	\$61-\$64/MWh	Company Owned "Thumb Wind"	Wind	3/9/2011	9/13/2011	12/31/2012
27	Barton Malow Company	Installation and construction				5/6/2011		
25	Tuscola Bay Wind, LLC	120 MW	Up to \$60.90/MWh	20 Years	Wind	11/18/2010	8/25/2011	10/31/2012
20	L'Anse Warden Electric Company	110,374 RECs	\$11.98 (Average of 4 REC/ACEC Contracts)	Amendment Acquiring Vintage RECs	Biomass	8/18/2009	8/25/2011	7/1/2010
18	Gratiot County Wind	12.8 MW additional	Unchanged from original contract	Company Owned	Wind	Amendment	5/10/2011	12/31/2012
16	Nova Consultants	Unchanged from original contract	Unchanged from original contract	Company Owned	Solar	Extension	12/21/2010	12/31/2011
17	Blue Water Renewables - Smiths Creek Landfill	3.2 MW	\$99.00/MWh	20 Years	Landfill	Unsolicited	1/20/2011	12/31/2011
		110.4 MW	\$91.43/MWh	20 Years	Wind	8/18/2009	9/14/2010	05/1/2012
18	Gratiot County Wind	89.6 MW Company Owned		Company Owned				03/31/2012
19	WM Renewable Energy - Eagle Valley Landfill	3.2 MW	Combined average price of \$98.94/MWh	20 years	Landfill	8/18/2009	8/10/2010	6/1/2011
20	L'Anse Warden Electric Company	17 MW		20 years	Biomass	8/18/2009	8/10/2010	7/1/2010
21	Boyce Hydro**	Firm 210,000 RECs w/additional 112,000 RECs dependent on generation	\$7.75/ REC	7 Years	Hydro	12/23/2009	4/27/2010	3/16/2010

Appendix F – Contract Summary

	Detroit Edison Company : Contracts							
	Seller	Quantity	Cost*	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
16	Nova Consultants	Up to 3 MW	Up to \$18 Million	Company Owned	Solar	11/23/2009	3/2/2010	12/31/2010
3	Heritage Sustainable Energy Stoney Corners Wind Farm	12.2 MW	Unchanged from original contract	20 Years	Wind	Unsolicited	12/1/2009	1/1/2011
23	UPPCO**	Firm 500,000 RECs	Combined average price of \$12.46/REC	7 Years	Hydro	12/23/2009	12/1/2009	10/1/2009
Not Shown	Sterling Planet**	Firm 2,500,000 RECs		10 Years	MISC	12/23/2009	12/1/2009	10/1/2009
3	Heritage Sustainable Energy Stoney Corners Wind Farm	14 MW	\$116.00/MWh	20 Years	Wind	Unsolicited	4/30/2009	12/21/2009
	Total	719.8 MW						
* Per MWh prices represent levelized costs. ** Pre-existing projects prior to 2008 PA 295 - The commercial operation date would refer to the effective date of the contract. ***Staff calculated levelized cost.								

Alpena Power Company : Contracts								
	Seller	Quantity	Cost	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
26	Consumers Energy	"Bulk of RECs needed to meet the RPS"	\$30.37/REC (estimated)	20 Years	MISC	Unsolicited	9/15/2009	8/4/2009
AEP/Indiana Michigan : Contracts								
	Seller	Quantity	Cost	Term	Renewable Energy Type	Request for Proposal	Commission Approval	Commercial Operation Date
	Fowler Ridge Wind Farm II	7.5 MW	Redacted	20 Years	Wind	Unsolicited	9/15/2009	2/15/2010
	Wildcat I Wind Farm, LLC	60 MW	Redacted	20 years	Wind	Competitive Solicitation	8/25/2011	12/31/12

Appendix G - Requests for Proposal (RFP) Summary

Consumers Energy : Request for Proposals/Requests for Information/Pre-Qualifications						
Issue Date	Type	Description	Requested Capacity	Company Owned	Applicable Technology*	Responses
7/23/2010	RFP	Requested bids for the Installation of a Utility Owned Wind Farm	100 MW by 2012	Yes	Wind	7 Proposals
1/15/2010	RFP	Requested bids for Utility Owned Wind Turbines				11 Proposals/ 4 Suppliers
7/27/2009	RFP	Requested Substation Transformer Bids for Utility Owned Wind Farm				4 Proposals
2/19/2010	RFQ	Request for Qualifications for the Installation of a 100 MW Utility Owned Wind Farm	N/A	Yes	Wind	8 Recipients
7/14/2010	RFQ	Request for Qualifications for 100 MWs of Utility Owned Wind Turbines	N/A	Yes	Wind	8 Recipients
5/7/2009	RFP	Requested CEREC**	100 MW by 2012 / 150 MW by 2014	No	All	80 Proposals
1/29/2009	RFP	Requested CEREC**	17.4 MW	No	All	12 Proposals/ 11 Suppliers

* All=Any Renewable Energy Resource defined by 2008 PA 295; REC=Renewable Energy Credit; ACEC=Advanced Cleaner Energy Credit

** CEREC=Capacity, Energy, and Renewable Energy Attributes

Appendix G - Requests for Proposal (RFP) Summary

Detroit Edison Company : Request for Proposals/Requests for Information/Pre-Qualifications						
Issue Date	Type	Description	Requested Capacity	Company Owned	Applicable Technology*	Responses
5/3/2012	RFP	100 MW of Wind	100 MW by 12/31/2013	No	Wind	17 proposals / 16 suppliers
4/17/2012	RFP	EPC (Echo)	NA	Yes	Wind	13 proposals / 13 suppliers
12/7/2011	Auction	Requested RECs* Without the Associated Energy	2009 and 2010 Vintage	No	All	NA
10/12/2011	RFP	110 MW of Utility Owned Wind Turbines (Echo)	110 MW by 12/31/2013	Yes	Wind	14 proposals / 7 suppliers
5/6/2011	RFP	EPC (Thumb)	N/A	Yes	Wind	6 proposals / 6 suppliers
3/24/2011	RFP	Solar Panels	12 MW	Yes	Solar	38 proposals, 24 companies
3/10/2011	RFP	Wind Ownership Option	50 MW by 12/31/2014	Yes	All	38 proposals / 15 suppliers
3/9/2011	RFP	109 MW of Utility Owned Wind Turbines (Thumb)	109 MW by 12/31/2012	Yes	Wind	17 proposals / 7 suppliers
2/28/2011	RFP	Requested bids for the Installation of Utility Owned Solar	N/A	Yes	Solar	27 companies, 27 proposals
2/10/2011	RFP	O&M Services	N/A	Yes	Wind	5 proposals / 5 suppliers
11/18/2010	RFP	Requested CEREC**	245 MW by 12/31/2014	No	All	146 proposals / 46 Suppliers
7/26/2010	Pre-Q	Pre-qualification for 100-200 MW of Utility Owned Wind Turbines	N/A	Yes	Wind	27 proposals / 17 Suppliers
3/29/2010	SOI	Solicitation of Interest to Host Utility Owned Solar at the Customers Location	N/A	Yes	Solar	10 Responses
11/23/2009	RFP	Requested bids for the Installation of Utility Owned Solar	3 MW	Yes	Solar	11 Proposals
10/23/2009	Pre-Q	Pre-Qualification for the Installation of 3 MW of Utility Owned Solar	N/A	Yes	Solar	30 Responses
8/18/2009	RFP	Joint Development for Utility Owned Wind	75 MW by 12/31/2011	Yes	Wind	12 Proposals/ 9 Suppliers
8/18/2009	RFP	Requested CEREC**	106 MW by 12/31/2011	No	All	35 Proposals/ 21 Suppliers
5/22/2009	RFI	Request for Information for the Joint Development of Wind Farms	N/A	Yes	Wind	155 Registered 27 Responses
12/23/2008	RFP	Requested RECs* and ACECs* Without the Associated Energy	250,000 RECs*/Year	No	All	43 Proposals/ 11 Suppliers

* All=Any Renewable Energy Resource defined by 2008 PA 295; REC=Renewable Energy Credit; ACEC=Advanced Cleaner Energy Credit

** CEREC=Capacity, Energy, and Renewable Energy Attributes

Appendix H - PA 295 CONTRACT RENEWABLE ENERGY PROJECTS						
Map Key	Renewable Project Name	County	Capacity (MW)	Type	Power Purchaser	Commercial Operation Date
14	Freemont Community Digester	Newaygo	3.1	Anaerobic Digester	Consumers Energy	2012
5, 15	Scenic View Dairy - 2 Locations	Allegan & Barry	1.2	Anaerobic Digester	Consumers Energy	2009 - 2010
20	L'Anse Warden	Baraga	17	Biomass	Detroit Edison	2010
	Biomass Total		21.3	MW		
12	Elk Rapids Hydro	Antrim	0.7	Hydro	Detroit Edison	Pre-Act 295 Project
	Hydro Total		0.7	MW		
19	Eagle Valley Landfill	Oakland	3.2	Landfill Gas	Detroit Edison	2011
11	Lennon Generation Station	Shiawassee	1.6	Landfill Gas	Consumers Energy	2010
10	Northern Oaks Landfill	Clare	1.6	Landfill Gas	Consumers Energy	2010
9	Pine Tree Acres Landfill	Macomb	12.8	Landfill Gas	Consumers Energy	2012
	Smith's Creek Landfill	St. Clair	3.2	Landfill Gas	Detroit Edison	2011
13	Zeeland #2	Ottawa	1.6	Landfill Gas	Consumers Energy	2009
	Landfill Gas Total		24	MW		
4	Experimental Advanced Renewable Program	Varies	5.3	Solar	Consumers Energy	2009-Present
16	SolarCurrents	Varies	22	Solar	Detroit Edison Owned and Customer Owned	2009 - Present
	Solar Total		27.3	MW		
28	Beebe	Gratiot	81	Wind	Consumers Energy	Expected 2012
30	Echo	Huron	110	Wind	Detroit Edison Owned	Expected 2013
	Fowler Ridge II (MI Allocation)	Benton County, Indiana	7.5	Wind	Indiana Michigan	2010
2	Garden I	Delta	20	Wind	Consumers Energy	September 2012
18	Gratiot County	Gratiot	212.8	Wind	Detroit Edison & Detroit Edison Owned	June 2012
7	Harvest II	Huron	59.4	Wind	Consumers Energy	November 2012
1	Lake Winds	Mason	100.8	Wind	Consumers Energy Owned	November 2012
27	McKinley	Huron	14.4	Wind	Detroit Edison Owned	December 2012
8	Michigan Wind II	Sanilac	90	Wind	Consumers Energy	January 2012
27	Minden	Sanilac	32	Wind	Detroit Edison Owned	December 2012
27	Sigel	Huron	64	Wind	Detroit Edison Owned	December 2012
3	Stoney Corners	Missaukee & Osceola	46.9	Wind	Consumers Energy & Detroit Edison	October 2012
25	Tuscola Bay Wind	Tuscola, Bay & Saginaw	120	Wind	Detroit Edison	December 2012
29	Tuscola Bay Wind II	Tuscola & Bay	100	Wind	Detroit Edison	Expected 2013
	Wildcat I (MI Allocation)	Madison & Tipton Counties, Indiana	60	Wind	Indiana Michigan	2012
Wind Total			1,119	MW		
Total Act 295 Contracts			1,192	MW		

Appendix I Michigan Utility Scale Wind Farms**								
Project Name	County	Capacity (MW)	Turbine Size (MW)	Number of Turbines	Turbine Manufacturer	Developer/Owner	Power Purchaser	Commercial Operation Date
Beebe	Gratiot	81	2.4	34	Nordex	Exelon & Great Lakes Wind	Consumers Energy	December 2012
Echo	Huron	110	1.6	68	GE Energy	Detroit Edison	N/A	Expected 2013
Cross Winds	Expected Tuscola & Huron	150	Unknown			Consumers Energy	N/A	Expected 2015
Garden I	Delta	20	2.0	14	Gamesa	Heritage Sustainable Energy	Consumers Energy	September 2012
Gratiot County	Gratiot	212.8	1.6	133	GE Energy	Invenergy & Detroit Edison	Detroit Edison	June 2012
Harvest	Huron	52.8	1.65	32	Vestas	Exelon	Wolverine Power Cooperative	2008
Harvest II	Huron	59.4	1.8	33	Vestas	Exelon	Consumers Energy	November 2012
Lake Winds	Mason	100.8	1.8	56	Vestas	Consumers Energy	N/A	November 2012
McKinley	Huron	14.4	1.6	9	GE Energy	Detroit Edison	N/A	December 2012
Mackinaw City	Emmet	1.8	0.9	2	NEG Micon	Mackinaw Power	Consumers Energy	2001
Michigan Wind I	Huron	69	1.5	46	GE Energy	Exelon	Consumers Energy	2008
Michigan Wind II	Sanilac	90	1.8	50	Vestas	Exelon	Consumers Energy	January 2012
Minden	Sanilac	32	1.6	20	GE Energy	Detroit Edison	N/A	December 2012
Sigel	Huron	64	1.6	40	GE Energy	Detroit Edison	N/A	December 2012
Stoney Corners	Missaukee & Osceola	60	2 - 2.5	29	Repower, Fuhrlander, Northern Power Systems	Heritage Sustainable Energy	Consumers Energy, Detroit Edison, Traverse City Light & Power	October 2012
Tuscola Bay Wind	Tuscola, Bay & Saginaw	120	1.6	75	120	NextEra Energy	Detroit Edison	December 2012
Tuscola Bay Wind II	Tuscola & Bay	100	Unknown			NextEra Energy	Detroit Edison	Expected 2013
Totals		1,338.0	978	Operational MW		641 Wind Turbines		
Bold text indicates the wind farm is operational.								
* Prepared by MPSC Staff and includes all wind farms operational, planned or under contract with an MPSC-rate-regulated electric provider.								

Appendix I

Michigan Wind Farms

