Marine Mammal Commission 2015 Annual Meeting
Offshore Energy Session Summaries

Wind energy

Wind energy is at an early stage of development in the United States, with only one project approved by the Bureau of Ocean Energy Management (BOEM) for construction and operations. Other projects are at the site assessment stage. Impacts of wind energy development on marine mammals are based on limited studies from European waters, and have focused on responses of harbor porpoise and harbor seals to wind turbine construction and operations. Researchers have observed short-term displacement and avoidance by harbor porpoise of pile driving activities during the construction phase. Longer term impacts are more variable—harbor porpoise may continue to avoid wind energy areas for several years, whereas it appears harbor seals may be using wind energy platforms in certain cases for foraging. No studies are available to indicate potential impacts on baleen whales such as North Atlantic right whales. The National Marine Fisheries Service (NMFS), BOEM, the Navy, and the U.S. Fish and Wildlife Service are collaborating on broad scale surveys to understand marine mammal, sea turtle, and seabird occurrence and use of Atlantic waters prior to wind energy development. That effort, known as the Atlantic Marine Assessment Program for Protected Species, has recently been extended to a second five-year period, and should inform assessments of impacts of both wind energy and oil and gas development. In 2012 wind developers and NGO groups developed an agreement on seasonally-based mitigation measures to minimize impacts of wind energy site assessment on right whales in the mid-Atlantic. That agreement has since been expanded to similar activities off Rhode Island and Massachusetts.

One-liner: Collaborative efforts are underway to better understand and mitigate impacts of wind energy development in the Atlantic Outer Continental Shelf on North Atlantic right whales and other marine mammals.

Oil and gas

The Bureau of Ocean Energy Management (BOEM) has recently issued its 2017–2022 Draft Program Plan for leasing of U.S. Outer Continental Shelf (OCS) waters for oil and gas exploration and development, which includes portions of the mid- and south Atlantic planning areas from Virginia to Georgia. The proposed leasing area on the Atlantic Outer Continental Shelf (OCS) would include a 50-statute mile exclusion zone along the coast. Information regarding oil and gas reserves on the Atlantic OCS is limited, and is based on a outdated seismic data and a handful of wells drilled in the 1980's. BOEM has received eight applications to conduct seismic surveys in the Atlantic OCS—seven for 2-D surveys and one for a 3-D survey. The oil and gas industry use seismic data to determine the location and depth of potential oil and gas plays, thereby minimizing the cost and environmental impacts associated with exploratory drilling. However, seismic surveys introduce sound into the water column that has the potential for short- and long-term impacts on marine mammals. The significance of those impacts on long-term survival of marine mammal populations is uncertain, as studies to date have not been designed to study long-term or cumulative impacts on marine mammals. The seismic industry would implement standard mitigation and monitoring measures to reduce impacts on marine mammals, including passive acoustic monitoring, but the effectiveness of such measures for right whales and other Atlantic marine mammal species is largely unknown. Several of the proposed seismic surveys appear to overlap spatially and temporally, raising the issue of whether the surveys might be unnecessarily redundant. They also appear to overlap with marine mammal "hot spots" in the mid-Atlantic, particularly off Cape Hatteras. Market forces and demands for seismic data are likely to limit the number and scope of surveys that eventually go forward, but there are concerns regarding the lack of a regulatory mechanism to minimize potential redundancy. There is also significant and increasing opposition to both seismic exploration and

drilling off the east coast by the public and local officials, with concerns that it could affect the health and livelihood of coastal residents.

One-liner: Seismic exploration and the potential for oil and gas drilling on the Atlantic OCS highlights the need for a better understanding of the long-term effects of seismic surveys and the cumulative effects of various other activities on marine mammal populations. The potential for significant impacts on marine mammals also highlights the lack of regulatory mechanisms to prevent overlapping surveys, as well as the need to consider designation of particularly sensitive areas in the Atlantic and for better planning to prevent and respond to oil spills.

Economic considerations in oil and gas leasing decisions

Under the Outer Continental Shelf Lands Act, the Bureau of Ocean Energy Management (BOEM) must balance statutory requirements for "expeditious and orderly development" of oil and gas resources with environmental safeguards. BOEM must also ensure the receipt of fair market value for such resources. To meet these objectives, BOEM develops five-year programs that identify which Outer Continental Shelf (OCS) will be available for leasing and the schedule for when lease sales will be held.

The leasing approach used by BOEM differs by OCS planning area, resulting in both economic and environmental implications. In the Gulf of Mexico, BOEM began using a "area-wide" leasing approach in the 1980's to encourage continued exploration and development of higher risk OCS areas, such as deep water tracts. Although initially criticized for reducing the number of bids offered per tract and the amount of each bid, there was an increase in the number of leases issued and overall revenues received. In Alaska, a more targeted leasing approach is being used to strike a balance between making oil and gas resources available for development while limiting conflicts with other OCS uses and environmental resources. For example, BOEM decreased substantially the size of the Cook Inlet leasing area initially proposed for leasing to reduce impacts on beluga whale and sea otter critical habitat, subsistence areas, and waters adjacent to parks and wildlife refuges.

The assurance of fair market value for OCS oil and gas resources is achieved in part by setting the pace of leasing, through the lease sale schedule, and the fiscal terms imposed on leases. One approach used successfully by BOEM to attract bidders is the establishment of fixed royalty rates. Other changes to the fiscal terms of leases to increase revenues and encourage timely development of oil and gas resources include the establishment of minimum bids for deepwater tracts, increased rental rates with additional increases after five years, and increased royalty rates.

One-liner: The oil and gas leasing program necessarily involves a series of trade-offs, with some tools better suited to assuring "fair market value" while minimizing environmental impacts. BOEM uses a variety of techniques to obtain the mandate of competitive, fair market value pricing of oil leases. However, the calculation of net social value of oil and gas development currently does not include non-market valuation analyses (e.g., each household's willingness to pay for recovery of endangered marine mammals, such as right whales).