

# GREAT LAKES WIND COLLABORATIVE

A Project of the Great Lakes Commission and  
many Great Lakes Wind Stakeholders

With funding support from Wind Powering America (U.S. Department of Energy)

## Year 1 (2008-09) Work Plan

**Purpose:** This document describes the operational plan for the Great Lakes Wind Collaborative (GLWC) which has been developed by the GLWC Steering Committee, which is composed of regional stakeholders and representatives of Great Lakes jurisdictions. It is to be updated on an annual basis. The GLWC was established to build consensus, and identify and address issues affecting the planning, development, and operation of wind power facilities in the Great Lakes region. The GLWC provides a forum for dialogue and an opportunity for analysis and exchange of information among key stakeholders to facilitate sustainable wind power development in the region. GLWC members include representatives from a broad spectrum of interests. Information about the GLWC is available on the GLWC website, [www.glc.org/energy/wind](http://www.glc.org/energy/wind).

**Outcomes and Milestones:** The following are the near-term (current year) and long-term (out-years) work priorities (outcomes) and projected milestones for each near-term work item. Long-term work elements may be elevated to current year or next year's near-term items by consensus of the GLWC Steering Committee.

### **I. Leadership, Regional Coordination and Policy Support**

#### **Near-term**

- a) Using the AWEA/DOE/NREL "20% Wind Energy by 2030" report as a guide, establish and conduct a process for sustaining dialogue to identify and address key regional wind issues.
  - i. Establish the GLWC charter and governance structure that will enable various interested stakeholders to engage in the GLWC activities at appropriate levels (*January 2008*).
  - ii. Coordinate with the inherent strategies, goals, policy positions and options set forth in the *Midwestern Governors Association Energy Security and Climate Stewardship Platform* as they relate to Great Lakes wind energy issues (*ongoing*).
  - iii. Where they exist, coordinate planning efforts with national and state/provincial wind energy stakeholder groups and support establishment of new wind working groups (WWG) in Great Lakes jurisdictions as appropriate (*ongoing*).
- b) Identify and procure funding sources for operation of the GLWC, including specific projects or activities included in the GLWC Charter (*ongoing*).
- c) Identify and recruit new members to the GLWC (*ongoing*).

- d) Work with the Great Lakes Commission membership and other regional organizations (e.g., Council of Great Lakes Governors) to encourage regional leadership and advance regional priorities identified by the GLWC (*ongoing*)
- e) As appropriate, engage GLWC members to provide feedback and input on federal, state, provincial and regional wind policy development (*ongoing*).

### **Long-term**

- f) Extract appropriate elements from the AWEA/DOE/NREL “20% Wind Energy by 2030” report to develop a framework for a Great Lakes regional wind vision that the GLWC can use to guide its long-term work.
- g) Assist in engaging all Great Lakes states and provinces to build consensus on wind policy goals and needed guidelines, consistent with those outlined in the *Midwestern Governors Association’s Energy Security and Climate Stewardship Platform*. Additionally, the GLWC will coordinate with national, regional and state/provincial wind initiatives and activities as appropriate.
- h) Research policy options regarding wind energy deployment that have been considered and/or implemented nationally, in other regions and states, as well as those in Canada.

## **II. Communication and Outreach**

### **Near-term**

- a) Host the first annual GLWC meeting to inform and gather input from a broad group of stakeholders on the GLWC first-year workplan tasks and its longer-term priorities, identify outstanding key issues regarding Great Lakes wind power, and share/enhance knowledge on technical and policy aspects of wind power – also see #IV-a below (*spring 2008*).
- b) Foster regular communication with national, regional, and state/provincial wind energy stakeholder groups and support establishment of new WWGs in Great Lakes jurisdictions as appropriate (*ongoing*).
- c) Establish and maintain an Internet-based communications infrastructure (i.e., web site, wiki and listservs) that employs internet technology to facilitate GLWC communications and activities. (*establish: January 2008. maintain: ongoing*).
- d) Publicize the GLWC’s work activities and develop information materials as appropriate (*ongoing*).

### **Long-term**

As part of developing the GLWC’s communication and outreach strategy:

- e) Host an annual meeting of the GLWC to review current-year workplan tasks and identify and address key regional wind issues and future priorities.

- f) Identify and address challenges to public acceptance.
- g) Target sectors for outreach.
- h) Facilitate institutional learning among stakeholders and other interested parties.

### **III. Research and Data Management**

#### **Near-term**

- a) Conduct a literature review on Great Lakes wind energy and publish the results online as an annotated bibliography on Great Lakes wind energy; publish bibliography on a wiki page that allows GLWC members to add additional information to the bibliography as new information is discovered or published on Great Lakes wind energy (*establish: January 2008. maintain: ongoing*).
- b) Begin development of a Great Lakes Wind Atlas and/or other GIS wind mapping resources that includes information related to weather patterns, ecological conditions, and environmentally sensitive areas in the Great Lakes Region that can guide project proponents and decisionmakers in wind siting issues (*December 2008*).
- c) Conduct a gap analysis on Great Lakes wind information and identify areas that require additional research or information (*July 2008*).
  - i. Develop a list of priority research and informational needs to address technical, environmental, and regulatory issues related to Great Lakes wind power (*August 2008*).

#### **Long-term**

- d) Facilitate research and analysis and integrate and publish information for decisionmakers about environmental and economic costs and benefits of wind power, such as:
  - i. the impacts of increased wind energy and its benefits/impacts on Great Lakes water levels, use and quality (versus traditional forms of energy production).
  - ii. the land use impacts of an increased number of wind farms in the Great Lakes region (versus traditional forms of energy production).
  - iii. the impacts of wind energy on carbon emissions and other air pollutants in the Great Lakes region.
  - iv. the role of wind as part of the Great Lakes energy mix.
- e) Facilitate academic research on Great Lakes wind issues as priorities demand; communicate and integrate these efforts to the extent possible with regional research coordinating bodies including the International Association for Great Lakes Research (IAGLR) and the Great Lakes Regional Research Information Network (GLRRIN).
- f) Facilitate data collection, integration and distribution through the development of protocols for data collection, management, access and sharing.

#### IV. Environmental Planning, Siting and Permitting

##### Near-term

- a) Identify and characterize key issues regarding Great Lakes wind power – siting, transmission, stakeholder impacts, technical issues, etc. as a starting point. Use the AWEA/DOE/NREL “20% Wind Energy by 2030” report as a guide (**June 2008**).
- b) In support of the *Midwestern Governors Association Energy Security and Climate Stewardship Platform*, which calls for the development of comprehensive siting principles and policies for wind farms to encourage orderly development of the region, research, document and publish information on federal, state and provincial policies and programs that affect the siting and permitting of wind energy facilities (**December 2008**).
- c) Identify, document and publish information about best management practices (BMPs) for siting of wind facilities in the region, addressing such issues as wildlife and ecological resources (with focus on lake-based resources and terrestrial habitat), visual resources, noise, cultural resources, stormwater, construction, operation, monitoring, decommissioning, mitigation measures, etc (**December 2008**).
  - Use Ohio, Pennsylvania, California, Maryland, Washington and other model standards/cooperative agreements as resources.
  - Consult with the National Wind Coordinating Collaborative’s Wildlife Workgroup to assist in addressing Great Lakes wind-wildlife issues.
  - Identify relevant policies and practices from federal wind development programs from agencies including the Minerals Management Service, Bureau of Land Management, U.S. Forest Service, etc.
  - Identify relevant wind policies and practices from European nations.

##### Long-term

- d) Building on the groundwork laid in IV-b above, consider one or more of the activities below if it is determined that regional guidance is needed to inform decisions regarding wind facility siting and permitting:
  - i. identify gaps, inconsistencies and obstacles in the regulatory framework at each level of government to achieving regional wind energy goals
  - ii. identify considerations to developing environmentally sensitive and sustainable wind power
  - iii. identify policy and process options for more streamlined project reviews across the region.
  - iv. work with members of the GLWC and other federal, state, local and private sector interests to facilitate the implementation of wind energy demonstration projects and/or pilot studies.
  - v. identify, document and publish information about best management practices for siting of wind facilities in the region.
- e) In addition to, and in support of item III-e above, identify major ecological risks and potential impacts associated with wind energy development and gather and distribute information on appropriate mitigation strategies (where needed, including pilot projects).

## V. Off Shore Wind Projects in the Great Lakes

### Near-term

- a) Identify key issues regarding Great Lakes *off shore* wind power – siting, transmission and power integration, stakeholder impacts, technical issues, etc. as a starting point. Use the “20% Wind Energy by 2030” report as a guide. Identify potential conflicts and opportunities in both federal and state/provincial agency jurisdictions (e.g. USFWS, USACE, USCG, DNRs, PUCs, etc.) (*June 2008*).
- b) Develop *off shore* data layers in support of item #III-c above (*December 2008*). (See Long-term section below for associated activities.)
- c) In support of the *Midwestern Governors Association Energy Security and Climate Stewardship Platform*, which calls for the development of comprehensive siting principles and policies for wind farms to encourage orderly development of the region, document information on relevant U.S. and Canadian policies and procedures for off shore wind siting and permitting, including the Record of Decision released for the federal regulatory approach to offshore wind and renewable energy projects on the Outer Continental Shelf, as part of item IV b and c (*December 2008*).
- d) Work with members of the GLWC and other federal, state, local and private sector interests to facilitate the implementation of wind energy demonstration projects and/or pilot studies *specifically for offshore wind power* that can be assessed and used to inform future policy and program development related to *offshore* wind energy (*December 2008*).

### Long-term

- e) In follow-up to Item V-a above:
  - i. Develop siting and design standards for *off shore* wind energy systems.
  - ii. Scope relevant issues for transmission *off shore* (including environmental aspects).
- f) Compare and analyze economic and environmental benefits, costs and tradeoffs specifically for off shore wind power with other power sources.
- g) Identify potential areas for off shore wind development; conduct offshore wind viewshed studies.
- h) Based on the results of the gap analysis proposed in III-d above, facilitate research to study relevant topics that relate to off shore wind power siting, such as lake ice and its effects.
- i) Develop recommendations for siting principles and policies for off shore wind development in the Great Lakes.
- j) Advance development of a programmatic environmental impact statement for wind development on the Great Lakes, identifying appropriate federal and state/provincial lead and cooperating agencies.

## **VI. Transmission and Power System Integration of Wind Power**

### **Near-term**

- a) Participate in the AWEA+CanWEA “Wind and Transmission Workshop” in Detroit, MI on March 18-19, 2008 and determine actions for the GLWC to carry forward thereafter. (*June 2008*).
- b) Participate in the NWCC “Eastern Midwest Transmission Workshop” to be held in Indianapolis, IN in summer 2008 and determine actions for the GLWC to carry forward thereafter (*September 2008*).
- c) Revise this section of the workplan for future years as a result of above two events (*December 2008*).

### **Long-term**

- d) Facilitate analyses by appropriate entities (e.g. PUCs, regional reliability councils, independent system operators, etc.) of transmission and grid interconnection issues for achieving the Great Lakes wind vision.
- e) Pursue more integrated resource planning on a regional basis; look at long-term power needs of the region tied to transmission.

## **VII. Economic Development Aspects of Wind Power**

### **Near-term**

- a) Review the AWEA/DOE/NREL “20% Wind Energy by 2030” report to review what economic development efforts can be promoted to drive wind power manufacturing and “green jobs” growth in the Great Lakes region. Coordinate with state/provincial economic development offices and other sources and create a database of wind energy-related economic stimulus ideas and approaches. Identify success stories of states and provinces in attracting the wind energy industry to the Great Lakes region (*December 2008*).
- b) Consider the need for either web-based tools or a workshop in the region to promote the economic developments aspects of wind power manufacturing and jobs growth potential (*December 2008*).

### **Long-term**

- c) Catalogue, promote and share lessons learned on economic development efforts that that drive wind power manufacturing and “green jobs” growth in the Great Lakes region, in follow-up to VII-a above.
- d) Facilitate approaches and efforts to develop wind-related industry in the Great Lakes Region.

- e) Explore what has been done and/or conduct an economic impact study of wind industry job development for the Great Lakes region.
- f) Explore what has been done and/or conduct a study of the available manufacturing infrastructure in the Great Lakes region for wind energy components.
- g) Explore what has been done and/or conduct research to quantify the potential overall rural economic development impacts of wind energy deployment in the Great Lakes region.
- h) Explore what has been done and/or conduct an assessment of the impacts of wind power potential on the energy security needs of the Great Lakes region.

## Project Timeline – Year 1 – Near-term Priority Work Items

Project Elements	1 <sup>st</sup> Qtr (Jan-Mar)	2 <sup>nd</sup> Qtr (Apr.-June)	3 <sup>rd</sup> Qtr (July-Sept.)	4 <sup>th</sup> Qtr (Oct.-Dec.)	Product/Deliverable
<b>I. Leadership, Coordination and Policy Support</b>					
a. Establish the GLWC charter and governance structure.	X				Approved Charter
b. Identify and procure funding sources for operation of the GLWC, including special projects.	X	X	X	X	New grants and contracts
c. Identify and recruit new members to the GLWC.	X	X	X	X	New members
e. Coordinate with the Midwestern Governors Association Energy Security and Climate Stewardship Platform.	X	X	X	X	Partnership/Common wind goals
f. Where they exist, coordinate planning efforts with national and state/provincial wind energy stakeholder groups and support establishment of new wind working groups (WWG) in Great Lakes jurisdictions where needs exist.	X	X	X	X	Coordinated planning, partnerships, new WWGs
g. Work with the Great Lakes Commission membership and other regional organizations (e.g., Council of Great Lakes Governors) to encourage regional leadership and advance regional priorities identified by the GLWC.	X	X	X	X	Cooperative regional leadership and advancement of regional priorities
h. As appropriate, engage GLWC members to provide feedback and input on federal, state, provincial and regional wind policy development.	X	X	X	X	Letters, e-comments
<b>II. Communication and Outreach</b>					
a. Host First Annual GLWC Meeting.	X	X			Meeting Proceedings
b. Foster regular communication with national, regional, and state/provincial wind energy stakeholder groups and support establishment of new WWGs in Great Lakes jurisdictions where needs exist.	X	X	X	X	Increased communication channels among wind groups, new WWGs
c. Establish and maintain communications infrastructure (i.e., web site, wiki and listservs).	X	X	X	X	Outreach on GLWC work
d. Publicize the GLWC's work activities and	X	X	X	X	Monthly news brief; press

Project Elements	1 <sup>st</sup> Qtr (Jan-Mar)	2 <sup>nd</sup> Qtr (Apr.-June)	3 <sup>rd</sup> Qtr (July-Sept.)	4 <sup>th</sup> Qtr (Oct.-Dec.)	Product/Deliverable
develop information materials as appropriate.					releases and announcements as needed
<b>III. Research and Data Management</b>					
a. Conduct a literature review on Great Lakes wind energy and publish the results online (on a wiki page) as an annotated bibliography.	X				Bibliography – online wiki
b. Begin development of a Great Lakes Wind Atlas and/or other GIS wind mapping resources.	X	X	X	X	Paper and electronic atlas
c. Conduct a gap analysis on Great Lakes wind information and identify areas that require additional research or information.	February - July				Gap Analysis Report
d. Develop a list of priority research and informational needs to address technical, environmental, and regulatory issues related to Great Lakes wind power.			X		List of research priorities
<b>IV. Environmental Planning, Siting and Permitting</b>					
a. Identify and characterize key issues regarding Great Lakes wind power.	X	X			List of key issues
b. Research, document and publish information on federal, state and provincial policies and programs that affect the siting and permitting of wind energy facilities.		X	X	X	Handbook or manual
c. Identify, document and publish information about best management practices for siting of wind facilities in the region.		X	X	X	Handbook or manual (same as above)
<b>V. Off Shore Wind Projects in the Great Lakes</b>					
a. Identify key issues regarding Great Lakes <i>off shore</i> wind power.	X	X			List of key issues
b. Develop <i>off shore</i> data layers in support of item #III-b above.	X	X	X	X	Data layers to feed into III-b
c. Document information on relevant U.S. and Canadian policies and procedures for off shore wind siting and permitting, as part of item IV b and c.		X	X	X	Elements to feed into IV-b&c
b. Work with members of the GLWC and other		X	X	X	Actual pilot project

Project Elements	1 <sup>st</sup> Qtr (Jan-Mar)	2 <sup>nd</sup> Qtr (Apr.-June)	3 <sup>rd</sup> Qtr (July-Sept.)	4 <sup>th</sup> Qtr (Oct.-Dec.)	Product/Deliverable
federal, state, local and private sector interests to facilitate the implementation of wind energy demonstration projects and/or pilot studies <b><i>specifically for offshore wind power.</i></b>					implemented
<b>VI. Transmission and Power System Integration of Wind Power</b>					
a. Participate and review actions for the GLWC to carry forward after the AWEA+CanWEA “Wind and Transmission Workshop” in Detroit, MI on March 18-19, 2008. Determine which elements make sense for the GLWC to adopt within scope coming from this workshop.	X	X			TBD
b. Participate and review actions for the GLWC to carry forward after the NWCC “Eastern Midwest Transmission Workshop” to be held in Indianapolis, IN in summer 2008. Determine which elements make sense for the GLWC to adopt within scope coming from this workshop.		X	X		TBD
c. Revise this section of the workplan for future years as a result of above two events.			X	X	Workplan amendment
<b>VII. Economic Development Aspects of Wind Power</b>					
a. Review the AWEA/DOE/NREL “20% Wind Energy by 2030” report to review what economic development efforts can be promoted to drive wind power manufacturing and “green jobs” growth in the Great Lakes region. Coordinate with state/provincial economic development offices and other sources and create a database of wind energy-related economic stimulus ideas and approaches. Identify success stories of states and provinces in attracting the wind energy industry to the Great Lakes region.		X	X	X	Database of wind energy economic stimulus ideas and approaches; associated document of success stories of states and provinces in attracting the wind industry to the Great Lakes region.
b. Consider the need for either web-based tools or a workshop in the region to promote the economic developments aspects of wind power manufacturing and jobs growth potential.				X	Web-based tools or workshop