MEETING SUMMARY

April 14, 2009
Ocean Energy Task Force
St. Paul's Center, Augusta

I. Introductory Matters

The proposed legislation, **"An Act to Facilitate Testing and Demonstration of Renewable Ocean Energy Technology" (L.D. 1465)** has been sent to the Reviser's Office.

The topical focus at the next full Task Force Meeting will be regarding Human Uses and Environmental Impacts.

II. Subcommittee Reports

Subcommittee One (*Human Uses and Environmental Impacts)*

- The Subcommittee is in the process of creating a scientific method to assess the different data layers that are present in the OWEGIS database.
- Criteria will be based on a series of issues and weighing these criteria will be the next important step in the creation of this method.

Subcommittee Two *(Permitting and Regulatory)*

- The Subcommittee is continuing to focus on involving Federal agencies in the permitting and regulatory process.
- The next steps following the proposed legislative discussion will be centered on the broader ideas of large scale, alternative energy development.

Subcommittee Five (*Tidal Power)*

- The Subcommittee has been compiling information on tidal energy and what the potential environmental impacts might be should be further tidal installations be developed.
- The Subcommittee has also ensured that tidal power is included in the proposed legislation. The Subcommittee is focused on the inclusion of provisions for the Coastal Zone Management Act consistency review as well.
- The Subcommittee is also examining how to establish a permanent group to promote tidal energy in the state.

Subcommittee Six *(Oil and Gas Development)*

- The Subcommittee has been involved in talks with the U.S. Minerals Management Service to discuss the Agency's offshore planning process and what opportunities there are for states to weigh in.
- The Subcommittee will probably have one more meeting to wrap up for the legislative session.

II. Economic Development Potential

Cathy Renault, Department of Economic and Community Development

Ms. Renault's presentation centered on highlighting Maine's separate energy clusters. The primary focus of this Task Force meeting was to discuss economic development potential in the state and Ms. Renault did so by identifying two potential attributes that Maine currently has:

- The existence of Heavy Manufacturing and Construction (BIW, CIANBRO, etc) in the state. There are a number of companies in Maine that have the capacity to do work with steel and composites.
- Additionally, there are already a number of component manufacturing sectors in Maine in the way of fabrics, and other components.
- 59% of potential economic impacts resulting from Ocean energy development will be in the field of manufacturing.

Ms. Renault's Presentation can be found here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/clusterdiagram.pdf

III. Bath Iron Works

Lisa Read, Project Manager, Bath Iron Works and John Fitzgerald, Bath iron Works

Bath Iron Works is heavily involved in Maine employment and manufacturing sectors. BIW has unique facilities and capabilities including manufacturing, construction and design producability (the creation of an efficient design from the onset so as to decrease the need for revisions). BIW has the capacity to accommodate both their traditional ship building industry and the addition of potentially new ocean energy projects construction.

BIW staff spoke to the emerging problem; that they see, of work force challenges and shortages in the state. Maine's construction cluster employs roughly forty to fifty thousand people. From 2006 to 2016, it is forecast that the cluster will, on average, grow modestly. Within the cluster, there are a number of occupations that require a high level skill set. The issue identified with this potential need is the retention and education of young, skilled employees with a degree to fill the potential growing demand. The take away point is that part of innovation is workforce preparation. BIW sees Maine's current state of workforce preparation as a concern.

The Bath Iron Works Presentation can be found here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/biw.pdf

Questions from the Task Force

- **Question:** There is not a clear solution to labor issues in Maine. Does the State or Department of Labor have an industrial policy to address this problem?
  Answer: The State is currently working on a solution. Higher education is a good staring place. The State needs to fix the "leaky bucket" and find a way to promote graduation from higher education with a degree. BIW currently has a generational path, but with many highly specialized positions, they are actively recruiting outside of the state.

- **Question:** Are there any estimates on the number of engineers that the state will need in the future?
  Answer: The Department of Labor has done preliminary estimates, but they are simplistic equations. The ongoing dialogue between UMaine engineering and The Department is the best path that the state has right now.
- **Question:** How hard is it to find the core labor they need in-state and is it easier to recruit out of state if the necessary workforce cannot be found in Maine? If the presenters could pick one area for the Task Force to focus on, what would it be?
  Answer: Consistent opportunity is the biggest issue right now. The resources are there to some extent, but the time in which the skills can be captured is difficult.
- A good number to relate to is 15000 jobs per one gigawatt of power.

IV. Type of Economic Development Incentives

Cathy Renault, Maine Department of Economic and Community Development

Ms. Renault spoke more to the nature of economic development as being a three-legged stool.

- Bringing in businesses from out of state,
- Expanding existing structure in the state,
- Or growing Maine's own business.

Maine's current paradigm is focused primarily on the second leg, which is helping existing businesses to expand. A number of other states have been explicitly investing in Research and Development for years.

Ms. Renault's presentation can be found here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/incentives.pdf

Maine Technology Institute

Betsy Biemann, MTI

The Maine Technology Institute's (MTI) mission is to invest in private companies to stimulate Research and Development. When MTI was created, there were seven large sectors for the state to invest in. In the Business Innovation Sector, companies that are just starting out can approach MTI for a grant (up to $25,000) for start up activities (prototype development, commercial aspect, etc.). The start up company is required to match the grant on a one to one ratio as MTI does not replace investment, it simply incentivizes it.

For companies that have finished a development award, they can come to MTI with a draft investment document and ask MTI to join in the initial round of investment to help the start up with the bridge to commercial achievement. All of these programs are supported with money from the general fund.

MTI also helps companies access Federal small business research innovation grants for small private companies to develop new technologies. Maine companies can secure six million dollars a year for start up research and funding.

Currently, Maine is attracting attention from other companies and states as the State is still making investments when other states are not because of the economy. MTI has a 50 million dollar bond limit. MTI has been impressed with the quality and quantity of the applications. A total of 210 million dollars in requests have come through for the 50 million bond amount. Most have been very strongly suggested.

European Initiatives
George Hart, Task Force Member

The Europeans see the world as being engaged in a fourth industrial revolution. The U.S and Europe were matched for installed wind power last year, but the U.S. had significantly less new job creation because there were no turbine manufacturing activities. Incentives include an alignment of several different factors: Financial, educational, and manufacturing.

What really makes offshore wind development in Europe work involves two key components:

- The creation of an enhanced grid (equivalent to the interstate highway system) and;
- The need for subsidy. The subsidy percent is 50 cents per kilowatt hour. This is part of the equation that Maine is going to have to address.

Questions from the Task Force

- **Question:** Thinking about using six to eight cents as a subsidy, how can we estimate a figure when we don't have any operating platforms to compare it to? How do we know what the delta is between the cost of alternative generation and current technology?
  Answer: Most of Mr. Hart's estimates are based off of offshore/nearshore developments that do exist. The potentially difficult part is that OWEC is very close-mouthed about how much a turbine or a platform would cost.

Public Comment

- **Question:** There may be a significant impact for traditional users of the ocean should any of the proposed legislation pass. Is it realistic to think that the transitional work force (people currently operating on the surface of the ocean) can get access to training and education for the new opportunities mentioned? Also, what do the maintenance boats look like?
  Answer: The first phase is probably going to nearshore technological development. Installation vessels will be very large; nearly the size of an Aegis class destroyer.
- **Question:** Why do we need to invest in massive developments when the average consumer can just create his/her own home generation?
  Answer: The Task Force is looking at supplying the larger energy picture, not just home electricity but the other 90% involved in transportation and heating (through electricity).

David Flanagan, Task Force Member

Mr. Flanagan spoke to dealing with the issues that stand between the idea of using this renewable resource and the practical realities of actual accomplishment.

- **Step One:** Accurate meteorological information is vital to this process. One of the great issues with wind power is its intermittent nature. The more we know about the wind resource, the more the grid developers can plan for this potential obstacle. There is every reason in the world to get new MET towers set up in the Gulf of Maine.

- **Step Two:** Robust turbine technology is needed to put together machines that can withstand environmental conditions in the Gulf of Maine.
- **Step Three:** Siting approval from all three elements of the Local/state/federal perspective.
- **Step Four:** Lead lines from the generation platform to the state grid, system integration into existing electric grid, and examination of incentives for commercial development.
    - Lead Lines – The generation tower has to connect somewhere. Cables are expensive to build and there is still an issue as to who pays for them. The ISO system says the generator must pay for the line from where it starts to where it joins up with the system. This makes generators site as close to the transmission system as is practically possible. One of the major constraints is going to be transmission development near wind development.
    - Integration into the System – The creation of a 'Smart Grid", which is the ability to control the electrical load on the load side of the equation. The idea is to have controls and equipment that can adjust on an instantaneous basis related to the power supply and demand. Load-following power is also needed and Hydro-generated energy is ideal. Gas fired plants are also an acceptable back-up. Maine also needs to develop ways to use wind off peak. Wind blows primarily at night, which is traditionally off peak. We need to address time of use pricing. In order to have 5000MW of alternative energy generation, our transmission system must be modified significantly.
    - Incentives for Commercial Development – Once Maine has the additional transmission, the state needs to have contracts to take to the bank to finance the project. Maine would benefit from having national, regional, and state policies that would promote all of the above in addition to Power Purchase Agreements.

V. Large Scale Renewable Development and Transmission
Denis Bergeron, Maine PUC

Mr. Bergeron gave a brief outline of the history of power generation in New England. He also spoke to the various types of transmission projects and what they entail:

- Open Access Transmission Tariffs;
- Regional Reliability Benefit Upgrades;
- Local Benefit upgrades (something to prop up transmission in a locality paid for by the locality);
- Elective transmission upgrades (merchant transmission projects/generator interconnections); and
- Market Efficiency Transmission Upgrades (Maine Power connector)

The federal government is now interested in listening to what New England might propose.

Mr. Bergeron's presentation can be found here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/bergeron_largescalerenewables.pdf

VI. New England Offshore Wind Energy and Transmission Challenges
Stephen Conant, Sr. Vice President, New England Independent Transmission Company

Mr. Conant spoke to the Maine Power Connection prospect (Detroit to Fort Kent). He also spoke of how Massachusetts and Connecticut considered the project a "Gen Tie" or generation tie-in as opposed to a Reliability upgrade, the latter being a project that they would have to contribute a significant amount of funding to, while the former does not require ISO New England member states to contribute money to. Mr. Conant also covered different transmissions project throughout the U.S in Texas and in California. He also spoke to Senator Reid's Bill involving identification of renewable energy zones with renewable resources of at least 1000 MW.

Mr. Conant's presentation can be found here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/conant_transmissioncost.pdf

And related materials here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/conant_transmissionchallenge.pdf

VII. SMART Grid Opportunities
Calvin Luther, Bangor Hydro Electric

Current energy initiatives from Bangor Hydro include implementation of automatic meter readings in order to obtain daily and now hourly readings from patrons. To facilitate daily readings BHP needs a compilation system, and they need a way to check the power readings to make sure they're accurate.

A Smart Grid is a vision and will be transactive (it will support many different transactions). The Grid has to accommodate many varying types of generation and storage options. It would enable new products and services.

Mr. Luther's handout can be found here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/luther_smartgrid.pdf

VIII. State Approaches to Long Term Energy Agreements
Sarah Tracey, Burnstein Shur, Counselors at Law

Ms. Tracey presented an overview of long term agreements for energy, capacity, and REC's. Much of the time, these agreements may cost the rate payer a small percentage more then current rates. Ms. Tracey also gave an overview of other Power Purchase Agreements and long term agreements in other states.
State agreements included Massachusetts, Delaware, New Jersey, and Rhode Island.

Ms. Tracey's presentation can be found here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/tracy_longtermapproaches.pdf

And other materials here:
http://www.maine.gov/spo/specialprojects/OETF/Documents/Apr14'09_TFmtg/tracy_matrix-longtermapproaches.pdf

Questions from the Tack Force

- **Question:** If every house in Bangor Hydro's jurisdiction tripled their electric use, would it require new wires?
  Answer: Yes, but it would be over a long period.
- **Question:** If most of the electricity use was at night, would it still require new wires?
  Answer: No, probably not, the night usage would serve to mitigate the increased load. Peak Usage is frequently driven by business and not by residential customers.
- **Question:** Is there a standard equation for transmission lines?
  Answer: It's usually about 2 million dollars per mile.

IX. DRAFT Interim Report Review

- There was a suggestion to change depth requirements to between 60 and 90 Meters.
- Maine DMR should be included in bullet point 2, page 4.
- The top bullet on page five conflicts with a current agriculture bill.

X. Adjourn

Mr. Perkins wanted to thank the Subcommittees for all of their work. He also wanted to thank everyone for the amount of work done by state staff on the legislation. Going forward we need to focus on state funding issues.

The next full Task Force meeting will be at the St. Paul Center in Augusta on Friday, May 8th from 9:00 AM to 4:00 PM.

There being no additional comment, the meeting was adjourned.