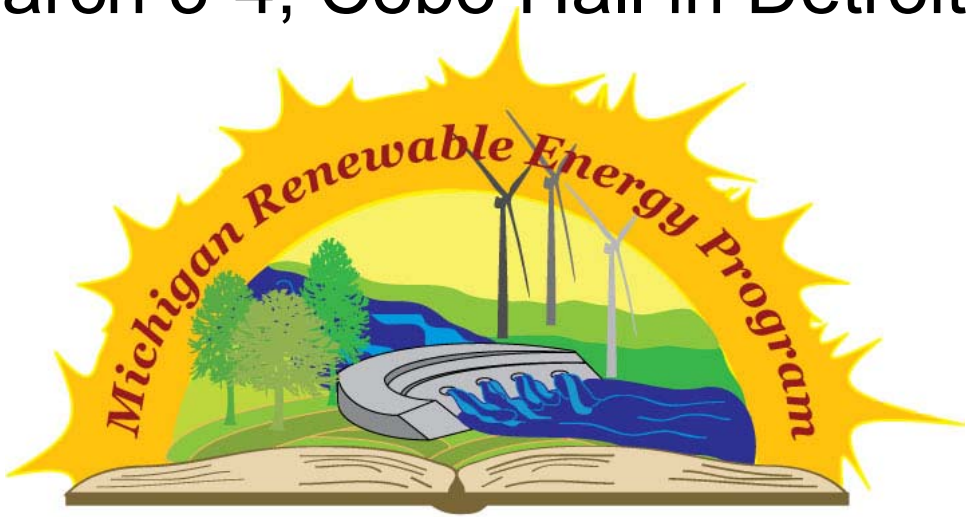
Growing Green Energy in Michigan
RPS & Net Metering Policies

Michigan Wind Energy Conference 2009

March 3-4, Cobo Hall in Detroit



Michigan Public Service Commission

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Disclaimer: Ideas presented are my own,
and are not necessarily those of the MPSC or its staff.

Check the News:
Michigan Energy Systems Changing Fast

- New legislation: Clean, Renewable, and Efficient Energy Act of 2008 (PA 295)
- New Michigan Department of Energy, Labor, & Economic Growth (DELEG)
- New Obama Administration focus on green energy
- New advanced energy technology jobs coming by the thousands

"Development of alternative energy technologies represents **a transformational opportunity for Michigan** to attract new global investment and create new jobs. **Michigan is uniquely positioned to take advantage of the evolving green energy revolution.** Our untapped wind resources offer us an almost unlimited source of clean, zero-carbon electricity; our productive farm and forest land can be put to use to grow the fuels of the future; our universities and corporate research centers are becoming world leaders in alternative energy science; and our manufacturing know-how **can build the components of the green-energy economy**."

– Governor Jennifer Granholm, Feb 22, 2008

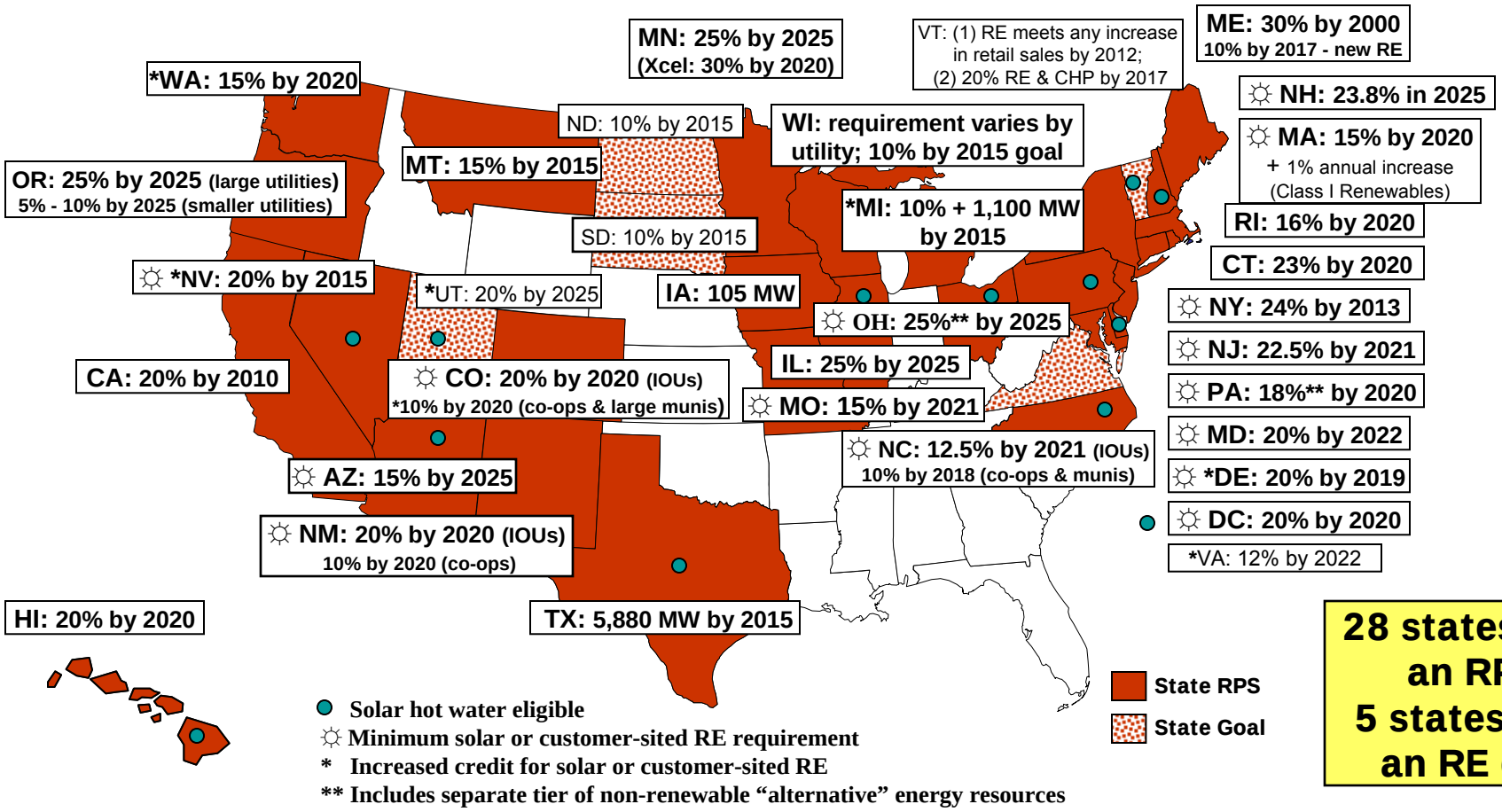
“By the year 2020, Michigan will reduce our reliance on fossil fuels for generating electricity by 45 percent. We will do it through increased renewable energy, gains in energy efficiency and other new technologies.”

“[W]e’ll be spending our energy dollars on Michigan wind turbines, Michigan solar panels, Michigan energy-efficiency devices, all designed, manufactured and installed by. . .Michigan workers.”

“[T]his new energy sector represents our single best hope for new investment and new jobs… .”

– Governor Jennifer Granholm, Feb 3, 2009

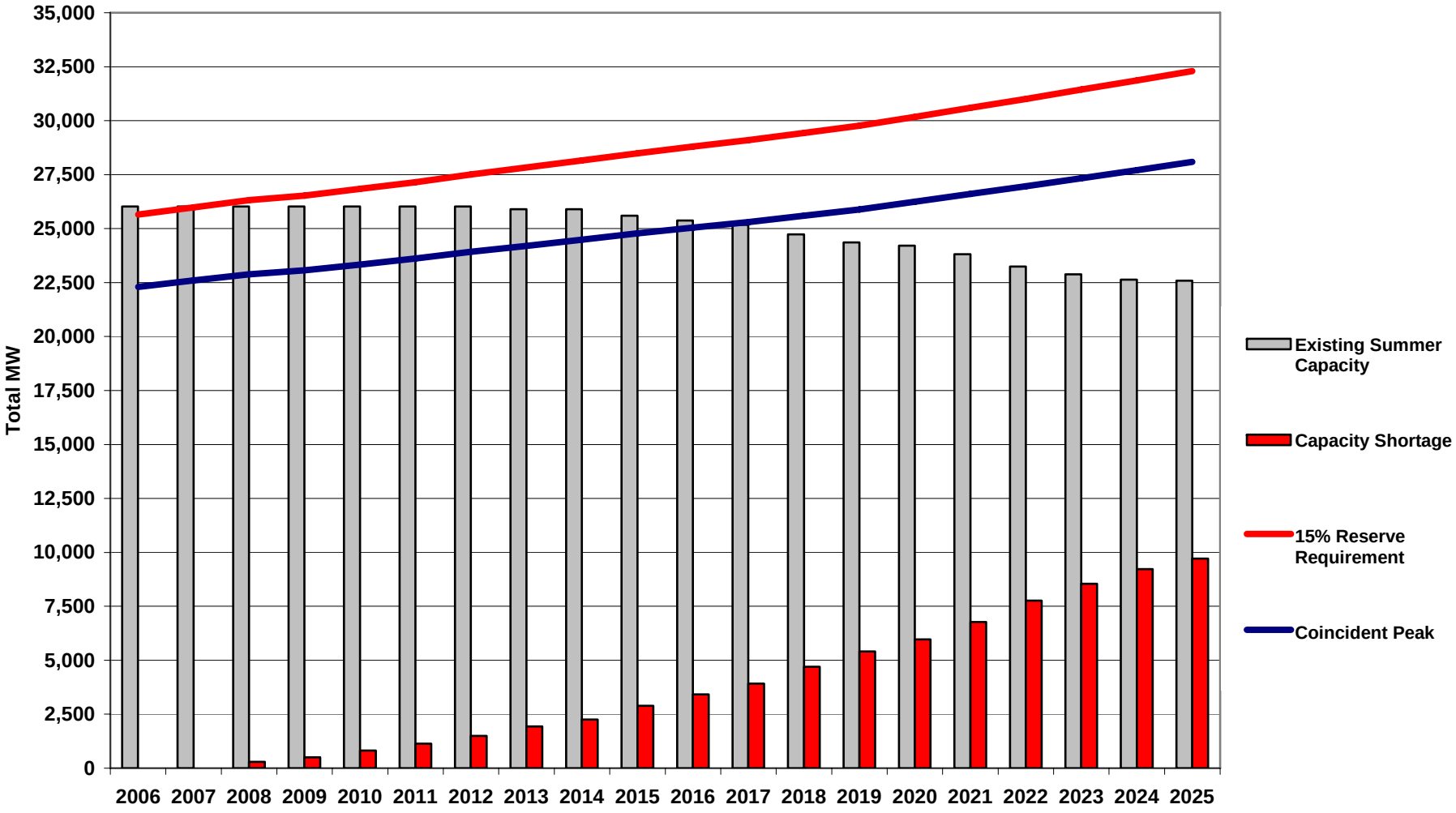
Renewables Portfolio Standards



28 states have an RPS; 5 states have an RE goal

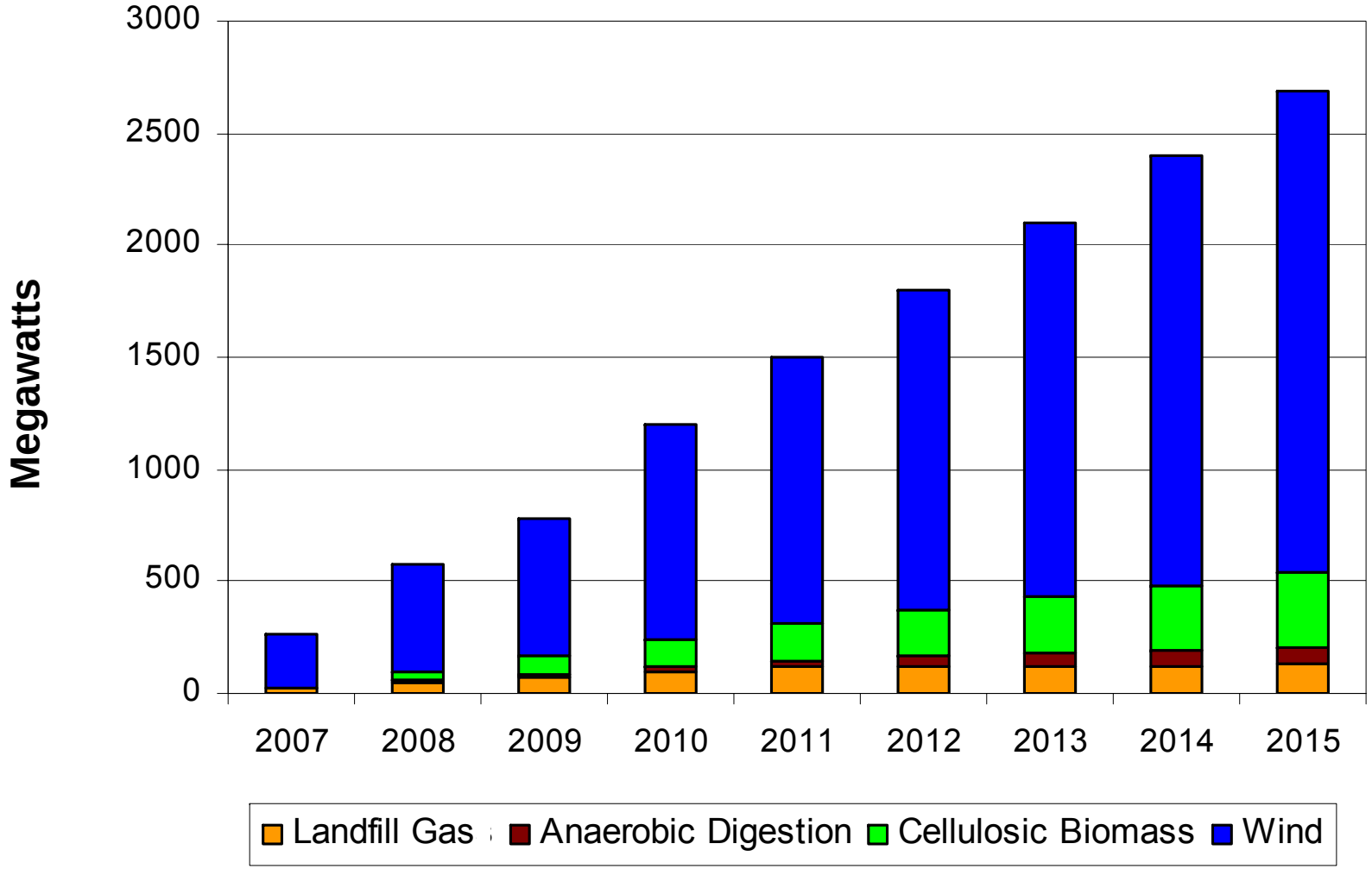
Source: www.dsireusa.org, February 2009

MECS Resource Gap Analysis
Summer Peak Load and Resource Balance of Existing System



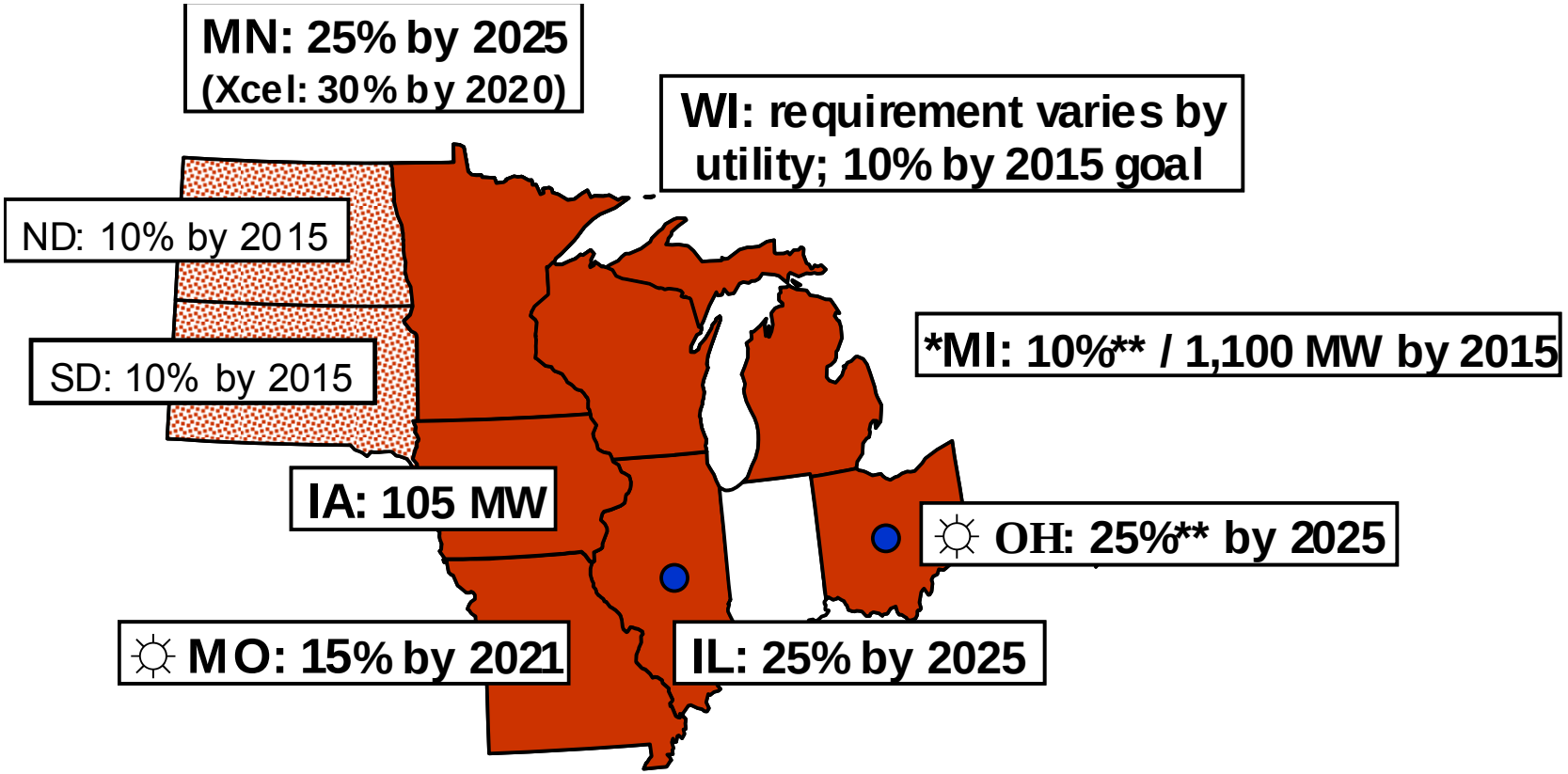
* Excludes Upper Peninsula

New Renewable Resources
10% Renewable Portfolio Standard



Renewable resource types were estimated for 21st Century plan

9 of 12 Midwestern States Already Have RPS Goals or Standards



● Solar hot water eligible

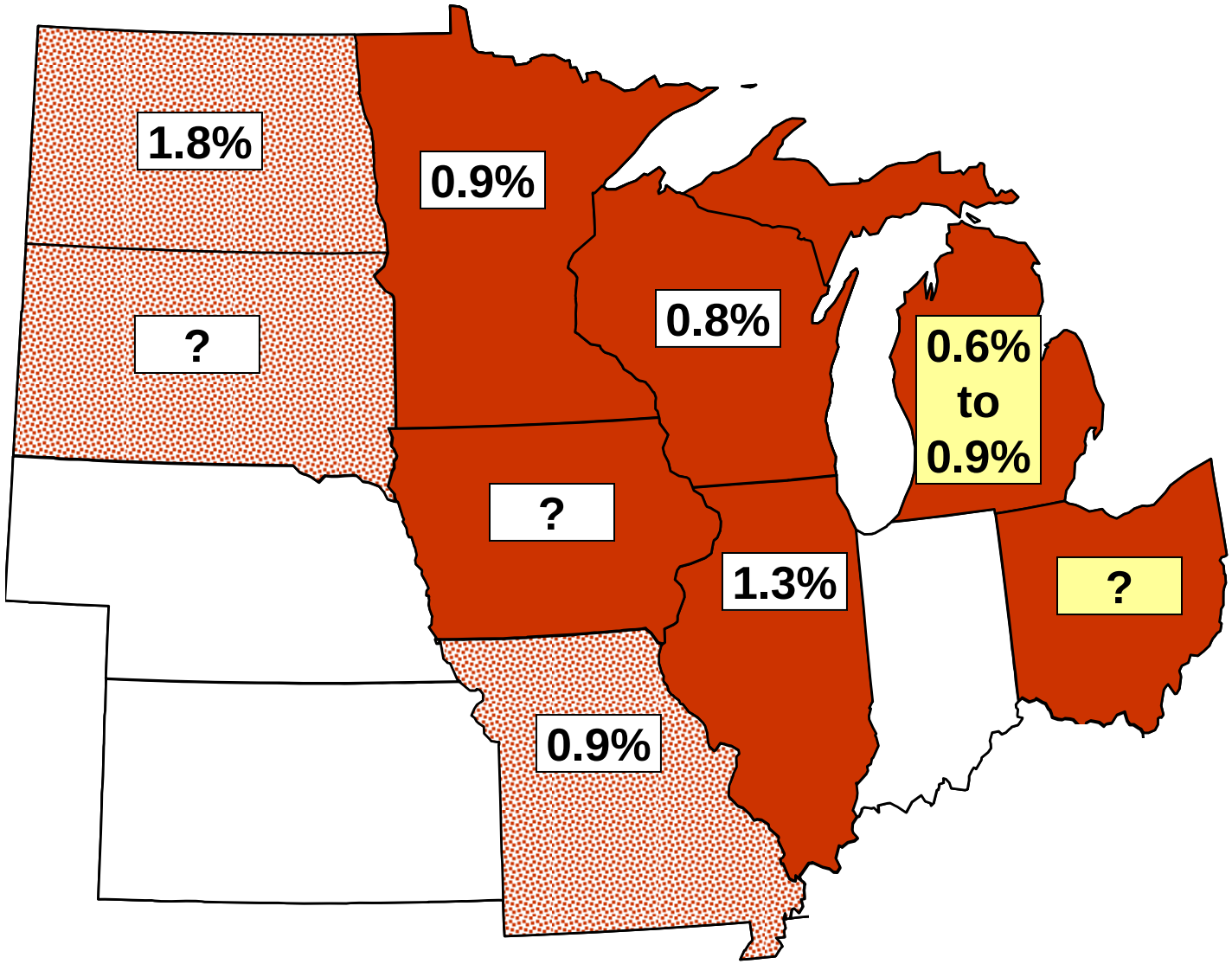
☼ Minimum solar or customer-sited RE requirement

* Increased credit for solar or customer-sited RE

** Includes separate tier of non-renewable "alternative" energy resources

RPSs are all modest goals…

Estimated % New Renewable Energy per Year



RPS Consistency?

State	Goal %	New %/yr
HI	20	0.8
WI	10	0.8
CO	10	0.9
OR	25	0.9
MN	10	0.9
PA	18	0.9
NC	12.5	1.0

State	Goal %	New %/yr
ME	40	1.0
NM	20	1.1
RI	16	1.1
NJ	22.5	1.2
IL	25	1.3
NH	23.8	1.3
DE	20	1.6

Comparison Goals for Renewable Energy

- Michigan RPS, nominally 10% by 2015 (could be 7–8%)
- Governor Granholm's new goal: 45% reduction in fossil fuel used to generate electricity by 2020
- MGA goal for the region's electricity production: 20% by 2020, 25% by 2025, 30% by 2030 (www.midwesterngovernors.org)
- DOE / AWEA 20% Vision (www.20percentwind.org)
- Necessary for Global Climate Change??? Reduce GHG emissions 50 to 80% by 2050 (www.ipcc.ch)
- Necessary for Peak Oil Response??? Reduce petroleum & natural gas use by 3 to 8% per year, or pay the price in economics and social upheaval… (www.aspo.org)

Michigan Energy Legislation 2008

1-Page Executive Summary

- RPS plans are being filed by all electricity providers
- 10% RPS by 2015, with interim steps for 2012-13-14; two big utilities can own only 50% of new renewables
- Energy Optimization Plans with energy efficiency & conservation programs for all customer classes; high standards for state government efficiency & conservation
- Wind Energy Resource Zones may expedite transmission planning, siting & construction
- True net metering for ≤20kW renewable generators; modified net metering for 20kW – 150kW generators, and up to 550kW for methane digesters
- State income tax credits, for taxpayers within income limits, for some home energy improvements & RPS costs
- Limits Michigan electric customer choice to 10% of load

Energy Acts of 2008

- SB 213 (PA 295)

  RPS, Energy Optimization Plans, State Government Efficiency & Conservation, Wind Resource Zones, Net Metering

- SB 1048 (PA 287)

  Tax credits for listed home energy efficiency improvements & RPS costs

- HB 5524 (PA 286)

  Modified customer choice
  & other utility processes

Clean, Renewable, and Efficient Energy Act (2008 PA 295)

- Part 1: General Provisions
  - Sections 3, 5, 7, 9, 11, 13 = 53 definitions
- Part 2: Energy Standards
  - Subpart A: Renewable Energy
  - Subpart B: Energy Optimization
- Part 3: State Government Energy Efficiency and Conservation
- Part 4: Wind Energy Resource Zones
- Part 5: Net Metering

RPS for Michigan's Major Utilities with >1,000,000 Customers §27(1)&(2)

- Consumers Energy: 200 MW renewable energy capacity portfolio by 12/31/2013, 500 MW by 2015
- Detroit Edison: 300 MW renewable energy capacity portfolio by 12/31/2013, 600 MW by 2015
- §33 ownership limits – no more than 50% owned by providers with >1,000,000 customers on 1/1/2008

RPS for All Suppliers

§27(3)&(4)

- 10% by 2015 and at least that same number of MWh per year for 2016 and after
- Goal set using 2007 baseline
- Interim, incremental progress steps towards the final goal are 20% for 2012, 33% for 2013, 50% for 2014, & then 100% for 2015
- Note: Some MI U.P. utilities with hydroelectric resources already exceed 10%:
  Alger-Delta, Cloverland, & Ontonagon Coops;
  Edison Sault and Xcel Energy

Energy Optimization Plans

- Filed by 3/5/2009 for regulated utilities; by 4/4/2009 for municipals
- Overall goal is to reduce future costs of service for both gas and electric suppliers
- All energy optimization programs, collectively, shall be cost effective using the standardized Utility Cost Test (§73)
- Utilities can earn a financial incentive (§75)

Energy Optimization Plan Goals §77

- Electric providers: 0.3% of 2007 load in 2008-2009; 0.5% in 2010; 0.75% in 2011; 1% per year for 2012, 2013, 2014, 2015, and thereafter
- Gas providers: 0.1% of 2007 load in 2008-2009; 0.25% in 2010; 0.5% in 2010; 0.75% per year for 2012, 2013, 2014, 2015, and thereafter

Self-Directed Energy Optimization §93

- Largest customers eligible
- Independent Energy Optimization Service Companies (EOSCs) used to develop and implement plans for customers with loads less than 2MW per location or 10MW in aggregate
- Multi-year plans with reports every two years
  - Provision for amendments to plans
- By 9/1/2010, Commission will establish “approval” process for EOSCs
- Customers with Self-Directed Plans won’t pay their supplier’s Energy Optimization Program Charges

The MPSC Shall… §95

- Promote load management
- Promote energy efficiency and conservation
- Actively pursue increasing public awareness of load management, energy efficiency and conservation
- Engage in regional efforts for these
- Report to the legislature each year & include recommendations for energy conservation legislation

PA 295 Part 3: State Government Energy Efficiency and Conservation

- Goal: Reduce grid-based purchases 25% compared to fiscal year ending 9/30/2002
- Conduct building energy analyses every 5 years
- Use Energy Star & LEED standards
- Educate state employees on how to conserve energy
- Reduce use in peak summer seasons
- Create a web-based tracking system

PA 295 Part 4: Wind Energy Resource Zones

- See www.michigan.gov/mrep (link at upper left)
- Board responsibilities (§145):
  - Study Michigan wind resources, potential, viability, land availability, requests in interconnection queues
  - Issue report within 240 days, identifying regions with highest wind energy harvest potential
  - Submit copies of report to all local legislative bodies located in the identified regions
  - Accept comments from legislative bodies (63 days); hold hearings (may include hearings in each region)
  - Issue final report (45 days)
  - Board dissolved 90 days after final report is issued

PA 295 Part 4: Wind Energy Resource Zones (2)

- After Board final report, area utilities and transmission companies identify necessary existing or new transmission infrastructure to deliver maximum and minimum wind potential for each region, and submit that information to the Board for its review
- After the Board's findings, MPSC issues an order which identifies the primary wind energy resource zone, and may identify additional zones.
- MPSC reports to state legislature, including any recommendations for legislation
- MPSC may issue expedited siting certificates for wind energy resource zone transmission

PA 295 Part 5: Net Metering

- Program applies to MPSC regulated electric utilities and AESs
- Only for renewable generators sized to meet the customer's electric needs
- MPSC to establish statewide net metering program not later than 4/6/2009
- Program size is 1% of in-state peak load
  - 0.5% for 20 kW or smaller generators
  - 0.25% for >20 kW to 150 kW generators
  - 0.25% for methane digesters up to 550 kW
- See www.michigan.gov/netmetering

PA 295 Part 5: Net Metering (2)

- Eligible net metering equipment and its installation must be certified by a nationally recognized testing laboratory to IEEE 1547.1 testing standards and in compliance with UL 1741 scope 1.1A
- Utility testing and approval must be completed prior to the start of operation
- Costs of testing and inspection for utilities are considered a cost of operating a net metering program and are recoverable from all customers

PA 295 Part 5: Net Metering (3)

- §175 addresses costs and cost recovery
  - Net metering application fee not to exceed $100
  - > 20 kW systems pay all interconnection costs
  - > 150 kW systems pay standby costs
  - Utilities with more than 1,000,000 customers can recover non-fuel net metering costs in base rates
  - For other utilities, MPSC will develop a cost recovery mechanism for contemporaneous recovery of non-fuel costs
  - All utilities can recover energy costs in the MPSC power supply cost recovery (PSCR) mechanism

PA 295 Part 5: Net Metering (4)

- §177 provides direction on metering
  - Meters will be used to determine net energy usage
    - Utilities with > 1,000,000 customers may provide this meter at no additional charge
    - Other utilities shall provide this meter at cost and only charge customer for the incremental cost over that of a standard meter
  - >20 kW systems will utilize a generator meter
  - >150 kW systems will pay the costs of installing new meters

PA 295 Part 5: Net Metering (5)

Program includes 3 billing methods:

- 20 kW and under systems will be billed based on net kWh – “true net metering”
- >20 kW up to 550 kW will receive the generation component of the full retail rate for their deliveries to the utility and pay full retail rate for all kWh delivered by the utility
- Additionally, >150 kW will pay full distribution charges for generation usage at the site

PA 295 Part 5: Net Metering (6)

- Net Metering Credit will be given for negative net metered quantities
  - Monthly average real-time locational marginal price (LMP)
  - Power supply component of the full retail rate
- Credit shall appear on the next month's bill & be limited to the total PSCR charges
- Excess kWh will be carried forward to subsequent billing periods

PA 295 Part 5: Net Metering (7)

- Renewable energy certificates (RECs) are owned by the generator §179
- §181 gives the MPSC authority to order remedies & penalties if an electric utility does not comply with a net metering provision or related MPSC order
- In the future, please check: http://www.michigan.gov/netmetering and http://www.michigan.gov/customergeneration

PA 287

- Establishes tax credits, limited by income level, for the purchase and installation of “qualified home improvements” such as insulation, furnaces, water heaters, windows, refrigerators, clothes washers, and dishwashers
- Establishes tax credits, limited by income level, for 10% to 25% of the costs of renewable energy under the RPS (other limits apply)
- Tax credits are for 2009 through 2011

PA 286

- Utilities can implement rate changes within 6 months
- MPSC oversight of utility mergers & acquisitions
- Certificate of need process for plant construction or power purchase agreements (includes integrated resource planning)
- No more than 10% of an electric utility's retail sales may take service from an alternative electric supplier
- Provides for rates to move to cost of service (a.k.a. "deskewing") over a 5-year period (by 2013) and limits annual rate increases to not more than 2.5%

Michigan's Bright Energy Future

- Wind industry growing ~1/3 per year
  - Already >2 dozen Michigan manufacturers making parts for utility scale wind machines
  - >1 dozen Michigan companies working on licensing agreements to manufacture designs from Europe and Asia
- Solar industry growing ~1/3 per year
  - Michigan is already home to some of the world's premier solar manufacturers
- Synergies between Automotive sector and Advanced Energy Systems

More MI's Bright Energy Future

- Energy Optimization Plans
  - Will grow to approximately $200 million per year in spending for efficiency improvements
  - Natural gas savings 0.75% per year goal
  - Electricity savings 1.0% per year goal
- Smart-Grid, plug-in-hybrid electric vehicles, advanced electricity storage; new potential growth industries for Michigan
- Promise for thousands of new, good jobs

2009 MPSC LIEEFund Grants

- $8.1 million – Michigan Saves System, a revolutionary means for customers to buy energy efficiency and on-site renewable energy with no money down and monthly payments on utility bills.
- $5.5 million – Michigan Schools Renewable Energy Program
- www.michigan.gov/lieefund
- See MSPC – Electricity – Workgroups to subscribe to Michigan Saves workgroup email

Read all about it…

- www.michigan.gov/mpsc, then click “e-dockets”
- Case Numbers are in the 12/4/2008 Order in Case No. U-15800, p. 73
- www.michigan.gov/mrep -- Michigan Renewable Energy Program web page
  - Subscribe to the mpsc-mrep listserv
  - Check MPSC – Electricity – Workgroups for other email lists
- Email sarverj@michigan.gov for Energy Tidbits e-newsletter

A New Beginning for Michigan
Michigan Energy Policy?
Like Winston Churchill said (1942):

- "Now this is not the end.
  It is not even the beginning
  of the end.
  But it is, perhaps,
  the end of the beginning."

And, like Henry Ford said:

- Whether you believe you can or you believe you can't… You're right.

Upcoming Events

- March 21 ***7th Annual Renewable Energy Conference*** at Pierce Cedar Creek Institute, South from Hastings; www.cedarcreekinstitute.org
- March 30-31 – ***Michigan Agri-Energy Conference***, Kalamazoo Radisson Plaza Hotel; http://www.agenergy.org/agenergy
- April 16-17 – ***Michigan Energy Conference***, Ferris State University, Big Rapids; http://www.ferris.edu/mec
- May 4-7, ***Windpower 2009*** at McCormick Place Convention Center in Chicago; http://www.windpowerexpo.org/
- May 11 – ***Green Today, Jobs Tomorrow*** conference at Lansing Center, www.michigan.gov/greenjobsconference.
- May 11-16 – ***National Solar Conference***, Solar 2009, Buffalo, NY; http://www.ases.org
- June 26-27-28 – ***Michigan Energy Fair*** at Manistee County Fairgrounds, Onekama; www.glrea.org
- October 16-17-18 – ***Beaming Bioneers Conference***; Traverse City, www.glbconference.org/, and Detroit, www.sustainabledetroit.org/bioneers,
- For more, watch the ***Michigan Renewable Energy Program Calendar of Events*** and subscribe to the Michigan Renewable Energy Program email listserv, at www.michigan.gov/mrep