

OCEAN ENERGY TASK FORCE FINAL REPORT

WORKING DRAFT OUTLINE

05.01.09

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

A. Task Force Mission

B. Task Force Process

1. Organization and work plan
2. Public participation

C. Summary of Key Findings and Conclusions

D. Recommendations

I. VISION: THE VITAL ROLE OF RENEWABLE OCEAN ENERGY IN MOVING FROM A FOSSIL FUEL TO A RENEWABLE ENERGY-BASED ECONOMY

A. The Need to Act Now to Advance Development of Maine's Renewable Ocean Energy Resources

1. Climate change concerns; relationship to greenhouse gas reduction goals
2. Real and present risks to Maine of anticipatable spikes and volatility in fossil fuel prices
3. Competition for public and private investment

B. The Central Importance of Grid-Scale, Offshore Wind Energy in Meeting Electric Energy Demand in Maine and New England, Including Foreseeable Heating and Transportation Demands

C. Assurance of Adequate Transmission Infrastructure and Smart-Grid Capability

D. The Important Role of Community Wind, Tidal Power, and Other Renewable Ocean Energy Resources and Conservation in Meeting Local Needs, Creating a Diverse and Robust Renewable Energy Mix, and Building a Renewable Energy-Based Economy

E. Integration of State Environmental, Energy, and Economic Development Policy

IV. MAKING VISION A REALITY: ADDRESSING KEY CHALLENGES AND IMPEDIMENTS TO DEVELOPMENT OF MAINE'S RENEWABLE OCEAN ENERGY RESOURCES

A. Offshore Wind Energy

1. Overview of the offshore wind energy resource potential in both state and adjacent federal waters: An energy resource of global significance

2. Assessment of current state goal for offshore wind energy development in Maine Wind Energy Act

3. Major challenges and Solutions to growth and development of Maine's offshore wind energy opportunities

a. Technological

- i. Status of deep-water wind technologies
- ii. Need for investment in research and development to accelerate commercialization of offshore deep-water wind and other emerging technologies

b. Economics of shallow and deepwater offshore wind

- i. Competition with fossil fuel-based generation; problems created by lack of true cost accounting
- ii. Pricing; long-term renewable power contract issues
- iii. Securing benefits for Maine people; assuring use of Maine's Public Trust assets (state submerged lands, waters, and air space) for energy development provides commensurate public benefits while fostering industry growth
- iv. Making Maine competitive in a global energy market through well-targeted public investment in research and development, education, and promotion related business opportunities

c. Infrastructural: Electric transmission and distribution system

- i. ISO considerations; addressing transmission cost allocation and related issues in a regional context
- ii. Transmission and distribution capacity needs and costs
- iii. Intermittency-related challenges and solutions

d. Regulatory: Facilitating well-sited shallow and deepwater offshore wind generation facilities

- i. Ensuring availability of accurate natural resources- related information to inform public and private decision-making on siting issues
- ii. Harmonizing federal, state and local review and decision-making
- iii. Understanding and balancing competing natural resources and related human uses

e. Federal policy-related

- i. Ensuring that national energy policy works to optimize use of regional wind energy generation to address regional energy needs
- ii. Ensuring that federal transmission siting policies do not impede development of renewable energy in Gulf of Maine

- iii. Securing needed federal investment in Maine-specific research and development initiatives, including the Maine Ocean Energy Research and Development Area
- iv. [other?]

4. Recommendations

- a. Review Maine Wind Energy Act's goal regarding offshore wind energy development [?]
- b. Facilitate permitting of demonstration projects: demo site selection process (status report re: implementation of general permit legislation if enacted)
- c. Support University-led Maine Offshore Wind Energy Research Center and related research and development initiatives
- d. Ensure efficient permitting of commercial-scale shallow and deepwater offshore wind development
 - i. Clarifying state agency jurisdiction
 - ii. Ensuring appropriate consideration of natural resources and related human uses
 - iii. [other issues to be discussed, e.g., pre-screening to identify areas in which development may present significant permitting issues]
- e. Develop presentation and engage in community outreach and public education
- f. Wind data [Beth - not sure what the related recommendation is on this topic which was among the wind-related recommendations in our prior outline][this was intended to get at use of UM data vs. NREL data I think]
- g. Environmental data [Don, Kathleen - Something more specific here?]
- h. Pricing Incentives; long-term contracts
- i. Grid-management and transmission improvements
- j. Community-scale wind energy projects to address local needs[I am not sure this is relevant to offshore wind given pricetag]

B. Tidal Energy

1. Overview of the scale and availability of Maine's inshore tidal power resource
2. Goal for tidal power development
3. Major challenges to growth and development of Maine's inshore tidal energy opportunities
 - a. Competing natural resources and related human uses
 - b. Transmission: Grid accessibility at locations well-suited to tidal power development; tidal power specific transmission issues [?]
 - c. Regulatory
 - i. Ensuring compatibility and predictability in and between federal and state review processes
 - ii. [other?]
4. Recommendations

- a. Full-scale tidal power project permitting [?]
- b. Stakeholder engagement
- c. Pricing incentives; long-term contracts
- d. [other?]

C. Wave Energy

1. Nature of Maine's wave energy resources
2. Status of technology
3. Recommendations
 - a. Support research and development, particularly as complement wind power
 - b. [other?]

D. Fossil Fuels - Oil and Natural Gas

1. Summary of potential oil and natural gas in state and federal Gulf of Maine Waters
2. Overview of risks and opportunities given current exploration and extraction technologies
3. Recommendations
 - a. Regulatory
 - b. State policy regarding hydrocarbon development in federal OCS waters in the Gulf of Maine

E. Promotion and Development of a Renewable Ocean Energy Industry and Related Businesses in Maine

1. Overview of current state and federal incentives
2. Overview of current state economic development initiatives
3. Recommendations
 - a. Support for research and development
 - b. Economic development
 - i. Ocean energy and smart grid-related manufacturing
 - ii. [other?]

CONCLUSION

APPENDICES

- Executive Order
- OETF membership list
- OETF interested parties list
- Map of Gulf of Maine's wind energy resource

- EPRI information re: Maine's inshore tidal power resource
- Outline of Maine regulatory framework
- Summaries of regulatory and other initiatives in select jurisdictions, such as Massachusetts, Rhode Island, Delaware, New Jersey, Denmark, Germany, United Kingdom
- Assessment of data availability and gaps regarding key natural resources and related human uses
- DECD's 1.09 CleanTech white paper
- Others