

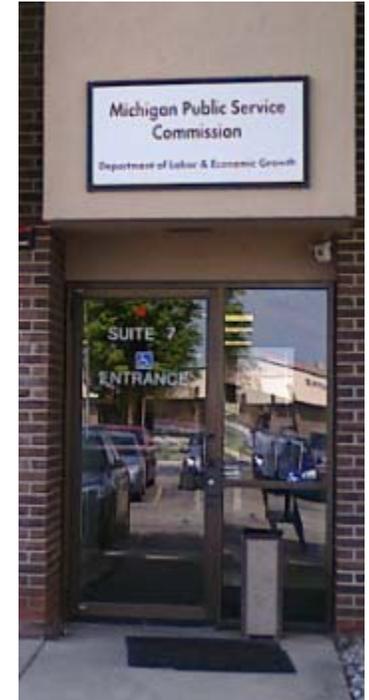


Selling Renewable Energy in Michigan Five Payment Possibilities

Julie Baldwin
Michigan Public Service Commission
Michigan Energy Fair
June 26, 2010

MPSC Background

- Three Governor-appointed Commissioners
- Regulates investor-owned and cooperative (member owned) utilities
- Licenses alternative electric suppliers
- Regulatory responsibilities include implementing the new Renewable Energy Standard (RPS), renewable energy project interconnection & net metering



Sale Possibilities

- Electric provider RPS program
- Net Metering
- Various tariff or contract arrangements with a utility
- Utility Green Pricing Program
- Sale arrangement with a retail customer



Electric Provider RPS Program



2008 PA 295

Renewable Portfolio Standard

- 10% RPS by 2015, with interim steps for 2012-13-14.
- Michigan needs at least 6% more renewable energy to reach 10%



CLEAN, RENEWABLE, AND EFFICIENT ENERGY ACT Act 295 of 2008

AN ACT to require certain providers of electric service to establish renewable energy programs; to require certain providers of electric or natural gas service to establish energy optimization programs; to authorize the use of certain energy systems to meet the requirements of those programs; to provide for the approval of energy optimization service companies; to provide for certain charges on electric and natural gas bills; to promote energy conservation by state agencies and the public; to create a wind energy resource zone board and provide for its power and duties; to authorize the creation and implementation of wind energy resource zones; to provide for expedited transmission line siting certificates; to provide for a net metering program and the responsibilities of certain providers of electric service and customers with respect to net metering; to provide for fees; to prescribe the powers and duties of certain state agencies and officials; to require the promulgation of rules and the issuance of orders; and to provide for civil sanctions, remedies, and penalties.

History: 2008, Act 295, Imd. Eff. Oct. 6, 2008.

Compiler's note: Enacting section 1 of Act 295 of 2008 provides: "Enacting section 1. As provided in section 5 of 1846 RS 1, MCL 8.5, this act is severable."

The People of the State of Michigan enact:

PART 1. GENERAL PROVISIONS

460.1001 Short title; purpose of act.

Sec. 1. (1) This act shall be known and may be cited as the "clean, renewable, and efficient energy act".

(2) The purpose of this act is to promote the development of clean energy, renewable energy, and energy optimization through the implementation of a clean, renewable, and energy efficient standard that will cost-effectively do all of the following:

- (a) Diversify the resources used to reliably meet the energy needs of consumers in this state.
- (b) Provide greater energy security through the use of indigenous energy resources available within the state.
- (c) Encourage private investment in renewable energy and energy efficiency.
- (d) Provide improved air quality and other benefits to energy consumers and citizens of this state.

History: 2008, Act 295, Imd. Eff. Oct. 6, 2008.

Compiler's note: Enacting section 1 of Act 295 of 2008 provides: "Enacting section 1. As provided in section 5 of 1846 RS 1, MCL 8.5, this act is severable."

460.1003 Definitions; A to C.

Sec. 3. As used in this act:

- (a) "Advanced cleaner energy" means electricity generated using an advanced cleaner energy system.
- (b) "Advanced cleaner energy credit" means a credit certified under section 43 that represents generated advanced cleaner energy.
- (c) "Advanced cleaner energy system" means any of the following:
 - (i) A gasification facility.
 - (ii) An industrial cogeneration facility.
 - (iii) A coal-fired electric generating facility if 85% or more of the carbon dioxide emissions are captured and permanently geologically sequestered.
 - (iv) An electric generating facility or system that uses technologies not in commercial operation on the effective date of this act.
- (d) "Affiliated transmission company" means that term as defined in the electric transmission line certification act, 1995 PA 30, MCL 460.562.
- (e) "Applicable regional transmission organization" means a nonprofit, member-based organization governed by an independent board of directors that serves as the federal energy regulatory commission-approved regional transmission organization with oversight responsibility for the region that includes the provider's service territory.
- (f) "Biomass" means any organic matter that is not derived from fossil fuels, that can be converted to usable fuel for the production of energy, and that replenishes over a human, not a geological, time frame, including, but not limited to, all of the following:
 - (i) Agricultural crops and crop wastes.

Rendered Tuesday, February 17, 2009

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Michigan Compiled Laws Complete Through PA 586 of 2008

Courtesy of www.legislature.mi.gov

How much new renewable energy is needed for Michigan?

- Total retail sales for Michigan (EIA, 2008)
 - 105,781,271 MWh in 2008 (12th in nation)
- Michigan needs 6% additional renewable energy (Assuming Michigan already has about a 4% renewable energy portfolio.)
 - $0.06 * 105,781,271 \text{ MWh} = 6,346,876 \text{ MWh}$ or RECs
- Assuming all wind with a 30% capacity factor:
2,400 MW of wind needed by 2015
- At the end of 2009, Michigan had 144 MW of installed wind (State Energy Office)



Provider Renewable Energy Plans

- All providers filed renewable energy plans with the MPSC. They were approved last spring/summer.
 - Schedule of forecasted construction and purchases
 - Show incremental cost for 20-year plan
 - AESs and member regulated cooperatives do not have to show incremental costs
- Filed plans are available on-line:
www.michigan.gov/mrep , then RPS Compliance



Renewable Energy Credits

- Compliance with Michigan's RES will be Renewable Energy Credit (REC) based
 - One REC is created for every MWh of renewable energy generated
 - Monthly renewable energy generation will be reported to a REC tracking system - MIRECs
 - RECs can be “banked” forward for 3 years
 - RECs from the first 120 days of the year can be counted toward the previous year's compliance

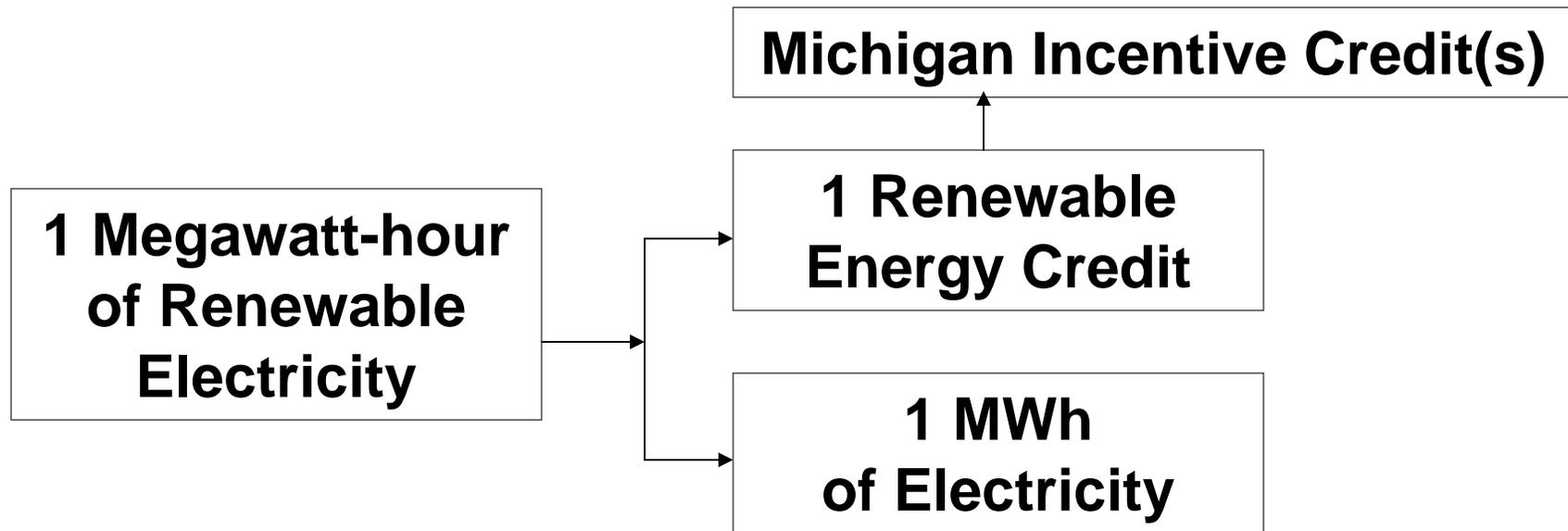


RPS Michigan Incentive RECs

- Solar generation earns 2 additional RECs (total of 3) for each MWh generated
- On-peak, non-wind generation earns additional 20% REC for each MWh generated
- Renewable energy generated off-peak, stored, and then used on-peak earns additional 20% REC for each MWh
- Renewable energy generated from equipment made in Michigan earns an additional 10% REC for each MWh generated, for the first 3 years of production.
- Renewable energy generated from systems constructed by a Michigan work force earns an additional 10% REC for each MWh generated, for first 3 years of production.



MIRECs Explained



**Renewable Energy Credit
can be sold separately from the electricity.**



RPS Cost Limitations to Providers

- Retail rate impact of RPS compliance is limited to not more than \$3/meter/month for residential customers & up to \$187.50/meter/month for the largest customers.



RPS Contract Info

- Rate-regulated electric providers must submit RPS supply contracts to the MPSC for review and approval
- MPSC has a 30-day target for issuing the order
- Contracts filed are available on our website:

www.michigan.gov/mrep then RPS Compliance, and PA 295 Contracts



Consumers Energy & Detroit Edison

- Required to purchase at least 50% of RECs from third party producers
 - Competitive bidding processes using request for proposals
 - Unsolicited bids may be accepted if the proposal provides opportunities that may not otherwise be available or commercially practical



Consumers Energy-RFP #1

Renewable Contract Summary

- 6 contracts totaling 9.4 MW for small renewable energy projects
 - Nameplate capacity ranges from 0.7 to 3.1 MW
 - Contract terms 7 – 10 years
 - Levelized price from \$126.32/MWh to \$160.56/MWh
 - Anaerobic digesters, landfill gas, hydro



Consumers Energy-RFP #2

Renewable Contract Summary

- 4 contracts totaling 243.2 MW with 20 year terms filed for Commission review and approval on June 25, 2010
 - John Deere – Michigan Wind 2
 - 90 MW, levelized cost \$94/MWh
 - John Deere – Harvest II Wind
 - 59.4 MW, levelized cost \$98.38/MWh
 - John Deere – Blissfield Wind
 - 81 MW, levelized cost \$100.88/MWh
 - WM Renewables – Pine Tree Acres Landfill Gas
 - 12.8 MW, levelized cost \$98.75/MWh
- All projects are scheduled to be operational in 2012
- Cost is \$770 million less than in renewable energy plan



Detroit Edison

Renewable Contract Summary

- 2 unsolicited bid contracts with Heritage Sustainable Energy
 - Stoney Corners Wind Farm
 - 14-16 MW, 20 year term, \$115/MWh
 - 12.2 MW, add-on amendment to first contract



Detroit Edison – RFP #1 REC only

Renewable Contract Summary

- RFP sought up to 250,000 RECs/ACECs (Advanced Cleaner Energy Credits) per year from existing Michigan generating facilities
- Sterling Planet & UPPCo contracts
 - Average REC price of the two contracts is \$12.46/REC
- Boyce Hydro
 - \$7.75/REC



Detroit Edison- Two RFPs Proposals Under Review

- 75 MW Wind Energy Joint Development
 - Operational by December 31, 2011
- Up to 106 MW renewable energy
 - Power Purchase Agreements
 - Operational by December 31, 2011
- Contracts are expected to be filed for approval sometime this summer



Future RFPs

- We expect both Consumers Energy and Detroit Edison to issue at least one additional RFP in the next several years.
 - Consumers Energy planned to purchase over 400 MW
 - Detroit Edison planned to purchase over 600 MW



Working with Consumers Energy

- See www.consumersenergy.com then *Your Home*, then *Generate My Own Power* for contacting the company about selling renewable energy



Working with Detroit Edison

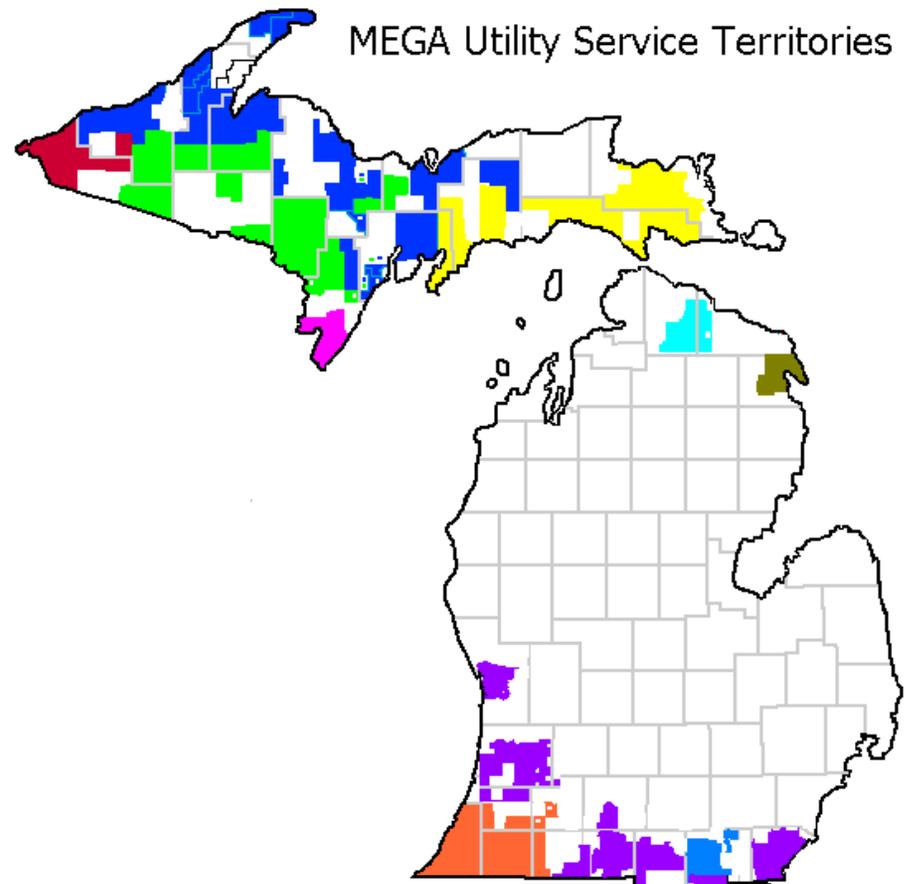
- For customer generation information, see <http://www.dteenergy.com/residentialCustomers/productsPrograms/generate/customerGeneration.html>



MEGA Electric Service Territories

- Edison Sault Electric Company
- Xcel Energy
- Upper Peninsula Power Company
- We Energies
- Wisconsin Public Service Corp
- Alpena Power Company
- Indiana Michigan Power Company

Service areas shown are approximate and do not separately identify gas and electric areas for combination utilities.



Working with Cooperatives

- Some cooperatives have all-requirements purchase agreements
 - Your initial contact regarding renewable energy/REC sales should be with the distribution cooperative (See www.michigan.gov/mpsc, then Electricity then Cooperatives for contact information)
 - Purchase contracts may include the cooperative, all-requirements power supplier and the generator



Michigan Cooperatives

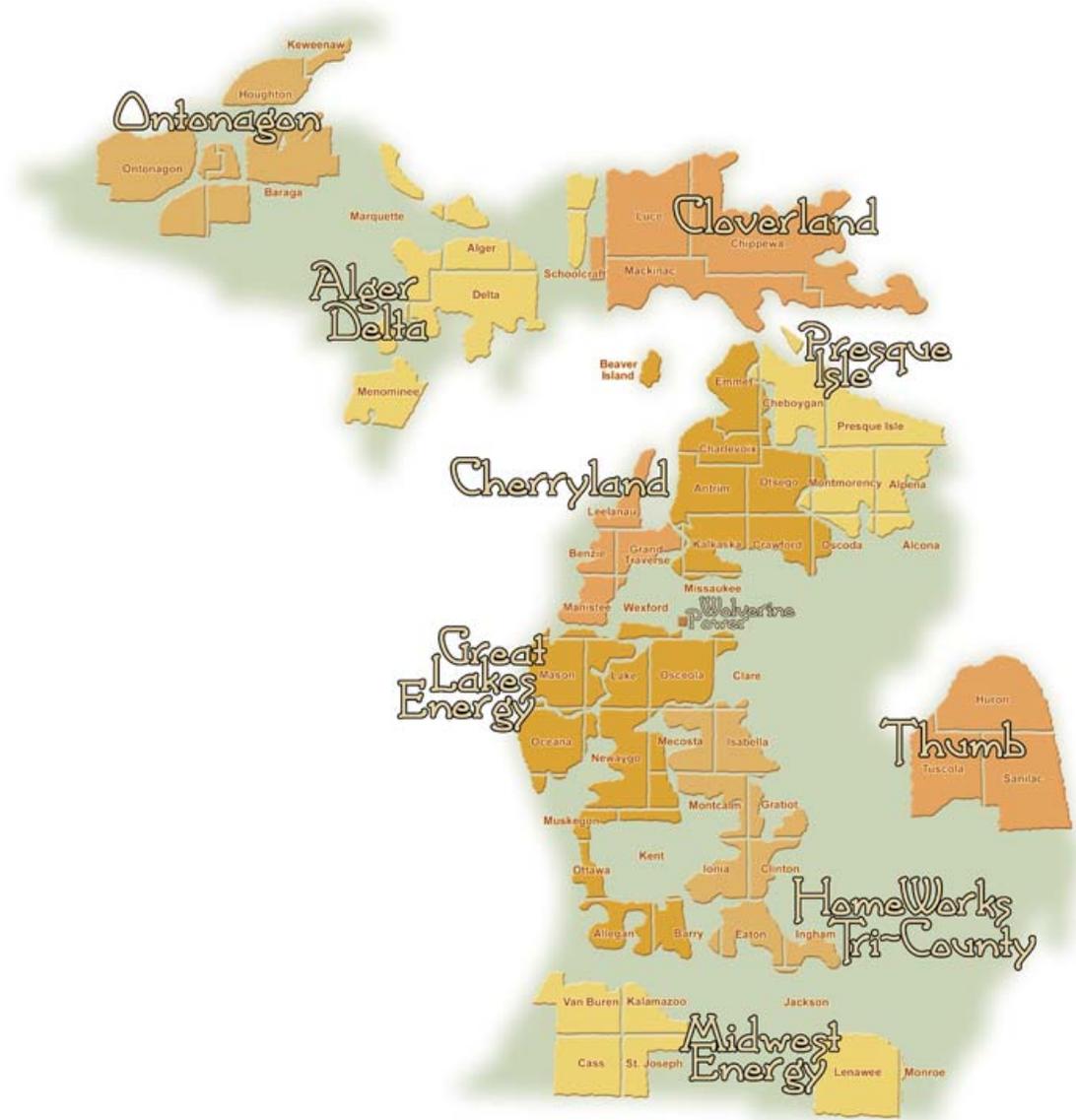
- Alger Delta Cooperative Electric Association
- Cherryland Electric Cooperative
- Cloverland Electric Cooperative
- Great Lakes Energy Cooperative
- Midwest Energy Cooperative
- Ontonagon Rural Electrification Association
- Presque Isle Electric & Gas Cooperative
- Thumb Electric Cooperative
- Tri-County Electric Cooperative

Red text indicates the cooperative has an all-requirements purchase agreement with Wisconsin Public Power, Inc.

Green text indicates the cooperative has an all-requirements purchase agreement with a Wolverine Power Cooperative.

Blue text indicates the cooperative has an all-requirements purchase agreement with Wabash Valley Power Association

Cooperative Service Territories



Municipal Utilities

- See www.mmeanet.org for contact information





Net Metering

Net Metering

- New PA 295 Net Metering Program...
- See www.michigan.gov/netmetering



Net Metering Program Details

- Three tiered program for rate regulated utilities and alternative electric suppliers totaling 1% of a provider's previous year peak in MW
 - 0.5% for ≤ 20 kW
 - 0.25% for >20 kW up to 150 kW
 - 0.25% for >150 kW up to 550 kW (methane digesters only)



Net Metering Program Details (2)

- Generator must be sized no larger than the customer's electricity needs
- Project must be located on-site
- RECs are owned by the generator
- Customers keep net metering credits
- Ask your utility to provide a sample bill to help you understand the economics of net metering



Net Metering Credits

- Projects 20 kW and less
 - Customers receive a credit equal to the full retail rate for all excess kWh
- Projects >20 kW up to 150 kW
 - Customers are credited at the generation portion of the retail rate or a wholesale rate for deliveries to the grid
 - For example, one utility's General Service rate:
Total retail rate is 12 cents, Generation is about 8.5 cents
- Methane Digesters >150 kW up to 550 kW
 - Customers are credited at the generation portion of the retail rate or a wholesale rate for deliveries to the grid
 - Customers also pay full distribution charges on kWh they generate and use on-site



Detroit Edison

SolarCurrents Pilot Program

- Available to Detroit Edison net metering customers
- Limited to 5 MW capacity; solar PV only; At least half reserved for residential customers
- Contract term of 20 years
- Up-front payment of \$2.40 per watt (estimated 25% of total system cost, including modest ROI) plus annual payments of 11¢/kWh for RECs (estimated ~25% of total system cost).
- Net metering program allows customer to receive an economic value of remaining 50% cost
- Estimated \$25 million program
- www.dteenergy.com/solar



Future program improvements?

- Frequently requested net metering scenarios
 - A group of customers (neighbors) invest in a renewable generator
 - A customer installs a renewable generator off-site
 - Generation from a renewable generator project applied to more than one customer billing meter





Tariff or Contract Arrangements with a Utility

Tariff or Contract Arrangements

- Typically related to PURPA (Public Utility Regulatory Policies Act)
- PURPA contained a provision that required local utilities to buy excess power from these so-called "qualifying facilities" at "avoided cost" rates – generally equivalent to the cost of producing power by conventional means.
- With the availability of wholesale energy markets like MISO, utilities are not required to purchase electricity from facilities large enough to have market access
- For a major utility:
 - 2009 Average Energy Purchase Price: (\$31.01/MWh - \$5/MWh) = \$26.01/MWh or \$0.02601/kWh



Utility Green Pricing Programs



Green Pricing Programs

- Voluntary program where customers pay extra to obtain greater percentages or all their use from renewable energy
- Some utilities purchase energy and RECs while others purchase only the RECs



Regulated Utility Green Pricing Programs

Company	Customers	Sales (MWh)
Cloverland	20	68
Consumers Energy	12,066	89,212
Detroit Edison	17,930	47,295
Edison Sault	38	120
Presque Isle	70	248
UPPCO	74	167
We Energies	341	821
WPSC	13	51
Total	30,552	137,982





Sales Arrangement With a Retail Customer

Sales Arrangement With a Retail Customer

- The self-service power provision in 2008 PA 286 (Section 10a(12)) provides for a third party generator to operate on the customer's property and provide retail service to the customer
 - Under this self-service power provision it may be possible to generate power and then serve an industrial customer(s) situated in a contiguous location



Sales Arrangement

With a Retail Customer (2)

- This is our most frequently asked question for larger generation projects
- In order to serve a third party customer located down the street, across town or across the state, or to serve more than one third-party customers, a generator *could* need to become a public utility or licensed alternative electric supplier



Sale Possibilities

- Electric provider RPS program
- Net Metering
- Various tariff or contract arrangements with a utility
- Utility Green Pricing Program
- Sale arrangement with a retail customer
- *Possible Feed-in Tariffs coming in the future?*



Questions?



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Presentation posted at
www.michigan.gov/rendocs

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