

Notes from Governor's Ocean Energy Task Force

Sub-Committee #3 Grid Access, Transmission and Utility Incentives Meeting held February 23rd, 2009

Members Present:

David Flanagan, Chair
George Baker
John Kerry, Governor's Energy Office
George Hart
Beth Nagusky, Co-Chair, OETF
Mitch Tannenbaum (for Sharon Reishus), MPUC

Interested Parties Present:

Jeremy Payne, Independent Energy Producers of Maine
Suzanne Sayer
Lisa Martin, Bangor Hydro
Sarah Tracy, Bernstein Shur
Jennifer Puser, Gov's Energy Office
Calvin Luther, Bangor Hydro

NEXT MEETING: March 23, 2009/March meeting subsequently rescheduled to April 3

**Department of Environmental Protection, Tyson Building, Large Conference Room
Will have conference call-in option.**

NOTES:

Beth Nagusky gave an update on the other sub-committees and their work. The big news is that the state is looking to develop a streamlined general permit in law for offshore wind and wave demonstration and test projects in sites that have been pre-identified as appropriate, and a state GP for tidal demonstration projects.. Two offshore wind developers, Principle Power and Blue H have expressed interest. Two issues of interest to subcommittee #3 have come up: 1) will the pilot projects generate power and connect to the grid? 2) where are the interconnection points?

In order to test floating platforms consistent with deepwater wind technologies some Federal permitting is necessary, even if it is within the three-mile state water boundary. Projects would also need adequate spacing between them. Deepwater was defined as waters more than 60-meters in depth.

I. Review of Papers Presented

Discussion and review of reports resulting from the scope of work and goals for Sub-Committee #3.

Market Structure:

Mitch Tannenbaum reported that there are no large regulatory barriers to developing ocean renewable energy resources. Discussion of “socializing” cost of transmission projects before the ISO-NE and in particular Cape Wind’s project and the MPC. So far, nothing has been built under the current “socialization” rules.

Discussed that building transmission is expensive and difficult. Is this a barrier? How much transmission will be coming on-line? PUC docket 2008-255 related to the MPRP does include some future projections and predictions. It was decided it is worth talking to CMP and asking about these projects from April 1, 2008 to the present. It was understood that CMP’s costs were \$1.4 billion just for the one proposed reliability project.

Also discussed that the PUC’s Docket 2008-156 concerning whether Maine should remain in the ISO-NE should also be considered related to transmission cost allocation. A decision to leave the ISO-NE would ultimately impact transmission costs. The utilities have been asked to go back and renegotiate agreements with the ISO as the Transmission Operator agreement is expiring soon.

Other pertinent questions included: How much will it cost to upgrade transmission in Maine? Who pays and who decides? In order to add a lot of wind into the system upgrades in all of New England would likely need to take place. Do we need rules to address this issue? System impact studies (SIS) can address these questions but they are very costly but would provide estimates of necessary upgrades.

It was agreed that transmission funding and construction is critical to developing wind power in Maine.

Lisa from BH suggested that going from our existing system to one that could accommodate 3,000 MW of wind power would require a completely new transmission system. She spoke with several engineers and they said that SIS would need to be completed and changes made up and down the lines in New England and New Brunswick. This would mean new transmission corridors, which would require a lot of public support. Currently, from Orrington south there is a 1200 MW restriction of how much power can flow into the grid.

Beth suggested that the sub-committee needs a map with Lisa’s numbers that would show how we get 3,000 MW into an upgraded system.

Discussed the need for comparative cost figures between upgrading New England vs. the Midwest/North Dakota plan in which transmission lines have been proposed to be constructed all the way to the East coast.

John Kerry reported on how the New England Governors' Power Planning Committee, (Chaired, by John Kerry; Sharon Reishus, Member) through the leadership of Governor Baldacci, and the ISO-NE is putting together a system-wide picture of what needs to happen in relation to capacity to take on the renewable energy and new MW of wind. ISO has agreed to provide technical advice and the NEGC has agreed to create a New England-wide picture of every state's RPS requirements and what the current system can absorb and factor in a long-term model. A report is supposed to be completed by the June NEGC/Eastern Canadian Premiers' meeting. A decision was made by the New England Governors at their Washington Meeting 2/22/09 to have the NEESCO (New England States Committee on Electricity) to be the entity to work with ISO-NE to develop the unified New England Energy Vision. The NEGC will collaborate.

Discussed the Anbaric Transmission study which provides estimates of the Dakotas – East transmission project at an estimated cost of \$80 billion.

Smart Grid:

Suzanne Sayer discussed her report on “smart grids” emphasizing that regulation should be minimized. State of Maine should streamline the permitting process for the siting of wind projects was discussed. “Smart meters” were discussed with several cases currently before the PUC. Bangor Hydro is moving forward which would be a necessity if heating and transportation technologies using electricity move ahead. It was noted that each device can have its own IP number and can be billed separately for electricity use. Increases in generation and load scheduling is critical and allocating where the power would go. It would be a mess if such a system isn't implemented.

Discussed that the distribution network is now sized to consumption of Maine but if increased to include heating and transportation it would not be able to handle the load. We also need to look at the cost of upgrading this system. 6000 kws/home/year are used now and another 9000 kws would be added onto that system, excluding transportation. It would be a massive increase.

Discussed that “smart grid” needs to be defined for purposes of the sub-committees discussions. It was suggested that it means different time of use rates and active load management, which will definitely be needed in the long term.

Discussed if there are any proposals that the OETF should/could suggest to the Governor for inclusion for spending in the Federal stimulus funds. It was suggested that smart grid/transmission should be included and possibly a phased-in study on these topics.

Economic Benefits:

Discussed the urgency of Maine moving forward on developing policies for developing offshore wind. Other states such as DE, RI, NJ are way ahead of Maine. A danger is getting stymied by trying to have a perfect process. Developers are already making commitments to states who are out there with some kind of policies. Maine needs to

move quickly and potentially use Federal stimulus funding like other states are doing. We should also consider shallow-water projects. What else should we be doing to get ahead or catch up? We are looking at permitting, what else do we need to do to put out the “welcome mat” to developers?

Discussed that fixed-bottom platforms can be installed in 60-90 meters of water. There is a capital problem as it would cost generally around \$25 million just to get started. Maine does have the advantage of having shallow waters. It was agreed that if we don't have a regulatory regime in place, other states will get ahead of us in the transmission queue.

Discussed putting out an RFP for a test site. Long-term contracts are already possible in Maine and an RFP has already gone out from the PUC. There is nothing to keep developers from submitting a mechanism and putting into place long-term contracts with utilities that would buy the long-term power. We would probably want and need to define certain geographical areas before an RFP was issued. The group should review the RFPs that Denmark and United Kingdom currently have.

Discussed economic incentives such as tax credits, bond packages etc. noting that help on all fronts would be highly beneficial. We don't need to reinvent the wheel, we should try to fit our programs and mirror the Federal stimulus priorities. New Hampshire has a site evaluation committee, Maine could investigate something similar. The OETF could have experts in the field to review potential project sites which would supersede local jurisdiction.

Bill Ferdinand volunteered to talk with ISO-NE about the queue policies such as attachment N and K related to the transmission tariff.

Offshore Wind Characteristics:

Discussed wind power's intermittency, the need for grid reliability and winter month peak power generation. George Hart recently looked at 25-years of wind data off Mt. Desert and found that there are many 1-day periods where wind capacity drops off entirely but the real problem is the number of 2-5 day periods in which there are complete dead zones on wind which is about 10-20% of power generation. This presents a real system problem. There are two potential solutions: 1) strike a deal with Hydro Quebec which has stable hydro storage power that could be transmitted into our region 2) implement hybrid home-heating systems with heat pumps and some kind of backup such as fossil fuel systems that most people already have. Or 3) build gas-fired back-up turbines. With backup systems 3-days cannot be stored.

Discussed plug-in hybrid cars. Three categories; 1) some engine power 2) extend range of existing electric vehicles 3) super EVs. Surges and jolts into the system are a problem.

Discussed time of use pricing. Wind resource is vast. Old assumption of wind turbines were at 40% capacity delivering 2 MW of power, now we can double the generation, size

to 10 MW and average 3-5 times more generation from each turbine with the platform price rising only 10%. The strength of offshore wind is very strong!

Discussed ancillary services, what about voltage support? Operators' issues include how to operate the system with intermittent resources? Pump storage is one solution, a huge transmission line investment is another.

Discussed what level of installed capacity of intermittent RE resources are a problem? Maine's goal now for offshore wind is 300 MW by 2020, there won't be a problem on the existing grid system until 5,600 MW total on the NE grid is added. However, somewhere between 3000 MW and 1 Gigawatt we will need an entirely different system to accommodate. It was thought that 20% of the system could be accommodated.

Final Report:

Discussed the Sub Committee's final report and its timing. It was agreed that the sub committee should consider the following issues to include in the report:

- Make a case for enhanced transmission system and grid reliability
- Incremental capacity is important
- Show how Europe is thinking about this (see climate wire article)
- Show practices/policies of other states that are pursuing offshore wind
- Address how DOE is looking at transmission as a prerequisite for power upgrades
- Need to address not just transmission but ancillary services, technical problems, and understanding issues like the Aroostook Wind problem.
- Need to know emerging Federal policy; Obama has key targets, New England could participate in major corridor policy, before the Dakota project takes precedence.
- Make clear the NEGC process and vision blueprint that is being developed.
- Federal stimulus funding on transmission
- Need an inventory of state policies on transmission capacity standards and the CPCN process.
- Where are we in Maine? What are our policies? Where is the OPA. Need statutory requirements in writing to review.
- Need to address and analyze potential and future technical advances.
- Investigate taking off pressure on transmission system by moving power off the grid during off-peak times. Night-time usage delivery.
- Need to analyze Bangor Hydro/CMP's capacity numbers and usage time profiles. (Lisa will speak with Calvin to obtain information)
- Need to address reducing costs, increasing reliability, reducing pollution, reducing price volatility. (Lisa will email problem statement.)
- Need to take into consideration working waterfront and how much land is needed for wind projects.
- Consider setting funding aside for purchase of land for this reason.
- Investigate financing, cost-sharing arrangements and siting issues.

- Address potential disincentives to alternative electricity-based technologies.

Calvin to send out a definition of “smart grid”