

# Windpower in Wisconsin

Outlook for 2009 and Beyond

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**RENEW Wisconsin**

**Wisconsin Wind Working Group**

**March 2009**

**www.RENEWWISCONSIN.org**

# About RENEW Wisconsin

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**Foggy morning, Forward  
Energy Center, Brownsville**

Advocates for state-level sustainable energy policies since 1991

One of the architects of the state's Renewable Energy Standard and ratepayer-funded public benefits program

Top three policy priorities for 2009

- \* Uniform Permitting Standards for Wind
- \* Increased Renewable Energy Standard
- \* Advanced Renewable Tariffs

*An organized voice for renewable energy producers and purchasers!*

# About the WI Wind Working Group

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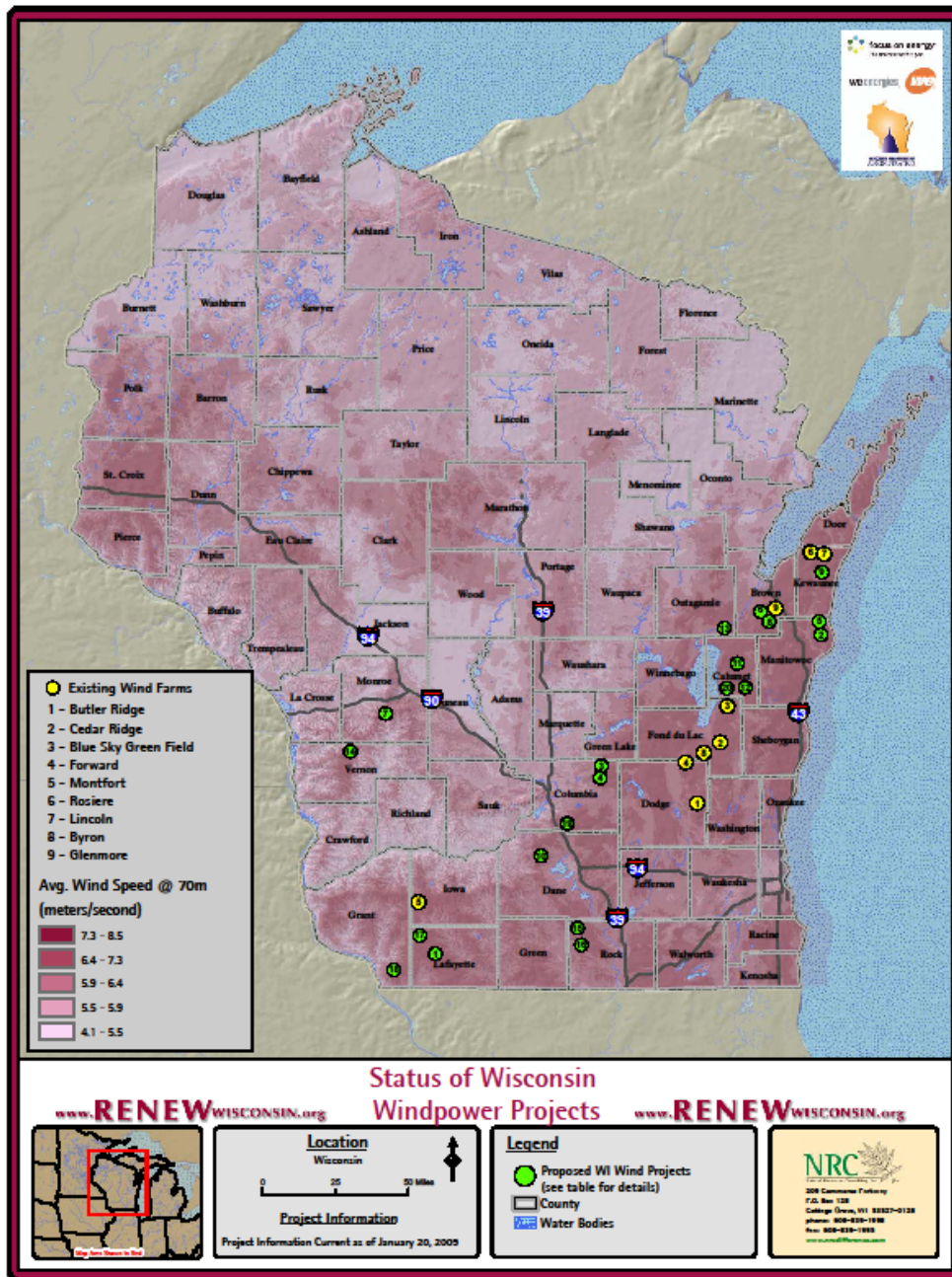
- Founded in March 2007
- Participants include industry professionals (developers, manufacturers, contractors, installers, utilities), NGO's (e.g., RENEW), and Focus on Energy and state agency personnel involved with wind energy development.
- Operates list service for internal communications
- Provides technical support for state and local governments
- Monitors wind energy project development
- Circulate updates on issues affecting wind on a bimonthly basis
- Funded by US Dept. of Energy
- RENEW provides facilitation support for group

# Why Promote Windpower?

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- Clean → Environmental
- Non-depleting → Energy Security
- **Fixed Price** → **Risk Management**
- Creates Wealth → Economic Development
- **Scalable to Utilities** → **Practicality**

***A sustainable source of wealth for Wisconsin!!***



Q. Where are the wind projects in Wisconsin located?

A. The majority are located near the load centers of eastern Wisconsin, in Fond du Lac and Dodge counties

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# No.1 Policy Driver for Utility-Scale Wind Development in Wisconsin

## **\*\* Renewable Energy Standard\*\***

Originally adopted in 1999, strengthened in  
2006 (2005 WI 141)

# What Does 2005 Act 141 Do?

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- **2015 – Sets renewable energy content goal of 10%**
- **Increases RE content requirements on utilities**
  - **2004 – Estimated percentage ~3.5%**
  - **2010 – Increase of 2 percentage points**
  - **2015 – Increase of 4 percentage points**
- **More than doubles quantity of RE in baseline**
- **Requires state of WI to purchase renewable electricity (10% by 2007; 20% by 2011)**
- **Law passed in March 2006**

# Numbers to Remember

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Annual electricity sales in WI ~ 70 billion kWh

1% of total ~ 700 million kWh

How many MW of wind would generate 700 million kWh/yr? ~ 275 MW

# Therefore ...

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The current Renewable Energy Standard (RES) will yield an additional ~4.2 billion kWh/yr of qualifying renewable electricity by 2015.\*

Assuming that windpower generates 90% of that quantity, about 1,600 MW of wind capacity must come on line between 2004 and 2015 to satisfy the RES.

\* Assumes no load growth

# WI Wind Projects - Class of 2008/9

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<u>Owner</u>	<u>MW/(WTG)</u>	<u>Name</u>	<u>County</u>
We Energies	145 (88)	Blue Sky Green Field	Fond du Lac
Invenergy	129 (86)	Forward Energy	FDL/Dodge
Alliant/WPL	68 (41)	Cedar Ridge	Fond du Lac
B+B*	54 (36)	Butler Ridge	Dodge

Estimated output from these projects (396 MW → 1 billion kWh/year → 1.4 percent of WI electricity sales)

\*Babcock & Brown

# Annual Revenues to Local Economies

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<u>Project</u>	<u>Act 31 Revenues*</u>	<u>Landowner Payments**</u>
Blue Sky Green Field	\$580K	\$725K
Forward Energy	\$532	\$710
Cedar Ridge	\$272	\$374
Butler Ridge	\$216	\$297
Total	\$1,584,000	\$1,806,000

**Estimated return from these projects in 2010 -- \$3,390,000**

\* Gross receipts tax \$\$ returned to host towns and counties

\*\*Estimated

# Forward Energy Center

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**July 2008**

**Owner: Invenergy**

**General contractor:  
Michels Wind  
Energy**

**Power sold to  
Alliant-WPL, MGE,  
WPPI, WPS**

**86 GE turbines  
producing 129 MW  
of power**

**Completed May  
2008**

# Question No. 1

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Will all the installations serving Wisconsin utilities be located in the state?

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No. Up to one-half of the windpower is likely to be generated in neighboring states.

<u><i>Iowa Projects</i></u>	<u><i>Year</i></u>	<u><i>MW</i></u>	<u><i>WI Utilities</i></u>
Top of Iowa 2	'08	80	WPPI, MGE
Top of Iowa 3*	'08	30	MGE
Barton	'08	80	WPPI
Crystal Lake	'08	100	Alliant (WP&L)
Endeavor 2	'08	50	MGE
Crane Creek*	'09	99	WPS*

\* Utility-owned

# Question No. 2

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Are the wind installations being built solely for compliance purposes with the state's Renewable Energy Standard?

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No. A portion of that capacity is serving the voluntary renewable energy marketplace.

**Project**

Top of Iowa 2

Endeavor 2

Forward

Blue Sky Green Field

Butler Ridge

**WI Utilities**

WPPI Energy, MGE

MGE

WPPI Energy, MGE

We Energies

WPPI Energy

Note: The State of Wisconsin bought 92 million kWh of renewable electricity in 2008, almost all of it windpower.

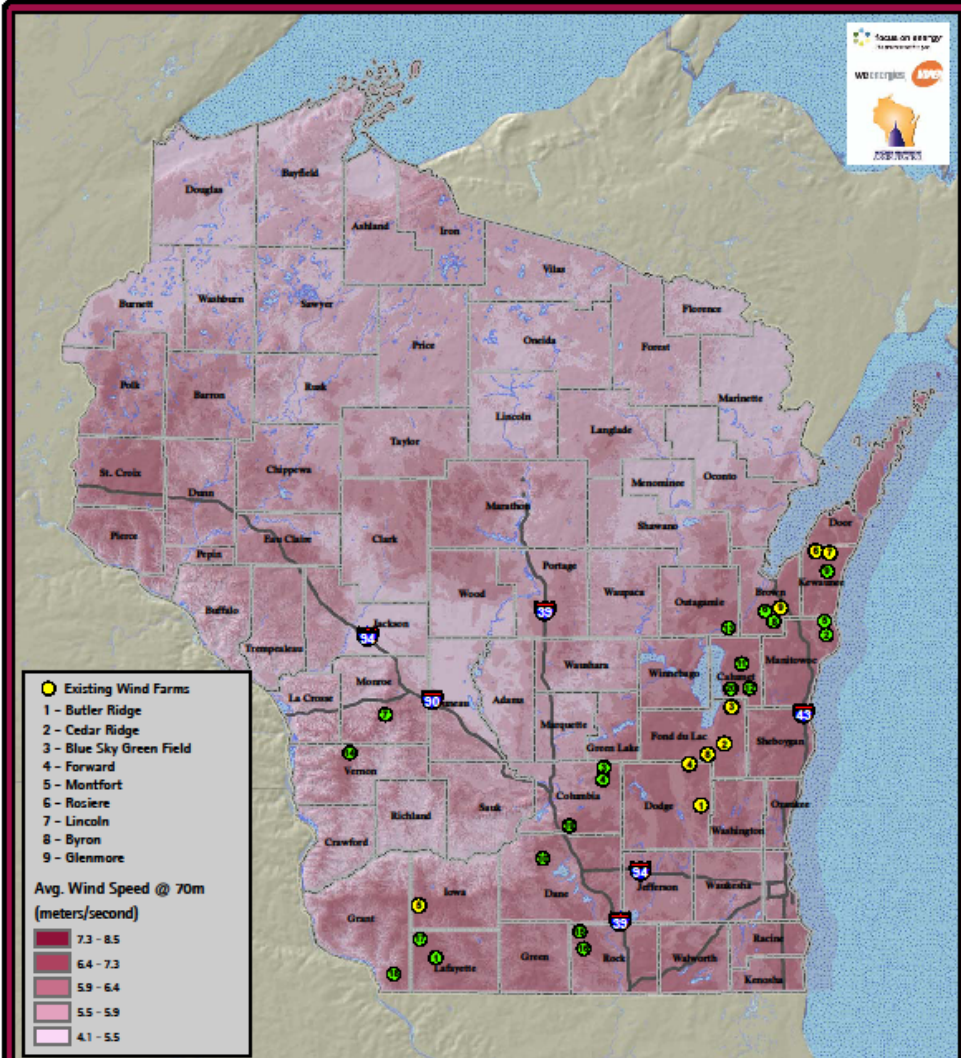
# WI Wind Projects On Deck

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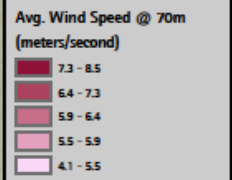
	<u>Project</u>	<u>Developer</u>	<u>MW</u>	<u>Year</u>
1.	Glenmore	EE*	19	2010
2.	Darlington	Horizon	99	2010
3.	Various	EcoEnergy	10-15	2010
4.	Glacier Hills	We Energies	<207	2011
5.	The Ledge	Invenergy	150	2011
6.	White Oak	WCG**	99	2011

\* Emerging Energies

\*\* Wind Capital Group



- Existing Wind Farms
- 1 - Butler Ridge
- 2 - Cedar Ridge
- 3 - Blue Sky Green Field
- 4 - Forward
- 5 - Montfort
- 6 - Rosiere
- 7 - Lincoln
- 8 - Byron
- 9 - Glenmore



- Glenmore      Brown Co.
- Darlington    Lafayette Co.
- EcoDane        Dane Co.
- Glacier Hills   Columbia Co.
- The Ledge      Brown Co.
- White Oak      Grant Co.

**Status of Wisconsin Windpower Projects**

[www.RENEWWISCONSIN.org](http://www.RENEWWISCONSIN.org)

**Location**  
Wisconsin

**Project Information**  
Project Information Current as of January 20, 2009

**Legend**

- Proposed WI Wind Projects (see table for details)
- County
- Water Bodies

300 Colorado Parkway  
F.O. Box 120  
Golden, CO, 80502-0120  
phone: 303-439-1900  
fax: 303-439-1999

# Other Drivers for Wind Energy

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- Voluntary RE market still going strong
  - State of Wisconsin to double RE purchase in 2011
- Some utilities need to expand their asset base (and coal is now way too risky)
- Possible fossil plant retirements (for economic or environmental reasons)
- Legislation to increase the state's RE Standard (25 x 2025) to be introduced later this year.

# Supporting Policies for a Higher Renewable Energy Standard

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- Uniform permitting standards for projects under 100 MW
- Regional transmission reinforcements
- Incentives (e.g., Advanced Renewable Tariffs) to expand the contribution from distributed renewable energy installations

# Wind for Wisconsin - Who's Who

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## A Broad-Based Coalition

- Wind Industry (AWEA/WOW/Developers)
- Utilities (IOU's, Munis, Co-ops)
- Farmers (WI Farm Bureau, WFU)
- Business Groups (WMC, General Contractors)
- Clean Energy Groups (Clean WI, RENEW)
- Labor (IBEW, Operating Engineers, Carpenters)

# Wind for Wisconsin - Who's Who

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## WI Wind Energy Supply Chain Companies Strongly Support Permitting Reform

- Boldt Construction
- Broadwind Energy
- Federal Marine Terminals
- Michels Wind Energy
- Port of Milwaukee
- Wausaukee Composites

# How does the Wisconsin's windpower market shape up in the near-term?

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- + Current Renewable Energy Standard will induce market expansion well into the next decade.
- + Utilities are investing in windpower projects and customers are buying windpower when offered the opportunity.
- + Executive branch views windpower as an essential strategy for driving economic growth and reducing CO<sub>2</sub> emissions.
- + Federal production tax credit extended through 2012.
- ? Uniform permitting standards would greatly improve the viability of wind projects under 100 MW.

# For More Information

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