

STUDY TITLE: Offshore Wind Energy Development Site Assessment and Characterization: Evaluation of the Current Status and European Experience

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SPONSORING OCS REGION: Atlantic Region

APPLICABLE PLANNING AREA(S): North, Mid-, and South Atlantic

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PROJECT MANAGER(S): C. Rein

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KEY WORDS: archaeological resources; avian species; Baltic Sea; barrier effects; Belgium; benthic habitats; birds; biological resources; CUEM; cumulative uses; cultural resources; Denmark; environmental impacts; environmental impact standards; European experience; European wind farms; fish; Germany; impacts; migration; mitigation; Netherlands; North Sea; offshore wind siting; other human uses; pre-construction studies; post-construction studies; Scotland; site assessment activities; seabirds; Sweden; United Kingdom; United States

BACKGROUND: Wind energy is the technology closest to commercial production status of any form of offshore renewable energy. Development of wind energy facilities requires assessments of proposed sites, including potential conflicts with other human uses, geological and geophysical characteristics, archaeological resources, and use by biological resources (e.g. birds, bats, fish, marine mammals, turtles). BOEM is in the process of collecting foundational information about these topics and has proposed initial guidelines for industry to use in collecting site specific information. European countries already have several commercial facilities in operation, and Bureau of Ocean Energy Management (BOEM) organized and held this workshop to learn from the progress that the Europeans have made.

OBJECTIVES: BOEM hosted this workshop to engage with European scientists and regulators who have experience in offshore wind energy projects. The goal of this workshop was for BOEM to learn from the European experience with offshore wind development about the types of information that should be gathered during site assessment and characterization activities that best informs decisions about the siting of offshore wind facilities and potential mitigation measures.

DESCRIPTION: The workshop was held on February 26-28, 2013 at the Crowne Plaza in Herndon, VA near the location of BOEM's offices. The workshop was attended by approximately 110 persons,

including the 17 invited European experts who were at the core the technical subject breakout sessions. The workshop started with a plenary session for all attendees during which some key BOEM managers welcomed the participants and provided an overview of BOEM's goals for the workshop. The plenary session also included an overview of the BOEM regulatory program for offshore wind energy development as well as an overview of European framework for offshore wind energy regulation.

Following the opening plenary session, the afternoon began with technical discussions in the three breakout sessions for avian, benthic and archaeological resources. Each technical track proceeded individually to begin discussing issues that BOEM technical leaders for each of the areas had presented to the European experts in preparation for the workshop. The breakout sessions were facilitated by subject area experts from the ESS Group, Inc. ESS also provided experienced technical staff to function as notetakers during the breakout sessions.

Following a day and a half of technical breakout sessions, on the third morning the workshop resumed in a plenary presentation and discussion. The topic of the final day was a "Cumulative Use Evaluation Model or CUEM. BOEM has been working on the consideration and development of a modeling approach that can handle the wide array of factors that could result in impacts to an ecosystem or a community as a result of offshore renewable energy development actions. During the final session of the workshop one of the CUEM developers provided an overview of how the model was developed, and how the model has been designed to weigh and evaluate factors that make up a cumulative consideration of human actions.

SIGNIFICANT CONCLUSIONS AND WORKSHOP RESULTS: The workshop provided an opportunity for BOEM and other Federal agencies, as well as the interested public, to discuss key questions about offshore wind development with scientists and regulators from Europe, who have direct experience. Participation during the workshop of individuals representing five of the six European countries with operating offshore wind energy facilities enabled BOEM to compare and contrast strategies for managing the stewardship of environmental and archaeological resources on the OCS. The format of the workshop allowed for an interactive opportunity to fully discuss, beyond the initial questions posed, the lessons learned from the experience of European colleagues in siting, permitting, developing, and operating offshore wind energy projects. BOEM was particularly interested in understanding what data collection efforts and analyses have been useful (or, by contrast, ineffectual) in the prediction and confirmation of environmental and resource impacts from offshore wind development in Europe. As a result of the workshop, it is hoped that valuable European experiences may be repeated in the U.S. While much was learned and is already presented in the sections above, the most important lesson was that we must maintain the lines of communication and continue to learn from each other as wind development progresses into new areas, with new technologies.

STUDY PRODUCT(S):

ESS Group, Inc., Rein C.G., Lundin, A.S., Wilson, S.J.K., Kimbrell, E. 2013. Offshore Wind Energy Development Site Assessment and Characterization: Evaluation of the Current Status and European Experience. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs, Herndon, VA. OCS Study BOEM 2013-0010. [273] pp.

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