

Testimony on Coastal and Marine Spatial Planning  
Committee on Commerce, Science, and Transportation  
Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard

Wednesday, November 4, 2009

Ocean Renewable Energy Coalition

On behalf of the Ocean Renewable Energy Coalition (OREC), I appreciate the opportunity to present my comments on a framework for coastal and marine spatial planning.

OREC is a national trade association representing the marine renewable energy industry, including wave, tidal, hydrokinetic, current, ocean thermal energy conversion (OTEC) and, in collaboration with other trade associations, offshore wind, solar and biomass. Founded in 2005 with just four members, OREC now stands 45 members strong, reflecting the increased interest in and commitment to OREC's mission of advancing the commercialization of marine renewables in the United States.

Development of marine renewables technologies can play a significant role in our nation's economic recovery and expand our renewable energy portfolio. According to the Electric Power Research Institute, ocean renewable energy in the United States has the potential to supply some 400 terawatt hours of clean power annually, or roughly ten percent of today's electric demand. This is more than the electric generation currently delivered from all conventional hydropower plants in the United States.

A robust marine renewables energy industry advances other national economic, energy and environmental goals by:

- Producing renewable, emission-free energy from our nation's abundant ocean resources, thereby mitigating climate change effects;
- Reducing our nation's reliance on oil imported from the Middle East, Venezuela and other politically volatile areas;
- Revitalizing shipyards, coastal industrial parks and shuttered naval bases;
- Creating green jobs in coastal communities hit hard by our country's current economic crisis;
- Securing our nation's place in developing offshore renewable energy technologies thereby ensuring that the United States is an exporter, not an importer, of these technologies;
- Providing low cost power for niche or distributed uses like desalinization, aquaculture, naval and military bases, powering stations for hybrid vehicles and for offshore oil and gas platforms; and
- Promoting coastal planning that reflects the goals of bio-diversity, and optimal use of resources which contemplates synergistic gains for all offshore industries.

The Coalition commends the work of the Committee and the National Ocean Policy Task Force to craft a national policy for the responsible development of our ocean, coastal, and Great Lake renewable energy resources. While this is a daunting task, we encourage this effort to enable marine renewable technologies to play a significant role in meeting our nation's energy, economic, environmental and security needs.

The marine renewables industry in the U.S. faces unique financial, jurisdictional and regulatory hurdles that threaten the commercialization of this emerging renewable technology. First, marine renewables have not enjoyed the level of federal support that other renewables, such as solar, biomass and wind have received. In FY08, the Department of Energy revived its dormant water power and hydrokinetic program and issued \$10 million in solicitations for grants. Appropriations increased to \$30 million for FY 09 and \$50 million in FY10. To date, DOE has not provided additional funding from the Recovery Act resources.

Second, while the potential of marine renewables is enormous, the industry stands at the same place as wind power fifteen years ago. Though offshore wind projects are now commercially viable and can be financed through power purchase agreements, marine renewables have only just reached the stage where the first generation of demonstration projects are ready for deployment. Although the first generation of marine renewables projects are small in size and lack the same private backing and access to capital as more mature energy technologies, nevertheless, they are required to comply with the same lengthy siting procedures applicable to well-established technologies.

For example, Verdant Power needed five years to acquire authorization to install a 30 kilowatt turbine array in the East River near New York City and Ocean Power Technologies (OPT) is embarking on the fourth year of its efforts to site a 2 megawatt project off the coast of Reedsport, Oregon.

The lengthy permitting process consumes scarce resources which are better used for perfecting the technologies which, in turn, would expedite commercialization. Moreover, permitting uncertainty deters private equity investors who, at present, are the primary source of capital for this nascent industry. As such, marine renewables developers have serious concerns about any system which will further delay siting or create more regulatory uncertainty for the first generation of marine renewables projects.

Because only two marine renewables projects have been sited in the United States and only a handful more abroad, little is known about the real world environmental, social and economic impacts of marine renewables projects. Consequently, marine renewable energy project developers are often unable to comply with resources agencies' requests for information without engaging in years of costly studies. For now, we advocate application of principles of adaptive management which allows for rigorous post-deployment monitoring and

changes in operation to address adverse impacts as an alternative to extensive pre-siting studies. Adaptive management will also allow for collection of data that can inform MSP and future siting decisions.

Uncertainty regarding impacts also makes marine renewables inappropriate candidates for the precautionary principle. A policy of prohibiting action in the face of uncertainty would essentially bar any new technologies, including marine renewables, because questions about impacts cannot be resolved without actually siting these projects and gathering data.

Marine renewables also suffer a second disadvantage in addition to their emerging status and undercapitalization. Specifically, marine renewables are subject to overlapping jurisdictions of multiple agencies, more so than any other offshore renewable. For example, marine renewables on the outer continental shelf (OCS) are regulated by both the Federal Energy Regulatory Commission (FERC) (for licensing) and the Mineral Management Service (MMS) (for leasing). Moreover, the existing “sweet spot” for wave energy technologies (based on existing technology, cost and operational viability) lies roughly two to five miles offshore, thus straddling state submerged lands and the OCS. Consequently, marine renewables are potentially subject to ongoing state coastal planning initiatives as well as any federal policies proposed by the Task Force. Because of the problem of multiple jurisdictions, coordination between federal and state programs as well as between FERC and MMS takes on heightened significance for marine renewables developers.

As with offshore wind, marine renewables do not fit within the five year planning process established for oil and gas under the Outer Continental Shelf Lands Act (OCSLA). Electricity from marine renewables is sold by contract to utilities, which have long-term planning processes for wholesale power procurement and transmission planning that must comply with federal, state and regional initiatives. The five year planning process for oil and gas is out of synch with the electric utility planning process and is unworkable for marine renewables.

As the Task Force moves forward with steps towards MSP, it should bear in mind that several coastal states are already undertaking their own initiatives. These states include Massachusetts, Oregon, New Jersey, and Rhode Island. The Task Force should coordinate federal efforts with state planning efforts. Finally, many of the models for MSP from Europe may not be appropriate for use in the United States because of our system of dual state-federal jurisdiction.

OREC and its member marine renewable energy developers are committed to environmentally responsible, economically viable development of ocean renewables projects. OREC and its members work closely with the resource agencies, NGOs and coastal communities to devise a workable approach to siting marine renewables in an expeditious and environmentally benign manner.

To this end, OREC has negotiated legislation (S. 1462 - provisions on Adaptive Management and Environmental Grant Program) that would establish an Adaptive Management Fund which developers can use to underwrite environmental studies and ongoing post-deployment monitoring requested by state and federal resource agencies, including NOAA, for demonstration and early-stage commercial projects. Information subsidized by the Adaptive Management Fund would be placed into the public domain (in contrast to many environmental studies performed in connection with permitting which remain proprietary if the project does not move forward) to inform future decision-making. As added protection against environmental harm, projects receiving adaptive management funds would be required to cease or alter operation if unacceptable environmental impacts are observed during post-deployment monitoring. OREC has also supported legislation that would provide funding to coastal states to study and map their coastal resources and make such information publicly available.

OREC believes that NOAA's history of, and long experience in protecting and enhancing our nation's coastal and ocean resources make it a critical player in developing an ocean management program. Most importantly, NOAA can play a valuable role in collecting the data necessary for a comprehensive ocean management policy. For that reason, OREC supports legislation to fund NOAA's ongoing data collection efforts through the Integrated Ocean Observatory Systems or other programs.

These carefully negotiated initiatives provide a course for moving forward cautiously, even in the face of some uncertainty and a means to gather the information that is critical to the success of MSP efforts. The Task Force should take these voluntary efforts into account when crafting an ocean management plan.

For the near term, OREC recommends that the Task Force begin to address uncertainties regarding marine renewables technologies through adaptive management, robust monitoring and data gathering. OREC does not oppose MSP in principle nor do we object to laying the framework for eventual incorporation of MSP in national ocean policy. However, MSP is only as effective as the data and input upon which it is based – and gathering the baseline information needed to implement MSP will take time and funding.

In the interim, many of the goals of MSP – such as a coordinated approach to ocean development and identifying compatible uses – can also be pursued for the near future within the parameters of existing regulatory processes with some modifications or improvements and through application of adaptive management principles.

OREC has recommended that the Task Force consider adopting the following principles in its MSP efforts to the extent possible:

- Adaptive management should be recognized as the preferred approach for siting marine renewables and addressing concerns related to ocean management;
- Avoid creating additional uncertainty which would effectively stop capital formation in this industry;
- Leave the door open for future innovation;
- Ensure that ocean management or MSP is informed by adequate data, including data that has already been collected by federal and state agencies;
- Recognize the differences between oil and gas and marine renewables;
- Avoid creation of a new bureaucracy;
- Establish a coordinated, comprehensive approach to permitting offshore renewables through use of MOUs and creation of a uniform application;
- Avoid jurisdictional conflicts;
- Synchronize ocean management or planning initiatives with state and regional planning efforts and policy making for the electric utility industry;
- Recognize the difficulties inherent in MSP and proceed cautiously, without slowing the marine renewables industry or sacrificing the goal of fighting climate change.

Marine renewables offer enormous potential to combat climate change and to provide an indigenous source of clean, renewable energy. Over the past five years, the marine renewables industry has gained momentum with respect to technology advancements and an influx of federal and state funding. Stalling deployment of marine renewables at this critical juncture could devastate the industry and drive it overseas.

Because of the unique hurdles that a nascent industry like marine renewables face, OREC urged the Task Force to avoid attempts for a “one size fits all” or universal solution. With respect to marine renewables, the best approach is to allow for deployment to move ahead in an environmentally responsible manner which incorporates robust monitoring, adaptive management principles and encourages coordination between the relevant permitting agencies through use of uniform applications and process schedules and collaboration. Data gleaned from monitoring operation of the first generation of marine renewables projects can offer insight into marine renewables’ environmental effects and its

compatibility with other ocean uses. Ultimately, information gleaned can be used to inform siting decision and future ocean management initiatives.

Thank you again for the opportunity to comment on the issue of ocean management.