PSC REF#:95388

Public Service Commission of Wisconsin

Eric J. Callisto, Chairperson
Mark Meyer, Commissioner
Lauren Azar, Commissioner

610 North Whitney Way
P.O. Box 7854
Madison, WI 53707-7854

Public Service Commission of Wisconsin
RECEIVED: 06/05/08, 2:00:47 PM

June 4, 2008

Hazel Hindsley, Chairperson
St. Croix Band
Lake Superior Chippewa Indians
24663 Angeline Avenue
Webster, WI 54893

Re: Investigation to Assess Wisconsin's Potential for the Development of Wind Energy Resources in Lake Michigan and Lake Superior 5-EI-144

To the Person Addressed:

The Public Service Commission (PCS), working jointly with the Department of Natural Resources and the Board of Commissioners of Public Lands, is analyzing the viability of wind power development on the Great Lakes. I recently sent you a letter to inform you about the work group, its membership, its goals and time frames, and to invite you to participate as your time and interests allow. This letter is to bring you up to date with the work group's activities.

The work group had its first meeting on Tuesday, May 13, 2008. (A copy of the meeting minutes is enclosed.) Members of the work group reflect the wide variety of interests that would be affected by the development of wind power on Lakes Michigan or Superior. The first meeting included the Chairwoman of the Red Cliff Band of Lake Superior Chippewa Indians. Also invited were representatives from the Bad River Band of Lake Superior Chippewa Indians and the Great Lakes Indian Fish and Wildlife Commission (GLIFWC).

The work group identified four areas that will be investigated over the next few months by smaller sub-groups. These sub-groups will concentrate on legal and jurisdictional issues regarding the use of the lakes, engineering and economic questions associated with the construction of wind farms on the lakes, the impacts of construction and operation on the environment, and the impact on community interests. The sub-groups are working to develop information in these four areas and will report back to the work group with their findings.

The work group has scheduled several dates for future meetings.

- Meeting 2: June 11 – Hold entire day
- Meeting 3: June 23 – 9 a.m. to 11 a.m.
- Meeting 4: July 7 – 9 a.m. to 12 noon
- Meeting 5: July 29 – Hold entire day
- Meeting 6: August 11 – Hold entire day
- Meeting 7: August 20 – 9 a.m. to noon

All of these work group meetings will be held at the PSC building, 610 N. Whitney Way, Madison, Wisconsin, and are open to the public. The sub-group meetings are open for both attendance and participation to people not part of the work group. Representatives from the Bad River Band and the Red Cliff Band of Lake Superior Chippewa Indians and of GLIFWC are working with these sub-groups. If you are interested in participating in any of the sub-groups, please contact me by telephone, e-mail, or mail.

If you are unable to attend any of these meetings but still wish to participate, a telephone conference call hook-up will be available. This is true for both the work group and the sub-groups. Please contact me if this would better meet your needs and time constraints so arrangements can be made.

If you have any questions regarding the work group, its mission, future meeting schedule, sub-group make up and schedules, or anything else, please feel free to contact me by telephone at (608) 267-9486, by e-mail at dan.sage@psc.state.wi.us, or by mail at the address on this letterhead.

Sincerely,

/s/ Dan Sage

Dan Sage
Assistant Administrator
Gas and Energy Division

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Attachments

cc: Jim Zorn, GLIFWC

HANDOUT

THE GREAT LAKES WIND ON THE WATER (WOW) WORK GROUPS

LEGAL/REGULATORY WORK GROUP

Charge for the Group:

What (international, federal, tribal, state and local) regulatory approvals and consultations are required for construction, operation, maintenance and decommissioning of electrical generation and associated electrical lines on Lakes Michigan and Superior from such sources as wind turbines or wave generators?

What legal standards must be met to obtain those approvals and consultations.

What statute changes either are necessary for or would be helpful to developing electrical energy generation on the Great Lakes?

Would development of electrical generation on the Great Lakes have any impacts on developing terrestrial wind generation on tribal lands?

THE HUMAN ENVIRONMENT WORK GROUP

Co-Chairs: Dave Siebert (DNR) / Noel Cutright

The Charge: Frame the full range of environmental issues associated with construction, operation, maintenance and decommissioning of wind turbines and associated collector/transmission lines on Lakes Michigan and Superior.

1. Substantive Areas of Focus:

    a. Bird/bat migration and water bird usage
    b. Fisheries and aquatic resources (including invasive species)
    c. Commercial fishing
    d. Lake bottom effects and impacts associated with the water/land interface
    e. Boating & Recreation
    f. Human health issues—flicker, EMF, noise
    g. Visual impacts – from shore, from boats
    h. Cultural and traditional resources
    i. Shipping, Air Traffic (inc. military operations), Communications

2. For each subject area: what are the information needs, what data are available, where the data gaps are, and what are priorities for data. Are there zones of the lakes for which the level of concern for an issue changes?

3. What can we learn from other states and Europe?

4. Are there environmental impacts unique to Lake Michigan or Lake Superior?

5. Would a PSC/DNR Generic EIS be a good way to investigate the issues and allow for interaction with the public?

ENGINEERING AND ECONOMICS WORK GROUP

Co-Chairs: Dan Sage (PSC), Flora Flygt (ATC)

The Charge / Substantive Areas of Focus:

1. Technology for wind on water
    a. Construction of Turbines, Foundations and Transmission Lines:
        i. Generation
            1. Turbine and Foundation options that are available given lake depths, weather, etc. (should take note of the best-practices as established in existing European off-shore development)
            2. Challenges for generation: Weather/lake icing
            3. Retro-fit of existing in-lake structures?
            4. Wave action
            5. Construction techniques for working on water
        ii. Transmission
            1. Cable
            2. Grid Interconnection Issues
            3. Transition from water to land, where would you bring ashore
            4. Difference in interconnections (ATC, Xcel)
    b. Operation, Maintenance and Decommissioning of Turbines, Foundations and Transmission Lines
2. What data is necessary for further analysis
    a. Wind speeds
    b. Lake Depths
    c. Riparian zones/Lake Bed Grants
    d. Data inventory: what already exists in these areas and what are the gaps in knowledge?
    e. Can any of this data collection be matched up with gaining information in other areas, e.g., wind speed and avian studies?
3. Cost for wind on water
    a. Cost estimates for construction and operation for various scenarios
    b. Economies of scale – how many to make initial project viable?

c. Maintenance
d. How do the costs for wind on water compare with other sources of energy, e.g., terrestrial wind, other renewables, natural gas, coal?

4. Financing for wind on water
    a. Financers – what financing is available and what are the likely terms?
    b. Insurance costs/expectations
    c. Ratebase vs. IPP
    d. Incentives
5. Royalties/payments to adjacent communities/state, how are other states handling this issue? Could this be directed towards goals such as mitigation?
6. How does this fit in, match up with regional transmission issues, e.g., MISO cost-sharing

Community Outreach Group

Co-Chairs: Mike Friis (DOA)/ Mayor Kevin Crawford

The Charge

1. Provide Wisconsin Great Lakes communities (local governments and nongovernmental organizations) with information and solicit feedback on the Great Lakes wind energy task force (or Wind on the Water) through:
    i. Through municipal organization newsletters (Wisconsin Counties and Towns Associations and League of Wisconsin Municipalities).
    ii. Regularly scheduled meetings (with in the August 30 time frame) of interested groups (Lake Michigan and Lake Superior partners, property owners, land trusts, watershed and users groups).
    iii. List servers (Great Lakes Information Network and Great Lakes Forever Town Hall).

2. Review existing community comprehensive plans and existing land use regulations that are applicable to Great Lakes wind energy generation.

3. Relay issues from the solicited comments for consideration of the other work groups.

4. Based on this experience and from other projects' lessons learned, provide suggestions for an informational campaign to any eventual Great Lakes wind energy project.

Great Lakes Wind on the Water Meeting Minutes: May 13, 2008

Meeting attendees included:

Commissioner Lauren Azar (PSC), Heather Leibham (We Energies), Mike Friis (DOA), Dave Siebert (DNR), Tia Nelson (BCPL), Dave Donovan (Xcel Energy), Richard Stadelman (WI Towns Association), Todd Vesperman, (US Army Corps of Engineers), Michael Vickerman (RENEW Wisconsin), Charlie Higley (CUB), Monica Groves Batiza, (WI Counties Association), Katie Nekola (Clean Wisconsin), Todd Stuart (WIEG), Scott Smith (Alliant Energy), Jeff Anthony (AWEA), Dan Sage (PSC), Emily Green (Sierra Club), Charlie Severance (WPS), Don Peterson (MGE), Flora Flygt (ATC), Karen Etter Hale (Audubon Society), Chairwoman Rose Gurnoe-Soulier (Red Cliff Band of Lake Superior Chippewa Indians (via teleconference)).

Introductions / Overview

Group members were given the opportunity to introduce themselves.

Open meetings and public records – Until we have firm answers about Open Meetings and Public Records requirements, group members are asked to refrain from communicating about this group (no phone, meetings or e-mail) with other group members off line.

- There is a request from group members for more information on lobbying in connection with this group. Will participants in the main group have to register as lobbyists? Can observers talk with members of either the main group or the working groups without registering as a lobbyist?

Review of the Great Lakes Wind on the Water Work Group Handout

Group members were asked to review the work group document, which outlines the groups (topics) and issues within each topic.

The work groups are outlined as follows:

- Legal
- Human Environment
- Engineering / Economics
- Community Outreach

Work group co-chairs were announced. They are as follows:

- Legal: Co-chairs for this group are not likely necessary; Lauren will lead if required.
- Economics / Engineering: Dan Sage (PSC), Flora Flygt (ATC)
- Environment: Dave Siebert (DNR), Noel Cutright (Audubon Society)
- Community Groups: Mike Friis (DOA), Mayor Kevin Crawford (Mayor of Manitowoc, Alliance of Cities)

Review of Charge of the Legal / Regulatory group

Possible additional charges / issues mentioned for this section:

- If we are entertaining statute changes to allow for development of wind energy on the Great Lakes, should we consider other technologies / energy generation explorations (e.g. wave energy).
- Because these are international waters, should we explore potential issues with the IJC?
- Tribal law should also be included in federal, state and local issues.
- DOJ can provide assistance with Public Trust / Water related issues. Key contact may be Tom Dosch.
- Follow up on Federal Register notice re National Guard using Lake Michigan for fake bombing exercises. We should contact the Brigadeer General of the National Guard for assistance if necessary.
- Explore relevant case law on Cape Wind.
- How do onshore wind projects (on tribal lands) affect offshore developments? It was noted in the discussion that various tribes may be looking at terrestrial wind energy projects.
- The legal group should interact with the National Park Service. One key contact may be the Lake Superior Park Service contact (Bob Krumenaker).
- "Consultations" should be added in addition to "approvals".
- Defining jurisdiction under this research will be a key task. Do legal interpretations change from state to state? (i.e. crossing over from WI into MI)?
- How does the work of this docket potentially interact with the Great Lakes Compact?

Potential group members may include:
Lauren Azar, Steve Levine, Tom German, Mike Cain, Tom Dosch and Jim Zorn.

Other suggested group members:

- Steve Adanksi. (nominated by Todd Vesperman).

Review of Charge of the Human Environment group

Additional charges / issues mentioned for this section:

- Areas of historical or cultural significance to the Tribes and general public. Jim Zorn (GLIFWC) is identified as a resource on this topic. Each nation will also have its own experts in this area.
- Examine flicker (sunset / sunrise on the water may especially be an issue). Also, consider if offshore wind turbines have any impact on communications, similar to DODconcerns re: radar in terrestrial projects. Not only should we explore this offshore, but near shore, as well.
- It is recommended our group ultimately put assessment of the offshore wind potential into context of the state's energy portfolio or RPS. Tia notes she'd like us to draw simple conclusion such as: "Ha, this gets us nothing" or "Ha! This gets us half-way there".
- It will ultimately be important for our group to better define ripiarian zones and understand limitations. There may be legal limits that serve as barriers to offshore wind development.
- Will a data inventory identify data gaps? Will this group be recommending ways to get missing data? How will we pay for it?

- Modify the charge to read from "construction and operation" to "construction, operation and decommissioning" of wind turbines.
- How do wind siting and human health concerns intersect on Great Lakes wind development?
- Generic EIS may have human health issues category that discusses aesthetics, EMF, Flicker, noise, etc.
- Socioeconomic also goes in EIS. The Community group may also want to take up some of these health and socioeconomic issues and concerns.
- Navigational safety issues should be investigated.
- Does the riparian community get a share of the development revenue? (Discussion ensued about whether this may be an economic issue).

Potential group members may include:
Audubon, Clean Wisconsin, Sierra Club, Members of the Tribal Nations (Red Cliff, Jim Zorn), DNR Staff, PSC Environmental Staff, Utility Representatives (We Energies, Alliant, ATC), U.S. Fish & Wildlife, US Coast Guard, FAA, AWEA (Laurie Jodziewicz), UW Water Institute – (Harvey? Mike Friis to send contact), Lake Carriers (Jim Weekly), Recreational Boating and / or Commercial fishing, WI Towns Association (Rick Stadelman)

Review of Charge of the Engineering and Economics group

Additional charges / issues mentioned for this section:

- Include specific examination of lake icing and icing of components under Technology
- Explore specific retro-fits of existing in-lake structures: Oar dock in Ashland
- Draft item 1b should also include decommissioning
- Transmission engineering should also examine icing – specifically, the transmission transition from land to water
- Consider whether to use the term "transmission" or "electrical interconnection" or "radial collection". The verbage and equipment may truly depend on where you site the wind equipment and what types (size/capacity) of lines you use (what size/capacity).
- European countries have a tremendous knowledge base re: wind on the water. When applicable, this group should recycle public information / best offshore wind practices.
- MISO is assembling a study (due for release Spring '09) to examine the economics of moving wind down the wires re: wind development in MN, IA, IL and Wisconsin. Use these data where applicable.
- Cost sharing issues with MISO and the RECB.
- Difference in Xcel and ATC transmission infrastructure.
- Consider measurement of wind resources on the lakes (or recommendation for further measurement). Wind monitoring should potentially include radar to monitor for bird migration patterns. The technology is available.
- When examining cost and financing, Wisconsin should examine economies of scale and the minimum sale for our first project.
- Wind developers will be welcomed in work groups and to give presentations in connection with this effort. It is announced that specific developers were not chosen for the main group to keep group size manageable and to avoid picking one representative.
- There will be a cost to Lake Bed Leases but BCPL does not currently have estimates on what that cost will be. BCPL plans to examine leases in other states. It is recommended that BCPL

consider different charges for IPPs, public utilities, and public power producers. Further examination may be necessary from the perspective of whether it is an IPP or utility project. Revenue reinvestment options (offset wind development, carbon offsets) are currently also unknown.

- When exploring costs, maintenance should be included and estimated.
- Further discussion on the topic of costs ensues. It is suggested that it would be helpful to compare operational costs between a terrestrial wind project vs. lake wind project. Other members advocate for the analysis to go further – to explore the benefits of wind vs. other sources of generation (coal, etc). Reusing data from the Task Force on Global Warming may be a possible resource for such a comparison. The group generally agrees to limit the scope of this group's cost estimates to Great Lakes Wind.
- Explore cost mitigation strategies, creative financing, etc.

Potential group members may include:
Utility representatives, AWEA (Jeff Anthony), RENEW Wisconsin, PSC Staff, Bob Owen, David Blecker, NREL (Walt Musial), WIEG.

Review of Charge of the Community Outreach Work Group

- This group should consider an exploration of socioeconomic benefits / issues.
- This group should think about community outreach in terms of both municipalities and grassroots groups.
- The Community presentations are meant to seek input.
- Are local communities directly interested in developing wind projects?
- This group should investigate whether European communities who have developed offshore wind projects have received community benefits or faced community opposition
- Create outreach plan.
- Provide / develop an objective resource guide for offshore wind development
- The community outreach component may best be assembled after the environmental and engineering components are explored. Communities will want to know what the plan looks like before responding; similarly, our community group will need to also know what it looks like before creating a communication plan. Since that is not possible, we should think of community outreach as a long term commitment.
- Community plans and land use regulation (item 3 on draft) should include interconnection. Local governments planning these projects will deal with interconnection.
- Involve regional planning commissions.
- Impacts on actual individuals need to be addressed. This group may discuss many positives to offshore wind developments, but some communities may have negative opinions of wind energy developments. Concerns about aesthetics, noise, flicker, etc need to be addressed.
- If group surveys community interest, it may consider surveying communities as to knowledge and opinions.
- Siting issues may drive community reaction and educational needs.

Potential group members may include:
Wisconsin Towns Association, Wisconsin Counties Association, Mayor Kevin Crawford, WI members of Great Lakes and St. Lawrence mayors (chair), Red Cliff Band (Chairwoman Soulier or designee), Alex DePillis,
Sierra Club, utility representatives (MGE, ATC)

Our group's product (wind report) will likely serve as a scoping document. Our group will present advantages, disadvantages and what to consider if you move forward developing wind energy projects on the Great Lakes.

Future meeting dates:

- Meeting 2: June 11 –Hold entire day.
- Meeting 3: June 23 – 9 a.m. to 11 a.m. (teleconference)
- Meeting 4: July 7 – 9 a.m. to 12 noon
- Meeting 5: July 29 -- Hold entire day.
- Meeting 6: August 11 – Hold entire day
- Meeting 7: August 20 – 9 a.m. to 12 noon

Speaker ideas:
- AWEA
- Specific financiers
- AREVA – Multibrid – smaller group presentation
- Representatives from Cape Cod – great for community outreach/ engineering
- Wind monitors / mappers
- NREL -- Walt (Jeff Anthony to contact) / Someone who's working on the wind atlas?
- Army Corps
- Great Lakes Wind Collaborative – perspective on what's going on?
- MISO for subgroup presentation.

Finalized speakers' list for the June 11th meeting: AWEA, NREL and Great Lakes Wind Collaborative.

Discussion: Our group may want to explore how to integrate this investigation with other projects being explored (re: transmission) and how it relates to MISO cost sharing.

Dan Sage presented instructions for ERF and group members are encouraged to sign up for ERF updates and to receive all materials for the Great Lakes Wind docket.

An opportunity for public comment was offered. There were no public comments at the end of the meeting.