

Environmental Impact Statement

Scope of Work

Wind Power Facility Proposed by Cape Wind Associates, LLC

This is the Corps of Engineers scope of work for the Environmental Impact Statement (EIS) to fulfill the requirements of the National Environmental Policy Act relevant to our review of the permit application for 170 wind turbines in Nantucket Sound. The Environmental Notification Form certificate issued by the state under the Massachusetts Environmental Policy Act (MEPA) on April 22, 2002 requires much of the same information necessary for the EIS. We are incorporating the MEPA scope and anticipating these additional topics are needed to ensure the items specific to NEPA are also included in the joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS). This scope was developed based upon the comments received through the scoping meetings and letters received from the general public, special interest groups and local, state and Federal agencies. The intent is to list the issues to be addressed; more specifics on how to address them will be developed further through coordination with the cooperating agencies. This scope of work is expected to be a dynamic document and will evolve as our review progresses. We have attempted to include all issues raised into this scope. The permit decision will be based on the public interest factors listed at *33 CFR Part 320.4 General policies for evaluating permit applications* (<http://www.usace.army.mil/inet/functions/cw/cecwo/reg/33cfr320.htm#320.4> .)

We will continue to meet with Cape Wind Associates, LLC representatives and the state and federal agency representatives to further develop the details of the alternatives screening and field studies and to review information as it becomes available.

The EIS must contain a complete discussion of scope and purpose of the proposal, alternatives, and impacts so that the discussion is adequate to meet the needs of local, state and federal decision makers.

The following organization and content of the Draft EIS (DEIS) can be adapted to allow for integration with the state's Environmental Impact Report. The items in bold text need to be clearly identifiable within the EIR/EIS to be evident that it fulfills the requirements of *33 CFR Part 325, Appendix B*.

The **cover** will identify the EIR/EIS as being a Corps permit action, state the regulatory authority and the Corps contact person.

A brief **Executive Summary** will include the Corps permit authority, Section 10 of the Rivers and Harbors Act, a summary of the purpose and need, alternatives, and both the beneficial and adverse impacts of the proposal. As the applicant's proposal is in a location that is unique with respect to the regulatory jurisdiction issues, each of the Corps of Engineers regulatory programs and their applicability and constraints, with respect to

this proposal, will be summarized. A summary of mitigation actions will also be included.

Purpose & Need will be described in sufficient detail to indicate the geographic range of the alternatives analysis, and criteria to screen sites and power generation technologies which do not fulfill the project purpose & need. The purpose is to develop a commercial scale renewable energy facility providing power to the New England grid. The range for “commercial scale” will be described. We concur with MEPA’s approach, including using New England as the geographic area. We will be reviewing information previously developed by the Massachusetts Renewable Energy Trust¹ to determine which renewable energy sources may be considered feasible at the commercial scale. Projections of future need for electricity, including the portion that should come from renewable energy sources based on regional, state and Federal requirements and policies will be included. The National Energy Policy recommendations will be included. Seasonal differences may need to be included. This will be compared to the projected power generation expected from existing facilities as well as those under construction. A brief description of the New England power grid, physical interconnection and the power market will be needed for context. Project description needs to include not only the structures but also the construction, operations and maintenance and decommissioning phases. Construction activities include transportation, staging, access, and any “onsite” assembly. A description of the pertinent state and federal regulatory authorities will include an explanation of the authorities of the Mineral Management Service for activities on the Outer Continental Shelf (OCS) and the applicability of the Clean Water Act. This is intended to inventory any existing or proposed legislation and any existing published federal policy addressing allocation of public resources of the OCS.

The **Alternatives** section will include reasonable terrestrial and offshore renewable energy facility locations, alternative cable routes and grid interconnection points which must be rigorously explored and objectively evaluated, as well as those other alternatives, which are eliminated from detailed study, with a brief discussion of the reasons for eliminating them. Initial alternatives will include alternative renewable energy technology, and alternative commercial scale generation capacity in addition to alternative terrestrial and offshore wind energy sites. Alternative technologies will include wind, tidal, solar, biomass, and hydroelectric. As was stated in the MEPA scope, based on Council on Environmental Quality (CEQ) guidance, only reasonable

¹ **T**he Renewable Energy Trust was created by the Massachusetts Legislature as an essential component of efforts to restructure the electric utility industry and to promote the development of renewable energy in the Commonwealth. The legislative goal is to "generate the maximum economic and environmental benefits over time from renewable energy to the rate-payers of the Commonwealth through a series of initiatives which exploits the advantage of renewable energy in a more competitive marketplace. It is completely independent of any project proponent.

alternatives need to be considered in detail. These do not need to be limited to those available to the applicant. The **no action alternative** may be either an alternative not involving Corps jurisdiction or denial of the permit. Onsite modification of, or siting of individual structures within, the final site(s) will be discussed as minimization of impacts after final site selection. Appropriate mitigation measures for the final alternative site(s) will be included. We expect a large number of alternatives will be quickly screened based upon criteria which will include, but not be limited to, ISO New England interconnection, wind quality mapping of 4 or better for wind sites, available land/water area, tide/wave/water depth conditions, legal/regulatory constraints, water quality criteria, engineering limitations, designated shipping channels, and environmental concerns. The screening criteria are being developed with input from the cooperating agencies. The EIS will include the criteria used to screen sites, and a summary of the screening process. The cooperating agencies have been asked to provide suggested alternatives in addition to those provided through the public scoping comment period. The initial list of sites will include potential “Brownfield” site reuse, Massachusetts Military Reservation/Otis AFB, expansion of other wind power sites such as Redington, ME and Searsburg, VT, public lands such as National Forest in New Hampshire, paper company lands in Maine, and private lands in addition to those already evaluated by the project proponent. Offshore wind and/or tidal power sites will include three locations within Nantucket Sound, Block Island area, south of Martha’s Vineyard, east of Cape Ann, Maine coast and near shore industrial/urban areas. We will screen these alternatives to develop a short list of reasonable alternatives for site specific evaluation. Grouping of sites may be considered if small but otherwise potentially suitable sites are in close proximity. This screening of alternatives will be coordinated with the cooperating agencies. These will be in addition to the alternatives required by the MEPA scope for the EIR.

Affected Environment will describe the existing resources of the final alternative sites in terms of physical oceanography and geology; wildlife, avian, shellfish, finfish and benthic habitat; aesthetics, cultural resources, socioeconomic conditions, and air and water quality. Human uses such as boating and fishing will also be described. For terrestrial sites, other uses such as hiking or hunting may be appropriate.

Environmental consequences will describe the potential direct, indirect and cumulative impacts of each of the final alternative sites. In addition to the topics required by MEPA the following will need to be addressed:

Avian Impacts –The Study will describe the current use of the final alternative sites by birds, in order to establish a baseline data set. The species, number, type of use, and spatial and temporal patterns of use should be described. Information derived from other studies, which provides a three-year baseline data set, should be included if available. Information should be based on (1) existing, published and unpublished research results, especially research that describes long-term patterns in use, and (2) new field studies undertaken for this EIR/EIS. Data on use throughout the year, especially through November for migratory species, and under a range of conditions should be collected. Data collection methods should include remote sensing through radar and direct observations through aerial reconnaissance and boat-based surveys. Data gathered

through radar should be validated with direct observations. The survey schedule is being coordinated with United States Fish and Wildlife Service (FWS). Data collection should allow a statistically rigorous analysis of results.

Known impacts to birds from former or current Wind Turbine Generators (WTGs) and other tall, lighted structures (such as communications towers) should be thoroughly reviewed in order to identify potential impacts which could result from terrestrial or coastal structures. Issues needing to be addressed include: (1) bird migration, (2) bird flight during storms, foul weather, and/or fog conditions, (3) food availability, (4) predation, and (5) benthic habitat and benthic food sources.

The Biological Assessment required for compliance with Section 7 of the Endangered Species Act will be a clearly identifiable section. The species to be addressed include Piping Plover, and Roseate Tern. Published data on avian impacts available from existing offshore facilities will be included.

Marine habitat impacts assessment should include vibration, sound, shading, wave disturbance, alterations to currents and circulation, water quality, scouring, sediment transport, shoreline erosion (landfall) and structural habitat alteration. Marine mammals and turtles to be addressed include northern right whale, humpback whale, fin whale, harbor seal and grey seal, loggerhead sea turtle, Kemp's Ridley sea turtle and leatherback sea turtle. Physical and acoustical impacts during construction and operation need to be assessed. The Biological Assessment required for compliance with Section 7 of the Endangered Species Act will be a clearly identifiable section.

Assessment of *fisheries and benthic impacts* needs to specifically address the requirements for an Essential Fish Habitat Assessment per the Magnuson Stevens Act. Studies for all final sites should include an assessment of: 1) species type, life stage, and abundance; based upon existing, publicly available information, 2) potential changes to habitat types and sizes; and 3) the potential for turbines as fish aggregating structures. The study should assess potential indirect impacts to fish, mammals, and turtles that may result from changes in water movement, sediment transport, and shoreline erosion. The study should include an assessment of potential impacts on specific fishing techniques and gear types used by commercial and recreational fishermen. The study should identify all potential conflicts with existing fishery use patterns and the potential for fishery elimination due to the consequences of the presence of the structures. The study should include a review of existing literature and databases to identify and evaluate commercial and recreational fish data and abundance data in Nantucket Sound. Data to be reviewed should include: National Marine Fisheries Service (NMFS) Commercial Data, NMFS Recreational Data, Massachusetts Division of Marine Fisheries Commercial Data, Massachusetts Division of Marine Fisheries Trawl Survey Data and supplemented with intercept surveys. The potential for indirect impacts such as changes in fishing techniques, gear type and patterns will need to be included.

The benthic field studies will provide sufficient information to compare between alternative marine sites and to provide a general characterization of the benthic habitat of the final sites. The data will include the Benthic Macroinvertebrate Community

Assessment (October 2001) and additional data collection will be as described in the Benthic Sampling and Analysis Protocol (April 18, 2002) supplemented by the ESS letter of May 10, 2002.

The EIS will attempt to comprehensively address the interconnections between the benthic, fisheries and avian resources. The predator-prey interactions are important considerations in fully understanding the potential impacts in siting a project within Nantucket Sound.

Aviation-Once a final alternative site is established for the wind farm and for each of the turbine towers an application will need to be submitted for a determination by the Federal Aviation Administration (FAA) that the activity will not cause an unacceptable interference with air navigation. FAA will need the precise coordinates of each tower. Their review will address lighting requirements, and radar interference and radio frequency interference as described in their letter of April 12, 2002. This review may require 6 months. It is highly recommended that this process be concluded and a determination made so this information can be included in the DEIS. The lighting scheme will need to minimize impacts to birds while also providing for safe aviation. Possible impacts to *telecommunication* systems vary with the different telecommunication technologies utilized in the area, and need to be considered. Microwave transmission typically requires "line of sight" between towers; installation of the wind turbine generators between Martha's Vineyard, Nantucket, and the mainland may interfere with existing transmission paths. Boaters in Nantucket Sound use a variety of communication devices including cellular phones, pagers, and VHS radios. The EIS will consider the possible impacts on existing and proposed communications equipment.

Commercial and recreational *navigation* impacts need to be addressed specifically for construction, operation and maintenance and decommissioning. Cable installation activities will be included. The Corps of Engineers will be working with the U.S. Coast Guard (a cooperating agency on the EIS) to insure that navigation impacts both to commercial and recreational boating, including the impact on sailing vessels and commercial fishing vessels, will be adequately addressed. A Coast Guard risk assessment for the overall wind farm project and a port navigation assessment may be needed. Appropriate lighting will be addressed. National security issues may be included based upon further coordination with the Coast Guard and Navy.

Socio-Economics-This project's possible impacts on electricity rates and reliability in New England and the local area need to be described. Explanation of any public funding and any applicable tax credits has been requested. Explanation of how this may affect the local economy including affects to employment, tourism, boating and fishing, coastal property values and local tax revenues and other fiscal impact to local governments needs to be included. The EIS will contain information relative to compliance with Executive Order 12898 "Federal Actions to address Environmental Justice in Minority Populations and Low-income Populations." Comments have suggested that new educational or tourism opportunities be explored.

Aesthetic and Landscape/Visual- the assessment as described by the MEPA scope needs to include documentation (an Appendix) of how the simulations were developed. We concur with the approach of using the locations as specified by MEPA. Visual impacts to any National Register-eligible site in proximity to any of the final alternatives will need to be included.

Cultural resources-needs to fulfill the requirements of Section 106 of National Historic Preservation Act including coordination with the State Historic Preservation Officer. In addition to the MEPA requirements we will need to determine the “area of potential effect”. Any impact on historic districts, buildings, sites or objects, local character and culture, tradition, and heritage will be included. Archeological surveys may be needed for the final site(s). Based on previous archaeological and geological investigations, Horseshoe Shoal has the potential to contain evidence of prehistoric settlement and use. The Wampanoag Tribe of Gay Head has indicated that there may have been fishing or whaling equipment used in that area. The *Bibliography for Historic and Prehistoric Nantucket Indian Studies* by Elizabeth Little was provided by the acting Wampanoag Tribal Historic Preservation Officer. The reconnaissance level survey will need to address these points. A desk search of some of these sources of information will focus on Native whaling. For the final site, prior to permitting, magnetometer and high resolution side scan sonar surveys will be needed sufficient to provide electronic data which can be analyzed to assess the potential for any artifacts, such as shipwrecks, followed up by diver reconnaissance where needed. If resources are found which are eligible for listing on the Register of Historic Places, ways to avoid, then minimize, impacts to cultural resources will be considered and discussed. If avoidance is not an option, a Memorandum of Agreement may be required to mitigate potential impacts.

Recreation-Recreation impacts may be addressed within other sections such as the fisheries, navigation and aesthetics.

Due to the potential for underwater *noise and vibrations* associated with construction and operation of the facilities, some concerns have been expressed regarding the impacts on fish and mammal habitats and migration. The EIS should include an assessment of the magnitude and frequency of underwater noise and vibrations, and the potential for adversely affecting fish and mammal habitats and migration. It should also include an assessment of fish and mammal tolerance to noise and vibrations, with particular emphasis on noise and vibration thresholds that may exist for each of the species. The EIS will also include the potential of noise impacts to human activity at any of the final sites.

The *water quality* section should include a description of the potential for spills of contaminants into waters of the United States and the measures such as an emergency response plan to mitigate impacts. The installation technique for the cables and affect on water quality will be described. The types of materials to be used in the water such as stone, metals, concrete, etc. and likely effects of interactions between water/encrusting organism/sediment will be assessed.

Electric and magnetic fields (EMF)-Concerns have been raised about the potential human health impacts of exposure to 60Hz EMF, as some studies have suggested a possible link between EMF and health risks. The potential impact from electric and magnetic fields produced from wind turbine generators and their associated cables, and the transmission cable, will be considered. The Massachusetts Energy Facilities Siting Board has previously accepted EMF levels at the edge of a transmission right-of-way of 85 milligauss(mG). The EIS should identify populations that could be exposed to 60 Hz EMF greater than 85mG, including human, fish, marine mammals, and benthic organisms. There are particular concerns about possible locations for the landfalls of transmission lines and the EMF should be specifically evaluated at those locations.

Air and climate-The EIS will include a description of compliance with the requirements of the Clean Air Act for construction and operation phases. Any potential for impact on the climate of the region should also be addressed.

Safety considerations will include public and employee safety through construction, operation and decommissioning. Design standards for the structures will be explained.

List of preparers will include the names and qualifications of persons who were primarily responsible for preparing the EIS and agency personnel who wrote basic components of the EIS or significant background papers must be identified. The EIS should also list the technical editors who reviewed or edited the statements.

Cooperating Agencies and their role in the EIS will be listed.

Public Involvement will list the dates, locations and nature of all public notices, scoping meetings and hearings. The scoping meeting transcripts and summary of comments report will be provided as an appendix.

Acronym List-will define all commonly used acronyms within the text of the EIS.

Index will provide easy reference to items discussed in the main text of the EIS.

Appendices will include the lengthy technical discussions of modeling methodology, and baseline studies of the affected environment.