Selling Renewable Energy in Michigan
Five Payment Possibilities

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Michigan Public Service Commission
Michigan Energy Fair
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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%
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 MWh = 6,346,876 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

1 Megawatt-hour of Renewable Electricity

Michigan Incentive Credit(s)

1 Renewable Energy Credit

1 MWh of Electricity

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 & UPDCo 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](http://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

- Yellow: Edison Sault Electric Company
- Red: Xcel Energy
- Blue: Upper Peninsula Power Company
- Green: We Energies
- Purple: Wisconsin Public Service Corp
- Brown: Alpena Power Company
- Orange: 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](http://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

<table>
<thead>
<tr>
<th>Company</th>
<th>Customers</th>
<th>Sales (MWh)</th>
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<tbody>
<tr>
<td>Cloverland</td>
<td>20</td>
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<tr>
<td>Consumers Energy</td>
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<td>Detroit Edison</td>
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<td>WPSC</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>30,552</strong></td>
<td><strong>137,982</strong></td>
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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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