

2.0 PROJECT PURPOSE AND NEED

2.1 Introduction

In November 2001, Cape Wind Associates, LLC filed a permit application with the U.S. Army Corps of Engineers (USACE), New England District under Section 10 of the Rivers and Harbors Act of 1899 to construct a wind-powered electric generating facility on Horseshoe Shoal in Nantucket Sound off the coast of Massachusetts. Cape Wind Associates (the Applicant) proposes to construct 130 wind generating turbines on Horseshoe Shoal. The structures will be approximately 417 feet (127 meters) above the water surface with the hub height approximately 246 feet (75 meters) above the water surface. There will be a collection grid of subsurface lines within a 24 square nautical mile area. The power will be transmitted to shore via a submarine cable system consisting of two 115 kilovolt (kV) lines to a landfall site in Yarmouth, Massachusetts. The submarine cable system will then interconnect with an underground cable system, where it will interconnect at the existing NSTAR Electric Barnstable Switching Station for distribution through the existing power grid. (See Section 4.0, Project Description of Applicant's Proposed Action, for location maps and more detailed description of the proposed project).

2.2 Project Purpose and Need

The permit Applicant's stated purpose is "to generate up to 454 MW of clean, renewable wind-generated energy that will be transmitted and distributed to the New England Regional power grid, including Cape Cod and the Islands." (Cape Wind Associates LLC. Application For Department of The Army Section 10 Permit (33 CFR 325) submitted 11/21/01; revised 6/3/04).

The proposed project would provide a utility-scale renewable power source³ that would make a significant contribution towards meeting the Independent System Operator – New England (ISO-NE) system energy needs, and, contribute towards the renewable energy technology requirements of state and Federal mandates and goals by interconnection with the New England transmission and distribution system.

The proposed project would help to address the need for new renewable energy supplies in Massachusetts and New England to advance achievement of the Massachusetts Renewable Portfolio Standard (RPS); improve fuel source diversity of the power supply in Massachusetts; provide a new source of competitive market power to the New England region consistent with the goals of the Electric Industry Restructuring Act of 1997; and, help to buffer increases in retail energy costs to consumers resulting from existing and future fossil fuel price volatility. In their July 2, 2004 Tentative Decision, the Energy Facilities Siting Board stated "the power from the wind farm is needed on reliability and economic grounds, and to meet the requirements of Massachusetts and regional renewable portfolio standards" (EFSB, 2004). (See Section 5.16 for a more detailed discussion of the impact of the proposed renewable energy project on the supply of electric power).

Additionally, the Department of Energy (DOE) has identified the need for additional sources of energy to offset New England's dependence on natural gas. DOE is concerned that the increased demand for natural gas will exceed its supply, leading to shortages and higher energy prices. The reliability of transporting natural gas by pipeline to generating facilities during winter peak periods has become a concern due to the inadequate capacity of the pipeline structure serving New England. The pipeline system that was originally designed to supply industrial and heating uses, now supplies 41% of New England's electricity needs. Declining natural gas reserves in North America, coupled with infrastructure investments needed in the delivery system, will increase the price of electricity. Canada, a ready source of natural gas in the past, is experiencing their own demand growth for natural gas and may not be able to reliably and cost effectively supply the United States with natural gas (An Energy Market Assessment, 2004). Wind power could be an additional energy source that would reduce the area's dependence on natural gas, thereby increasing energy reliability and lowering its price (see Appendix 2.0-A).

³ Based on a review of historical ISO-NE data on proposed / planned interconnection and long term firm point-to-point transmission service requests to ISO-NE, the energy generating capacity of new utility-scale and regionally significant energy facility projects that have been permitted or are presently being studied for interconnection with the regional power grid have generating capacities that range between 200 and 1,500 MW.

The USACE considers and expresses the proposed activity's underlying purpose and need from a public interest perspective when appropriate, but generally focuses on the Applicant's purpose and need statement. The USACE exercises independent judgment in defining the purpose and need for the project from both the Applicant's and the public's perspectives.

The purpose and need as independently determined by the USACE is: to provide a utility-scale renewable energy facility providing power to the New England grid. Renewable sources of energy are needed to provide additional power to meet demand and to reduce dependency on non-local, non-renewable energy sources. The Massachusetts Legislature identified this as a public policy priority through Chapter 164 of the Acts of 1997: "An Act Relative to Restructuring the Electric Utility Industry in the Commonwealth." The Renewable Portfolio Standard established a schedule of minimum percentages of electrical energy sales supplied by new renewable energy generators. The National Energy Policy also included recommendations to promote competition, encourage new generation, protect consumers, enhance reliability and promote renewable energy.

2.3 Purpose and Scope of the Environmental Impact Statement (EIS) /Environmental Impact Report (EIR)

Environmental Impact Statement (EIS)

This document has been prepared to comply with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations for implementing NEPA, [Title 40 Code of Federal Regulations (CFR) Parts 1500-1508], and the USACE implementing regulations (Title 33 CFR Part 320-330). As required under 33 CFR Part 325, the USACE permit program is subject to NEPA. In December 2001, the USACE determined that an EIS is required for this proposed project, currently the first proposal of its kind in the United States. The purpose of this EIS is to assess the environmental impacts associated with construction of the offshore wind-generating facilities proposed by Cape Wind Associates, LLC.

Under Section 10 of the Rivers and Harbors Act of 1899, the USACE regulates all structures and work in navigable waters of the U.S. Section 4(f) of the Outer Continental Shelf Lands Act (OCSLA) of 1953 (67 Stat.462), as amended (43 U.S.C. 1331 et seq. (1988) extends USACE authority under Section 10 to include the outer continental shelf for fixed structures and artificial islands. The USACE, therefore, has a responsibility to review permit requests seeking authorization to build structures in the navigable waters of the United States. The USACE review considers the Applicant's purpose and need from a public interest perspective. The EIS will provide the basis for this public interest review, as outlined in Title 33 CFR Part 320.4, which states:

"The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Evaluation of the probable impact which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of this general balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people."

Additionally, 33 CFR Part 320.4 requires that the following general criteria will be considered in the evaluation of every permit application:

- (i)** The relative extent of the public and private need for the proposed structure or work;
- (ii)** Where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work; and
- (iii)** The extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited."

The USACE is neither a proponent nor opponent of any permit proposal. A permit will be granted unless the district engineer determines, after weighing and balancing the public interest factors, that it would be contrary to the public interest (33 CFR 320.4(a)). Therefore, the District Engineer will grant the permit, grant the permit with modifications or conditions, or, deny the permit.

As the wind turbine structures would be constructed in federal waters outside of the boundary of state waters, a Section 404 permit under the Clean Water Act is not required.

Environmental Impact Report (EIR)

The submarine cable system associated with the proposed wind park would be constructed partially in state waters, and is therefore subject to review by the Commonwealth of Massachusetts under the Massachusetts Environmental Policy Act (MEPA). The MEPA regulations at 301 CMR 11.00 establish the standards for environmental impact review and a basic procedural outline for conducting that review. The MEPA imposes a requirement on project proponents to understand and fully disclose the potential impacts of a project, both positive and negative; to study feasible alternatives to a project; and to avoid, reduce, or mitigate environmental impacts to the maximum extent feasible. The proposed project will be reviewed pursuant to Section 11.03(7)(b)(4) of MEPA as the project involves development of a new electric transmission line greater than one mile in length with a capacity of 69 or more kV.

The MEPA office has determined that an Environmental Impact Report (EIR) will be required for those portions of the proposed project that would be constructed in state waters. The portion of the Project subject to MEPA does not meet or exceed any mandatory thresholds, however the Secretary of Environmental Affairs determined in his Certificate of April 22, 2002, that the project has "potentially significant environmental impacts, and I am thus exercising my discretion in requiring an EIR". The Project is undergoing coordinated review and preparation of this combined EIS/EIR document as is encouraged by both MEPA and NEPA regulations in order to allow for maximum public and agency understanding of the project and to ensure that review by regulatory agencies is as efficient as possible. In addition to the EIR and EIS process, the Project will undergo review pursuant to the Cape Cod Commission (CCC) as a Development of Regional Impact (DRI). MEPA and the CCC have a formal process for coordinated EIR/DRI review pursuant to a Memorandum of Understanding between the agencies which has been initiated.

Additional state approvals, reviews and permits required for the portion of the submarine cable system within state jurisdiction include a Water Quality Certificate and a Chapter 91 License from the Massachusetts Department of Environmental Protection (MADEP); approval from the Massachusetts Energy Facilities Siting Board (EFSB); a construction permit from the Massachusetts Highway Department; and an Order of Conditions from the Barnstable and Yarmouth Conservation Commissions (and hence Superseding Order(s) from MADEP if one or both local Order(s) were appealed). Also, the Massachusetts Coastal Zone Management Office (CZM) will conduct a Federal Consistency Review of the project, including those portions of the project located in federal waters that may affect the Massachusetts coastal zone.

2.4 References

Energy Facilities Siting Board (EFSB). July 2, 2004. EFSB 02-2. Tentative Decision In the Matter of the Petition of Cape Wind Associates, LLC and Commonwealth Electric Company, d/b/a NSTAR Electric for Approval to Construct Two 115 kV Electric Transmission Lines.

An Energy Market Assessment. 2004. Looking Ahead in 2010 Natural Gas Markets in Transition. Canada National Energy Board.