PECC Energy Transition Seminar 2
From Prototype to Market: Development of marine renewable energy policies and regional cooperation
June 24-25, 2014, Santiago, Chile

Offshore Renewable Energy and the need for Ocean Business Community Leadership and Collaboration

Paul Holthus
CEO, World Ocean Council

The development of marine renewable energy policies and regional cooperation needs to be based on a clear understanding of the status and trends in economic use of marine space and resources – as well as the potential new kinds and areas of use. Achieving a balance between 'blue' growth, jobs, and a sound maritime environment will largely be based on addressing the opportunities and challenges outlined below. Success in improving ocean governance and sustainable marine development will require coordinated leadership and collaboration by the diverse ocean business community.

Ocean Industry Sustainability Challenges and Opportunities

Leadership and collaboration by the diverse, international ocean business community is essential to addressing ocean sustainability issues and maintaining industry access and social license to responsibly use marine space and resources.

Sustainable use of the dynamic, interconnected global ocean presents unique opportunities and challenges for ocean industries. As the health of the marine environment declines, ocean industries are often held responsible for their impacts to the ocean by the public, governments, non-government organizations (NGOs), and inter-governmental organizations (IGOs). Advocacy groups are confronting ocean industries on a sector, incident, or local basis (e.g. oil spills, deep sea trawling, port expansion). Moreover, ocean environmental concerns are increasingly being pursed through globally coordinated campaigns (e.g. ocean zoning, marine protected areas (MPAs), ocean noise, marine debris, greenhouse gas emissions).

Ocean stakeholders are pushing for increased regulation in a variety of international venues where international ocean rules are established. Some of the most important ocean governance developments are being pursued through the non sector-specific international policy processes that include oceans, e.g. the Convention on Biological Diversity (CBD) and the UN Convention on the Law of the Sea (UNCLOS), etc. Balanced, comprehensive information on industry efforts to address marine environmental issues is often not seen in these processes, and there is a need for strategic, coordinated industry participation. Marine industries are often portrayed only as the cause of ocean problems, and the ability unable to create any other perception if they are not "at the table" and constructively engaged in ocean developments.

As a result, private sector access to ocean resources, services and space - even by companies with the best environmental record - is increasingly at risk from the loss of the social license to operate in the seas. There are many efforts by responsible companies to differentiate themselves from poor

performers and try to do business more sustainably. However, the efforts of one company or even a whole sector are not enough to address collective global impacts by a diverse range of industries in a shared global ecosystem.

The private sector is well placed to develop and deliver solutions in response to society's demands that marine ecosystem use is responsible and industry impacts are minimized. A cross-sectoral ocean business community of leadership and collaboration is needed to address marine environmental issues, differentiate good performers, create collaboration with like-minded companies within and across sectors, and engage ocean stakeholders and policy processes. Given the size and scope of ocean industries, forward-looking companies and executives have a particular opportunity to provide leadership in collaborative, industry-driven ocean sustainability.

Offshore Renewable Energy Opportunities and Interactions with other Ocean Industries

There is a particular need to ensure that offshore wind and ocean energy (wave, tidal, currents) are engaged with other industries that operate in the same area, especially in relation to the local/regional issues and interactions. As offshore renewable energy becomes an increasing part of the maritime economy in some areas, it is critical to have good communication and collaboration between the renewable energy sector and other ocean industries. Efforts are needed to ensure that other industries are informed and aware of the special needs and opportunities of the renewable energy industry.

Offshore winds tend to blow harder and more uniformly than on land, providing higher potential for electricity generation and smoother, steadier compared to land-based wind energy. Globally, total installed offshore wind capacity was 3,117.6 megawatts (MW) in 2010, with 1,161.7 MW added in that year alone The growth rate of 59% in 2010 was far above the growth rate of the wind sector overall. The share of offshore facilities in wind capacity worldwide went up from 1.2% in 2009 to 1.6% in 2010. The N Atlantic has the potential to generate considerable renewable energy from offshore wind, especially during the northern winter. As of 2010, offshore wind farms had installed by 12 countries, 10 of whom were in Europe. A total of 10 gigawatts (GW) of capacity had been installed, led by the UK, Denmark, the Netherlands, and Sweden. The EU has a target of 40 GW of offshore wind power capacity by 2020 and 150 GW by 2030.

The world's ocean waves, currents, and tides are estimated to contain more than 5,000 times current global energy demand, with estimates that marine resources could feasibly provide 20,000 terawatthours (TWh) of electricity per year, which is more than the entire global generation capacity. A variety of mechanisms are under development to convert ocean energy efficiently from these sources into electrical power, and several devices are being tested, but the engineering challenges for technology to survive for long periods of time in the harsh marine environment presents many challenges. The maturation of ocean power technologies depends upon deployment of substantial demonstration and commercial projects in nearshore areas. Currently, there are only a few hundred MW worth of projects installed around the world, mostly in European waters.

Catalyzing Cross-Sectoral Ocean Business Leadership and Collaboration

Industry leadership in "Corporate Ocean Responsibility" is essential to navigating this critical juncture and ensuring the long term health of both the ocean and responsible industry use of marine space and resources. Responsible industry performers are well positioned to develop and drive business-oriented

solutions to marine environmental challenges and collaborate with other ocean industries and stakeholders in ensuring the health and continued economic use of the seas.

Many of the policy, practical and reputational aspects of ocean industry activities are now affected, if not dominated, by environmental concerns. These issues are affecting all industries that use ocean space and resources, e.g. oil and gas, shipping, fisheries, aquaculture, ports, tourism, ocean renewable energy, seabed mining, dredging, etc. This is creating important needs and opportunities for collaboration, synergies, and business benefits among the ocean business community. There is business value in ocean industries engaging in a coordinated systematic approach to addressing the challenges affecting the future of ocean business, creating opportunities for collaboration and economies of scale in developing solutions.

With the marine environment subject to increasing commercial use, ocean industries have much to gain by developing and delivering solutions to sustainability - and much to lose if they continue to be perceived only as the cause of ocean problems.

To address the ocean sustainability issues and opportunities critical to business, the World Ocean Council (WOC) was established to create an unprecedented global, cross-sectoral industry alliance. The WOC is catalyzing proactive, collaborative efforts towards “Corporate Ocean Responsibility” by bringing together the diverse mix of ocean industry sectors. Cross-sectoral leadership and collaboration can result in significant business value for the operators committing to the vision of a healthy and productive ocean that supports sustainable use by the responsible ocean business community.

A multi-sectoral and multi-stakeholder approach can result in cost-savings (e.g. collaborative research to develop best practices in sustainability and find science-based solutions to shared issues) and reduce the risk of costly, unplanned and unnecessary restrictions to responsible business operations in the marine environment, e.g. through the economies of scale that can be achieved in joint research on shared problems. Identifying problems and developing solutions must be based on good science, credible risk assessment, performance monitoring and the best available technology - and must be tacked at the scale at which the impacts are accumulating.

Companies with a long-term view of their ocean business are looking to collaborate within and between industries on solutions through participation in the WOC. This not only applies to the companies that directly operate use marine space or resources, but also to the wide range of industries linked to, or dependent on, those direct ocean users. This includes marine technology, mining, manufacturing and many sectors. In fact, any company that transports its products by sea is part of the associated marine environmental impacts.

A growing number and range of companies share the WOC vision of a healthy and productive global ocean and its sustainable use and stewardship by responsible companies. They are distinguishing themselves by becoming WOC Members and are calling on others to join. WOC Members to date include over 70 leadership organizations from a wide range of ocean industries: oil and gas, shipping, fisheries, seafood, mining, seabed mining, offshore renewable energy, ocean technology, maritime law, marine environmental services and other areas. In addition, the WOC has created a network of almost 34,000 ocean industry stakeholders worldwide.

The WOC has created an international, multi-sectoral structure and process for leadership companies from the diverse ocean business community to work together shared challenges. This unique

composition and scope makes the WOC different from national or sectoral industry associations and makes the WOC uniquely positioned to serve as a portal for the ocean business community to work with other clusters and research institutions and consortia.

Regional and Multi-sectoral Ocean Business Community Collaboration

Ocean business representatives have identified priorities to advance ocean industry cooperation on key marine environmental issues. The WOC is forming cross-sectoral industry working groups to address priority in the five thematic program areas that have emerged:

- Ocean policy and governance, e.g. Convention on Biological Diversity (CDB), Law of the Sea, etc.
- Marine spatial planning (MSP), including marine protected areas (MPAs).
- Operational/technical issues, e.g. invasive species, marine debris, marine sound, marine mammal impacts, etc.
- Regional interests, e.g. the Arctic, the Mediterranean, the Caribbean
- Smart Ocean-Smart Industries, i.e. voluntary collecting of ocean, weather and climate data from "ships of opportunity".
- Adaptation of ports and coastal infrastructure to sea level rise/extreme weather events.

Several of these priority areas are particularly important to the development of offshore renewable energy:

Marine Spatial Planning (MSP)

The WOC program is ensuring that the ocean business community is informed about MSP where it is moving forward or being suggested. As an example, areas where MSP is or may develop and where there is significant business interest are the EU (national, regional sea basin), the Arctic, the US, Canada, Australia and international waters and high seas.

The WOC is working to:

- Ensure the ocean business community is informed of MSP process and plans.
- Examine how MSP has worked and reviews the role of industry.
- Define and examine the potential business impacts and benefits of MSP.
- Determine how industry can optimize potential MSP benefits and minimize the impacts.
- Develop coordinated business community engagement in MSP.
- Ensure that MSP takes into account the viability of responsible ocean economic activities.

Operational Environmental Issues

The WOC is creating working groups around the following priorities:

- Marine Sound.
- Marine Mammal Interactions (ship strikes).
- Marine Waste and Debris/Water Quality (solid waste).
- Port Reception Facilities.
- Marine Invasive Species/Biofouling

Smart Ocean-Smart Industries (SO-SI)

The WOC SO-SI program will expand the number of vessels and platforms used to collect standardized ocean, weather and climate data, improve the coordination and efficiency of data sharing and input to national/international systems and build on“ships/platforms of opportunity” programs.

The program is working to ensure a wide range of industry vessels and platforms are:

- Providing routine, sustained, standardized information on the ocean and atmosphere.
- Contributing to describing the status, trends and variability of oceanographic and atmospheric conditions.
- Improving the understanding, modeling and forecasting of ocean ecosystems, resources, weather and climate.

Increased data collection could increase the number of the contributing ones where we have little data. For example, with more accurate predictions of the duration of hurricanes in the Gulf of Mexico, platforms could be shut down for one (or more) less days thus allowing for direct economic value for industry.

Corporate Ocean Responsibility

To conclude, the Pacific Basin ocean hosts an increasing kind, level and extent of economic activity. Industry leadership and collaboration is key to responsible ocean development that includes offshore renewable energy. The private sector needs to ensure access and social license, reduce risk and implement solutions. There is a compelling business value for the ocean business community coming from collaboration on sustainability, stewardship and science. The World Ocean Council, the international multi-industry leadership alliance of ocean companies is a leadership opportunity for responsible ocean companies to address risks and opportunities.