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ENERGY INNOVATION  
BUSINESS COUNCIL

# Ensuring MI's Energy Future

Grand Rapids Listening Session  
February 25, 2013

presented by

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# *About MiEIBC*

The **Michigan Energy Innovation Business Council (MiEIBC)** is a business organization representing companies in Michigan's growing advanced energy sector. MiEIBC's mission is to grow Michigan's advanced energy economy by building an active statewide network of advanced energy companies, fostering opportunities for innovation and business growth and offering a unified voice in creating a business-friendly environment for the advanced energy industry in Michigan.

The **Institute for Energy Innovation** is the not-for-profit sister organization to MiEIBC. Its mission is to promote greater public understanding of advanced energy and its economic potential for Michigan, and to inform the public and policy discussion on Michigan's energy challenges and opportunities.



**The business voice of advanced energy in Michigan.**

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# Advanced energy globally

Advanced Energy Today:

**\$1.1 TRILLION**

global industry

Advanced Energy Today:

**\$200 BILLION**

Global revenue from  
2012 installations

FIGURE 6: REVENUE FROM ANNUAL INSTALLATIONS BY MARKET SEGMENT, WORLD 2012-18 (BILLIONS OF \$)



26 International Energy Agency. FAQs: Renewable Energy. <http://www.iea.org/aboutus/faqs/renewableenergy>



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# Advanced energy in Michigan

ADVANCED ENERGY MANUFACTURING

**\$4.9 BILLION**  
annual economic impact

ENERGY EFFICIENCY MANUFACTURING

**\$2.3 BILLION**  
annual economic impact by 2015



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# Full spectrum of advanced energy

## Efficiency

CLEAResult



TOGGLED



## Solar



## Wind

ENERGETX COMPOSITES



## Bioenergy

NOVI ENERGY

Energy Solutions for the 21<sup>st</sup> Century



GRANGER

## Transportation



DOW KOKAM



ROCKFORD BERGÉ  
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# Renewable Energy Standard driving investment in Michigan

Michigan's RES has proven to be good for the state's economy

- Total direct investment under the RES is ***\$1.8 billion***
- Consumers Energy's Ludington Lake Winds project created an economic boost of ***\$10 million***
- DTE Energy's three wind projects expected to contribute ***\$150 million***
- While most of the new generation has been wind, have also seen solar projects, methane digesters, and others
- RES has come in below statutory rate caps



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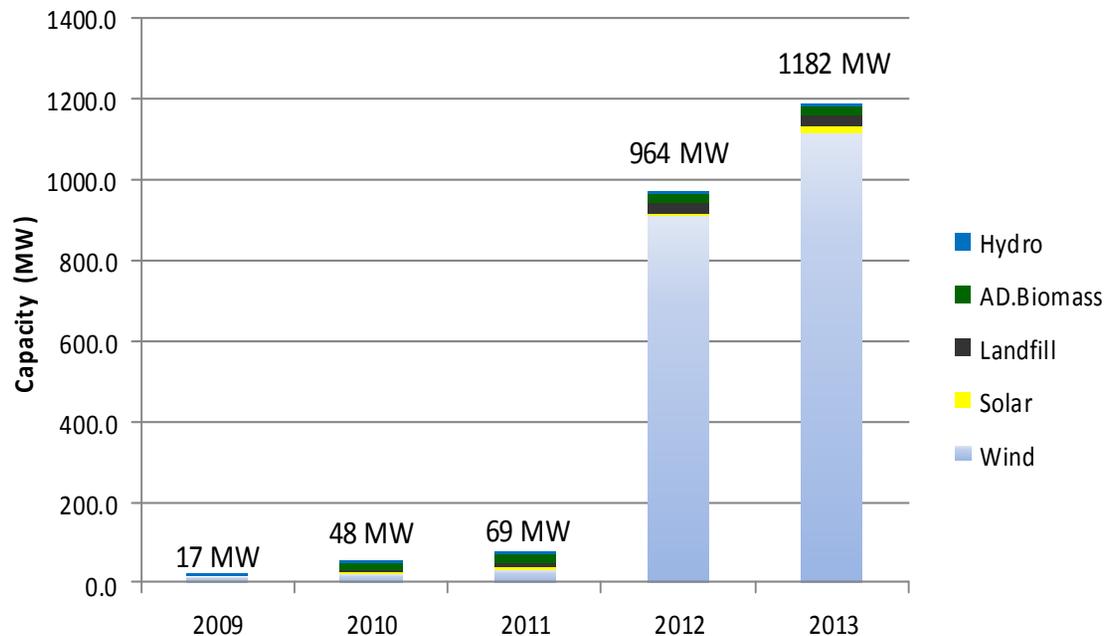
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# More than 1 GW of renewable energy installed since passage of PA295

Cumulative Renewable Energy Capacity by Commercial Operation Date



- RES responsible for development of more than 1.1 GW of renewable energy generation capacity since 2009
- Michigan placed 8<sup>th</sup> in the nation in new wind development in 2012, with 611 MW of new generation coming on line
- But what happens in 2015?



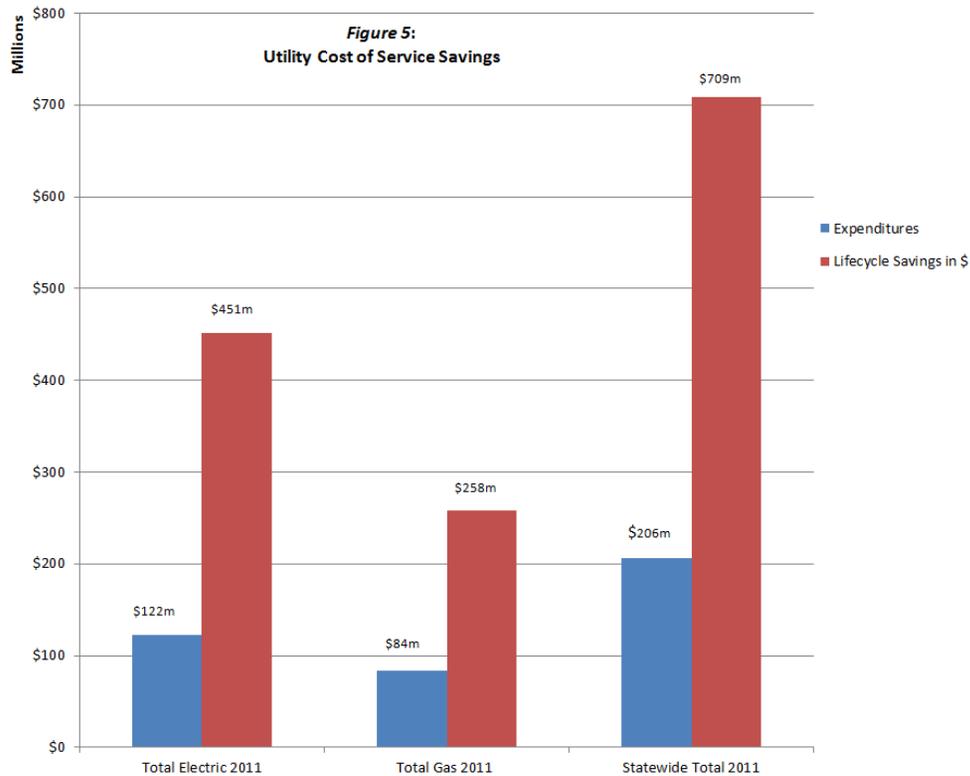
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# Energy Optimization programs save money while boosting economy



- EO program expected to net more than \$2.5 billion between 2011-15
  - \$500 million in 2011 alone
- In 2011, customers saved \$3.55 for every \$1 in EO expenditures
- Cost of electricity use avoided = \$0.02/ kWh
  - 1/3 wholesale cost of generation
  - 1/5 retail cost of electricity



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# Recommendations to strengthen energy optimization program

- Continue full implementation of energy optimization program
- Accelerate pace of energy optimization program
  - More rapid energy efficiency programs are more effective/ efficient
- Provide the Commission with clear revenue decoupling authority
- Provide additional economic incentives for efficiency measures that produce strong energy savings during peak period or in specific areas
- Adopt least-cost planning for transmission and distribution improvements to require utilities to consider efficiency measures (over and above current targets to defer or eliminate T&D upgrades
- Phase out credit for those efficiency measures that would be adopted even without incentives to ensure credited energy savings are real



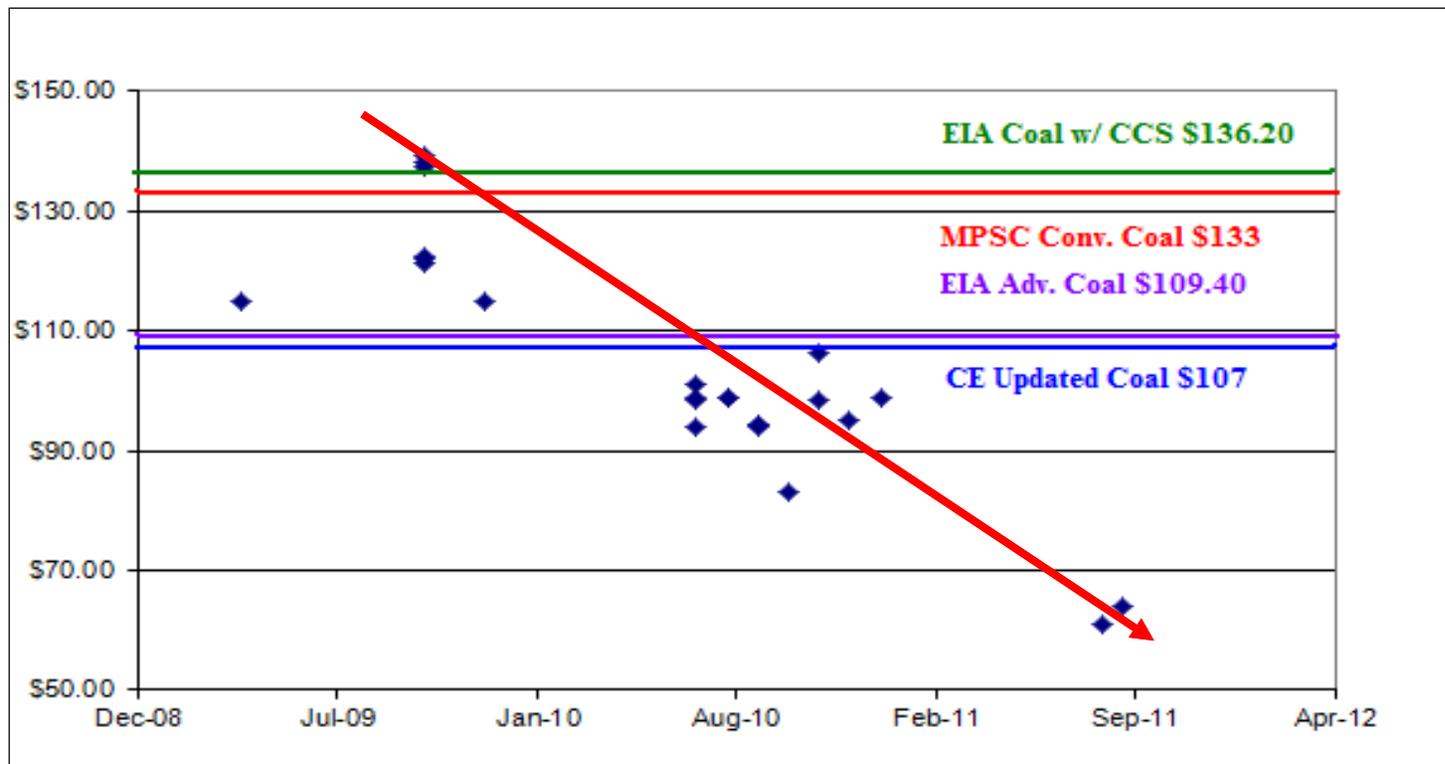
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# Cost of renewables is falling rapidly – and far faster than expected

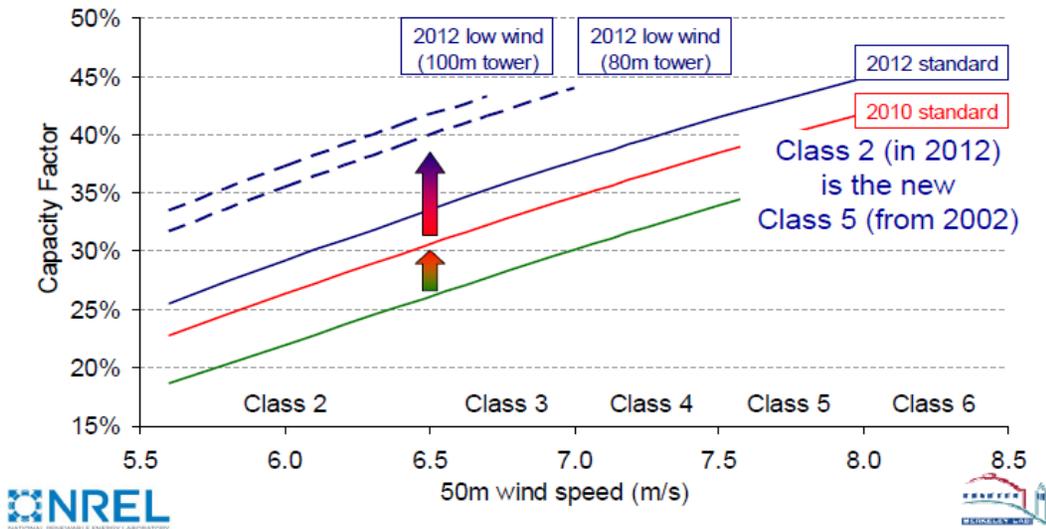


# Lower costs drive innovation, creating a virtuous circle

WIND AND WATER POWER PROGRAM

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

## Turbine Design Improvements Lead To Significant Increase in Capacity Factors...



NREL  
NATIONAL RENEWABLE ENERGY LABORATORY



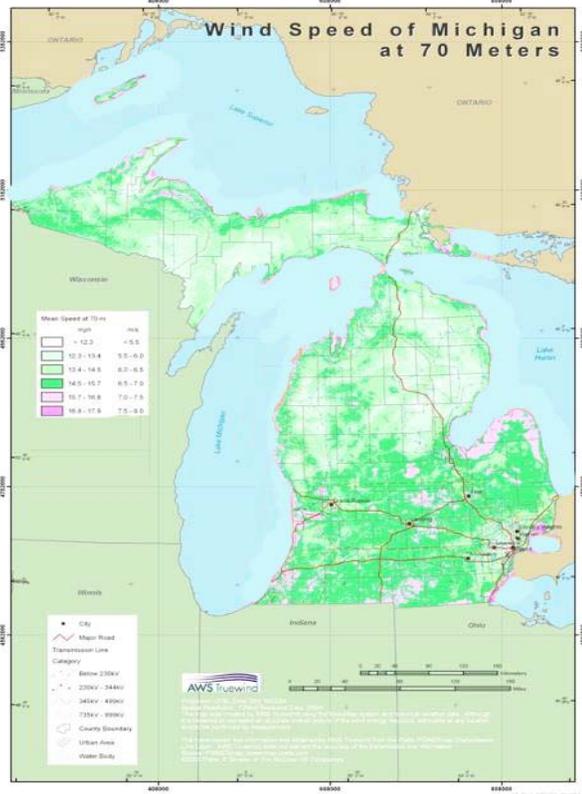
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# Innovation driving new possibilities



- Capacity per turbine increased 23%
- Energy production per turbine increased almost 55%
- **Economical wind production now possible in 60% of Michigan's total land area**
- On-shore wind potential using 2012 technology is 478% of 2011 total electricity delivery in Michigan

**Then: 2008 Technology**

**Now: 2012 Technology**



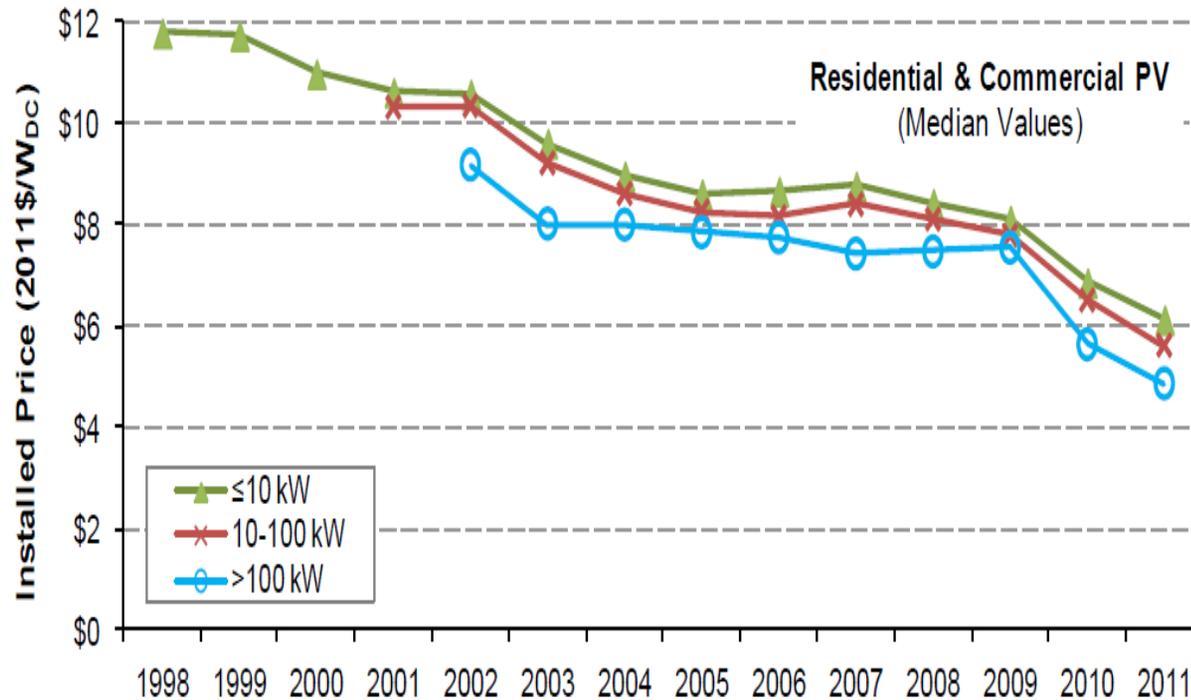
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# Solar prices also dropping fast



- Precipitous cost decline continues, with many solar developers in Michigan reaching \$2.50/W in 2013.
- Michigan breakeven for retail electricity is at about \$2.00/W.



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# New energy realities require a new energy paradigm

Renewable energy is rapidly approaching “socket parity” on a cost basis with the retail price of electricity

- When it’s cheaper for businesses and individuals to generate their own electricity than to purchase it from their utility, we need a whole different way of thinking about our electricity system
- What does this look like, who pays stranded costs, how do we maintain overall system reliability, what’s the appropriate regulatory response?
- **Key point:** this isn’t a conversation we can defer. We will reach socket parity in the timeline contemplated by the current discussion.



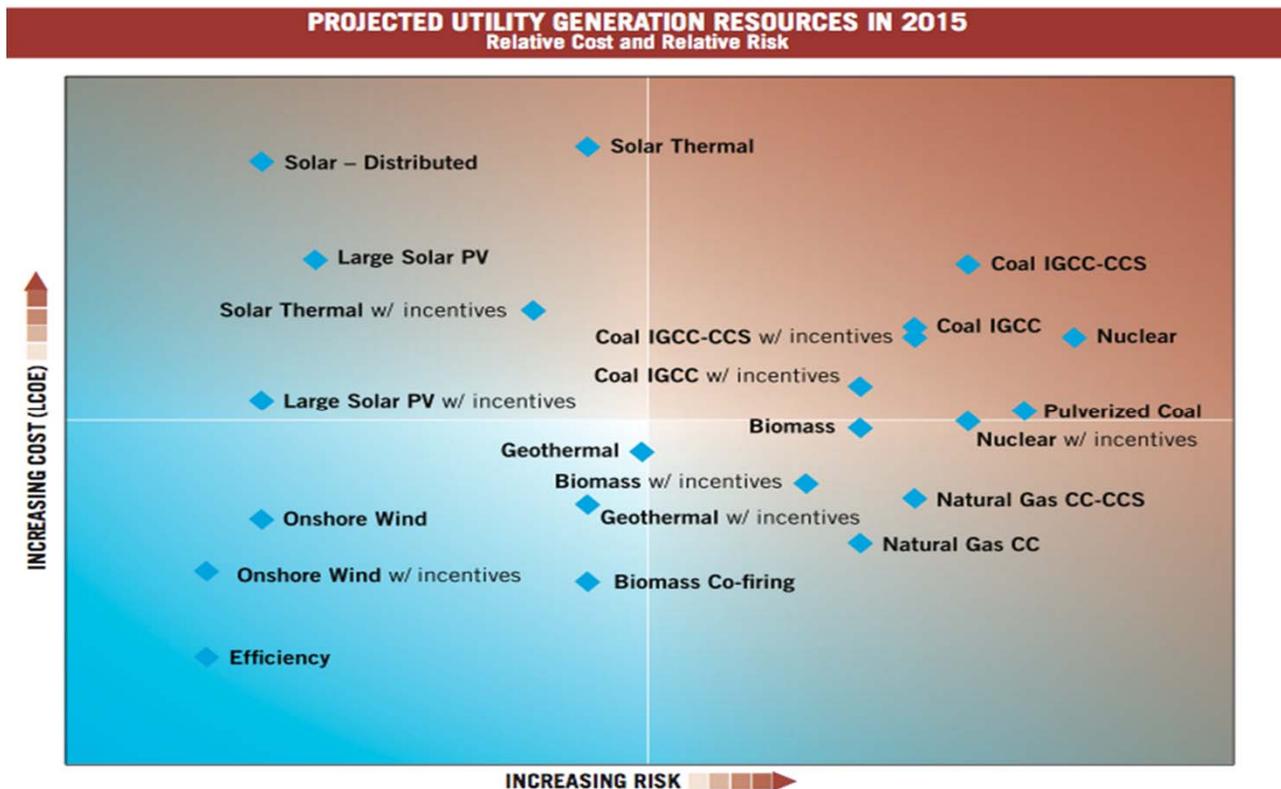
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# Risk considerations central to a “no regrets” energy policy



- Focus of policy development should be in a least cost-least risk energy mix.
- Advanced energy provides an effective hedge against future price risks.

# Additional recommendations

- Economic growth and development considerations should be added to criteria used to evaluate energy options
  - Advanced energy has a more diffuse economic impact than traditional baseload generation
- Structure policy to drive down costs over long term, while also supporting policies that can bridge any residual price gaps to further reduce costs to ratepayers
  - This can be done through financing mechanisms, credit enhancements, etc.
  - Can be achieved through better utilization of existing funds; does not require a new charge to ratepayers



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# Additional recommendations

- Regulatory improvements needed to address other elements of the status quo that serve to increase costs for advanced energy
  - Stand-by rates
  - Net metering caps
  - Permitting and tax issues
  - Structural biases that increase cost of capital for advanced energy
- Policy focus should be on fostering innovation
  - This is not just an energy discussion, but about the role of innovation in driving long-term economic growth



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