

Global Marine Renewable Energy Conference

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NOAA and Energy

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Good morning. I want to thank the Ocean Renewable Energy Coalition and the other conference organizers for inviting NOAA here today to describe NOAA's role in supporting Administration efforts to create a clean energy economy. President Obama, in his first Fiscal Year 2010 budget request, called for making critical investments over the next three years to double our Nation's renewable energy capacity. While much of the current focus is on the terrestrial side, marine renewables will play an increasingly valuable role in meeting our energy needs, particularly for that substantial segment of our population who live and work on or near the coasts and Great Lakes. The large number of international attendees at this conference also attests to the importance that renewable energy technologies can have for trade and commerce.

NOAA's interactions with the energy sector are wide-ranging. Many of you are familiar with our involvement in outer continental shelf oil and gas exploration and production, siting of offshore LNG terminals, fish passage prescriptions for hydroelectric dam licensings, and offshore wind and hydrokinetic energy permitting. NOAA also is the licensing authority for ocean thermal energy conversion facilities. But, NOAA's energy role also involves land-based wind power, solar power, biomass, and biofuel. Our energy sector involvement encompasses:

- ensuring that ocean and coastal energy development occurs in an environmentally responsible manner;
- providing products and services to aid development, siting, operation, and integration into the grid of diversified renewable energy sources; and
- understanding and predicting changes in Earth's environment to improve energy efficiency and independence.

NOAA is one of the Nation's agencies charged with understanding and predicting the variations and changes in the Earth's environment. We provide weather, water, and climate forecasts and information over a full range of time and geographical scales. We accomplish this through remote sensing and imagery from satellites, a surface network of weather radars, upper air balloons, ocean buoys, ships, aircraft, and seafloor observations. Our network of integrated Earth observing systems monitor changes in ocean, land, air, and space that are critical to decisions by the energy sector.

NOAA weather forecasts are already the foundation for energy-demand predictions on hourly, weekly, and monthly scales by traditional energy suppliers. As renewables become a larger component of the energy sector, NOAA's forecasts will be critical to integrating renewables and managing energy supply. To advance the development of renewable sources, we are working to enhance our observation networks, improve weather forecasts, and develop climate models that incorporate renewable energy. Our newly confirmed Administrator, former Oregon State University professor Dr. Jane Lubchenco, identified one of her major goals for NOAA is to create a National Climate Service. Based on the NOAA Weather Service model, the National Climate Service would produce information related to issues such as global warming, sea-level rise, precipitation changes, and heightened frequency and strength of severe weather. This information will contribute to improved planning and decision making in a changing environment. For example, wind-pattern projections for the next century will likely be more instrumental in making decisions regarding the placement and economically viable operations of wind farms than data accumulated over the last 100 years.

In the products and services arena, NOAA provides global positioning and marine and coastal mapping. We invest in applied science, technology, and transition of research to operations to serve the energy community. These investments provide a broad range of oceanographic and meteorological services, ranging from monitoring space weather for managing the Nation's electrical grid; to river, ice, and water forecasts for hydroelectric power generation; to weather forecasts to optimize conventional power plant production. NOAA provides environmental warnings, forecasts, assessments, and decision tools to mitigate environmental impacts, promote adaptation, and offer long-term mitigation and management strategies. Other NOAA services relevant to marine renewables include researching, monitoring, and predicting ocean currents, tides, water levels, ocean circulation, and temperature, which provides important information for the assessment and prediction of potential renewable energy resources.

In addition to our science and services roles, NOAA has several legislative mandates to protect marine species and their habitats, some of which provide strict guidance related to allowable levels of impact. Under these laws NOAA evaluates potential adverse effects of coastal and ocean energy projects and works to achieve suitable siting and operation of energy-related facilities. NOAA provides scientific expertise on public trust resources such as marine fish stocks, threatened and endangered species, marine sanctuaries, and the coastal zone. Potential impacts of energy development of interest or concern to NOAA include marine biota and benthic habitat impacts, acoustic disturbances to marine mammals, commercial navigation impacts and increased ship traffic, interference with commercial and recreational boating and fishing, interference with weather and other radars, archaeological and historic preservation impacts, and other human dimension effects. We actively participate in energy permitting and licensing processes, and conduct a variety of environmental consultations necessary for Federal agencies to complete energy facility assessments and authorizations. The recent increase in the types and volume of energy projects are challenging NOAA's ability to meet its mandates in an efficient and timely manner. Tomorrow's *Permitting and Permissions* panel will provide an opportunity to discuss these issues in more detail. Finally I want to mention that recent renewal of industry interest in OTEC technology has resulted in NOAA working cooperatively with potential applicants and the Department of Energy to determine the best strategy to move forward.

Throughout humanity's long coexistence with the sea, the world's oceans have provided us with benefits beyond measure. Your presence at this conference demonstrates how great this potential new use of the oceans is. Renewables will be a key piece in addressing domestic and international energy needs, while making an important contribution to reducing the significant threats posed by global climate change. I compliment the conference organizers on assembling such a diverse group of attendees, and once again welcome you to Washington. Thank you for the opportunity to share how NOAA is and will be involved in the environmentally-sound development of renewable ocean energy.
