

Based on some of the New North's efforts to promote the region's wind energy industry, the story below was written by *Windpower Monthly*, a nationwide trade publication. The story discusses some of the regulatory changes in Wisconsin that have made wind energy production and component shipping easier, and paints a great picture for the future of the industry in Wisconsin and the New North. We hope you'll take a moment to read it through.

Fewer hurdles in linchpin market

Onerous permitting requirements and transport regulations have stymied wind businesses from expanding in Wisconsin, a state with good wind resources located along strategic shipping routes. A shift in attitude by state policy makers promises new opportunities, says Jesse Broehl.

Wisconsin has watched wind projects in upper Midwest neighbours Minnesota, Iowa and Illinois experience breakneck growth in recent years. But Wisconsin has remained stuck at half a gigawatt of wind power capacity, with nothing under construction today. The lull is about to change now that the state has tackled two main impediments to bringing wind online: construction permissions and regulation of component transportation.

Of the two obstacles, construction permitting has arguably been the hardest to get around. For Wisconsin wind projects below 100MW, construction permissions have been administered through the state's 72 county governments. Until last autumn, requirements varied greatly between counties, with some requiring onerous construction permission studies and others imposing complete bans on wind projects. "You either had to get big or get out of town," says Michael Vickerman, executive director of Renew Wisconsin, a renewable trade group.

"Since most developable sites cannot accommodate 100MW worth of generation, there were essentially some areas, and sometimes whole counties, that were off limits to commercial developers, and the crazy restrictions even sometimes extended to small wind turbines," he says. "The permitting environment had become so intractable that certain developers had basically given up on Wisconsin. The last wind project permit issued by local government was in March of 2007."

It is easy to lump many Midwestern states together as one indistinguishable land mass between the coasts, he says. But, in reality, Wisconsin has geographic and socioeconomic particulars that conspire against wind.

Unlike Iowa to the south-west, with its more than 3GW of wind and expansive wind-friendly crop farms, Wisconsin's economy is more varied – featuring, for example, factories and areas of greater population density. Like Iowa, Wisconsin is an agricultural heavyweight. But instead of corn as far as the eye can see, Wisconsin's landscape is more often a patchwork of smaller cattle farms. Farmers seeking extra income have in many cases sold parcels of land off to homeowners.

With increasing numbers of landowners living closely together, it is harder for wind projects to avoid compromising the views of residents. Technically, local counties were not allowed by state law to deny wind farm permits except over concerns of health or safety. But Vickerman says the two "became code words for something else", namely an unwillingness to adapt to evolving energy needs. "What the opponents succeeded in doing was translating their true feeling about wind into arguments about health and safety," he says. "It went through a kind of translation process where they started harping on wind turbine syndrome and shadow flicker."

People claiming to suffer wind turbine syndrome blame the sound of nearby wind farms or the shadows cast by spinning turbine blades for headaches, insomnia, vertigo and other purported maladies. Scientists, however, have established no conclusive proof of cause and effect, and recent studies have suggested there is no validity to the claims.

In one case in Calumet County, restrictions were placed on the permitting of wind projects because of local concern that helicopters would not be able to land on the periphery of a wind project or between wind turbines to rescue sick or injured residents requiring transport to hospital. "You would think you're dealing with the world's sickest people, that the average Calumet County resident is enfeebled, with life hanging on by a thread, and all they think about is proximity to the nearest hospital," says Vickerman.

Uniform rules

Calumet is arguably ground zero for wind opposition. It is the windiest county in Wisconsin, which itself falls just short of ranking in the top third of the 50 states in terms of potential wind power capacity. Vickerman worries about support by wealthy individuals for anti-wind lobbying campaigns aimed at local county officials, law makers and regulators at the state capital, as well as for organizers drumming up public opposition.

Calumet's opponents of wind, however, suffered a major blow in the autumn, when a blanket ban imposed by the county on wind turbines was lifted by a state court of appeals. Wisconsin law makers then passed a new law requiring the state's public service commission (PSC) to establish uniform standards for every county in Wisconsin. "It's so clear that the current system is broken, absolutely servicing nobody's interest, and the legislature had to take action if there were going to be more wind projects in Wisconsin except for the very largest ones above 100MW," says Vickerman.

Local control will remain at the county level, but standards are expected to become more lenient. "Right now, if you go from one county to the next, you may run into ... different sound thresholds, different rules with regard to decommission, different study requirements on the front end. All of this will change," says Vickers. "As for what the standards might be, I'm sure it will be based on science and what can be measured and documented. I think this speculative aspect that so often flavours debate about certain wind projects will basically go away."

The PSC is expected to announce uniform rules this year. Wisconsin is unlikely to ever boast the wind plant capacities of Iowa or Minnesota with their superior wind and geography. But the state could easily bring another 600MW online in coming years, says Vickers, allowing it to join its neighbours in the gigawatt club.

Red tape unraveled

After construction permission hurdles, regulation of the transport of large wind components has most bedeviled Wisconsin. Until the autumn, if a wind project required 100 truck trips to deliver all the components to a wind project, the logistic company moving the equipment had to file as many individual applications rather than one multi-trip permit as is common in other states.

Regulation of the transport of large components such as towers, blades and nacelles varies from state to state. But the situation in Wisconsin is particularly vexing. "If you think of all the staging activities and equipment requirements, manpower requirements that are now [involved], everything costs more," says Jerry Murphy, executive director of the New North, an economic development agency in Wisconsin pushing to expand the wind industry in the state. "It wasn't so much that they were not issuing permits, period, but that they were issuing them in a really slow fashion."

Over the past few years, logistics companies have often done whatever possible to rail, truck or barge components around Wisconsin, even when a route through the state would have been shorter. Because Wisconsin is located in the heart of the US northern industrial supply chain, with major shipping ports on both Lake Superior and Lake Michigan, this has affected the broader wind industry.

Dock and roll

"The real ramifications were from Vestals and Gems and others that were using the port authority in Milwaukee and port Marinette-Menominee," says Murphy. "Both are on Lake Michigan and most of the issue was related to moving significant components like blades and tower sections across Wisconsin to development projects occurring west in Iowa and southern Minnesota." Murphy says he knows of

companies that diverted shipping to the port of Duluth, Minnesota, to rail, to barge traffic on the Mississippi. "People, when they are pressed into a bad situation, have to adjust," he adds.

Murphy says the reality on the ground was at odds with rhetoric from state officials and law makers trying to entice wind energy businesses to come into the state. "The highway systems are great. It's the regulatory systems there that were inhibiting the use of those highways and ports," he says. "We were saying one thing as a state and providing something significantly different."

Things were not always so complicated. A single event just over two years ago prompted Wisconsin's Department of Transportation (DOT) to require individual permits for each journey. Preferring not to name the logistics companies involved, Murphy recalls how a tower section rolled off a truck, resulting in minor damage to property but no injuries. The state reacted with tough regulations that ended up going overboard, he says.

But in the autumn, the DOT reinstated multi-trip permits for transport of wind components. Only one permit is now required if similar components travel the same route during a six-month period. "If you read between the lines, it's an admission of having gone too far," Murphy says, commenting on a letter from the DOT that outlined the changes. Current regulation now resembles that in other state, he continues. "The bad news is, it took a while. The good news is that it's very well fixed now."

The flurry of changes bodes well for Wisconsin wind. Hans Detailer, who tracks state legislations for the American Wind Energy Association, agrees. Solving both the permitting and the transportation problems in one go represents "a very clear cut case of a state having a bad reputation based on some major problems and taking clear steps to solve the problem," he says. That puts membership in the gigawatt club well within sight.