State and Provincial Land-Based Wind Farm Siting Policy in the Great Lakes Region: Summary and Analysis

Benton County Wind Farm, located near Earl Park, Indiana. Photo © John Schanlaub.

Great Lakes Wind Collaborative

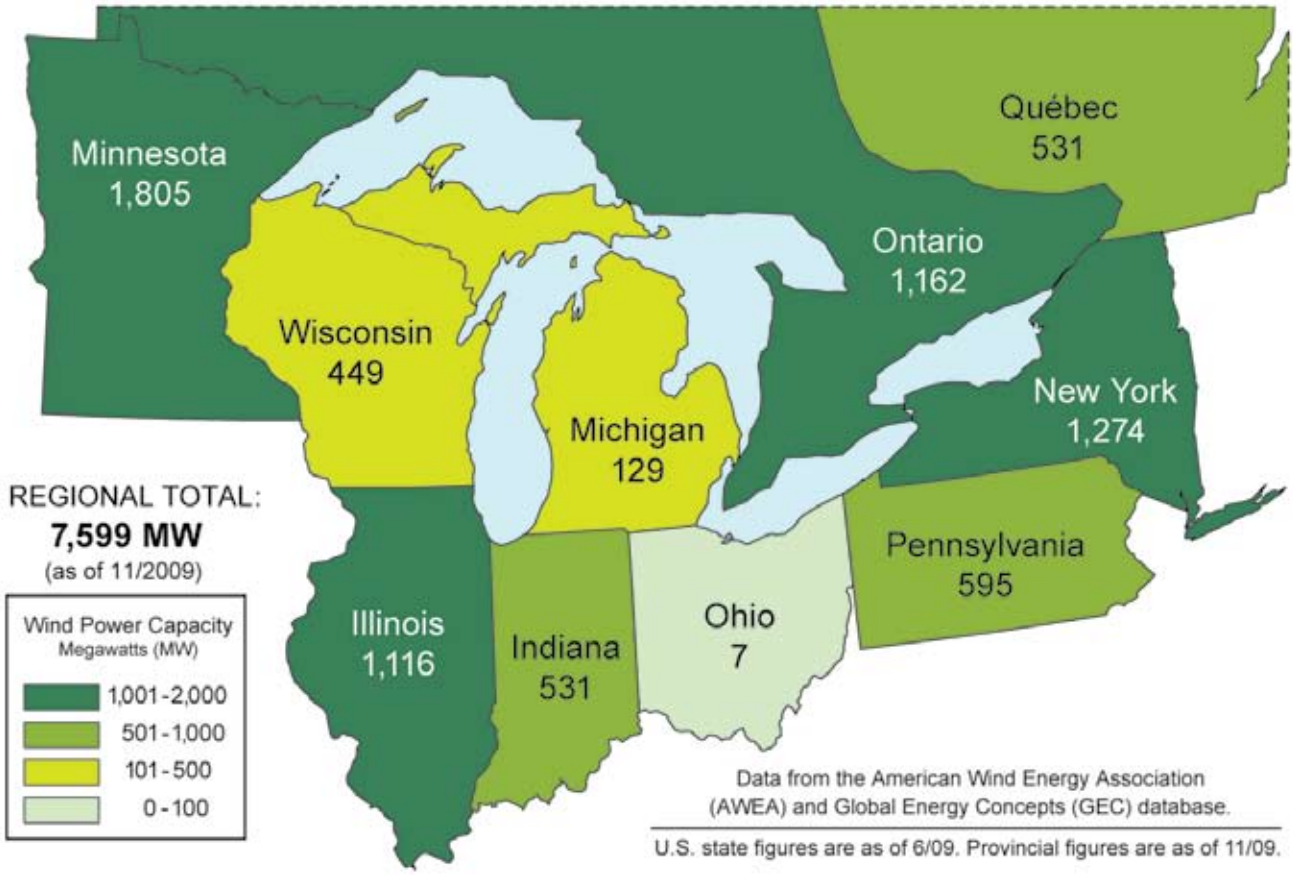
Great Lakes Commission January 2010

Introduction

The Great Lakes region has a widely varied policy framework to govern the development of wind energy facilities on the land. A wind energy facility can be a single turbine, but more often it is a group of turbines that are constructed as part of a single development project, commonly known as a "wind farm." This document compares and contrasts Great Lakes states and provincial policies that affect wind farm development. Some jurisdictions have developed siting guidelines for local implementation; others have developed enforceable regulations while still others have a hybrid approach. The process also varies: some jurisdictions have relatively streamlined processes, while others have a more complex decisionmaking structure. The type of developer (i.e., utility or independent power producer) or the size of the project can also affect which regulations, if any, apply. Siting policies and associated regulatory structures are heavily influenced by state-specific factors such as state government organization, level of electric utility regulation how much authority is delegated to the local level.

Effective wind siting policy will provide a clear process that maximizes the benefits to society, and minimizes adverse environmental and community impacts and costs. Beyond state and provincial wind farm siting, other policies, such as transmission siting and local zoning, can have a significant impact on whether a wind farm gets developed. By examining the policy approaches that exist among the states and provinces in the region, this paper is a first step toward identifying those policies which are most effective and innovative. To that end, this document is a starting point upon which further research and analysis will be conducted to identify various polices and practices that are most promising to accelerate sustainable wind development across the Great Lakes region.

Great Lakes Region Current Installed Wind Capacity 2009 (MW)



Analysis of State and Provincial Wind Siting Policies

Regulatory Approaches

Eight of the ten Great Lakes states and provinces either fully or partially regulate electric energy facility development in their jurisdiction. These jurisdictions regulate wind facilities in the same way as any other energy-producing facility: utilities must demonstrate consumer need for the electricity to be generated and receive a certificate of need from the appropriate regulatory authority. (Table 1)

The main regulatory mechanisms to prevent and manage environmental impacts of wind farm development are specific wind facility siting permits or certificates and the application of existing state statues that govern large construction projects. Wind-specific siting permits or authorizations are required in Minnesota, Ohio, Québec, Ontario and Wisconsin. Size also matters: the trigger point for requiring a state/provincial permit varies from three megawatts (MW) in Ontario to 100 MW (for non-utility wind projects) in Wisconsin.[1]

Table 1. Electricity Development Regulation Among Great Lakes States and Provinces

Jurisdiction	Regulating Authority/Agency
IL	N/A
IN	Indiana Utility Regulatory Commission (IURC)
MI	Michigan Public Service Commission (MPSC)
MN	Minnesota Public Utilities Commission (PUC)
NY	New York State Public Service Commission (PSC)
OH	Ohio Power Siting Board (OPSB)
ONT	Ontario Ministry of the Environment (MOE)
PA	N/A
QC	Hydro-Quebec
WI	Public Service Commission of Wisconsin (PSCW)

Minnesota, Ohio and Ontario have more centralized state level permitting.[2] The public utility commissions in Minnesota and Wisconsin have specific authority to site new wind facilities. Outside the region, one stop state-level permitting is also found in Washington and Oregon. A one-stop permitting or approval process allows the developer to work through one agency to obtain all the necessary authorizations and can save time and money for both the developer and the regulatory agencies. Because many types of regulations come into play for siting a wind facility, the one-stop permitting/approval process must be carefully designed to ensure effective coordination among all of the relevant state or provincial agencies and the laws and programs they administer. In Washington and Oregon, and Minnesota and Wisconsin, the state-level siting approval process supersedes local approval processes, which may be beneficial for projects that encounter opposition due to NIMBY (not-in-my-backyard) sentiment rather than legitimate environmental or safety concerns.

Beyond regulations specific to energy or wind development, each of the Great Lakes states and provinces has a suite of environmental and public safety laws with which any construction project must comply. On the environmental side, the following construction-related activities or impacts are commonly regulated in the Great Lakes states and provinces: discharge of storm water runoff; placement of fill or excavation within a wetland, lake, river, stream or floodplain; soil erosion and sedimentation; and endangered or threatened habitats or species. Some jurisdictions have additional requirements related to native prairies and dunes, forested lands, farmlands and woodlands, and impacts on Aboriginal communities. On the public health and safety side, common permit requirements for large construction projects include compliance with laws related to obstruction with airports/navigable airspace; fire protection; electromagnetic interference; natural and cultural heritage sites; and recreation areas. A few jurisdictions also have compliance requirements to avoid conflicts with tourist areas and landfills or to ensure opportunities for public feedback/complaint resolution. Finally, many Great Lakes jurisdictions require a decommissioning plan, either as part of general construction permit requirements or as part of the wind-specific siting permit.

1 Wisconsin Public Service Commission wind siting rules, scheduled for completion in late 2011, will apply to all sizes of wind projects.

2 Wisconsin Public Service Commission wind siting rules, scheduled for completion in late 2011, may result in a more centralized approach. Currently siting approvals are coordinated through the Public Service Commission, but the Wisconsin Department of Natural Resources issues its own permits.

Guidance Approaches

Even though a state or province may regulate the development of a new electricity generating facility such as a wind farm, it does not mean that siting new wind developments is regulated at the state level. (Table 2). Michigan, New York and Pennsylvania differ widely in their state role in regulating electric energy development. However, they are alike in that none of these states have regulatory authority for siting wind projects at the state level, and that each of them has developed guidance for use by municipalities to use in developing their own rules for siting wind farms.

Table 2. Great Lakes State and Provincial Wind Farm Permitting Requirements

State/Provincial Permit Required		State/Provincial Guidelines
IL	No	No
IN	No	No
MI	No	Yes
MN	Yes. Minnesota Public Utilities Commission Permit	Yes, for municipalities that oversee 5-25 MW projects
NY	No	Yes, for pre- and post-construction bird and bat surveys
OH	Yes. Ohio Power Siting Board Certificate of Environmental Compatibility and Public Need	Yes
ONT	Yes. Ontario Ministry of Natural Resources Renewable Energy Approval	
PA	No	Yes. Voluntary Cooperative Agreement for pre- and post-construction monitoring of bird, bat, and threatened or endangered species.
QC	Yes. Quebec Council of Ministries Governmental Decree and Ministry of Sustainable Development, Environment and Parks Authorization Certificate.	Yes. Landscape integration and harmonization.
WI	Yes. A Public Service Commission of Wisconsin Certificate of Public Convenience and Necessity for projects over 100 MW (and all projects built by a utility)*	Yes

* *When completed in 2011, Wisconsin Public Service Commission wind siting rules will apply to all wind projects.*

In Michigan, the Public Service Commission issues a Certificate of Public Convenience and Necessity for the actual electricity to be generated, but does not require a state-level permit to site the wind farm. Instead, the Department of Energy, Labor, and Economic Growth has created sample zoning guidelines for municipalities that wish to amend their zoning ordinances to address wind energy development.

New York also approves the need for new energy; for most projects the environmental review has been led by a local municipal agency. The New York State Department of Environmental Conservation has issued recommended guidelines for pre- and post-construction bird and bat surveys that will allow it to assess ongoing or expected environmental impact and give recommendations to the lead agency regarding the construction or operation of the facility to minimize adverse environmental impacts.

Pennsylvania does not regulate new electricity development and does not issue wind siting permits at the state level. However, the Pennsylvania Game Commission has established a wind energy voluntary cooperative agreement (for wind farms of five or more turbines) to address bird, bat and wildlife issues. The agreement requires both pre- and post-construction monitoring of birds, bats, and threatened or endangered bat and bird species. There is a standard level of surveys required for all sites and additional monitoring may be necessary for those sites deemed to be at

a higher risk to birds and/or bats. The agreement requires the utilization of wind industry and Game Commission best management practices relevant to the conservation of wildlife resources during construction and subsequent operation of the wind-energy facility.[3] Similarly, the state of Ohio has developed a voluntary cooperative agreement

Table 3. Common Elements of State/Provincial Wind Farm Siting Policy*

Type of Impact	Approach
Environmental	Minimize and mitigate impacts on vulnerable ecological features, such as: wetlands, waterways, floodplains, dunes, native prairie, bird migration corridors, bat hibernacula.
Cultural/Archeological	Minimize and mitigate impacts on areas of cultural/historic significance and recreational areas, such as archeological sites, recreational trails, state and local parks, and recreational areas.
Public Health/Safety	Setbacks from homes, other buildings and roads; height standards; minimum distances between turbines
Visual/Audio (real or perceived)	Specifications on color and finish of turbines; avoid shadow flicker
Navigable Airspace	Protect against interference of navigable airspace of public or private airports.
Electromagnetic Interference	Protect from interference with radar installations, television signal reception, radio signal reception, or personal communication signal reception

* *State policy approaches may be limited in areas where federal policy already exists.*

for companies that wish to construct wind facilities in Ohio. Whereas in Pennsylvania pre- and post-construction monitoring is required under their agreement, the Ohio agreement only requires pre- and post-construction monitoring, if the Ohio Department of Natural Resources deems it necessary. (See below for further details on both states' voluntary cooperative agreements.)

Federal Role in Wind Farm Siting

Wind farm development projects must comply with federal environmental, public safety, and historic/cultural preservation statutes. For example, the National Telecommunications and Information Agency and the Federal Aviation Administration have regulations to ensure that wind farm development does not interfere with federal radio, microwave, radar, and other frequencies, disrupting critical lines of communication, or otherwise interfere with navigable airspace. Additional federal rules govern wind development on federal lands. The American Wind Energy Association's *Wind Energy Siting Handbook* provides a detailed description of federal laws relevant to wind siting.[4] Federal guidelines, although not legally enforceable, also play an important role in wind farm siting. Of note are national wind assessment and siting guidelines being developed by the U.S. Fish and Wildlife Service (USFWS).[5] Until these guidelines are final, the USFWS recommends use of its 2003 Interim Guidance on Wind Power.[6] Of particular relevance to the Great Lakes Region, Region 3 of the USFWS (which covers the Great Lakes states of OH, MI, IN, IL, WI, MN) advises against development near Important Birding Areas, known or suspected bird migration corridors, bald and golden eagle nests, bat hibernacula, or areas occupied by federally-listed endangered species such as the Indiana bat. As of early 2010 a new federal permit system is being developed under the U.S. Bald

3 Although the agreement is voluntary, the Pennsylvania Game Commission has the authority to require bird, bat, and threatened or endangered bird and mammal species monitoring if the Game Commission deems if the planned project footprint is determined to have a potential to adversely impact a State or Federally listed species.

4 AWEA, 2008, Wind Energy Siting Handbook, retrieved from http://www.awea.org/sitinghandbook/

5 USFWS Wind Turbine Guidelines Advisory Committee Website, http://www.fws.gov/habitatconservation/windpower/wind_turbine_advisory_committee.html

6 USFWS, 2003, Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines, retrieved from http://www.fws.gov/midwest/wind/guidance/index.html

and Golden Eagle Protection Act (BGEPA) that could also have implications for wind farm siting. On the Canadian side, wind projects must also comply with relevant federal laws. Similar to the NEPA review process in the U.S., an Environmental Assessment is required under the Canadian Environmental Assessment Act when a Federal Authority proposes or undertakes a wind project; grants money or any other form of financial assistance to a wind project; grants an interest in the land to enable the project to be carried out; and/or exercises a regulatory duty in relation to the project, such as issuing a permit or license.[7]

State and Provincial Policy Summaries

Illinois

State enabling laws allow counties and municipalities to establish standards and regulate the siting of wind farms. Counties have jurisdiction in unincorporated areas not within 1.5 miles from the zoning jurisdiction of a municipality. Municipalities have jurisdiction within municipal corporate limits and 1.5 miles beyond corporate limits. The Illinois County Code and the Illinois Municipal Code each require a public hearing prior to a siting decision by the county board or corporate authorities of a municipality, with notice of the hearing published in the newspaper. These siting regulations will generally classify wind energy as a permitted use or special use, and this classification will affect the zoning process in each municipality. *65 ILCS 5/11-13 (2008)*.

Although no statewide permitting requirements exist, several state environmental statutes (the *Illinois Endangered Species Protection Act*, the *Illinois Natural Areas Preservation Act,* and the *Interagency Wetland Policy Act*) require local government agencies to consult with the Illinois Department of Natural Resources (DNR) before authorizing, performing or funding any action that disturbs the land, water or air. Consultation will determine if a wind development project is likely to adversely impact protected natural resources or features and if detailed maps showing individual turbine locations will eventually be needed to assess potential impacts adequately. If protected resources are known to be in the area, DNR staff may request a biological survey to document their presence, and recommend measures to minimize potential adverse effects. *525 ILCS 30/17 (1993), 520 ILCS 10/11 (2000), 20 ILCS 830 (2006)*.

Wind projects are also required to comply with Illinois' Pollution Control Board noise standards.

Indiana

Indiana has a fully regulated electricity market governed by the Indiana Utility Regulatory Commission (IURC). However, the IURC has opted to decline jurisdiction over utility-scale wind development. Utilities are required to demonstrate consumer need and receive a Certificate of Need from the IURC in order to provide public utility service in a given area or to construct a new power plant. *Ind. Code § 8-1-2-23 (2009)*.

At the state level, Indiana has no regulations or guidelines specific to siting of wind facilities. Siting and permits for wind development are handled entirely at the local level, and interaction with state agencies is triggered by state laws that govern electric generation and transmission, and environmental laws that apply to construction projects. An exception is if a project includes federal money, early coordination with the DNR is required. Beyond that, the environmental regulatory requirements that come into play will depend largely on the local environmental impacts. Impacts that will trigger some type of permit or certification of compliance include: discharge of stormwater runoff at construction sites whose size is greater than one acre; placement of fill or excavation within a wetland, lake, river, or stream; placement, modification or fill near a public freshwater lake; and construction on, obstruction or excavation within a floodway. *Ind. Admin. Code tit. 327, r. 15-5, 17 (2010); Ind. Code § 14-26-2 (2008); Ind. Code § 14-28-*

7 Siting and Permitting Wind Farms in Canada - Federal Regulations. Great Lakes Wind Collaborative Background Document. Prepared by Great Lakes Commission Research Associate John Cherry, 2008.

1 (2008). Although not required, the Indiana DNR has an early coordination process where it provides guidelines as well as an assessment of what permits are needed and if any threatened or endangered species are in the area. The Indiana Department of Environmental Management offers a similar early consultation process to advise on the need for state Water Quality Certification. Additionally, the Indiana Department of Transportation may require some permitting with regard to the use of right-of-way near state highways.

Michigan

Michigan does not have statewide regulations detailing wind-specific siting regulations or a permit process. However, broader regulation is applicable to regulated utilities that require the utility to demonstrate consumer need for capacity (both before and after construction) in order for state-approved cost recovery rates to be granted (by the Michigan Public Service Commission). Also, utilities are required to complete an integrated resources plan if they intend to develop new or significant upgrades to an electric generation facility or enter into long term (beyond five years) power purchase agreements.

Although there are no state-level siting regulations, Michigan's Department of Energy, Labor & Economic Growth produced siting guidelines for municipalities that wish to amend their zoning ordinances to address wind energy development. The guidelines "Sample Zoning for Wind Energy Systems" provide recommended property setbacks, sound pressure levels, safety procedures (including minimum vertical blade tip clearance from grade), visual impacts and electromagnetic interference. The guidelines also recommend that municipalities require the following several plans or assessments: third party environmental impact assessment; third party avian and wildlife impact assessment; analysis of and plan to manage potential shadow flicker; decommissioning plan; and a complaint resolution plan.

Projects that trigger state environmental regulatory requirements depend largely on the local environmental impacts. Impacts that will trigger some type of permit or certification of compliance include: soil erosion and sedimentation; construction activities of one acre or more with a point source discharge to waters of the state; construction along the shoreline below the high watermark; construction that affects a wetland in the state of Michigan; and construction affecting Michigan sand dunes. *Mich. Comp. Laws § 324.9101 et seq. (2005); Mich. Comp. Laws § 324.32301 et seq (2005); Mich. Comp Laws § 324.30301 et seq (2009); Mich. Comp. Laws § 324.35301 et seq (1996).*

In October 2009 a Michigan Wind Energy Resource Zone (WERZ) Board issued a report identifying geographic areas in the state with greatest wind energy potential. The Michigan Public Service Commission will consider the recommendations of the WERZ and any zones created as a result would benefit from expedited siting of transmission lines.

Minnesota

Minnesota has a fully regulated electricity market overseen by the Minnesota Public Utilities Commission (PUC). Investor owned utilities are required to have a Certificate of Need for facilities that generate 50 MW or more. *Minn. Stat. §§ 216A, 216B (2009).*

The Minnesota PUC has authority over and issues permits for the siting of wind farms over 5 MW. *Minn. Stat. § 216F (2008)*. Siting authority for wind developments under five MW is reserved for local jurisdictions and does not require PUC approval. *Minn. Stat. § 216F.02 (1995)*. Systems between 5 and 25 MW can be permitted according to local ordinances if the county assumes permitting responsibility and provides notice to the PUC. *Minn. Stat. § 216 F.08 (2007).*

The applicant must conduct an analysis of the potential environmental impacts of the wind facility. In addition, the applicant must conduct an analysis of mitigation measures that could be taken and an analysis of those impacts that cannot be mitigated. This process satisfies thave environmental review requirements of the Environmental Quality

Board , other environmental requirements of the PUC, and other Minnesota environmental policies. *Minn. R. 4410 (2009); Minn. R. 7849.7010-7849.7110 (2009); Minn. Stat. § 116D (2004).* Therefore, no additional environmental reviews are necessary for the wind project. *MNPUC Docket # E,G-999/M-07-1102 (2008).*

Once an application is submitted, the PUC will issue a preliminary determination within 45 days whether to accept, conditionally accept or reject the application. If the application is accepted, then a draft permit is created and released for public comment. Once the application for a site permit is accepted, a staff person, or "Public Advisor," from the PUC is designated to the project to answer questions from the public about the permitting process. *Minn. R. 7836.0700 (2009).* A final decision is made by the PUC within 180 days of the preliminary decision. The site permit supersedes and preempts all zoning, building, or land use rules, regulations, or ordinances adopted by regional, county, local and special purpose governments. *Minn. Stat. §§ 216F.04, 216F.07 (2008); MNPUC Docket # E,G-999/M-07-1102 (2008).*

General wind permit standards for facilities less than 25 MW were outlined by the PUC in January 2008. These general wind permit standards provide setbacks for internal turbine spacing and noise; and from homes, public roads and recreational trails, and meteorological towers. The PUC standards prohibit siting wind facilities in public waters or wetlands, native prairies (unless approved in native prairie protection plan), active sand and gravel operations (unless negotiated with the landowner), and where the facilities might obstruct navigable airspace. The following plans and surveys (or consultations) are required for projects less than 25 MW: pre-construction biological preservation survey; fire protection plan; native prairie plan (if native prairie is present and will be impacted by the project); electromagnetic interference plan; archeological resource survey and consultation (with the State Historic Preservation Office); site plan; and decommissioning plan. Finally, Minnesota state laws require soil erosion and sedimentation, and water discharge permits as well as a permit for use of public roads as part of general construction activities. *MNPUC Docket # E,G-999/M-07-1102.*

New York

The New York State Public Service Commission (NYSPSC) regulates the siting of electric generating capacity over 80 MW.[8] Project developers must obtain a Certificate of Public Convenience and Necessity from the NYSPSC for all electric generating facilities greater than 80 MW in output and new plant construction is required to undergo an environmental review. *N.Y. Pub. Serv. Law § 4-68 (Consol. 2009).*

The state of New York does not have any wind-specific siting regulations, but the state Department of Environmental Conservation (DEC) has issued guidelines to guide developers in the design and conduct of pre-construction studies and post-construction monitoring. This information is then built into the Environmental Impact Statement (EIS) process and is used by the lead agency to assess the potential environmental impact of a proposed wind farm. To date, local municipal agencies have served as the lead agency for the conduct of the environmental review (with the exception of the proposed development on Galloo Island, where the DEC is serving as the lead agency).

Although New York as no regulations specific to siting of wind facilities, the construction process requires compliance with several state environmental statutes. Depending on the location and the resulting environmental impacts of the particular project, the following permits may be required: tidal wetlands permit; construction stormwater permit; coastal erosion control permit; freshwater wetland permit; and/or use and protection of waters permit. *N.Y. Envtl. Conserv. §§ 15, 17, 24, 25, 30, 70 (Consol. 2009); 6 NYCRR §661 (2006); 6 NYCRR §505 (1998); 6 NYCRR §663 (2006); 6 NYCRR §608 (2009).*

8 The New York State Public Service Commission fully regulates the transmission of electric power. Even though New York has deregulated electric generation, there are two state owned utilities: the New York Power Authority (NYPA) and the Long Island Power Authority (LIPA). Other, private utilities do not have their rates set by the Public Service Commission.

Ohio

The state of Ohio has does not have statewide mandatory siting guidelines for wind farms. However, the Ohio Power Siting Board (OPSB), which oversees the siting of new energy facilities for the state requires that developers of projects generating 5 or more MW of electricity to apply for and obtain a Certificate of Environmental Compatibility and Public Need from the OPSB. The application must include a complete description of the proposed facility including, among other criteria, the type and number of wind turbines to be used, the land areas required during construction and operation, and the footprint, height, and blade length of each turbine. For each wind turbine, the applicant must list the setback distance from nearby residences and property lines as well as evaluate the noise levels expected at adjacent property boundaries. State regulations establish that each turbine must be located at least one and one-tenth times the height of the turbine from the nearest property line, and at least seven-hundred fifty feet from adjacent residences. The applicant must also evaluate and describe the potential impacts of ice throw, blade shear, and shadow flicker upon nearby properties, as well as any plans to minimize the potential impacts. Wind farms that receive OPSB certification are exempt from local regulatory oversight; however, local authority is still in place for projects under 5 MW. *Ohio Rev. Code §§ 303.213, 519.213, 713.081, 4906.13-.98 (2009).*

Additionally, the Ohio Department of Natural Resources (ODNR) has developed a voluntary cooperative agreement for companies that wish to construct wind facilities in Ohio. The agreement does not detail specific siting guidelines, but it does establish that the developer inform the ODNR of plans to develop before the start of construction, allowing the ODNR time to visit the proposed site, review and detail the impacts of the proposed construction. The agreement requires pre- and post-construction monitoring of bird, bat or endangered species if the ODNR deems it necessary.

Ontario

As of October, 2009, Ontario has a streamlined approach for permitting and approval for renewable energy facilities, including wind power facilities. The new process is based on the concept of a complete submission, with clear requirements established up-front by regulatory Ministries for any necessary permits or approvals. The Ontario Ministry of Environment (MOE) issues a single Renewable Energy Approval (REA) for all windpower facilities over 3 kW, with requirements established in regulation under the Environmental Protection Act. The Ministry of Natural Resources may issue multiple approval and permits for facilities, with the scope of these approvals and permits determined on a site by site basis, MNR requirements are identified in the ministries Approval and Permitting Requirements Document for Renewable Energy Projects (APRD).

Of particular interest in the renewable energy approval process, are requirements and standards established in the REA regulation for noise levels and setbacks, and mandatory procedures for public consultation and outreach to landowners and affected Aboriginal communities. Normally setbacks for noise receptors are set at a minimum of 550 meters and for natural heritage values at 120 meters. Any proposed derivation from these setback requirements will necessitate further studies and analysis. The REA application also includes the following key components; a construction plan, a site plan, a stormwater management plan, an emergency response plan, a decommissioning plan, a summary of community/Aboriginal consultation; the documentation of any impacts to cultural heritage, natural heritage and water bodies and measures to address those impacts.

An additional Site Release process, managed through the Ontario Ministry of Natural Resources (OMNR), is required for projects proposed on Crown (Public) land before they enter the renewable energy approval process. In addition, a renewable energy project may require approval from other agencies or level of government, for example, a conservation authority, municipality or federal agency.

Pennsylvania

Pennsylvania has no wind-specific siting authority at the state level; wind siting is governed at the municipal level. However, the Pennsylvania Game Commission, which is the state agency with regulatory authority over wildlife, has developed a cooperative agreement that wind farm developers may sign that requires the measurement and minimization of wildlife impacts. The terms of the agreement state that the developer will notify the Commission of plans to develop 14 months before the start of construction. Within 45 days of notification, the Commission will provide the results of their reviews, including information regarding the impacts of the proposed wind development and methods to reduce the impact of development on affected species. The agreement requires both pre- and post-construction monitoring of birds, bats, and threatened or endangered bat and bird species. Additionally, the agreement requires the utilization of wind industry and Game Commission best management practices relevant to the conservation of wildlife resources during construction and subsequent operation of the wind-energy facility. *Pennsylvania Game Commission (2007).*

Although Pennsylvania has no state level regulations specific to siting of wind facilities, the construction process requires compliance with several state environmental statutes. Depending on the location and the resulting environmental impacts of the particular project, the following permits may be required: special use permits (in order to conduct surveys for birds or mammals or to collect bird or mammal specimens); erosion and sediment control; water obstruction and encroachment and wetland (projects that intend to construct, operate, maintain, or enlarge any water obstruction or encroachment that will affect a waterway, its 100-year floodway or any lake, pond, reservoir, or wetland). Permits must document review of the Pennsylvania Natural Diversity Inventory (PNDI). Additionally, bird, bat, and threatened or endangered bird and mammal species monitoring is required if the Pennsylvania Game Commission deems it necessary under the agreement or if the planned project footprint is determined to have a potential to adversely impact a state or federally listed species. *34 Pa. Cons. Stat. Ann. Game Ch. 29 (2009); 25 Pa. Code § 92.1 et. seq (2000); 25 Pa. Code § 93.1 et. seq (2009;, 25 Pa. Code § 102.1 et. seq. (1999); 25 Pa. Code § 105.1 (1991); 25 Pa. Code § 106.1 et. seq. (1983); Pennsylvania Game Commission (2007).*

Québec

In Québec, every project over 10 MW is required to conduct and submit an Environmental Impact Assessment (EIA) to the Ministry of Sustainable Development, Environment and Parks (MDDEP). (Projects under 10 MW are not required to complete a full EIA, but must be authorized by the relevant MDDEP Regional Office.) The EIA must include noise mitigation, setbacks from roads and buildings, compliance with forest management regulations, mitigation of impacts on farms and woodlands and landscape preservation measures (for projects on public land). The impact assessment must be publicized and public information and consultation sessions may be held, depending on the project. Based on the environmental impact assessment and feedback from consultations, the MDDEP will make a recommendation to the Québec Council of Ministries (*Conseil des ministres du gouvernement du Québec:* Members of the Québec Government's Cabinet Offices). If the recommendation is favorable and the Québec Council of Ministries agrees, they will issue a governmental decree authorizing the project, which may include conditions or modifications to the proposed project.

Hydro-Québec, a state-owned electricity utility is the sole purchaser of the electricity produced by wind farms in Québec and plays a major role both in where, how and when wind farms are sited. Hydro-Québec uses a bidding process to select the best wind farm projects. Prior to entering the bidding process, applicants are required to obtain a *Certificate of conformity with the municipal use planning framework (Certificat de conformité au schéma d'aménagement)* and a construction permit from the relevant municipality. When the project is located on public lands, the developer is required to obtain a letter of intent from the Ministère des Ressources naturelles et de la Faune (MRNF), which indicates the agencies intent to grant the land rights required for the construction of wind generating farms on public land. Once bidders obtain signed sales contracts with Hydro-Québec, they must then obtain public land

rights by submitting a detailed application request to use public land to the MRNF. If a project is located on private lands, other requirements may be applicable. For example, in order to implement a wind project on land under agricultural zoning, the developer must obtain an authorization from the Québec Commission for the Protection of Agricultural Land (Commission de protection du territoire agricole du Québec (CPTAQ).

Wisconsin

The Public Service Commission of Wisconsin (PSCW) regulates Wisconsin private and municipally-owned public utilities. A Certificate of Public Convenience and Necessity (CPCN) is required for constructing all electric generation facilities over 100 MW. *Wis. Stat. § 196.491 (2009).*

Under current law, all wind facilities built by a utility and all wind energy facilities 100 MW or larger (whether built by a utility or not) must be reviewed and approved by the PSCW. Local governments currently have permitting authority over wind energy facilities less than 100 MW that are not built by a utility. However, in September 2009 the State of Wisconsin enacted a law (2009 Wisconsin Act 40) directing the PSCW to promulgate rules that will when completed govern all wind facility siting throughout Wisconsin. Act 40 requires the rules to establish setback distances related to the health effects of noise and shadow flicker, and establish decommissioning procedures. The rules may also address visual appearance, lighting, electrical connections to the power grid, setbacks for other purposes, maximum audible sound levels, shadow flicker, proper means of measuring noise, interference with radio, telephone, or television signals, or other matters. The PSCW's rules should be finalized some time in 2010. Once in place, local governments may not, when reviewing an application to build a wind facility, impose permitting conditions that are more stringent than those promulgated by the PSCW.

State law requires pre-application consultation for utility projects over 100 MW that require a Wisconsin Department of Natural Resources (DNR) permit. (For smaller projects, consultation is not mandatory, but is strongly encouraged.) CPCN applications are subject to a 30-day completeness review by the PSCW and consultation with the Wisconsin DNR. The DNR must identify any permit requirements, and those permits must be found to be "issuable," or actually issued, before the PSCW takes final action. If the PSCW determines that the application is complete, it must review and take final action within 180 days. The PSCW may petition the Dane County Circuit Court for up to an additional 180 days for project review and decision making. *Wis. Stat. § 196.491(3)(g) (2009); Wis. Stat. 30.025 (2003).*

The Wisconsin DNR has developed recommended siting guidelines for wind farms, as well as recommendations for the scope of site habitat and wildlife characterization studies. The DNR siting guidelines address: wildlife areas; migration corridors; current or proposed ecosystem acquisition/restoration projects; state and local parks and recreation areas; active landfills; wetlands, streams and riparian corridors; wooded corridors and woodlands; major tourist/scenic areas; and airport/landing strip clear zones and other lighted facilities. Wisconsin DNR guidelines for pre-construction study at a wind facility site that has already been selected include: a baseline wildlife evaluation; endangered species resources review; plant and animal surveys; preconstruction bird and bat studies; and a materials management plan. *Wisconsin DNR (2004).*

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Michigan Wind Working Group. http://www.michigan.gov/dleg/0,1607,7-154-25676_25774-75767--,00.html
Ohio Power Siting Board. http://www.opsb.ohio.gov/
Ohio Wind Working Group. http://www.ohiowind.org/
PA Wind Farms and Wildlife Collaborative. http://www.dcnr.state.pa.us/info/wind/resource1.aspx
Pennsylvania Wind Working Group. http://www.pawindenergynow.org/

Personal Communication

The personnel at the following state and provincial agencies reviewed the jurisdictional policy summaries during the spring of 2009. For more information, see the Great Lakes Wind Collaborative Advisory Committee roster at http://www.glc.org/energy/wind/pdf/Advisory Committee Roster_updated 10-26-09.pdf.

Illinois Department of Commerce and Economic Opportunity
Indiana Office of Energy & Defense Development
Indiana Department of Natural Resources
Michigan Department of Energy, Labor and Economic Growth, Bureau of Energy Systems
Michigan Public Service Commission
Minnesota Department of Commerce
Minnesota Department of Natural Resources
New York State Energy Research and Development Authority
New York State Department of Environmental Conservation
Ohio Department of Development
Ohio Department of Natural Resources
Pennsylvania Game Commission
Public Service Commission of Wisconsin
Wisconsin Department of Natural Resources
Ontario Ministry of Energy and Infrastructure
Ontario Ministry of Natural Resources
Québec Ministère des Ressources Naturelles et de la Faune

This report was written by Victoria Pebbles, Program Director at the Great Lakes Commission, for the Great Lakes Wind Collaborative. Additional Great Lakes Commission staff support was provided by Research Associate John Cherry, Sea Grant Fellow Kristina Donnelly, Research Associate Sarah Herbert-Marcoux, Project Manager John Hummer and Program Specialist Rebecca Pearson. Information contained herein was generated through internet and literature reviews, development of written profiles for each Great Lakes state and province and review of those profiles by professional staff in each jurisdiction.