

SCANDIA WIND ENERGY PRESENTATION QUESTIONS

June 16, 2010

How much money will Aegir itself invest? (not U.S. grants, etc.) What will be Aegir's profit? What will be the Grand Haven "profit"?

Expected energy cost: \$/kwh

Why did Bill Bouvier get to talk? Who is he? What does he mean the view changes all the time. It has not changed in the 68 years I've looked at it. Why didn't the people against get to talk?

Please detail the total amount of incentives provided to your company from federal, state, and local sources to pursue wind energy in the state and our area in particular. How could those incentives be passed on to the communities burdened by your development?

Why so near shore. Are there any wind farms operating in the U. S. in similar conditions.

Are there other organizations interested in establishing wind farms in Lake Michigan? Who are they?

What is the return on investment time frame for offshore versus on shore? "This assumes increased substructure costs for offshore".

Your studies talk about job creation. What do your studies tell you about people leaving the area due to the wind farms? Michigan can't afford to lose that tax revenue!

How much will Aegir II (500 mw) cost? How much would 500 mw on land cost?

How many employees does Scandia have and what are its assets (i.e. to support its obligations).

How much more does it cost to build in the lake than on the land?

I understand the Cape Code wind farm supplies electricity at 3 times the cost of our Grand Haven power facility.

Where are components of turbines (major) now manufactured? Any in the U.S.? How realistic is getting a manufacturer to locate in the West Michigan area?

You said you could not guarantee local jobs. Why not? You can commit to buying at least 50% in \$ of materials/parts from West Michigan sources. How do we know you won't place most of the manufacturing work in Norway or elsewhere?

Finally many of the fences are down in Downtown Grand Haven!! Now, Scandia is proposing to put a 500 ft tall "fence" of steel wind Turbines that would never come down across the horizon in FRONT OF the sunset! Don't the people of Grand Haven have the right to value and protect the view that draws so many west Michigan people to the pier and boardwalk? If they want a sunset picture, won't people go somewhere else where the view is not obstructed, just as they didn't shop in our shops when the sidewalks were blocked?

What would be the radar hazards for thousands of flights that cross the Lake every day? It was stated about Cape Wind in Nantucket Sound, Massachusetts, "This decision flies in the face of public safety and the recommendations of pilots who use this airspace every day". Won't this project compromise the safety of many air travelers?

Could you please explain why wind power over solar (not enough sun in Michigan, cloudy and windy). We have to as a people do something to conserve our diminishing resources and protect our environment, the slight visual eyesore (which I do not agree with) is what is necessary to make the steps toward a better world for all of us. It's about the future of this earth and our species! Thank you, (Catrina Chambers)

With the City of G.R. going down in flames in Grand Haven Twp. what makes Scandia think people are going to want offshore LWET's. After 30 years life cycle of LWET will Scandia put an escrow (escrow) account together to take out the footings of every LWET?

Aside from creating jobs in West Michigan, I am in favor of wind power in order to create clean energy. Wind power will help reduce toxic coal ash, mercury, arsenic, lead & toxic emissions from our air and waterways from coal power plants. (Amanda Shunta)

There are a lot of made up criticisms about wind power, considering years of successful precedent and over 600 U. S. wind farms. How can decision makers separate false information from accurate information?

Who will be buying your power? Who will be responsible for filling the power gap when there is a calm day? What will a KW hour tat you generate sell for?

I am in favor of this project. What is your response to the opposition's claims this project will not create jobs? I believe this argument to be false, and an attempt to sway the undecided from approving of this proposal. Wind power here has the potential to employ

up to 3,000 people, with 800 local manufacturers ready to produce the components needed for wind turbines. More jobs = more money for schools & cities. (Elizabeth Council)

According to the Great Lakes Wind Council, your project would require a change to state law essentially allowing companies to privatize our public lake for industry. Please describe the process as you understand it and which political partners are driving this change on your behalf.

You described 4 “completed” Hangul projects (parks), only 1 is built? None have been completed offshore? Other 3 are just in design/build stages?

When and why was the Scandia Company secured to present this information? tonight?

Has the Governor and the State of Michigan entered into any agreement for wind energy yet?

When wind turbines become obsolete or not cost effective who will be responsible for removing these eyesores from Lake Michigan?

According to the Great Lakes Wind Council, our area has several features considered unfavorable: aids to navigation (lighthouses), navigational channels (Grand River) shoreline, harbors/marinas, shoreline parks, threatened species (Bald Eagle). How do you plan to address these issues?

Lake Michigan is a heavily used route for migratory birds. A recent DNR count included 30 thousand longtail ducks. How do turbines change/effect flight paths?

Please explain to us how Aegir plans to mitigate the impact of Shadow Flicker resulting from the turbines (especially because such flicker will affect our sunsets, one of the most beautiful assets of living in West Michigan, at the lakeshore).

Why has Scandia not come forward to those who currently use this area of water i.e. charter fishermen? This project would have a direct impact on charter fishermen who bring a good amount of tourism to this area.

What will you do to minimize disturbance of bottom sediment in the area that was found to contain heavy metals and brine just a few years ago? (G. River Haven)

What impact will there be on the migratory bird routes? Some info is out there that Homeland Security will est. zones around the turbines which will close areas to boat traffic – Yes? No?

(For Bill Bobier) Explain how the view toward the lake from shore has changed in the last 10, 100, 1000 years.

What guarantees do we have that the wind turbines would not be put closer than 6 miles out? Since the GLOW council removed all suggestions of any buffer zone from shore from their initial report, how will counties and the people here know for sure that regulations will ensure this? Why should approvals for wind farms be made BEFORE any regulations are in place? And will studies be done by independent, non-wind developers?

You originally stated that a million tons of cement would be used for the turbine bases and now you state that water will be pumped into the bases. Are you absolutely sure now that you have the right technology or are you still at the drawing board? Since no one has ever put a wind farm in fresh water, or any off-shore site in the entire U. S. to this date, why should the people of MI who love this treasured natural resource trust you? How confident are you of your expertise in wind farm development?

Michigan Submerged Lands protection act states, “private uses of the waters, including the rights of waterfront owners, are subject to the public trust. If the private use adversely impacts the public trust, the State of MI regulatory authority requires that the proposal be modified or denied.” How could 50 or more 500 ft tall steel towers with spinning blades, lights, foghorns, platforms with many gallons of oil on them, and the constant construction mess washing up on beaches because of the disruption of the lake bottom be anything but an adverse impact? How could you possibly mitigate all of that damage?

Cape Wind, in Nantucket Sound, would potentially be the first off-shore wind farm and similar in size to this project here. They show a boundary zone around their wind farm and fishermen there are upset that they will have to spend more on gas and their time to get around the wind farm to their fishing areas. Since Lake MI salmon are caught at 300 feet and wind turbines are at no more than 240 feet, can you guarantee in writing that fishermen here will not have to go around the wind turbine farm and that charters will not be obstructed from the Lake’s open waters and use? In other words, what guarantees will the people of MI have that wind farm waters will never be closed off and off-limits? 50 sq. miles could become a thousand square miles off limits in later years.

How have the ice problems been solved?

10-20 years from now, when/if West MI wants this wind farm, can we still get one? Is this our only chance?

1. Without subsidies what is the payback? - # of years.
 2. The Grand Haven Project –where will this be placed? From what street to what street?
- What minimum wind speed is needed to turn the blades?
 - Does Consumers Power “have to” buy your power “regardless” of your cost of production?
 - At what cost does the “grid” have to pay you?
 - Can your turbines avoid pleasure craft?
 - Will you pay for my sailboat to be equipped with a navigational radar system?
 - How many sailors/powerboaters on your coastal waters – how many turbines?

Whose responsibility would it be to salvage any turbine or shaft that sank? If turbine lasts 20 years (?) who is responsible for repair/replacement?

What does maintenance involve on the towers and turbines?

I understand that the transmission lines in the lake are under the sand. When the lines come to shore, how do these lines get to the power plant or into the grid. Especially in the Grand Haven area!!

1. What is the source of the wind map/diagram on page 12 (of your booklet)? Is this source available for review? and what source for wind speed diagram slide in your presentation.
2. You claimed “no reduction in tourism” then said “impossible to measure”. So which is it – no reduction or not measured?
3. Are your power point slides available online?

West Michigan has a very high degree of fog – what would the sound of fog horns on 150-200 wind turbines sound like from 4 to 6 miles away from shore?

Will the area around the wind towers be restricted for security or any other reasons?

Technical – answer on web site?

- Who receives the royalty payments?
- What is plan “B” if this proposal has problems?

- Is this presentation available for download? What is the link?
 - You showed 100 m hub ht. for a 10 mw turbine vs. B. C. Cobb stack at 198 m.
 - You also said 300-450 ft. high towers.
 - How high would the actual turbine blade go and how close to the water would it come down?
1. Project will not pay any property to local government, but, will it pay property taxes to the state?
 2. Why will wind power cost more for the home owner & how much more?
 3. How does the project deal with uneven power productions – not enough wind or too much wind?
 4. Can you state “the wind turbines will be built with Michigan made turbines”?
 5. How long will it take to build out the complete project?

Can you please show us the specific calculations you’ve done to arrive at your estimate of the CO₂ reductions you suggest will result from the Aegir project? Moreover, can you please explicate the assumptions underlying your calculations? (You stated CO₂ emission reduced by 2.2 million ton annually.) (Libby Wheatley, Montague MI)

When a sailboat or powerboat hits a LWET at night or in the fog, ever though you have horns or lights, who is liable? If someone is killed who is liable? Is every LWET a separate LLC?

How promptly can and will repairs be made, and how can you accomplish this feat?

Who is going to manufacture the turbines for this project?

Will we hear the wind mills on shore?

How many wind mills to generate 500kw? How long along the shore will they take?

Is new technology under development to allow turbines to be placed further out in the lake and would your company consent to placing the turbines further out? Why or why not? Would those living on dues have a higher visual impact? In what way?

1. What is the turbine warranty?
2. What months have the highest capacity factor for wind?

Will you explore development further offshore on the mid-lake plateau? This has a depth of approx. 50 meters near the border line depth of seabed jacket/tripod foundations or use of semi-submerged platforms; would a feasibility study be considered here?

What is the projected cost per kwh of the electricity to be generated by the project? Is there a market for electricity at that cost?

Do the communities involved have the infrastructure or the \$ to update current infrastructure to store and use the power? Who will get to use the power?

How will the grid manage fluctuations in electricity produced by the farm?

Can you explain the terms: Infra Sound & Wind Turbine Syndrome

What percent of the rated capacity would actually be produced? How tall are turbines?

When no wind where we get our electricity?

1. The Mackinaw Bridge supports are 552 ft. above the water. How tall will your turbines be at the top of the blade?
2. How much in property or other taxes would this wind farm pay?

Lights will need to be on these wind farms – right? How powerful – how many? What colors? It will be too much for star gazing? People will no longer enjoy the night sky?

What is the expected lifetime of a wind turbine? How long does turbine last?

What did Scandia mean when the representative stated he would “change tactics”? Does this mean community desire, especially if against the development, will be circumvented by dealing directly with state and federal authorities?