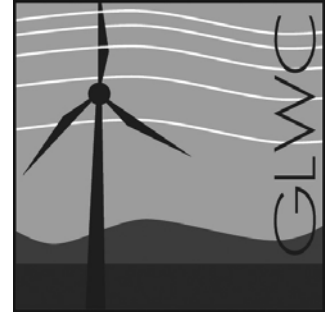


Great Lakes Wind Collaborative 2nd Annual Meeting
Milwaukee, Wisconsin
June 10-11, 2009



Meeting Summary

Overview

More than 120 Great Lakes policymakers, wind industry professionals and a host of other stakeholders interested in development of wind energy attended the second annual meeting of the Great Lakes Wind Collaborative, which convened June 10-11, 2009 in Milwaukee, Wisconsin.

A diversity of topics were addressed by speakers during this two-day event. Day one opened with a welcome address by Tim Eder, Executive Director of the Great Lakes Commission and an overview of the meeting's agenda by Terry Yonker, co-chair of the GLWC Steering Committee. The opening keynote was delivered by Dave Jenkins from the Wisconsin Office of Energy Independence. Larry Flowers, National Renewable Energy Laboratory, delivered an opening presentation which highlighted the opportunities of wind energy development in the Great Lakes region to help achieve the United States national 20% by 2030 goal. On behalf of Joyce Mclean of Toronto Hydro, Kevin Edwards, OMNR presented the Canadian Wind Energy Association's Wind Vision 2025 highlighting opportunities and trends in the Canadian wind market. Representatives from each Great Lakes state/province provided updates on wind developments in their respective jurisdictions. A panel of speakers presented case studies from around the region and touched on various issues being addressed and progress taking place in the offshore wind arena. Two presentations highlighted issues dealing with marine transportation of wind components. Dale Osborn, Midwest ISO, discussed the gamut of issues dealing with transmission and integrating wind power into the grid. The last session of the first day addressed current research on avian and wildlife issues.

The end of the first day featured a "virtual field trip" where participants were treated to additional presentations and a video documentary on wildlife, bird and bat studies at Forward Energy Center and Blue Sky Green Field wind farms in Wisconsin.

The second day began with participants separating into five GLWC workgroup breakout groups: 1) Economic Development; 2) Environmental Planning, Siting and Permitting; 3) Offshore Wind; 4) Transmission; and 5) Great Lakes Wind Atlas. Report-outs followed. The sessions focused on key issues each of the workgroups are addressing. The second day featured a second offshore session encompassing the offshore permitting process for both the U.S. and Canada. All presentations from the meeting are available online at <http://www.glc.org/energy/wind/conf2009.html>.

The text that follows (beginning on p. 2) includes key questions and answers that were addressed by the presenters, as well as a summary of the State and Provincial Updates.

Presenter: Larry Flowers, National Renewable Energy Laboratory
Presentation Title: Wind Energy Update

Q&A

Q: How does natural gas prices compare to wind today?

A: Those two sources have been locked in battle for a while. It depends on whether you predict higher or lower future costs for natural gas. If you predict that natural gas will be low and don't install renewables then you aren't forming a hedge on unexpected price hikes.

Q: What percent of 8% capacity additions is driven by RPS?

A: Most states are driven by RPS as a policy driver but, for example, look at Texas. That state's wind market is driven by prices dictated by merchant plants and open access grid interconnection policies.

Q: Please discuss the economic development scenario of wind versus coal.

A: NREL has done that analysis at the state level and one must consider how much coal a certain state has versus how much money they are sending out of state to purchase that fuel.

Q: Please speak to social issues involved with wind power.

A: Social acceptance and public acceptance are key issues. Public support comes from an educated constituency.

Q: Please touch on the connection between future wind and other renewables.

A: Solar is much better at load matching and has higher value to retailers wholesale. Can put solar in urban environments – better value than large wind. But wind is \$60-80 MW-hr. Solar is \$120 MW-hr. Costs for solar are higher. Biomass is important to the southeast. In terms of storage, using lines more efficiently, plug-in hybrids and converting fleet to electricity and using wind at night to charge vehicles could expand 20% wind to the transportation sector.

Presenter: Kevin Edwards, Ontario Ministry of Natural Resources (on behalf of Joyce McLean, Toronto Hydro)

Presentation Title: CanWEA's WindVision 2025: Opportunities and Trends in the Canadian Wind Market

Q: Please touch on the connection between future wind and other renewables.

A: In Canada, we're looking at hydro-electric development to counter variability to wind as well as biomass.

Offshore Wind Panel

Presenters:

Steve Dever, Ohio Great Lakes Energy Development Task Force

Presentation Title: Building an Advanced Economy through Offshore Wind Power

Deborah Erwin, Wisconsin Public Service Commission

Presentation Title: Harnessing Wisconsin's Energy Resources: An Initial Investigation into Great Lakes Wind Development

Tom Stanton, Michigan Public Service Commission

Presentation Title: Great Lakes Wind Council Update

John Kourtoff, Trillium Power

Presentation Title: Economic Prosperity in the Great Lakes Basin: A Unified Approach to Offshore Wind Development

Q&A

Q: When do you think the first offshore wind turbines will be placed in the lakes?

A: Variable responses, anywhere from 2011-15 are predictions for first turbines in the water.

Q: Re: transmission underwater; are there opportunities to expand transmission projects?

A: Could be data sharing (e.g. bathymetry); can take government or developer perspectives; depends who wants to participate.

Q: Re: ice break-ups what is the best technology solution?

A: Using ice cones; bridge foundations; every lake is a little different, depends on ice flow.

Q (to Dever): How many cities in OH would be interested in offshore turbine manufacturing?

A: There are utility-scale sites all along the waters of Lake Erie.

Q: Any thoughts for the education community to ensure career tracks for diverse jobs in erecting offshore wind turbines?

A: MI is identifying training opportunities; ON is working to get trainees demo turbines to practice on – St. Lawrence Training College is starting this in the fall; also reaching out to First Nations Communities.

Marine Transportation of Wind Components

Presenter: Tim Downey, St. Lawrence Seaway Development Corporation

Presentation Title: Great Lakes Wind Turbine Transport: Terrestrial & Offshore Development

Presenter: Ken Szallai, Lake Express

Presentation Title: Marine Transport for Offshore Wind Farm Projects

Q&A

Q (to Downey): Is there any legislation on the Canadian side similar to the Jones Act?

A: Yes, it's different and would impact the development of the offshore industry.

Transmission: Integrating Wind Power into the Grid

Presenter: Dale Osborn, Midwest ISO

Presentation Title: Summary of Wind and Transmission Planning for the Midwest ISO

Q&A

Q: What changes in terms of transmission needs if you add generation in the Great Lakes?

A: Not much; the main issue is still linkage from east-to-west.

Q: What do you need from Congress to address transmission challenges?

A: 1) Right-of-way across state lines and 2) Return on equity. Currently there is no way to do this and get a reasonable return.

Great Lakes Research on Avian and Wildlife Issues

Presenter: Dave Redell, Wisconsin Department of Natural Resources

Presentation Title: Reducing Bat Fatalities at Wind Energy Facilities by Changing Turbine Cut-In Speed

Q&A

Q: Is this tool being used elsewhere as a mitigation technique?

A: Texas is working on it.

Q: Are there any traditional power plant studies on bat populations?

A: Habitat laws would probably be pointed to most often. Not as clear-cut or direct as looking at wind turbines.

Q: What is the best time of day for bat studies?

A: Only at night when bats are most active.

Q: Are you familiar with any U.S. jurisdictions using this information for post-construction mitigation?

A: A Texas site is using radar to study targets in the air.

Q: What's the cut-in speed when it's not curtailed?

A: Generally 3.5 meters/second.

Q: Are there any sites studied without turbines?

A: Generally assumed to be very low on non-turbine sites; better to direct resources at sites with turbines.

Q: Are you aware of any studies at offshore sites?

A: No, tough to sample. Bats generally won't stick around with water underneath.

Q: Any comments on bats foraging?

A: Peak fatalities occur during fall migration. May be due to different behavioral patterns.

Offshore Wind Permitting Process

Presenter: Steve Metevier, U.S. Army Corps of Engineers

Presentation Title: Off-Shore Wind Power Projects: U.S. Army Corps of Engineers Regulatory Program and Permitting Process

Presenter: Captain Lorne Thomas, U.S. Coast Guard

Presentation Title: Coast Guard Requirements for Offshore Renewable Energy Installations

Presenter: Peter Carter, Ontario Ministry of Natural Resources

Presentation Title: Offshore Wind: Canada-Ontario Approvals, Permits and Authorizations

Presenter: Mike O'Brien, Bluewater Wind

Presentation Title: A Developer's Perspective: Offshore Wind in the Great Lakes

Q&A

Q (to Thomas): With the prospect of an installation vessel on the Great Lakes, what is the USCG's role?

A: We will be working with the schedule of that vessel, but it looks like they are huge and there is nothing like that now, so would need to work with it from the perspective of Jones Act compliance.

Q (to O'Brien): You mentioned all the support you got for the DE project; what were some of your opponents saying and what did they do?

A: We had overwhelming support, a few skeptics in the bird arena but we reacted to that by cutting our DE Bay project site proposal.

State and Provincial Updates

Illinois

Submitted by Wayne Hartel, Illinois Department of Commerce and Economic Opportunity; read by Victoria Pebbles, Great Lakes Commission

- Wind energy development in Illinois is growing rapidly – from 0 MW in 2002 to 917 now
 - Wind energy projects in operation: 917 MW (10th in the U.S.)
 - Projects under construction: 2,191 MW
 - Projects permitted: 892 MW
 - Projects proposed: 6,940 MW
- There are two manufacturing facilities in IL related to wind energy components:
 - Siemens Energy & Automation – Elgin, IL – produces wind turbines
 - Trinity Structural Towers – Clinton, IL – produces towers for wind turbines
- Illinois Renewable Portfolio Standard was established in Public Act 095-0481 in August 2007
 - RPS requires at least 2 percent of utilities' retail customer supply must be from renewable energy by 2008 rising to 10 percent by 2015 and increasing by at least 1.5 percent each year thereafter to at least 25 percent by 2025.
 - At least 75 percent of the renewable energy is to come from wind generation.
- DCEO programs have supported several large wind farm projects in the past (2002-04), provided small grants for wind farm feasibility studies, and have recently provided grants for several wind turbines between 900 kw-2 MW for a few electric coops and public schools.
- New/revised renewable energy programs are being considered for FY2010 from the state Renewable Energy Fund and the Stimulus funds:
 - Small solar & wind rebate program (rebate for systems < 30 kw)
 - Community Solar & Wind Grant Program (grants for local governments and businesses for larger systems, 40 kw – 2 MW)
 - Green Industry Business Development Grant Program (grants for new/expanding manufacturing facilities that produce sustainable equipment (renewable energy, energy efficiency, and recycled content products))
- Organizations in Illinois involved in the wind industry:
 - Illinois Wind Working Group: Part of Illinois State University's Center for Renewable Energy, the IL WWG communicates with various stakeholders on development of wind energy in Illinois; holds annual conference and provides regional landowner forums.
 - Western Illinois University – Illinois Institute for Rural Affairs: Offers organizations and landowners throughout the state the opportunity to assess the wind at a site under consideration for wind power; has developed maps of wind resources throughout the state.
 - Illinois Clean Energy Community Foundation: Provides grants for renewable energy projects developed by local governments and nonprofit organizations; supports wind assessment work by Western Illinois University.

Indiana

Traverse Murphy, Indiana Office of Energy and Defense

See http://www.glc.org/energy/wind/documents/Murphy_Update_IN.pdf.

- There has been a wave of development in 2008 and the first half of 2009. By the end of 2009, IN hopes to have 1,000 MW on the grid – mostly due to its access to transmission and markets.
- Ivy Tech Community College now has a wind component manufacturing degree program.
- The state is in the process of writing a report that would attract wind manufacturers to IN.
- The IN Economic Development Corporation is on board, utilizing incentives and tax credits. They are trying to get existing companies to produce wind components.
- The state wants to produce a “roadmap for wind” similar to other states.
- The IN Wind Working Group now has 300 members and is very active in promoting advantages of wind. July 21-22 is the second WINDIANA conference; hoping to attract 1,000 attendees.

Michigan

John Sarver, Michigan Energy Office

See http://www.glc.org/energy/wind/documents/Sarver_Update_MI.pdf

- Michigan’s Public Act 295 was passed which includes an RPS of 10% by 2015
- The state’s Wind Energy Resource Zone (WERZ) Board has identified the four best regions in the state for siting wind parks. These zones may be designated as expedited permitting zones.
- True Net Metering put into place four projects 20 MW and under.
- The state will have modified net metering for larger projects.
- Wind Farms include Harvest and Wind I.
- Integrated Resource Plan re: new coal power plants: Governor Granholm made a decision that these plants have to look at alternatives. Future of coal power plants in MI could be impacted.
- NEXTENERGY is doing a lot of match-making between OEMs and component manufacturers. Contracts and jobs are increasing. They have also had successes with start-ups: two companies are making small wind turbines – Mariah and Swift. Global Wind Systems in Novi, MI manufactures utility scale turbines.
- Jeff Daniels ads are doing great at promoting the Michigan Renewable Energy Program.
- By 2015, the state is projected to have 2,400 MW of wind power generated. Wind maps show 16,000 MW of wind power capacity in MI.
- There are 40 companies in MI slated to make wind components.
- The Michigan Energy Fair is June 26-28 at the Manistee County Fairgrounds.

Minnesota

John Schladweiler, Minnesota Department of Natural Resources

- MN had early entry into wind during the early 1990s.
- Buffalo Ridge in the southwest part of the state is where a lot of wind power is produced in MN.
- About 10% of MN energy comes from wind.

- The MN Public Utilities Commission or counties can be the main regulatory body for new wind projects.
- The MN Department of Natural Resources is almost finished with a guidance document on wind energy – targeted for release in July.
- The MN Department of Health just published a white paper on the public health impacts of wind turbines – low frequency noise and shadow flicker – available at energyfacilities.puc.state.mn.us/wind.html – scroll to bottom of page.
- The Duluth port on the southwest tip of Lake Superior handles many wind turbines and has a staging area for them.

New York

Submitted by Jack Nasca, New York State Department of Environmental Conservation; read by Kristina Donnelly, Great Lakes Commission

- The state currently has 1,274 MW of land-based wind with 200 MW of projects under review.
- The New York Power Authority issued a Request for Expressions of Interest (RFEI) on April 22 for information regarding potential offshore development of 125 MW projects in lakes Erie and Ontario.
- ConEd and LIPA completed an offshore wind connection feasibility assessment showing 700 MW capacity offshore in NY. They are developing an RFEI for offshore projects 13 miles offshore.

Ohio

Tony Logan, Ohio Department of Natural Resources

Presented via webcast. See http://www.glc.org/energy/wind/documents/Logan_Update_OH.pdf

Pennsylvania

Paul Zeph, Pennsylvania Department of Environmental Protection

- 13 industrial wind complexes are operating in the Appalachian Mountain area – 525 MW; 222 MW in construction
- BQ Energy is exploring the feasibility of a large complex in NW Lake Erie.
- PA Game Commission's Voluntary Cooperative Agreement now has 22 companies participating. See <http://www.pgc.state.pa.us/pgc/cwp/view.asp?a=483&q=171755> for more details.

Wisconsin

Deborah Erwin, Wisconsin Public Service Commission

- The state is in the process of reforming wind siting for small wind.
- SB 185 WI would give WPSC orders to establish some standards for local siting and an advisory committee would be created to help PSC in their evaluation process; there would be specific member groups represented.

- The Governor's Task Force recommends enhancing the state's RPS from 10% by 2015 to 10% by 2013 and 25% by 2025. There would also be mandates for in-state renewable generation.
- There are two new projects: Glacier Hills project and a WI utility doing a project in MN.
- Several projects are looking at bird/bat studies to contribute to siting processes.
- WPSC has an open docket regarding whether WI should expand its use of feed-in tariffs or advanced renewable tariffs.

Ontario

Kevin Edwards, Ontario Ministry of Natural Resources

See http://www.glc.org/energy/wind/documents/Edwards_Update_ON.pdf

- Ontario's Green Energy Act was passed on May 14. Drivers for the GEA were carbon capture, greening the economy, and upgrading infrastructure (transmission).
- Ontario has a proposed Feed-in Tariff (FIT) Program; it will be managed by Ontario Power Authority.
- There should be a fairly minimal impact on rates from FIT prices - about 1-3%.
- 700 MW of wind is now installed in the province.

Québec

Anick Madon, Québec Ministère des Ressources Naturelles et de la Faune

See http://www.glc.org/energy/wind/documents/Madon_Update_QC.pdf.

- Over 300 MW of wind are operational in the province.
- From the 2005 call for bids for 2,000 MW – 15 projects were accepted.
- A 2009 call for bids was put out for 500 MW of wind mainly for communities and First Nations.

Stakeholders Provide Input to GLWC Workgroups

In breakout groups, the attendees discussed the GLWC's near-term agenda and long-term priorities for its five workgroups: 1) Economic Development; 2) Environmental Planning, Siting and Permitting; Offshore Wind; 4) Transmission and 5) Great Lakes Wind Atlas. Results of each breakout were reported out to the plenary group. The GLWC workgroups will utilize the input they received from the breakout groups in their coming workplan tasks and conference calls.