

Tiptoeing Through the Minefields: Permitting Wind Projects in Wisconsin

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About RENEW Wisconsin



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

A Focus on Energy subcontractor promoting commercial solar thermal systems and reducing barriers to customer-sited renewable energy

A founding member of CRS's Green-e Board

An organized voice for renewable energy producers and purchasers!

How RENEW Promotes Windpower

- Developing Model Ordinances
 - Large Wind (>170 ft, 100 kW)
 - Small Wind (<170 ft, 100 kW)
- Supporting Individual Wind Projects
 - Voluntary Good Neighbor Policy
- Fighting Fires (e.g., FAA delays in permitting projects due to radar impacts)
- Setting the Record Straight About Windpower's Environmental Impacts (countering NIMBYism)

Recent Renewable Energy Initiatives in Wisconsin

- 1993 Act 414 (1994)
 - Strengthens landowner access to wind energy

- 1997 Act 204 (1998)
 - 50 MW set-aside for renewable generation

- 1999 Act 9 (1999)
 - Established a renewable energy standard on utilities
 - Created Focus on Energy to support customer-sited renewables

- 2003 Act 31
 - Revised Utility Local Aid Formula – Bonus Provisions for Large Wind

- 2005 Act 141
 - Established target of 10% renewable energy content statewide by 2015
 - Utilities are required to increase renewable energy sales by six percentage points by 2015

Solar and Wind Siting Law

State Statute 66.0401

No county, city, town or village may place any restriction, either directly or in effect, on the installation or use of a solar energy system or a wind energy system unless the restriction satisfies one of the following conditions:

- ✓ Serves to preserve or protect the public health and safety.
- ✓ Does not significantly increase the cost of the system or decrease its efficiency.
- ✓ Allows for an alternative system of comparable cost and efficiency.



**Montfort Wind
Energy Center**

30 MW

Iowa County

**In-service:
2001**

**Montfort is still
Wisconsin's
"newest"
operating wind
energy plant**

What Does 2005 Act 141 Do?

- **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 existing quantity of RE**
- **Estimated RE growth – 4.2 billion kWh/year**
- **Requires state of WI to purchase renewable electricity (10% by 2007; 20% by 2011)**

Likely New Renewable Resource Mix

- **Wind** **95%**
- **All others**
(solar, biogas, biomass, new hydro) **5%**

Of the 4.2 billion kWh/yr of RE that utilities must acquire by 2015, the contribution from wind will approach 4 billion kWh per annum.

WI Wind Projects - Class of 2008

<u>Developer</u>	<u>(MW)</u>	<u>County</u>	<u>PPAs with</u>
We Energies	145	FDL	N/A
Invenergy	129	FDL/Dodge	WPL, WPPI, MGE, WPS
Alliant/WPL	68	FDL	N/A

Estimated output from these projects → 850 million kWh
(1.2 percent of WI electricity sales)

Top two projects received CPCN approval from the PSC.

Windpower Projects Planned to Satisfy Act 141

<u>Developer</u>	<u>Name</u>	<u>(MW)</u>	<u>State</u>	<u>PPAs with</u>
We Energies	Blue Sky GF	145	WI	N/A
Invenergy	Forward	129	WI	MGE, WPPI, WPS, WPL
Alliant/WPL	Cedar Ridge	68	WI	N/A
MWE	Butler Ridge	54	WI	WPPI
EcoEnergy	Various	<24	WI	WPPI
Iberdrola	Top of Iowa 2	50	IA	WPPI
MG&E	Top of Iowa 3	30	IA	N/A
WPS/enXco	Howard County	99	IA	N/A

Estimated output from these projects → 1.46 million MWH/yr
(2.1 percent of WI electricity sales in 2010)

The Post-2008 Pipeline

- @ 180 MW of approved projects
- @ 400 MW of stalled projects

Increase in RE required between 2010 and 2015: 2.8 billion kWh/yr or 1,100 MW of wind capacity.

How Wind Stacks Up (Against the Competition)

- Pulverized Coal (Appalachian) \$75 - \$80/MWH
- Coal – CFC (Powder River) \$85- \$95
- Combined Cycle (NatGas) \$85 - \$95
- Livestock Manure \$90 - \$120
- Solar (Photovoltaic) \$200-\$300

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- Wind (75 MW in Wisconsin) \$75 - \$90/MWH
 - Wind (75 MW in Iowa) \$50 - \$60

Note: Renewable energy costs assumes continuation of federal and state incentives
Sources include utilities and MISO

Comparing Output - Wind vs. Solar

- A typical household-size PV system (1.65 kW) will produce 2,000 kWh/yr
- A typical commercial wind turbine (1.65 MW) will produce 4,000,000 kWh/yr
- It would take 2,000 household-sized PV systems to equal the output from one commercial wind turbine in Wisconsin

About Dairy Farm Biodigesters

- Minimum herd size to support a biogas energy installation economically --- **700** cows.
- Estimated number of Wisconsin farms that produce enough manure to justify installing a digester --- **200**.
- Some dairy operations sell the biogas they produce as natural gas instead of electricity

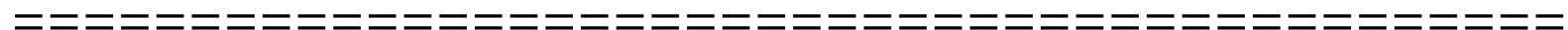
Knocks Against Windpower

- Causes Stray Voltage – Completely untrue
- Lowers Property Values – Not corroborated in studies
- Low Frequency Sound – Not corroborated in studies
- Land Intensive (Reality: <1 acre for every turbine)
- Shadow Flicker (Worst case-scenario – a mild nuisance)
- Low Wind Speed (WI resource is economic today)
- Kills Birds (see next slide)

Avian Mortality in the USA

(per annum)

■ Buildings	550 million
■ Power Lines	130
■ Cats	100
■ Cars/Trucks	80
■ Pesticides	67



Others	Wind turbines	28,500
	Airplanes	25,000

Sources: USFS, USFWS, American Ornithological Union

PSC on Setbacks and Sound

“Over the years, modern turbine designs have reduced noise emissions from turbines. The turbines proposed by the applicant would be an upwind design with insulated nacelle, isolation mounts, blade pitch control, and relatively slow blade rotation (10 to 20 rpm). All these factors tend to reduce turbine noise. In addition, maintaining a large setback distance (1,000 feet or more) from residences would tend to further limit noise impacts.”

Final Environmental Impact Statement – Forward Wind Project,
Docket 9300-CE-100, May 2005, page 176.

How Serious Is Shadow Flicker?

“Even in the worst situations, shadow flicker only lasts for a short time each day—rarely more than half an hour. Moreover, flicker is observed only for a few weeks in the winter season.”

“In the United States, shadow flicker has not been identified as causing even a mild annoyance. In Northern Europe, on the other hand, because of the higher latitude and the lower angle of the sun, especially in winter, shadow flicker can be a problem of concern.”

National Research Council:

Environmental Impacts of Wind Energy Projects, May 2007.

The Small Turbine Situation

State Definition of Small Wind

- Rated capacity not to exceed 100 kW
- Total height not to exceed 170 feet (tower + blade)
- Output sold to local utility

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- Focus on Energy developed a model ordinance (downloadable at <http://www.renewwisconsin.org/wind/windtoolbox.html>)
- Setback: Total height from property lines sufficient for public safety
- Small turbines present zero risk to public health
- No special regulations needed for sound

Counties That Restrict Small Turbines*

- Shawano
- Manitowoc
- Dodge
- Trempealeau

* As defined in state model ordinance

Shawano County Ordinance

Regulation Gone Haywire

- Drafted by a citizens committee and adopted in 2005
- Small turbine definition – 20 kW 125 feet max.
- Local farmer proposed to install one 35 kW turbine
- Ordinance defined this device as a large turbine, requiring multiple studies and tests
- County was leery of a lawsuit
- Permit was granted to the applicant under a variance
- Restrictive definition of small wind still stands

The Dilemma Facing Local Jurisdictions

While the state has adopted a set of guidelines that it follows when reviewing permit applications (>100 MW), it has not provided any guidance to local governments as they deliberate over wind projects proposed in their jurisdiction. To date the state has been unwilling to impose its energy policies on local land use bodies.

The State's Unofficial Guidelines

Setbacks: 1,000 feet from nonparticipating residences, 1.1 x total height from public right-of-ways

Sound: 50 decibels from the residence

Five Easy Steps to Squelch Wind Development in Your County

- **Setbacks** – Define them from neighboring property lines (instead of neighboring residences)
- **Setbacks** – Require setbacks from public right-of-ways that are beyond total height of turbines
- **Sound** – Impose relative measures instead of absolute measures
- **Studies** – Require many of them at the developer's expense
- **Decommissioning** – Impose onerous bonding requirements

Examples of Arbitrary Provisions in County Ordinances (Part 1)

- Testing requirements and impact studies (Shawano)
 - Stray voltage, wells, communications, ice throws, blade throws, noise, soils, catastrophic failure, avian wildlife, fire control and prevention, air navigation, emergency services, agriculture, etc.
- Setbacks from public right-of-ways
 - 4 x total height (Shawano)
 - 2 x total height (Door, Trempealeau)
- 1,000 ft setback from residences for small WTs (Manitowoc)
- Sound limit - no more than 5 dBA above ambient (Manitowoc)
- Setbacks from parks, water bodies, wetlands, etc. (Shawano)

Examples of Arbitrary Provisions in County Ordinances (Part 2)

- Setbacks from residences + "sensitive receptors"
 - 1 mile (Trempealeau)
 - 4 x total height (minimum 1,000 feet)
- Setbacks from property lines
 - 3 x total height (Trempealeau)
 - 2 x total height (Shawano)
- Setbacks from communication towers
 - 1 mile (Trempealeau)

Siting Battles in Wisconsin (Part 1)

- **Kewaunee County projects - 1999 - present**
 - Two-year moratorium ensued in Town of Lincoln – no ordinance adopted
 - WPS extended buyout offer on homes – two accepted
 - CUP's extended
- **Town of Addison (1999 - 2002)**
 - FPL Energy project never built
- **Shawano County - 2003 to present**
 - Moratorium issued in wake of Navitas activity -- restrictive ordinance adopted July 2005
 - 35 kW turbine recently approved via variance

Siting Battles in Wisconsin (Part 2)

■ Manitowoc County - 2004 to present

- Moratorium issued following approval of Navitas project – restrictive ordinance adopted
- Emerging Energies' wind farm approved under old ordinance – lawsuit filed
- Court overturned the permit, saying the County used the wrong ordinance
- Developer filed lawsuit against County challenging the new ordinance

■ Calumet County - 1999 to present

- MGE chased out of Stockbridge in 1999 – ensuing lawsuit settled
- Decent ordinance now in place – adopted in 2005
- Several attempts to add restrictions fail by 10-10 votes
- Town of Stockbridge adopted its own restrictive ordinance – 09/07
- Board of Supervisors imposed four-month moratorium – 09/07
- Recall election held for one supervisor – recall failed -- 02/08

Siting Battles in Wisconsin (Part 3)

■ Trempealeau County - 2007

- Adopted moratorium – created a citizens committee to propose a wind ordinance
- Citizens committee proposes strictest ordinance in the state – 11/07)
- On a 10-6 vote County Board approves ordinance w/out changes (12/07)

■ Monroe County - 2005-present

- County Board adopts county wind energy ordinance in 2006.
- County grants 3 CUPs to Invenergy to build 75 MW project in Towns of Ridgeville, Wells, and Wilton.
- New town govt.'s in Ridgeville and Wilton veto CUPs. Vetoes are being challenged in district court.
- Onerous licensing ordinances now being considered in the towns of Ridgeville and Wilton.
- CUP for Town of Wells is upheld by Monroe County Board of Adjustment in late 2007. BOA decision is now being appealed in district court.

Other Obstacles Facing Developers

- Redesignating private landing strips as public airports
- Setbacks from communications towers
- Height restrictions
- Licensing ordinances on top of zoning ordinances

Why a Good Neighbor Policy?

- Stronger community support
- Smoother path to permit

Elements of a Good Neighbor Policy

- Early outreach to affected community
- Environmental due diligence
- Reasonable terms for land options
- Avoid piecemeal review
- **Compensation to nonparticipating neighbors**

Note: RENEW's Guidelines does not affect matters covered under permits or zoning ordinances

What Are a Developer's Current Options?

1) Get Big – Expand project to >100 MW and obtain a CPCN from the PSC

- Rely on agency's pre-emptive authority
- Expensive and time-consuming
- Reasonable probability of success
- Only a handful of locations can accommodate 60 turbines

2) Go Somewhere Else

Suggested Remedies

- 1) Uniform siting standards (similar to the state's livestock operation siting law)
 - ✓ Setbacks
 - ✓ Sound
 - ✓ Studies and testing requirements
 - ✓ Bonding requirements

- 2) Mechanism for appealing local decisions to a state body (also similar to the large livestock siting law)

Questions?

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