OCS EIS/EA
MMS 2010-011

Cape Wind Energy Project

Environmental Assessment

April 28, 2010

TABLE OF CONTENTS

1. Objectives of the Environmental Assessment 1

2. The Proposed Action and Alternatives 1-2
   - A. Proposed Action 2
   - B. Alternatives 2-3
     - i. Emerging Deepwater Technology 4
     - ii. Quad-caisson – Mid Range Depth Technologies 5

3. Cultural Resources 6
   - A. Sites Eligible for listing in the National Register of Historic Places 6-9
   - B. Quonset Staging Area 9

4. Air Quality 9-10

5. Avifauna 10
   - A. Migratory Birds Baseline Studies 10-11
   - B. Avoidance of Wind Turbines by Birds 11
   - C. Energy Demand on Birds 12
   - D. MOU – MMS/FWS 12-13

6. Marine Mammals 13-16

7. Competing Uses in the Vicinity of the Proposed Action 16
   - A. Navigation Features 16-17
   - B. Airport Facilities – FAA Hazard Determination 17-18
   - C. Coastal and Marine Spatial Planning 18

8. Cumulative Effects 18-19

9. Consultation and Coordination 19

List of Preparers 20

Cape Wind Environmental Assessment

1. Objectives of the Environmental Assessment

The Council on Environmental Quality (CEQ) regulations give the Minerals Management Service (MMS) broad discretion under 40 CFR 1501.3(b) to "prepare an environmental assessment on any action at any time in order to assist agency planning and decisionmaking." The CEQ regulations are consistent with the Department of the Interior regulations at 43 CFR 46.300(b). The Secretary directed MMS to prepare an environmental assessment (EA) in order to evaluate the significance of post-FEIS information and to assist MMS in decisionmaking on the Proposed Action.

In accordance with CEQ regulations, this assessment examines whether there are any "substantial changes in the proposed action that are relevant to environmental concerns" or "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts" that either were not fully discussed or did not exist at the time the FEIS was prepared in January, 2009 (40 CFR 1502.9). Such information would indicate a need to add to or reconsider the analyses in the FEIS in a supplemental EIS. Input for the EA came from numerous sources including:

MMS research and review of new scientific and technical information;
Comments received on the FEIS;
The January 13, 2010, Revised Finding, prepared in compliance with the National Historic Preservation Act (NHPA);
The January 28, 2010, DOI Inspector General Report (IG Report));
Intergovernmental coordination and communications;
The April 2, 2010, Comment on the Section 106 Process by the ACHP; and
Comments submitted to MMS during the 30 day comment periods for the Revised Finding dated January 13, 2010 and for the Cape Wind Environmental Assessment dated March 4, 2010 and published March 8, 2010.

The EA evaluates only the topics in the FEIS for which new information has become available since the FEIS was published and which potentially could be material to the decisionmaking process. Comments that were already submitted in the public comment period for the Draft EIS are not discussed in this document. The EA identifies the new information and/or circumstances, assesses its relevance to the analyses contained in the FEIS, and makes a determination of whether or not any new or changed information significantly affects the analyses previously completed in the FEIS or identifies new significant impacts, such that additional analysis is needed.

This EA incorporates by reference MMS' *Cape Wind Energy Project, Final Environmental Impact Statement, January 2009* (US DOI, MMS, 2000).

2. The Proposed Action and Alternatives

This section examines whether or not there have been changes in the Proposed Action, or circumstances and information affecting the Proposed Action and alternatives that render invalid any assumptions underlying the formulation of the Proposed Action or the range of alternatives.

A. Proposed Action

Background: The Proposed Action, including project location and extent, remain the same as described for the Proposed Action in the FEIS, issued by the MMS in January, 2009. Cape Wind Associates, LLC (CWA), plans to construct, operate, and eventually decommission an offshore wind power facility on Horseshoe Shoal on the OCS in Nantucket Sound, offshore Massachusetts. The Proposed Action calls for 130, 3.6± megawatt (MW) wind turbine generators (WTGs), each with a maximum blade height of 440 feet (ft..), to be arranged in a grid pattern on the OCS in Nantucket Sound, just offshore Cape Cod, Martha's Vineyard, and Nantucket Island. With a maximum electric output of 468 MW and an average anticipated output of 182 MW, the facility is projected to generate up to three-quarters of the Cape and Islands' electricity needs. Each of the 130 WTGs will generate electricity independently. Solid dielectric submarine inner-array cables (33 kilovolt) from each wind turbine generator will interconnect within the array and terminate on an electrical service platform, which will serve as the common interconnection point for all of the wind turbines. The proposed submarine transmission cable system (115 kilovolt) from the electric service platform to the landfall location in Yarmouth would be approximately 12.5 miles (mi.) in length (7.6 mi. of which would fall within Massachusetts' territory).

In the FEIS, the MMS assessed a 3.6± MW WTG, which was identified as the preferred WTG in the application that CWA submitted to the MMS. To date, the MMS has received no new information from the applicant that would constitute a change to the Proposed Action. As recently as December 11, 2009, the MMS confirmed with CWA that there are no changes to the Proposed Action as described in the FEIS.

New information: Comments were received asserting that the 3.6 MW turbines may no longer be available from General Electric Corp. (GE). These assertions were also evaluated by the Inspector General of the U.S. Department of the Interior. The Inspector General's investigation found that GE and European companies still manufacture a turbine with the capacity and dimensions in the Proposed Action (See IG Report). If CWA were to choose a different turbine manufacturer (for example, a 3.6± MW Siemens instead of a 3.6± MW GE), it is likely that the turbines would be comparable in size, shape, and profile, and that the environmental impacts would be similar in nature and magnitude. CWA did in fact agree on terms of a contract with Siemens for manufacture of the turbine components on March 30, 2010. The total height remains 440 feet, and CWA has not indicated that there will be any other changes from the proposed configuration. Also, and in any event, should the CWA modify the Proposed Action by selecting a WTG with substantial changes in specifications, the MMS would review such proposed change and determine whether the changes would result in significantly different impacts than those analyzed in the FEIS. Speculation from commenters that the Siemens blades might be longer, resulting in a larger area swept by the rotors, even if true, would not necessarily result in a need to supplement the analysis. Many factors went into the model used to predict the likelihood of avian collisions, including frequency of avian presence, the distance between

turbines, and visibility conditions. It is unlikely that a slightly larger rotor area would substantially increase the projected number of collisions. Therefore, it is unlikely that mortality estimates would be significantly different.

Conclusion: There are no changes to the Proposed Action or assumptions. The description of the Proposed Action contained in the FEIS accurately describes the project as currently envisioned.

B. Alternatives

Background: In accordance with NEPA, the FEIS evaluates all reasonable alternatives to the Proposed Action. The alternatives to the Proposed Action were derived from the purpose and need statement. The purpose and need statement of the FEIS is as follows:

> The underlying purpose and need to which the agency is responding is to develop and operate an alternative energy facility that utilizes wind resources in waters offshore of New England employing a technology that is currently available, technically feasible, and economically viable, that can interconnect with and deliver electricity to the New England Power Pool, and make a substantial contribution to enhancing the region's electrical reliability and regional renewable energy portfolio.

The FEIS evaluates nine geographic locations along the coast from Maine to Rhode Island, three non-geographic alternatives, the Proposed Action, and a no action alternative. In addition, the MMS considered onshore, nearshore, and dispersed sites, a deepwater alternative located more than 22 mi. offshore (Nauset Alternative), and other forms of renewable energy production. To select alternatives for detailed evaluation, the MMS developed a screening process aimed at identifying those project alternatives that did not meet the purpose and need statement and that were not technically feasible and economically viable. The alternatives that met the screening criteria, along with the Proposed Action and no action alternative were subject to detailed environmental analysis in the FEIS.

The MMS determined technological feasibility by considering existing technology currently being utilized successfully on a commercial scale, and applied this to describe the physical criteria within which a project could be successfully constructed, operated, and maintained.

The physical criteria included water depth, extreme storm wave height, the composition of the subsea substrate, and the length of the transmission cable line. The monopile foundation technology currently available for commercial application typically limits the placement of wind energy facilities to waters less than 100 ft. (30 meters (m))) to ensure economic and technical feasibility.

Projects utilizing monopile technology are typically located in areas that allow installation by vibratory hammer or driving ram. Seabed substrate that contains bedrock or excessively hard substrate would prevent the installation of monopiles and cables, resulting in major design changes that would increase project costs and geographic footprint. The limitations on transmission cable functions increase with distance, depending upon the type of cable used.

Fluid-filled alternating current (AC) cables typically cannot exceed 20 mi. (32 km) due to limitations on pumping the cooling fluid. High-voltage direct current (HVDC) cables require converter stations to be built along an extended route. Solid, dielectric AC cables have limits of approximately 31 mi. due to thermal resistivity.

The Offshore Portland, Cape Ann, Boston, Nauset, and Block Island Alternatives were eliminated from further consideration due to a combination of factors, including water depth, extreme storm wave height, and seabed substrate. In addition to these physical constraints, the Cape Ann and Boston alternatives are located in close proximity to the Stellwagen Bank National Marine Sanctuary, which is an area with dense congregations of humpback and northern right whales, and the Nauset alternative is located in close proximity to Northern right whale Critical Habitat.

Two geographic alternatives met the screening criteria and, in accordance with 40 CFR 1502.14, the EIS compared the environmental impacts of these sites with those associated with the Proposed Action:

- South of Tuckernuck Island (3.79 mi. southwest of Tuckernuck Island, Massachusetts)
- Monomoy Shoals (3.5 mi. southeast of Monomoy Island, Massachusetts)

i. Emerging Deepwater Technology

Background: The FEIS (Section 3.2.1.3.1) states that the monopile foundation technology currently available to commercial application limits the placement of wind energy facilities in waters less than 100 ft. (30 m) deep. The FEIS also states that water depths in the 65 ft. to 147 ft. (20 to 45m) range are being explored with several demonstration projects, mentioning the Beatrice Demonstrator Project as one such example (that project is in its third year of data collection and ongoing studies are scheduled to conclude in the fall of 2012).

New Information: Since the publication of the FEIS, MMS has received comments that questioned the adequacy of the range of alternatives that were presented in the FEIS. These comments have specifically questioned the assumption that deepwater technology is not commercially viable and is an issue discussed in the IG report. Therefore, MMS has reviewed new information on deepwater technology worldwide since the publication of the FEIS to determine whether or not advances in this type of technology have occurred to the extent that the assertions in the FEIS's analysis of the issue is no longer valid or appropriate. This information is summarized below:

In September, 2009, the Norwegian company StatoilHydro constructed a floating wind turbine "Hywind", approximately 6 mi. from Norway's Karmøy island, with about 330 ft. visibility above water. The wind turbine is a prototype. The primary intention of the prototype is to test how wind and waves affect the structure. Depending on whether the prototype satisfies offshore requirements, the technology potentially could be commercialized.

Blue H USA, LLC submitted an application to the U.S. Army Corps of Engineers (USACE) to deploy a demonstration deepwater floating offshore wind platform on the OCS for the duration

of one year, approximately 23 mi southwest of Martha's Vineyard, Massachusetts in depths of 165 ft. The USACE received Blue H USA's submission on August 21, 2009. USACE determined that Blue H USA's application is complete, issued a public notice on September 15, 2009, and accepted public comments on the application through October 15, 2009. A primary objective of the platform is to assess the suitability of the location for deployment of a utility-scale deepwater offshore wind farm (known as "Project Belinda"). The floating platform will gather both engineering and environmental data useful to Blue H USA and environmental and resource agencies to help determine whether a commercial project based on floating turbine technology would be technologically feasible and economically viable.

The University of New Hampshire's Center for Ocean Renewable Energy will receive $700,000 in Federal stimulus money to test the Nation's first floating deepwater wind turbine off the Isle of Shoals. A wind turbine on a 60-ft. tower will be installed about six mi. off the mainland and close to the Isles of Shoals in Fall 2010. The 10-kilowatt turbine will measure wind, wave and temperature on the turbine itself, the platform and the mooring lines that anchor it to the seabed. Two other larger, floating wind turbines will be tested off Maine. On October 15, 2009, the Department of Energy (DOE) awarded the University of Maine $8 million to develop three, test deepwater floating wind turbine prototypes. With $5 million coming from the Energy and Water Appropriations bill and additional state and private funds, the project is expected to have a budget of about $20 million. More than 30 research and industry partners will be involved with the deepwater initiative. New grant funds from the DOE may help the United States begin to address the Nation's gap in deepwater wind research.

Conclusion: The new information summarized above shows that the placement of wind turbines in deep water is still in the exploratory stages. Ongoing activities regarding deepwater technologies include modeling, experimental designs, and some small-scale demonstration projects. The timing of the availability of economically feasible commercial scale technology, however, remains uncertain, as was the situation when the FEIS was prepared. Therefore, there is no new evidence to suggest that deepwater alternatives would be economically and/or technically feasible. As a result, this information does not affect the adequacy of the range of alternatives. Moreover, the Office of Inspector General's Office of General Counsel concluded in the IG Report that the purpose and need statement in the original FEIS "is probably within the bounds of "MMS discretion."

ii: Quad-caisson – Mid Range Depth Technologies

Background: The FEIS provides a detailed analysis of mid-range depth technology for the South of Tuckernuck alternative, as the depth of this site ranges from 15 to 100 ft. (FEIS 3.3.5.2). The FEIS concludes that the anchoring impacts associated with this type of structure would cause greater impacts to the benthos and benthic resources than the Proposed Action.

New information: The Cape Wind Final Environmental Impact Report (FEIR) (prepared pursuant to the Massachusetts Environmental Policy Act) was prepared concurrently with the FEIS by the State of Massachusetts and was available prior to the publication of the FEIS. While the FEIR does not contain new or different information than that discussed in the FEIS, provides

more detail regarding the current limitations of multi-caisson design and its potential use at the South of Tuckernuck site. This detail was known by MMS but was not necessary to fully describe the alternative in the FEIS. Excerpts from the FEIR discussion are repeated here because post-EIS comments indicate this issue was not fully understood by some readers. Relevant to this discussion, the FEIR specifically states the following:

> Greater water depth and storm waves require taller foundations resulting in greater bending moments at the point of fixity, at the seabed interface and in the tower…such technology has not been demonstrated over any significant period of time. Although a demonstration of two lattice type foundations in deeper water is underway off the UK, it is located in an environment that is measurably less severe than that South of Tuckernuck Island. Results from this UK demonstration would not be directly relevant to a site with different environmental conditions. The stress, strain and fatigue measurements would not be comparable; it is unlikely that foundations of a design required for a wind farm at the South of Tuckernuck Island alternative will be commercially proven in the foreseeable future.

Conclusion: MMS is not aware of any additional, more recent information that would alter the facts as presented in the FEIS or the assumptions related to the commercially speculative status of this technology in a setting that is subject to the water depths and meteorological conditions experienced in the South of Tuckernuck Island area.

MMS concludes that additional analysis is not warranted because this is not new or additional information that alters the FEIS analysis of this issue. The FEIS discussion of the mid-range depth technologies was sufficient to inform MMS and the public that the technology to place a wind project at the South of Tuckernuck Island alternative, while available, remains speculative and risky in an open ocean setting that is subject to severe storm and wave conditions, and would result in greater environmental impacts than those associated with the Proposed Action. The analysis in the FEIS remains valid and no supplemental EIS is required.

3. Cultural Resources

A. Effects to Sites Eligible for Listing in the National Register of Historic Places

Background: The FEIS concludes that there will be an adverse visual effect on historic properties within the Area of Potential Effect (APE) resulting from the Proposed Action. These conclusions are set forth in the relevant sections of the FEIS and discussed in more detail in the December 2008 Documentation of Section 106 Finding of Adverse Effect (Original Finding). The MMS solicited and received comments from the public and NHPA consulting parties on the Draft EIS and incorporated responses to those comments in the FEIS.

The FEIS "Visual Impacts Assessment" identifies 29 historic properties on Cape Cod, Nantucket, and Martha's Vineyard that fall within the APE for visual effects, and assesses the effect on these historic properties, including an historic property important to the Mashpee Wampanoag Tribe and two National Historic Landmarks. The altered view of the eastern horizon from a place identified as culturally important by the Mashpee Wampanoag Tribe was

deemed a major impact in the FEIS. The FEIS also concludes that there would be similar impacts to other areas within the APE if such areas are utilized by the Tribes for similar purposes.

Concerns were raised during Tribal consultation and in comments made on the DEIS that the proposed action would destroy the physical integrity of Nantucket Sound, the entirety of which the Tribes consider to be their ancestral lands. The Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe also believe that the Proposed Action would destroy the archaeological evidence of their history throughout the Sound, including Horseshoe Shoal. In response to these concerns, MMS examined in the FEIS archaeological resources in the seabed of the project area underlying Nantucket Sound and described data found via vibracore sampling of this area. The FEIS discusses mitigation of potential adverse effects to seabed resources via modifications to the placement of the turbine array to avoid the identified locations within the project area where vibracore sampling indicates that archaeological or cultural materials may be present. No such resources were actually found. The paleosols identified from sampling included tree pollen, seeds and an ant head. The FEIS notes that no other areas having a high probability for prehistoric site occurrence had been identified through the studies performed on the seabed. The FEIS concludes that impacts to seabed resources important to the Tribes, and prehistoric and historic resources in the seabed could be mitigated through turbine placement modifications and "stop-work" requirements associated with chance finds.

New information: On June 23, 2009, the Advisory Council of Historic Preservation (ACHP) requested that MMS resolve three issues related to the National Historic Preservation Act (NHPA) Section 106 process. The first issue related to the Proposed Action's potential to have adverse visual impacts on the Nantucket Island and Kennedy Compound National Historic Landmark Districts. The second issue related to additional site visits with the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah) Tribes. The final issue related to the eligibility of Nantucket Sound for inclusion on the National Register of Historic Places as a Traditional Cultural Property.

With respect to the first issue, the MMS solicited an opinion from the National Park Service (NPS) regarding the visual impacts to Nantucket Island and the Kennedy Compound National Historic Landmark Districts. In a letter dated October 16, 2009, the NPS concurred that the impacts to both Nantucket Island and the Kennedy Compound National Historic Landmark Districts would constitute an indirect adverse effect. The NPS stated "while these long-distance interruptions visually "diminish" each National Historic Landmark's (NHL) overall integrity of setting, they will not impair the far more significant, essential character-defining aspects and high integrity associated with the immediate coastal waterfront settings. . . .the [Proposed Action] will have no direct adverse effect within or even immediately adjacent to the boundaries of either NHL. The adverse effect involved results solely from the visual intrusiveness caused by the introduction of a concentration of modern WTGs within the historic viewsheds of both NHLs. In both cases adverse effect will be limited to the partial obstruction of long-distance, open-to-the-horizon views historically associated with the resources. Given that the adverse effect to each NHL is visual only, limited in overall scope and impact, and does not diminish the core significance of either NHL, NPS concludes that the adverse effect of the undertaking that is the subject of this comment is indirect rather than direct."

Regarding the second issue, on August 3-5, 2009, the MMS accompanied the Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe to visit additional places on Martha's Vineyard and Cape Cod important to them that the Tribes believe would be impacted by the Proposed Action. On December 15, 2009, the Massachusetts State Historic Preservation Officer (SHPO) concurred with MMS's determination that two additional sites identified to the MMS by the Mashpee Wampanoag Tribe during these site visits are eligible for listing in the National Register of Historic Places as Traditional Cultural Properties. In addition, the MMS determined that two other properties identified by the Wampanoag Tribe of Gay Head (Aquinnah) were also eligible for listing as Traditional Cultural Properties. In its Revised Finding, MMS determined that these four new Traditional Cultural Properties will be subject to adverse visual effects by the proposed undertaking. In addition, the Revised Finding better articulated MMS' understanding of the tribes' belief that the physical intrusion of the monopoles into the seabed would disturb the cultural integrity of the seabed and thus result in an unavoidable adverse effect to their cultural identity that cannot be mitigated, even if actual archaeological evidence were not disturbed. This impact to the tribal culture is best described as moderate according to the FEIS impact level definitions for socioeconomic impacts (FEIS at E-7). The SHPO concurred with the MMS Revised Finding's adverse effect determination on February 12, 2010.

As for the third issue, on October 9, 2009, MMS submitted to the SHPO for concurrence her determination that Nantucket Sound itself was not eligible for listing on the National Register. On November 5, 2009, the SHPO informed MMS that it disagreed and that the MMS should seek a formal determination of eligibility from the Keeper of the National Register of Historic Places, which MMS did on November 18, 2009. On January 4, 2010, the Keeper of the National Register of Historic Places stated its view that Nantucket Sound is eligible for listing in the National Register for its significance as a Traditional Cultural Property and as a historic and archaeological property. In its Revised Finding, MMS evaluated effects to the Nantucket Sound Traditional Cultural Property and determined that the Proposed Action would have an adverse effect on it. MMS solicited comments on the Revised Finding from consulting parties and the public. Comments received on the Revised Finding provided no new information and raised no concerns that had not already been identified.

The Department of the Interior (DOI) and MMS have continued consultations with the Wampanoag Tribe of Gay Head (Aquinnah), and Mashpee Wampanoag Tribe under its NHPA and government-to-government (E.O. 13175) obligations. Through these consultations the Tribes have provided additional detail regarding the impacts discussed in the FEIS, including viewshed effects for the additional onshore Traditional Cultural Properties, as well as the Tribes' beliefs about the impacts of the physical intrusion of the Proposed Action to the now-eligible Nantucket Sound. The additional detail was not specifically related to either the resources at issue or impacts to them, but reiterated concerns that those impacts could not be mitigated to their satisfaction.

Despite continued efforts at the Departmental level in early 2010 to identify a potential course of action that would accommodate concerns expressed by the tribes, an agreement to resolve adverse effects could not be reached. The Department terminated the consultation on March 1,

2010 with a request for comment by the ACHP. The ACHP provided its comments on April 2, 2010. The ACHP comment is discussed further in section 9.

Conclusion: None of the ACHP-related issues or the April 2, 2010 comment by the ACHP presented new information significantly different from the existing FEIS discussion or that would change the disclosures or analysis in the FEIS regarding potential impacts to the NHLs, the onshore Traditional Cultural Properties or the Nantucket Sound Traditional Cultural Property. The National Park Service's independent conclusion of indirect adverse effect served to confirm MMS's finding in the FEIS.

The new eligibility status of the additional onshore Traditional Cultural Properties does not alter the validity of the analysis in the FEIS because the FEIS identifies and discusses those resources. All of the new onshore Traditional Cultural Properties are within the APE and impacts on tribal cultural practices throughout this area were identified and discussed in the FEIS. Further, the FEIS anticipates that areas other than the Traditional Cultural Property identified by the Mashpee Wampanoag Tribe, and specifically discussed in the FEIS, might be utilized by tribal members for the same or similar purposes. The FEIS acknowledges that the adverse effects to those places would be the same as to the FEIS-identified Mashpee Wampanoag Tribe Traditional Cultural Property. All of the new onshore Traditional Cultural Properties are within the area MMS examined for potential adverse effects to other such properties.

The FEIS also discusses the potential for impacts to Nantucket Sound. The FEIS acknowledges that adverse impacts to culturally important areas underlying the Sound will occur. The FEIS discusses mitigation to avoid impacts to areas in which archaeological resources (ancestral tribal sites) could be found. Information provided in post-FEIS tribal consultation reiterates how the Tribes view the adverse effects discussed in the FEIS, and their negative reaction to proposed mitigation, but this information is not substantially different from the information and comments addressed by MMS in the FEIS and it is consistent with the FEIS's conclusions regarding adverse impacts of the proposed project to cultural resources. In addition, MMS has sufficiently clarified and disclosed potential seabed impacts again in its Revised Findings Document, included in the project record, and provided an opportunity for public review and comment on the Revised Finding. Concerns expressed regarding spiritual, as well as physical, impacts associated with seabed-related activity have been identified throughout the process, and have prompted the special attention given to sea-bed related activities. Supplemental analysis would not add further substance to the discussion in the record that will inform the Secretary's decision. Finally, the record includes comments filed in February 2010 by individual Wampanoag Tribe of Gay Head (Aquinnah) members that questioned the overall impact the project might have on cultural traditions. This new information, while relevant, does not raise the potential for any new impacts from the Proposed Action, nor does it require MMS to analyze internal tribal disagreements in a supplemental EIS. Considered together, all of this new information confirms for MMS that the level of detail in the FEIS was sufficient, and that the description of the information and impacts remains appropriate; no significant change is indicated.

B. Quonset Staging Area

Background: The FEIS describes the industrial port facility located in Quonset, Rhode Island as the onshore staging area for major construction activity associated with the Proposed Action. This site was formally known as the U.S. Naval Reservation-Quonset Point. Following the downsizing of the U.S. Naval Reservation-Quonset Point, the site became an industrial and commercial park. The industrial commercial park is approximately 3,150 acres and houses several large businesses. In addition, the site is home to a deep water port with two piers that are capable of servicing large ships.

New Information: Subsequent to the FEIS, John Brown of the Narragansett Tribe commented that the Quonset staging area is located near the Tribe's reservation and the Tribe should be consulted about impacts to tribal cultural resources at the Quonset staging area. The MMS determined that expanding the APE to include Quonset Point was not warranted because no new surface disturbing activity was proposed at that location and therefore there was no potential for the staging and other activities to impact resources in this area. The ACHP concurred with this determination as documented in a letter dated December 11, 2009.

Conclusion: MMS's determination and ACHP's subsequent concurrence is consistent with the description of the APE in the FEIS; therefore, the information is not deemed significant and will not change or add to the discussion of environmental effects that has already been presented in the FEIS.

4. Air Quality

Background: The FEIS discusses the air quality impacts during construction and decommissioning as well as visual, emission, and public health impacts. It was concluded that the impacts were expected to be negligible to minor because the impacts would primarily be temporary and localized in nature. The FEIS states that under the "General Conformity Rule" (40 CFR 93) Federal actions resulting in air emissions within a designated non-attainment area will be required to conform to the federally approved state implementation plan (SIP). Air emissions within a non-attainment area that are not covered by an air permit will require a conformity analysis. Based on the emissions calculations presented in the FEIS, a conformity determination was needed for both Massachusetts and Rhode Island.

New information: On December 28, 2009, after issuance of the FEIS, the MMS completed its Final General Conformity Determination as required by the Clean Air Act. It was published on January 3, 2010, on the MMS website and in local newspapers. The Final General Conformity Determination reflects public comments received on the draft conformity determination and current EPA guidance and preferred methodology for estimating vessel emissions. Based on this methodology, the revised NOx emissions are lower than the original estimates in the draft conformity determination and in the FEIS. The MMS worked closely with the applicant, EPA, Rhode Island Department of Environmental Management (RIDEM), and Massachusetts Department of Environmental Protection. On December 17, 2009, EPA stated in an email from Donald Cooke, that EPA supported MMS's General Conformity Determination, with minor changes. These changes were incorporated into the final document. The revised emissions calculations for Massachusetts are below the 100 tons per year threshold for conformity. A

conformity determination is therefore no longer required for Massachusetts. The Proposed Action will still need to conform to the SIP for Rhode Island since the revised emissions levels remain above the threshold. Should the Proposed Action be approved, any lease issued to CWA will stipulate that prior to commencing construction activities, CWA shall meet general conformity requirements through the purchase of offsets that meet the requirements of RIDEM's regulations or through a combination of offsets and emission control measures.

Conclusion: The Clean Air Act Final Conformity Determination provides new information that does not affect the validity of the air quality analysis in the FEIS. The predicted emissions, based on the current EPA methodology, are lower than originally calculated. The Final Conformity Determination specifies measures that CWA shall implement to conform to the Rhode Island SIP and also provides documentation to support the conclusion that a conformity determination is no longer applicable to Massachusetts.

5. Avifauna

The FEIS includes extensive analysis of potential impacts of the Proposed Action to various categories of birds (raptors, passerines, coastal/shorebirds and marine birds) as well as a framework for avian monitoring and an extensive literature review. The FEIS concludes that impacts of the Proposed Action to non-listed bird species would be minor (Pg. 5-97) to moderate (Pg. 5-120) overall. The U.S. Fish and Wildlife Service (USFWS) in its Biological Opinion concluded that the Proposed Action would not constitute a jeopardy to populations of the threatened piping plover or the endangered roseate tern. The IG Report investigated concerns raised about the Biological Opinion for the Proposed Action. This section evaluates concerns raised in the IG Report as well as additional information about migratory bird baseline studies, bird avoidance of wind turbines, and bird energy demands.

A. Migratory bird baseline studies

Background: MMS discussed and assessed migratory bird impacts in the FEIS. The FEIS describes the extensive aerial, boat and radar surveys, and avian risk assessments conducted in preparing the FEIS. Prior to the FEIS, the USFWS recommended that MMS develop more baseline data in order to better inform its determination that the impacts to migratory birds would be minimal. MMS considered this information and the FEIS concludes that the suggested studies were cost-prohibitive and unlikely to provide information useful to its analysis.

New Information: Concerns that MMS did not perform the USFWS requested studies were again raised after publication of the FEIS and were investigated in the IG Report. The IG Report explained in further detail MMS's conclusions that the radar studies would be both impracticable and cost-prohibitive. The IG Report identified that MMS had evaluated this request and found that the type of radar capable of detecting birds had an inadequate range from the existing meteorological tower, the only structure with the project area that could accommodate a 24/7 radar installation. This type of radar also has a limited range, is not multi-directional and would be cost-prohibitive. MMS concluded that the type of radar that could be utilized to cover the

relevant distances in the project area from outside of structures in Nantucket Sound was incapable of tracking smaller objects such as birds from shore to the meteorological tower.

Conclusions: The migratory bird baseline study issues investigated by the IG Report, while relevant to environmental concerns and impacts of the Proposed Action, did not present new information and MMS knew and analyzed this information in the FEIS. Given that MMS determined that the suggested studies were impracticable, cost-prohibitive and not likely to produce useful information, there is no reason to revisit this issue in a supplemental EIS.

B. Avoidance of wind turbines by birds

Background: The FEIS discusses avoidance of wind turbines by birds. It did not discuss whether risk models of collision mortality are sensitive to small errors in estimates of avoidance rates or whether site-specific and series-specific studies are required to estimate such avoidance rates accurately.

New information: The FEIS discusses a publication by Chamberlain et al. (2006) that cited measured avoidance rates for golden eagles in the United Kingdom, which in every case exceeded 99.5%. The FEIS, however, did not discuss that the Chamberlain study also emphasized that even small errors in avoidance rates potentially can have large effects on predicted mortality rates, or that the study authors recommended that collision risk models not be used without site specific research on species-specific avoidance rates. The FEIS uses the collision risk models of Hatch and Brault (2007) to estimate collision mortality for roseate terns and piping plovers. The avoidance rates used in these models were not obtained via site-specific and species-specific studies as recommended by Chamberlain *et al.* (2006). Therefore, the FEIS estimates of bird mortality rates may be inaccurate, especially given the ability of the birds studied in Chamberlain *et al.* (2006) to avoid turbines.

Conclusion: The issue of the sensitivity of the models used in the FEIS to small errors was not addressed in the FEIS and is relevant to the Proposed Action. However, the FEIS analysis relies upon studies at already constructed and operating facilities because currently available technology to perform pre-construction studies of this type is impracticable, cost-prohibitive and unlikely to provide reliable information more useful for analysis of the Proposed Action than the studies discussed in the FEIS. Since the relevant analysis cannot be performed pre-construction using currently available technology, it would not be practicable to conduct these studies and the new information does not result in any significant changes to the conclusions in the FEIS about collision risk to birds (40 CFR 1502.22(a)).

C. Energy demands on birds

Background: The FEIS discusses the potential for increased energy demand on migrating birds caused by the need to detour around or above a wind energy facility at the Proposed Action project site and concludes that such increased energy demand could have negative effects on survival of individual birds and on their reproductive success.

New information: After publication of the FEIS, Speakman *et al.* (2009) published a study of whether energy demands of birds would be increased by diversion around wind farms. The study focused on two issues:

1. Increased energy demand caused by birds having to divert around a wind farm twice annually during spring and fall migrations. They concluded that such increased energy demand would be negligible.

2 Increased energy demand on birds when a wind farm is located between their breeding/nesting site and a preferred foraging site, causing birds to divert around the wind farm multiple times daily during the breeding/nesting season. They concluded that multiple daily diversions around the wind farm would create a significant increase in energy demands.

Because the Proposed Action project site is located more than 5 miles from shore, it is not located between breeding/nesting sites and offshore foraging sites. Therefore, the FEIS discussion about increase in energy demands caused by diversion around the Proposed Action project site may have overstated the energy demands on birds as a consequence of the Proposed Action. To actually measure any increased energy demands on birds diverting around the Proposed Action project site would require operational turbines and in situ, species-specific studies, and therefore such studies cannot be made until turbines are in place and operational.

Conclusion: The information about energy demands on birds is new since the FEIS and is relevant, but since it indicates that energy demands on birds may have been overestimated in the FEIS, there are no new impacts that were not already analyzed in the FEIS and thus no change in the FEIS conclusions.

D. Memorandum of Understanding (MOU) between MMS and FWS

Background: The FEIS was completed prior to finalization of a Memorandum of Understanding (MOU) on the conservation of migratory birds between MMS and the FWS.

New Information: The MMS/FWS MOU on the Conservation of Migratory Birds was signed on June 4, 2009. The MOU was developed pursuant to the requirements of Executive Order 13186. This issue was discussed in the IG Report. Although the FEIS was completed prior to the signing of the MOU between MMS and FWS, the Avian and Bat Monitoring Plan (ABMP) in the FEIS is consistent with the MOU for conservation of migratory birds. In the spirit of compliance with the MOU, MMS has invested substantially in research (Study AT-10-01) to develop technology that combines acoustic monitoring of bird flight calls with thermal imagery in a marine-hardy encasement that could be monitored remotely from shore for up to one year without maintenance. Such data could be collected even at night, in low visibility, and in all seasons of the year. The MMS has also invested in the development of software to automate the analysis of such acoustic recordings. Additionally, MMS is preparing to fund a pilot study (Study AT-10-02) using high definition video aerial surveys in each season of the year to obtain information about seasonal and annual variation in distribution and abundance of birds on the

Atlantic OCS. In combination, these new technologies will provide future projects with additional information regarding bird activity on the Atlantic OCS.

Conclusion: This MOU provides a new programmatic approach that will be applicable to future projects such as the Proposed Action, but does not raise issues, identify impacts or lead to conclusions different from those reached in the FEIS regarding the impact of the Proposed Action on birds or the adequacy of the proposed mitigation and monitoring plan.

Literature Cited and Consulted for Avian Issues

Chamberlain, D.E., M. R. Rehfisch, A.D. Fox, M. Desholm, and S.J. Anthony. 2006. The effect of avoidance rates on bird mortality predictions made by wind turbine collision risk models. Ibis. 148, 198-202.

Hatch, J. and S. Brault. 2007. Collision mortalities at Horseshoe Shoal of bird species of special concern. Report 5.3.2-1. Prepared for Cape Wind Associates, L.L. C., Boston, MA. 39 pp.

Hlista, Brittan L.; Heidi M. Sosik; Linda V. Martin Traykovski; Robert D. Kenney and Michael J. Moore. Marine Ecology Progress Series 394:289-302. 2009.

Nisbet, I.C. T. 2008. January 8, 2008 comments on draft Biological Assessment. Unpubl. rep. to USFWS and roseate tern recovery team. 27 pp.

Speakman, John, Hannah Gray and Lindsey Furness. 2009. University of Aberdeen report on effects of offshore wind farms on the energy demands on seabirds (October 2009).

U.S. Fish and Wildlife Service. 2009. Waterfowl population status, 2009. U.S. Department of the Interior, Washington, D.C. USA.

U.S. Fish and Wildlife Service. 2009. Trends in Duck Breeding Populations, 1955-2009. U.S. Department of the Interior, Washington, D.C. USA.

6. Marine Mammals

Background: In the FEIS, MMS determines that there would be a potential for the taking of marine mammals, and therefore advises the applicant to seek a Marine Mammal Protection Act (MMPA) Incidental Harassment Authorization with NOAA Fisheries (formerly National Marine Fisheries Service (NMFS)). The applicant informed MMS that it intends to seek authorization under the MMPA. The FEIS states that a copy of the MMPA authorization must be provided to MMS prior to commencement of any activities allowed under any MMS-issued lease or other authority that may result in the taking of marine mammals. The FEIS also states that the Endangered Species Act (ESA) Incidental Take Statement (ITS) authorization is to be in place prior to commencement of these activities.

Marine mammals are protected in U.S. waters under the MMPA and, where listed as threatened or endangered, the ESA. Both statutes afford additional protection to marine mammals and their habitat for activities which may result in taking (e.g., disruption of important natural behaviors,

injury, mortality). In order for an entity to legally take a marine mammal, it must receive authorization under the MMPA, and for species that are listed, the ESA.

In analyzing the potential for impacts to marine mammals from the Proposed Action, the FEIS and associated consultation under the ESA used the best available information to conduct an evaluation of all aspects of the Proposed Action, their potential for impacts, and mitigation and monitoring measures to minimize or eliminate the potential for impacts to occur. Sections 5.3.2.6 and 5.3.2.9 of the FEIS provides the evaluation conducted under NEPA for marine mammals. Chapter 9 includes mitigation and monitoring measures identified for marine mammals to minimize or eliminate the potential for effects to occur. The impact analysis and mitigation and monitoring measures defined in the FEIS were developed in coordination with NMFS. Since the publication of the FEIS, no new information has become available which would affect the selection and implementation of these measures. These mitigations and monitoring requirements will be again analyzed as the applicant requests authorization from NMFS under the MMPA.

To meet its ESA requirements, MMS entered into informal ESA consultation with NMFS in January 2006. After two years of information gathering and analysis and close coordination, MMS and NMFS entered into formal ESA consultation on May 22, 2008. NMFS completed consultation and issued a biological opinion on November 13, 2008, which found no jeopardy to listed species and no destruction or adverse modification of designated critical habitat (specifically no or little potential for adverse impacts to ESA-listed marine mammals).

The MMPA, unlike the ESA, requires the applicant to seek authorization with the respective Federal authority (NMFS and/or FWS) to obtain take approval for marine mammals. MMS has communicated with CWA regarding the need for MMPA authority, and CWA has initiated discussions with the appropriate authorities.

New information: Since publication of the FEIS, MMS has reviewed the available information to determine if new data or information are available which would affect the analysis within the FEIS or ESA consultation. Relevant literature which has since become available after the release of the FEIS is listed below. The MMS has reviewed this information and determined that the analysis included in the FEIS on potential impacts of the project on marine mammals remains adequate.

Weinrich, Mason and Claudio Corbelli. 2009. Does Whale Watching in Southern New England Impact Humpback Whale (Megaptera novaeangliae) Calf Production or Calf Survival? Biological Conservation 142(12):2931-2940.

This paper concluded that whale watch exposure did not correlate with either the calving rate or calf production and survival of individual females. In some comparisons, whales with more exposure were significantly more likely to produce calves and to have those calves survive. The study found no direct evidence for negative effects of whale watch exposure, and suggests that short-term disturbance may not necessarily be indicative of more meaningful detrimental effects on either individuals or populations. This paper dealt mainly with impacts from vessel presence, particularly vessels closely following animals over periods of time. The vessels under the Proposed Action would pass by en route to the site and would therefore likely have even less of a

potential for impact to whales. Further, this study supports the NMFS ESA biological opinion that there is no direct evidence of negative effects from vessel presence.

Hlista, B; Sosik, H; Traykovski, L; Kenney, M; and Moore, M. Seasonal and Interannual Correlations between Right-Whale Distribution and Calving Success and Chlorophyll Concentrations in the Gulf of Maine, USA. Marine Ecology Progress Series 394:289-302. 2009.

This study determined that food availability during and just before the gestation period may be a critical factor regulating reproductive success, with low food years contributing to delays in conception. Because right whales will not feed in the project area, that information regarding effects to prey availability are not relevant to this analysis.

Vanderlaan, S; Corbett, J; Green, S; Callahan, J; Wang, C; Kenney, R;. Taggart, C; Firestone, J. Probability and Mitigation of Vessel Encounters with North Atlantic Right-Whales Angelia Endang Species Res 6: 273–285, 2009.

Vessel-whale encounters are an important issue, especially for the North Atlantic right whale. This study examined the probability of vessel strikes by location. It does not impact the analyses in the FEIS. The FEIS contains an evaluation of the potential for vessel strikes to whales. Further, MMS has imposed mitigation, in line with NMFS vessel mitigation requirements, to further lessen the potential for impacts to occur. This paper does not provide new information which would affect the analysis of vessel strikes from the Proposed Action.

MMC (Marine Mammal Commission) (2007). Marine Mammals and Noise: A Sound Approach to Research and Management. 370 pp. Available at:
http://www.mmc.gov/sound/committee/pdf/soundFACAreport.pdf.
This is a standard publication cited in marine mammal analyses. It provides overviews on anthropogenic sound, scientific research to-date, regulations, and mitigation techniques. It would not affect the analyses of the FEIS. This report summarizes existing information on sound impacts to marine mammals, all of which was considered in the development of the FEIS.

Tyack, P.L. 2009. Human-generated Sound and Marine Mammals. Physics Today. Physics Today 62 n.11 (2009): 39-44.

This recent publication in Physics Today is a review of the issue of marine mammals and sound and the research being conducted by Woods Hole Oceanographic Institution (WHOI). It does not change the analyses of the FEIS. This review considers noise impact issues to marine mammals that were available and considered within the analysis in the FEIS. This paper provides more detail to support these same conclusions. It does not contain new data or information which would affect the analysis in the FEIS or ESA consultation.

The National Marine Fisheries Service has prepared a number of 2008 Stock Assessment Reports that are available at: http://www.nmfs.noaa.gov/pr/sars/species.htm.

The NOAA Stock Assessment Reports are standard publications that are updated nearly yearly for many species. The Stock Assessment Reports cited in the FEIS were published in 2007.

The most recent Stock Assessment Reports were published in 2008. The data in the Stock Assessment Reports did not vary greatly between these years and this is simply and updated reference. Therefore, it would not change the analyses in the FEIS.

Conclusion: The NMFS determined that the Proposed Action was not likely to affect ESA-listed marine mammal species given that they are an uncommon occurrence in Nantucket Sound (where the potential for noise impacts to ESA-listed marine mammals would be greatest). The new literature does not suggest that their occurrence rates have changed materially, or that the proposed mitigation measures detailed in the FEIS require reconsideration. Further, if the Proposed Action moves ahead, CWA would need to apply for authorization under the MMPA, which was anticipated under the FEIS.

Recent Aggregations of Whales

Background: Several components of project construction and operation will produce sound that may affect listed sea turtles and whales. NOAA Fisheries concluded in its November 13, 2008 BO (FEIS Appendix J) that the proposed action (e.g., pile driving noise, and potential for vessel strikes) may affect various species of sea turtles but is not likely to jeopardize the continued existence of these species. Potentially disturbing levels of sound (160-180dB) would equally affect right, humpback and fin whales, and would constitute harassment. (FEIS Appx. J NOAA BO at 85-87). NOAA Fisheries concluded that listed whales were "not likely to be adversely affected" by the action because they rarely occur in Nantucket Sound. However, mitigation measures (RPMs and implementing Terms and Conditions) to prevent exposure to disturbing levels of sound were designed to be applied to all listed species Id. at 102-104. The most significant of the measures requires that no pile driving occur if any whales or turtles are present within 750 meters of the pile to be driven. Observers are required to begin monitoring at least 60 minutes prior to pile driving (a "soft start" is required).

New information: In December 2008, NOAA Fisheries implemented new regulations designed to protect the endangered North Atlantic Right Whale. One of the protection measures includes creation of temporary Dynamic Management Areas (DMAs) that would surround aggregations of more than three whales in a 15 nautical-mile radius for a maximum of 15 days (which could be extended if the aggregation of whales remains in the area). Mariners are requested to voluntarily comply with the DMA protection measures by either avoiding the area or limiting vessel speed to 10 knots (USCG letter to MMS, June 24 2009). MMS has recently learned that large aggregations of right whales have been sighted in the vicinity of Nantucket Sound, and even within the Sound, which is very unusual. Commenters have stated this information requires a supplemental EIS and re-initiation of the section 7 consultation process.

Conclusion: The presence of larger numbers of right whales at this time does not alter the action or the effectiveness of the established protective mitigation measures. This information does not significantly change the impacts analyzed in the FEIS. Construction activities involving the Project in the Sound are not imminent, and by the time that construction might begin in the Sound, the groups of whales may no longer be present. The imposition of DMAs is not inconsistent with project activities as long as other monitoring and mitigation measures are followed. The USCG was aware of these issues and has addressed the matter in its own FEIS

comment responses. The protocols and protections in the NOAA BO and RPMs were drafted with this in mind—how to avoid harassment of whales when they come near. The effectiveness of these measures was not predicated on the assumed frequency of whale sightings, and changes in those assumptions do not render the protocols invalid. The actual conduct of project activities might be affected if the protocols had to be employed frequently, but there is no basis to conclude that an increased level of harassment or take would result. The criteria for re-initiation of consultation with NOAA Fisheries has not been met, and supplementation of the EIS is not required (FEIS Appx. J NOAA BO at 105).

7. Competing Uses in the Vicinity of the Proposed Action

A. Navigation Features: U.S. Coast Guard (USCG) Terms and Conditions

Background: The FEIS includes a "Report on the Effect of Radar Performance of the Proposed Cape Wind Project" and an "Advanced Copy of Findings and Mitigation" from USCG (See Appendix M), which concludes that the project could result in moderate impacts on navigation safety, due to radar interference resulting from the proposed installation of WTGs. The study, commissioned by the USCG, documents the challenges for radar observers: USCG confirmed that it will be more difficult - though not unreasonably so - for vessels to distinguish targets within the wind farm. The radar study also points out that radar interference decreases with decreasing distance to the radar; in other words, the objects that a vessel operator would be most concerned with - those closest to his location - show up clearly on radar, while those objects further away and therefore of lesser concern are intermittently distorted.

While there is disagreement over the severity of the interference, the radar study discussed in the FEIS concludes that interference is unavoidable, it is moderate, and it can be managed with prudent operation of any vessel in accordance with the collision regulations. The USCG also reassessed its previous findings in November 2008 and responded to comments regarding all other issues related to navigation safety and search and rescue operations (see Appendix B at 75-106).

New information: The IG Report addressed complaints that MMS failed to adequately address impacts on navigation safety and was prepared to approve the Proposed Action prior to receipt of the USCG's terms and conditions to mitigate these impacts. After the FEIS, on June 24, 2009, the USCG officially informed MMS that the Proposed Action will (1) have a moderate impact on navigation safety, but sufficient mitigation measures are available to reduce risk to an acceptable level, (2) have negligible impacts to Coast Guard missions, and may in some circumstances actually facilitate the success of certain missions.

The USCG's final assessment determined that no specific mitigation measures are required beyond the terms and conditions submitted to MMS for the DEIS (See Appendix M of the FEIS: "Advanced Copy of Findings and Mitigation" and Appendix B at pp 75-106 (November 14, 2008 USCG response to DEIS comments and confirmation of the adequacy of its Terms and Conditions).

With these terms and conditions in place and the prudent operation of vessels, the USCG has concluded that maritime navigation can be conducted safely within and around the Proposed Action's turbine array.

If the Proposed Action is approved by MMS and additional mitigation becomes necessary, MMS will exercise discretion under its statutory and regulatory authority, and the USCG would develop necessary and appropriate additional mitigation measures under its relevant legal authority. Future measures could include creation of a specially marked channel through the turbine array, creation of routing measures such as the two-way route currently in use in Buzzards Bay, and/or creation of a Regulated Navigation Area to govern or manage vessel activity. The precise details of any such mitigation strategies would be further developed and refined with continued input from appropriate stakeholders such as the Southeastern Massachusetts Port Safety and Security Forum.

Conclusion: The information provided by the USCG and discussed in the IG Report is entirely consistent with the analysis of navigation impacts in the FEIS; therefore, the information is not deemed significant and will not change or add to the discussion of environmental effects in the FEIS.

B. Airport Facilities: FAA Hazard Determination

Background: Section 5.3.4.4.2 of the FEIS for the Proposed Action states that wind turbines have the potential for adding "clutter" to a radar's display screen, making it difficult to distinguish small objects, even with high resolution, at angles close to the horizon. The FEIS describes that this "clutter" effect can extend from 57.5 to 92 miles (92.6 to 148.2 km) from the turbine farm, making it difficult to distinguish each turbine separately on a radar display screen. The FEIS includes a study (See FEIS Appendix L: "Brookner Report") which asserts that wind turbines will generate "clutter" that may confuse traffic controllers. At the time of publication of the FEIS, the FAA had not issued its final determination; therefore, there are no conclusive statements in the FEIS concerning adverse effects from the Proposed Action to the safe and efficient use of navigable airspace by aircraft and on the operation of air navigation facilities.

New Information: On February 13, 2009, after MMS issued the FEIS, the FAA issued a Presumed Hazard Determination (PHD), concluding that each of the proposed 130 wind turbine structures exceed obstruction standards under Title 14 of the Code of Federal Regulations, part 77, and would have an adverse physical or electromagnetic effect upon navigable airspace or air navigation facilities. Since the PHD issuance, the FAA has been conducting a full aeronautical study of the Proposed Action, including consideration of public comments received. This study has not yet concluded. The aeronautical study will be completed before the FAA can finalize its hazard determination for the Proposed Action and issue either a determination of no hazard or a determination of hazard. If the FAA concludes a hazard exists, it would then, if possible, develop mitigation measures to reduce or eliminate such hazard.

Conclusion: The FAA PHD is relevant to and consistent with the discussion of potential air navigation hazards due to wind turbine interference with radar systems presented in the FEIS. The IG report investigated the import of the FAA PHD and found that the "presumed hazard

determination" is issued when a proposed structure exceeds specific obstruction standards and the Proposed Action will have a "physical or electromagnetic interference with an air navigational system." This determination is a presumption serving to preserve the status quo until a study is completed leading to a factual finding of whether or not a hazard actually exists. Pursuant to 14 CFR Part 77 and FAA Order JO 7400.2G, the FAA will complete its study and, if required, develop mitigation measures if a hazard is found.

The FAA's PHD does present a change in circumstances and provides new information to the discussion already covered by the FEIS with regard to adverse effects to the human environment resulting from the Proposed Action. However, as the determination is a presumption serving to preserve the status quo until FAA completes their study, the new information cannot be characterized as significant. As stated in the FEIS, CWA could not begin construction under the Proposed Action until CWA's receipt of the FAA's final determination on whether a hazard exists and compliance with any resulting mitigation measures. Upon receiving information from the FAA detailing appropriate mitigation measures, MMS will evaluate the information to determine whether implementation of the measures would necessitate a supplemental NEPA analysis.

C. Coastal and Marine Spatial Planning

Background: The FEIS was prepared prior to the convening of an Interagency Ocean Policy Task Force which made recommendations in late 2009 as to how a comprehensive Federal agency approach to Marine Spatial Planning would apply to development projects in the marine and coastal environments, such as the Proposed Action. The following discussion evaluates whether the existing Interim Framework for Marine Spatial Planning (MSP) released in 2009 bears on the analyses or conclusions in the FEIS.

New information: On December 14, 2009, President Obama's Ocean Policy Task Force released its Interim Framework for Effective Coastal and Marine Spatial Planning (Interim Framework or CMSP) for a 60-day public review and comment period. The Interim Framework recommends consideration of a new approach to planning and managing uses and activities in the coastal and marine environment. Under the Interim Framework, coastal and marine spatial planning would be regional in scope, developed cooperatively among Federal, state, tribal, local authorities, and regional governance structures, with substantial stakeholder and public input. The recommendations included in the Interim Framework have not been finalized.

Conclusion: While the FEIS did not discuss and evaluate marine spatial planning specifically, the language in the Interim Framework itself states that coastal and marine spatial planning is not meant to delay or halt existing or pending plans and projects such as the Proposed Action. The implementation of the Interim Framework therefore, if implemented, does not create the need for any additional analyses or considerations beyond what was included in the FEIS.

8. Cumulative Effects

Background: The FEIS records the geographic study area for cumulative impacts as extending northeastward from Nantucket Island to Monomoy Island including Monomoy Shoals and

northwestward from Nantucket Island through Narragansett Bay to Quonset, Rhode Island including Martha's Vineyard. The northernmost boundary is the northern shore of Nantucket Sound and the easternmost boundary is described as Latitude 41.4571, Longitude -69.8676.

Projects included in the cumulative impact analysis were limited to present activity that included (1) the Proposed Action; (2) any ongoing projects or known projects (i.e. projects for which an application has at least been filed or for which planning documentation exits); and (3) projects not now taking place, but which may occur periodically over the next 20 years because they have occurred in the recent past. An example given of the latter is the maintenance dredging of channels and harbor areas. The FEIS records a variety of activities along with their geographic descriptors in the cumulative scenario.

New information: DeepWaterWind (DWW) has proposed for development a facility off Rhode Island. It is located about 3 miles offshore of Block Island within state waters. The proposal consists of constructing 5-8 wind turbine generators.

Conclusion: The FEIS discusses cumulative impacts and assesses the extent to which the Proposed Action would incrementally contribute to current conditions. The development of the small-scale DWW project, when added to the cumulative impacts discussed in the FEIS results is a *de minimus* incremental addition to the cumulative effects resulting from the Proposed Action and the projects already analyzed. Therefore this new information, while relevant and bearing on the environmental impacts of the Proposed Action, does not describe significant new cumulative impacts or affect the validity of the assumptions and analyses in the FEIS.

9. Consultation and Coordination

In accordance with CEQ regulations (40 CFR 1501.7), on January 21, 2009, MMS published a notice in the *Federal Register* announcing the availability of the FEIS, and accepted comments on the FEIS through the Public Connect System from January 16, 2009 to March 21, 2009.

In accordance with the relevant legal authorities, MMS has continued to consult and coordinate with cooperating agencies in identifying and reviewing potential new information that is evaluated in this EA. In accordance with the NHPA, MMS has continued consultation with the Mashpee Wampanoag Tribe and Wampanoag Tribe of Gay Head (Aquinnah) Tribes, the ACHP, the SHPO, and other consulting parties to attempt to reach agreement on mitigation measures to address the adverse effects described in this EA and in the FEIS. On March 1, 2010, the Secretary determined that reaching an agreement on a Memorandum of Agreement to resolve the adverse effects of the Proposed Action was not possible and that further consultation on the Proposed Action would not be productive. MMS will continue to engage the Mashpee Wampanoag Tribe and The Wampanoag Tribe of Gay Head (Aquinnah) Tribes in furtherance of its ongoing government-to-government relationship with them.

Responses to Comments
MMS offered a thirty-day public comment period for this Environmental Assessment (dated March 4, 2010 and published in the March 8, 2010 Federal Register). The comment period

closed on April 7, 2010. MMS received and reviewed over 450 comments in response to the Federal Register Notice. MMS analyzed the content of these comments to determine if they contained new and relevant information, and if the new information changed the analyses and conclusions contained in the Cape Wind Final EIS. Over 300 of the comments were statements of support or opposition to the proposed project providing little or no additional information and no new information regarding the environmental impacts of the project. An additional 144 comments expressed positions and raised issues that either had already been addressed in comments received on the Cape Wind Draft and Final EISs, or did not provide any new or relevant information regarding the environmental analysis. This included comments challenging other agencies' review processes and/or asserting errors in decisionmaking, and some alleging deficiencies in the MMS NEPA process unrelated to new information.

Navigation Safety, Competing Uses/Ferries, Emergency Response

Some commenters voiced concerns over navigation safety, competing uses of the Sound by ferry traffic, and the potential costs incurred by municipalities under obligation to respond to emergency events such as fires, accidents or oil spills. Administration of these matters pursuant to the Oil Pollution Act amendments to the Clean Water Act (33 USC 1321) are shared by MMS, the applicant and the USCG under a Memorandum of Agreement that gives lead responsibility to the USCG. Matters related to navigation safety on the OCS, including the obligation to engage in search and rescue operations, is also the responsibility of the USCG. Commenters challenged the sufficiency of the USCG review and studies.

The background discussion of the extensive and repeated reviews by the USCG above has been expanded to cite to relevant assessments in the FEIS. None of these comments are new; the USCG responded to each in its November 14, 2008 responses to DEIS comments. Its June 2009 response to FEIS comments contained little change from past responses; no substantive changes to its August 2, 2007 Terms and Conditions were recommended.

With these terms and conditions in place and the prudent operation of vessels, the USCG has concluded that maritime navigation can be conducted safely within and around the turbine array. Navigation is freely permitted within the array; traffic controls have not been imposed. The distance between turbines is greater than that between various buoys, jetties and harbor entryways that are navigated routinely. Ferry traffic will not be required to alter their routes to avoid the turbines, which would be constructed on the shallow shoal. On the contrary, a ferry that departed from the shipping channel would be in more danger of running aground than colliding with a turbine. Shipping channels in the area are narrow due to many shoals, and the closest turbine would be approximately 1166 yards from the channel along the southern portion of the project, a distance nearly as wide as the shipping channel itself (1300 yards wide at that point). FEIS Appendix B at 75-106. The USCG found that tacking maneuvers by ferries are rare occurrences, and while they could result in a ferry entering the array, a collision is unlikely due to the ample distance between turbines, and tacking will not be prevented.

The USCG found that its own search and rescue operations and response times would not be adversely affected by the project, and in some cases would be aided by the navigation, ladders and other aids located on the turbines. Comments stating that municipalities would incur high

costs associated with emergency response operations failed to consider the USCG's role in search and rescue or its findings that the project's impacts on these activities would be negligible. The FEIS addresses the socioeconomic impacts to "existing infrastructure" to provide emergency services for the project and concludes that the project needs are within existing capacity. FEIS at 3-15. Similar comments stating that local municipalities would need to provide the first response in the event of an oil spill are inconsistent with the draft Oil Spill Response Plan at FEIS Appendix D. The applicant plans to contract with a private company to provide these response services, and in the event that local support resources such as fire, EMS or hospitals are enlisted to aid in the response, financial support would be provided by CWA (FEIS Appendix D at ESS Appx. F).

Microclimatology effects—fog or "sea smoke" created by turbine action

Some comments submitted news articles to support a concern that permanent, localized fog banks within the array could be created by the action of the turbines causing cooler air to move against warmer air near the water. This issue was covered in the FEIS at 5-50. MMS found that "[c]onditions such as the formation or dissipation of fog would not be affected by the WTGs operation because fog is formed during specific psychometric (atmospheric temperature and moisture) conditions. . . .nearby onshore seasonal average [air current] mixing heights (4,662 ft.) are substantially above the top of the rotor swept zone (440 ft.). It is unlikely that the WTGs would entrain the air above the mixing height to the layer below the mixing height." Therefore MMS does not agree that this is an issue of concern that could result in additional navigation safety impacts.

April 2, 2010 ACHP Comment

On April 2, 2010, the ACHP provided final comments to MMS on the project under Section 106 of the National Historic Preservation Act. The ACHP comments stated that adverse effects on historic properties will be direct and indirect, cannot be avoided, and cannot be satisfactorily mitigated. The ACHP recommended against building the project, and criticized the MMS' conduct of the section 106 process, calling the effort "tentative, inconsistent, and late."

MMS believes that the record shows otherwise. The Secretary has provided a more detailed response to the comments, disagreeing with several ACHP statements and conclusions.

Further, since the MMS took over as lead agency for the Project in 2005, the record reflects at least 21 formal meetings with consulting parties. These were in addition to the agency coordination and consultation meetings on the environmental impact statement. Effects on historic properties were also discussed at those meetings as well. In addition to formal meetings, the consultation record is replete with informal communications, correspondence and e-mail exchanges and telephone calls with consulting parties. The ACHP has been engaged with consultation regarding the Project since March of 2005. All of this is reflected in the FEIS at 7-2-3 and the agency records.

In a nearly unprecedented effort, in 2010 the Secretary personally convened a Section 106 consultation meeting in Washington, D.C. on January 13, 2010, joined by the Deputy Secretary, the Solicitor, and the MMS Director. The Secretary also participated in a government-to-

government meeting with leaders of the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah) to discuss their views of the proposed project. The Secretary also held a meeting with the signatory parties to determine if there was agreement on a resolution of adverse effects. The Secretary also visited tribal cultural sites with the Mashpee Wampanoag Tribe and the Wampanoag Tribe of Gay Head (Aquinnah) Tribes and viewed the proposed project site.

The Deputy and Associate Deputy Secretary led additional government-to-government consultations with the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag Tribe, which provided additional opportunities for the MMS to ascertain the Tribes' assessment of the proposed project and their opinions regarding proposed mitigation measures.

After nearly five years of formal NHPA consultation on the Project and a diligent effort to identify historic properties, assess the effects of the Project on them, and to resolve the Project's adverse effects that were found, earlier this year it became clear that further consultation would not result in agreement among the consulting parties on how to resolve the adverse effects, and the Department terminated consultation. This termination triggered the ACHP's responsibility to provide its final comments on the Project and adverse effects.

While the ACHP comments summarized adverse effects identified by MMS in its Revised Findings documents, and the Secretary's consultation efforts cemented MMS's understanding of the Tribes' views on adverse effects, none of this presents new information about the Project's effects on historic properties and confirms MMS' earlier determination in the EA that supplementation of the FEIS would provide no new useful analysis to guide MMS's decision.

Draft mitigation measures to minimize take of avian species that were not adopted by FWS

Background: The analysis of impacts to birds in the FEIS assumed that turbines would operate continuously during periods of low visibility, and concerns were raised that the risk of collision might be higher under these conditions, especially during spring and fall migration seasons. In a draft BO, the FWS proposed a measure to require seasonal shutdowns ("feathering") for four hours each at dawn and dusk during periods of low visibility. This proposal was ultimately not included in the final BO for both economic and biological reasons. CWA provided an economic analysis to support the severity of the economic impacts and its assertion that such a measure would result in more than a "minor change" to the operation of the project. Mitigation measures are not required unless they are minor changes to a project.

New information: MMS received a comment that MMS rejected the turbine shutdown recommendation based solely on economic reasons. The letter included an economic analysis prepared by the commenter that concluded turbine shutdowns during times of low visibility would not jeopardize the economic viability of the project.

Conclusion: The conclusions of the economic analysis do not change the environmental analysis in the FEIS because the FWS decision to exclude the operational shutdowns was not based solely on economic considerations or changes in project operations. The BO recognizes that only a small to moderate level of take -- approximately 4-5 terns a year and 1 plover every 2 years—

would result from operation of the project even before the imposition of any RPMs. Any enhancement of bird safety that might have resulted from implementation of the "feathering" measure, while supportive of conservation goals, was not biologically necessary to avoid jeopardy to the species. Moreover, the FWS found that "implementation of the Bird Island Restoration Project would offset any level of roseate tern mortality." Appx. J FWS BO at 73. Another consideration was that the ¼-mile visibility constraint that had been proposed as a condition for turbine shutdown was not based on biological information relevant to bird safety or visual acuity, but was an artifact of the units by which visibility is measured at airports. There was no biological basis to conclude that the ¼-mile visibility restriction would enhance bird safety. Thus, MMS' decision to permit of the project without requiring the shutdowns has a scientific as well as an economic basis.

Massachusetts Ocean Management Plan

The Massachusetts Ocean Management Plan, currently under development, will identify areas for wind energy related projects in state waters in a section entitled "Renewable Energy Areas." Some commenters stated that MMS must either reconsider the purpose and need for the project based on assumed implementation of, or perceived conflicts with, the Massachusetts Ocean Management Plan, or include alternative energy projects or proposals in its cumulative impacts analysis. MMS has included concrete proposals in its discussion of cumulative impacts. Other offshore projects in state waters remain speculative, as the Ocean Management Plan itself, published in December 2009, is not final. The Plan also has not yet obtained a consistency determination from the State Coastal Zone Management (CZM) program. The State of Massachusetts has already determined, on January 23, 2009, that the Cape Wind Project is consistent with CZM enforceable program policies. Therefore, the project, if approved, will not interfere with this plan.

Cape Wind Energy Project

Environmental Assessment

List of Preparers

James F. Bennett	Chief, Branch of Environmental Assessment
Poojan Tripathi	Cape Wind Project Coordinator
Norman Froomer	Environmental Protection Specialist
Dirk Herkhoff	Meteorologist
Christopher Horrell	Marine Archaeologist
Jennifer Kilanski	Environmental Protection Specialist
Jill Lewandowski	Protected Species Biologist
Julie Light	Secretary
Lennis Montague	Secretary
Kimberly Skrupky	Marine Biologist
Kathleen Tyree	Archaeologist
James Woehr	Avian Biologist

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the Offshore Minerals Management Program administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS Minerals Revenue Management meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.