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March 29, 2007

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Cape Wind Project
PROJECT MUNICIPALITY : Barnstable, Yarmouth, and Federal Waters of Nantucket
Sound
PROJECT WATERSHED : Cape & Islands
EOEA NUMBER : 12643
PROJECT PROPONENT : Cape Wind Associates LLC
DATE NOTICED IN MONITOR : February 20, 2007

As Secretary of Environmental Affairs, I hereby determine that the Final Environmental Impact Report (FEIR) submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and with its implementing regulations, 301 CMR 11.00 (the "MEPA regulations).

I believe that an ambitious program of renewable energy development is in the interests of the citizens of Massachusetts, and that the Commonwealth has an obligation to its citizens to promote development of renewable energy. Global climate change, sea level rise, dependence on foreign oil, and the health impacts of local and regional air pollution create an urgent need for sustainable alternatives to energy produced from fossil fuels. While new technologies are not without impacts themselves, these pale in comparison to the scale of impacts that continued fossil fuel emissions will have on the environment of Massachusetts. The development of the large scale wind farm as proposed is expressly consistent with and will significantly advance the Commonwealth's energy policy goals, and will provide immediate and significant benefits to air quality and energy reliability in Massachusetts and the Northeast. Overall, the project represents a balanced and thoughtful commitment to action that will contribute to the long-term preservation and enhancement of our environment.

For this project, my obligation under MEPA is to ensure that the impacts of the construction and operation of the portions of the project within Massachusetts' jurisdiction have been adequately avoided, minimized, and mitigated. I find that they have. The proponent has provided an extensive assessment of impacts related to the electric transmission cable, the portion of the project subject to MEPA jurisdiction, and as explained below has mitigated those impacts. To the extent that technical issues associated with the electric transmission cable remain to be addressed, these can be addressed in the state permitting process, as described in detail below.

As for the wind farm itself, which for the most part lies outside of MEPA jurisdiction, the proponent has provided a significant amount of information regarding the wind turbine generators ("WTG array") located in federal waters. I note that the Coastal Zone Management (CZM) Office must perform a federal consistency review in which it assesses the impact of the wind farm upon Massachusetts coastal waters to determine whether the project is consistent with the commonwealth's enforceable policies. CZM's comment letter notes that there are some information gaps that need to be resolved prior to the issuance of CZM's federal consistency review, but that CZM expects that the additional information it needs to make an informed decision will be provided under the ongoing and comprehensive Minerals Management Service (MMS) review under the National Environmental Policy Act (NEPA). I concur with CZM's view, and instruct the proponent to coordinate closely with CZM to ensure that this information is provided to CZM's satisfaction.

Similarly, several state agencies and public commenters identify several aspects of the proponent's environmental analysis of potential impacts of the WTG array in federal waters that require additional information and analysis, and I expect that these issues will be addressed in greater detail in the Draft EIS to be published by MMS.

Project Description

As described in the FEIR, the proposed project involves the development of 130 Wind Turbine Generators (WTG) on a grid over approximately 25 square miles of sub-tidal area in Nantucket Sound known as Horseshoe Shoals. The project will have a maximum potential electric output of approximately 454 megawatts (MW) of renewable power. As currently proposed, the hub of each WTG will be 257.5 feet above Mean Lower Low Water (MLLW), with a total height up to 440 feet above MLLW when rotor systems reach maximum height. The WTG array and inter-connecting cables are located in federal waters.

The project also entails the placement of submarine cables for interconnection of the WTGs. The underground cables and portions of the submarine cables are located within Massachusetts or in the waters of the Commonwealth. The wind-generated electricity from each of the turbines will be transmitted via a 33 kilovolt (kV) submarine transmission cable to the Electric Service Platform (ESP) located within the WTG array. The ESP will take the wind generated energy from each of the WTGs and transform and transmit the electric power to the

mainland via two 115kV alternating current (AC) submarine cable circuits. The submarine cable systems will make landfall in the Town of Yarmouth.

The proposed submarine cable system route is approximately 12.5 miles in length (7.6 miles within the Massachusetts 3-mile territorial line) from the ESP to the landfall location in Yarmouth. The submarine transmission lines would travel north to northeast in Nantucket Sound into Lewis Bay past the westerly side of Egg Island, and then make landfall at New Hampshire Avenue. The submarine transmission lines would transition to the upland transmission line by using horizontal directional drilling (HDD) methodologies to a transition vault situated at the end of New Hampshire Avenue.

Federal and State Jurisdiction, Required Permits, and MEPA Jurisdiction

Because MEPA (like the Cape Cod Commission Act) is the product of state law, not federal law, MEPA review (and by extension Cape Cod Commission review) applies only to those portions of the project that are located within Massachusetts, including its territorial waters (generally within three nautical miles of the low water mark of the shore). The proposed WTG array is located outside of Massachusetts and, therefore, is not subject to state regulatory requirements. There is one notable exception: CZM has somewhat broader jurisdiction because federal law (pursuant to the Coastal Zone Management Act) specifically delegates review authority over projects in federal waters to the Coastal Zone Management Office of the adjacent coastal state, provided that state has a federally approved Coastal Zone Management Plan. However, under federal law CZM's review is not unlimited: its review must focus on the wind farm's foreseeable effects upon the uses and natural resources of the Massachusetts coastal zone.

At the time of the original submission of the Environmental Notification Form (ENF) filing and review, the portion of the project subject to MEPA was not believed to meet or exceed any mandatory EIR thresholds. Because of the precedent setting nature of the project and the potential for significant environmental impacts, the project was scoped for a discretionary EIR in accordance with section 11.06 of the MEPA Regulations.

Despite the jurisdictional limitations on MEPA review, the proponent agreed at the commencement of the MEPA process to voluntarily provide information under MEPA (within the meaning of Section 11.05(8) of the MEPA regulations) as it relates to the entire project, including the WTG array in federal waters. The purpose of subsequent MEPA scopes addressed to the non-jurisdictional WTG array was to ensure that state issues regarding potential impacts and benefits to Massachusetts would be fully addressed through a scope voluntarily accepted by the proponent for the purposes of MEPA, and which represented state comments for the purposes of NEPA. While strongly supporting the benefits of this approach, previous Certificates issued for this project carefully delimited the extent of MEPA jurisdiction, noting that "...the proposed WTG array is located outside of Massachusetts and, therefore, is not subject to state regulatory requirements." To facilitate this distinction, the first Certificate specifically directed that the proponent disaggregate the impacts of the project in Massachusetts from impacts that are occurring within federal waters, "since the latter represent aspects of the project that fall within

the “voluntary” nature of MEPA review but lie outside the scope of state and local permitting.”

The project is undergoing review pursuant to Section 11.03 (7)(b)(4) of the MEPA regulations, because the project involves development of a new electric transmission line greater than one mile in length with a capacity of 69 or more kV. For purposes of MEPA analysis, I have assumed, but not decided, that the electric cable constitutes a non-water dependent use. On the basis of this assumption, the project also requires the preparation and review of a mandatory EIR pursuant to Section 11.03(3)(a)5 of the MEPA Regulations, as that section requires an EIR for a new non-water dependent use of more than one acre of tidelands. The portion of the project within Massachusetts will require a 401 Water Quality Certificate and a variance from Chapter 91 Waterways License from the Department of Environmental Protection (DEP) should the project be deemed to be non-water dependent; approval from the Massachusetts Energy Facilities Siting Board (EFSB) (which has already occurred); a construction permit from the Massachusetts Highway Department; and an Order of Conditions from the Barnstable and Yarmouth Conservation Commissions (and hence Superseding Order(s) from DEP if one or both local Order(s) were appealed). The Massachusetts Coastal Zone Management Office (CZM) will conduct Federal Consistency Review of the project, including the portions of the project located in federal waters. In addition, if a state-listed species is located within the proposed NSTAR Electric ROW transmission line route, a Conservation Permit will be required from Natural Heritage Endangered Species Program (NHESP) under the Division of Fisheries & Wildlife.

Because the proponent is not seeking financial assistance from the Commonwealth for the project, MEPA jurisdiction extends to those aspects of the project that are within the subject matter of required or potentially required state permits and that have the potential to cause significant Damage to the Environment. In this case, given the broad scope of the state permits listed above, MEPA jurisdiction effectively extends to all aspects of the project that are within Massachusetts, or that are appropriately the subject of CZM’s federal consistency review.

Coordinated Review

The proponent also voluntarily committed, with strong support from this office, to a coordinated review process under MEPA and NEPA, to harmonize the timetables for the state and environmental reviews and facilitate informed and efficient agency and public review. The benefits of this approach were made obvious when the Draft EIR/EIS was filed as a joint document in November, 2004, which allowed the public to review a single set of materials within a common state/federal review period.

However, the federal Energy Policy Act of 2005, enacted after that Certificate was issued, reassigned lead agency responsibility for the project from the US Army corps of Engineers to the Department of Interior, MMS. MMS, in turn, determined that a new Draft EIS was required, and began the federal scoping process anew. This set the state and federal reviews on different schedules, and while the MMS process of developing the Draft EIS is now in its final stages, the proponent has chosen to file this Final EIR in advance of the MMS Draft EIS.

I have received numerous comments expressing strong dissatisfaction with the now bifurcated review process. Many commenters have written in opposition and asked that I require the proponent to withdraw the Final EIR or extend the comment period to correlate with the MMS schedule for release of the Draft EIS. Under the MEPA regulations, I can neither extend the review period of a Final EIR nor require that the proponent withdraw a Final EIR to allow additional time for comment. Other commenters have asked that I deny the project on grounds of inadequate information, flawed process, or perceived impacts. MEPA is not a zoning process, nor is it a permitting process. Rather, it is a process designed to ensure public participation in the state environmental permitting process, to ensure that state permitting agencies have adequate information on which to base their permit decisions and their Section 61 Findings, and to ensure that the potential environmental impacts are described fully and avoided, minimized, and mitigated to the maximum extent feasible.

MEPA issued the scope for the Final EIR before the Energy Policy Act of 2005 was promulgated, and the expectation of this office was that the coordinated state/federal review process would continue through a Final EIR/EIS. While my strong preference would be to continue the coordinated review process, I recognize and wish to note that the proponent is entirely within its rights to file with MEPA before filing with MMS.

Project Mitigation

Wind energy represents an indigenous source of virtually emissions-free power. However, as with all other power sources, wind power has potential drawbacks. Potential impact on wildlife is an important consideration, as is the highly visible nature of wind turbines. The placement of wind turbines in ecologically sensitive areas can also raise concerns with site-specific construction and operational impacts to marine resources and uses. The Final EIR describes specific measures the proponent has proposed to avoid, minimize, and mitigate impacts. In addition, the proponent has further clarified its mitigation commitments, generally described in the Final EIR, and has committed to their implementation in a letter dated March 26, 2007 from the proponent to EOEA. I note that for the most part, the proponent proposes mitigation for impacts from activities in federal waters, and this mitigation is not required for purposes of MEPA. However, the proponent has voluntarily offered this mitigation in the MEPA context, and it is therefore appropriate to describe the mitigation in this certificate. As explained below, the project will provide over \$10 million in mitigation as compensation for unavoidable impacts as follows.

Compensatory Mitigation

- The proponent will provide \$780,000 towards the restoration of Bird Island, off the town of Marion in Buzzards Bay, with funds to be managed by the Department of Fish and Game, Natural Heritage and Endangered Species Program.

At 1.5 acres in size, Bird Island supports an average of 750 pairs of Roseate Terns, and is the second or third largest Roseate Tern colony in North America, supporting an average of 22%

of the North American population. It is also the third largest Common Tern colony in Massachusetts, and supports an average of 1,900 pairs of Common Terns. Bird Island is conservation land owned by the Town of Marion and managed by the Harbormaster and Conservation Commission.

While Bird Island provides prime nesting habitat, the island is subject to significant and accelerating erosion. As a result, former Common Tern nesting areas adjacent to the seawall have turned into salt marsh, which is unsuitable for nesting. Common Terns have moved into interior nesting areas, forcing Roseate Terns out. The objective of the local, state, and federal partnership that is managing the restoration is to restore tern nesting habitat and protect the historic lighthouse by rebuilding the revetment to reduce erosion, fill eroded areas, and revegetate appropriate areas to provide suitable nesting habitat. Based on consultation with the Natural Heritage and Endangered Species Program, I understand that the enhancement of tern nesting habitat on Bird Island will directly benefit the same tern population that is subject to potential impacts from the WTG array. The project has a total cost of \$3.775 million, the balance of which will be borne by the US Army Corps of Engineers, who is also providing planning, design, and construction services. If the proposed restoration project does not go forward, for whatever reason, the proponent shall coordinate with EOEA and state agencies and develop an alternative vehicle of equal value for mitigating avian impacts.

- The proponent will provide \$4.22 million in annual payments prorated over the life of the project towards natural resource preservation, marine habitat restoration, and coastal recreation enhancement projects in the area of Cape Cod, Nantucket, and Martha's Vineyard, with funds to be managed by the Coastal Zone Management Office, in consultation with state agencies and the Cape Cod Commission.

Comments from the Department of Conservation and Recreation, CZM, Department of Fish and Game and others have identified a range of potential projects that would provide appropriate mitigation for impacts associated with the project. In order to take advantage of additional information that will be presented through the MMS Draft and Final Environmental Impact Studies, I will defer the specific guidance regarding allocation of this mitigation until the conclusion of the federal review process. I am therefore directing CZM, as an office of the Environmental Affairs secretariat, to seek appropriate public input and develop a program that will guide the allocation of these funds, in conjunction with its federal consistency review responsibilities. When a final allocation is reached, CZM shall prepare a document to be published in the environmental monitor.

Federal Lease Payment

- Pursuant to the Energy Policy Act of 2005, the project will provide Massachusetts with 27 percent of the revenues received by the federal government as a result of payments from projects that are located wholly or partially within the area extending three nautical

miles seaward of State submerged lands.¹

The Department of Interior, through MMS, is currently developing the regulations that will implement relevant provisions of the Energy Policy Act, and an exact calculation of the mitigation to be derived from the project under this provision is therefore not possible. However, based on a Bureau of Land Management calculator recommended as a reasonable analog by MMS, it appears reasonable to estimate that the annual payment will be between \$200,000 and \$300,000 per year over the life of the project. At a minimum project life of twenty years, this equates to \$5.6 million.

I anticipate that these funds will be available for project mitigation. As with the annual direct payments described above, in order to take advantage of additional information that will be presented through the MMS Draft and Final Environmental Impact Studies, I will defer the specific guidance regarding allocation of this mitigation until the conclusion of the federal review process. I am therefore directing CZM, as an office of the Environmental Affairs secretariat, to develop a program that will guide the allocation of these funds, in conjunction with its federal consistency review responsibilities.

Project Benefits and Mitigation

At a global and national level, the potential for climate change, global climate disruption, and rapid sea level rise create an urgent need for sustainable alternatives to fossil fuel combustion. At a regional level, development of an indigenous renewable energy market will help diversify New England's energy mix, improve regional air quality, and create a hedge against price fluctuations in gas and oil prices. I take administrative note of the decision of the Energy Facility Siting Board (EFSB). The EFSB, as part of an Alternative Needs Analysis, concluded that the project's operation would displace a portion of the electric generation capacity provided by power plants burning fossil fuels resulting in a significant annual reduction of pollutants. The FEIR updated those reduction estimates using a model based on the prospective dispatch of generating units and projected that the project's operation would annually offset 802 tons of SO₂, 497 tons of NO_x, and 733,876 tons of CO₂ within the New England area. Additional studies indicate that a substantial portion of the regional NO_x, SO₂, and CO₂ emission reductions would occur in Massachusetts, and nearly one-half of the Massachusetts offsets would occur in the Cape and Island area.

At a state level, development of renewable energy will help Massachusetts ensure

¹ Energy Policy Act of 2005 (P.L. 109-58, 42 USC 15801). Section 383 (B) states: "The Secretary shall provide for the payment of 27 percent of the revenues received by the Federal Government as a result of payments under this section from projects that are located wholly or partially within the area extending three nautical miles seaward of State submerged lands. Payments shall be made based on a formula established by the Secretary by rulemaking no later than 180 days after the date of enactment of this section that provides for equitable distribution, based on proximity to the project, among coastal states that have a coastline that is located within 15 miles of the geographic center of the project."

compliance with the Commonwealth's legally mandated Renewable Energy Portfolio Standards (RPS), M.G.L. c. 25A, s. 11F and 225 CMR 14.00, and Commonwealth commitments for reduction of greenhouse gases. The Commonwealth has adopted air quality goals to reduce emissions of greenhouse gases to 1990 levels by 2010; to reduce greenhouse gas emissions to 10% below 1990 levels by 2020; and ultimately to reduce greenhouse gas emissions by 75%-85% to achieve sustainability and climate stability.

Based on the foregoing, I find that the power produced by the project will mitigate impacts from Massachusetts generating facilities because it will serve to reduce demand on fossil fuel-fired facilities and thereby reduce air emissions from these facilities. The proposed project would reduce the need to construct additional fossil fuel-fired electric generation facilities as energy demand increases, facilitating the Commonwealth's and the region's air quality goals. The clean energy provided by the project will also serve as a mitigation measure in Massachusetts' efforts to achieve attainment of the air quality standard for ozone.

Based on the air quality benefits, the compensatory mitigation, and the specific mitigation identified in pages 19-25 of this Certificate, I find that the environmental benefits and compensatory mitigation provided by the project are adequate to mitigate the impacts of the project occurring in Massachusetts.

Review of the Final EIR:

Alternatives

In the certificate on the DEIR, I required that the proponent disaggregate the impacts of the project in the state territorial waters and overland from impacts that are occurring within federal waters, since the latter represent the aspects of the project that fall within the "voluntary" nature of MEPA review but lie outside the scope of state and local permitting. Therefore, the alternative analysis for state permitting purposes is related primarily to the cable route and its associated impacts. The FEIR adequately describes the potential impacts of the construction and operation alternatives of the electric transmission cables and measures to avoid, minimize and mitigate the potential impacts.

I take administrative notice that the Massachusetts Energy Facilities Siting Board (EFSB), the jurisdictional body of the Commonwealth charged by the legislature with ensuring a reliable energy supply with a minimum impact on the environment, has approved the proponent's petition regarding the in-state transmission cable for the project.

With respect to alternatives to the wind farm, as noted above there is limited MEPA jurisdiction over the wind farm and therefore arguably no strict requirement that the proponent study alternatives to the wind farm for purposes of MEPA. However, the proponent has nevertheless presented information to address the alternative issues that were raised in the Draft EIR and NPC Certificates, as well as comments raised by the Massachusetts Office of Coastal Zone Management (CZM). The FEIR presents additional information on alternative

technologies, including fossil fueled generators (oil, coal and natural gas) and renewable technologies, in order to provide a baseline for comparison of other power plants capable of generating similar levels of power. A No-Action alternative analysis is presented to establish a future baseline in relation to which the proposed Project and its alternatives can be described and analyzed and its potential environmental impacts and mitigation measures can be assessed.

The FEIR also presented alternative configurations for the proposed project that were evaluated. A phased approach compares the proposed Project of 130 WTG with a similar size project constructed in two 65 WTG phases. This two phase, 50/50 approach was chosen primarily for illustrative purposes, as it addresses many issues common to both a reduced sized project and a phased development approach. An alternative further from shore is discussed, as are alternative spacing of turbines, and a mix of turbine sizes. In addition, the FEIR presents two new configurations that were not previously presented in the DEIR. The revised project layout as presented in the NPC provides a minor change from the originally proposed Horseshoe Shoal array. The rotor diameter spacing has been reduced from the original 10.0 x 6.0 rotor diameters down to 9.0 x 5.7 rotor diameters. In addition, a "split alternative" configuration of two 65 turbine groupings within Nantucket Sound is analyzed as requested by CZM. The South of Tuckernuck Island alternative was examined in greater detail in the FEIR. The site is located in water depths between 65 and 90 feet, and would require the use of larger, multi-pile foundation systems which are as yet commercially unproven in a deep water offshore wind application.

Chapter 91

Pursuant to the waterways regulations (310 C.M.R. 9.00), a threshold issue is whether project is water-dependent or non-water dependent. That is a determination for DEP to make. However, the Secretary does play a role in this determination. Specifically, under 310 CMR 9.12(d), DEP relies on the Secretary's determination as to whether a facility can "be reasonably located or operated away from tidal or inland waters based on a comprehensive analysis of alternatives and other information analyzing measures that can be taken to avoid or minimize adverse impacts on the environment." The MMS final Record of Decision will ultimately determine the location of the project and the cable route. But, based on the information provided to date, the WTG will be located offshore and as a consequence there is no reasonable alternative to the cable traversing tidelands subject to Chapter 91 jurisdiction.

Should DEP determine that the project is non-water dependent, a variance under 310 CMR 9.21 will be required, and the proponent will also have to demonstrate compliance with 310 CMR 9.55. I find that the FEIR provides adequate information for DEP act on the c. 91 license application, whether the project is ultimately characterized as water-dependent or non-water dependent.

Massachusetts Ocean Sanctuaries Act

Under the Ocean Sanctuaries Act, OSA, M.G.L. c. 132A, ss. 13-16 and 18 (OSA), and its implementing regulations at 302 CMR 5.00, the five ocean sanctuaries, including the Cape and

Islands Ocean Sanctuary (CIOS), “shall be protected from any exploitation, development, or activity that would seriously alter or otherwise endanger the ecology or the appearance of the ocean, the seabed, or subsoil thereof, or the Cape Cod National Seashore.”

With respect to the cable located in state waters, DCR views this activity as potentially eligible for the exemptions in Section 16, such as the exemption concerning electric power related activities, as well as exemptions regarding (1) the laying of cables approved by the department of telecommunications and energy, and (2) projects that are authorized under Chapter 91, deemed to be of public necessity and convenience, and can obtain other approvals as needed.

In determining whether the cable is of public necessity and convenience, DCR and other state agencies will consider (302 CMR 5.04):

1. the financial and/or technical ability of the person proposing the project to build and maintain the project properly;
2. whether the facility or use, if any, existing at the time the agency approval is requested is inadequate;
3. whether either the public, which may be represented by several individuals or a representative group, demonstrates a need for the facility or use or that appropriate state or local public officials deem the facility or use necessary for the public's safety or welfare;
4. whether the proposed facility or use will serve the public interest;
5. whether the proposed facility or use will seriously alter or otherwise endanger the ecology or appearance of the ocean, the seabed or subsoil thereof, or the Cape Cod National Seashore; and
6. the extent to which existing uses or facilities will be affected by the proposed facility or use.

For purposes of the OSA and impacts in the CIOS, an important issue of potentially significant alteration of resources protected by the Act relates to the methods used to lay the cable and the potential impacts of that activity. My review of this aspect of the project focused on the potential adverse impact or degradation of marine resources such as benthic ecology, shellfish beds, fisheries, beaches, eel grass beds, water quality or public access. In general, the proposed techniques for laying the transmission cable do not appear to pose a long term threat to the resources in question or the public's enjoyment of them, but care should be taken in implementing the work, such as avoiding impacts to sensitive resources such as eel grass beds.

In the Certificate on the Draft EIR, I required the proponent to consult closely with DCR and DEP, to analyze how the project meets the “public necessity and convenience” requirements of the OSA. As detailed in the comment letter from DCR, the FEIR has in general adequately addressed concerns with the provisions of OSA. However, DCR states that although these activities will occur outside the CIOS, and therefore may not be prohibited by the Act, nonetheless these impacts will be realized and observed within that area and at certain shore location. DCR has indicated that it believes that these additional issues can be addressed either through the federal NEPA process, the CZM consistency review, or the chapter 91 licensing

process. I agree with DCR's view, and instruct the proponent to work closely with DCR through these processes.

Environmental Impacts/Air Quality

The installation of the cable will not produce or emit significant air pollutants. In addition, the wind farm will not only not cause air quality impacts, but will significantly improve air quality. On a regional level, a significant amount of emissions, 802 tons of SO₂, 497 tons of NO_X, and 733,876 tons of CO₂, will be displaced by the operation of the non-emitting facility. Of these emission offsets, 27.2% of the SO₂ offsets, 21.1% of the NO_X offsets, and 18.9% of the CO₂ offsets would occur in the South Eastern Massachusetts (SEMA) zone. Activities related to the construction and maintenance of the project, including the offshore and upland cables, will result in minor air emissions due to the fossil fuels used to operate internal combustion engines associated with equipment such as vessels, trucks, compressors, generators, etc.

Avian Impacts

The FEIR adequately describes the potential avian impacts of the construction and operation of the electric transmission cables and measures to avoid, minimize and mitigate the potential impacts. The installation of the cable will have no negative avian impact. As for the wind farm, there is a dispute over its impact on birds and whether the information provided in the FEIR is adequate to fully assess that impact. Due to the jurisdictional limits, MEPA is not the proper forum to resolve this dispute. However, I fully expect that the MMS process will include consideration of avian impact, and I instruct the state agencies that have submitted comments on this issue to provide their comments to MMS. The section below summarizes the information supplied by the proponent and proposed mitigation.

I note the comments from the Natural Heritage & Endangered Species Program (NHESP) that the project will impact several state and federally listed endangered species. Specifically, the project is expected to result in direct mortality of Roseate Terns, Piping Plovers and Common Terns and is also expected to disrupt the foraging activities of Roseate and Common Terns. The Roseate Tern is listed as "Endangered" and the Piping Plover is listed as "Threatened" pursuant to both the Massachusetts Endangered Species Act (M.G.L. c. 131A) ("MESA") and the Federal Endangered Species Act, while the Common Tern is listed as a species of "Special Concern" pursuant to MESA. In addition, the project will impact other migratory birds and other Massachusetts wildlife species such as the Long-tailed Duck. I expect that these issues will be addressed in the Federal EIS process.

During the MEPA review of the project the proponent analyzed five years of avian use data which includes the collection of two full years of migratory season radar. Using this data and data collected by others, the FEIR estimates collision risk and population viability for critical bird species such as Roseate Terns, Piping Plovers and Long-tailed Ducks. The modeling approaches used produced results that indicate a very low level of potential impact. The estimate of collision risk to Roseate Terns is 0.8 collision fatalities annually and for Piping Plovers, the

estimate of risk of collision is less than 1 per year. The daily movements of Long-tailed Ducks were observed through visual observations undertaken by the proponent in 2005-2006. The FEIR concluded that very few of the daily movements of Long-tailed Ducks were in close proximity to the site.

The FEIR concludes using best available data that fatal bird collisions resulting from the operation of the proposed project will be in the range of 0 to 2 birds per turbine per year. The potential distribution of species within this range of collision risk indicates that threatened and endangered species like Roseate Terns and Piping Plovers are each likely to sustain losses of less than one bird per year from the overall project. I note that the proponent has committed to provide funding towards the restoration of Bird Island, off the town of Marion in Buzzards Bay, as mitigation for potential avian impacts. Bird Island supports an average of 750 pairs of Roseate Terns, which is one of the largest Roseate Tern colonies in North America with an average of 22% of the North American population. It is also the third largest Common Tern colony in Massachusetts, and supports an average of 1,900 pairs of Common Terns.

The FEIR states that the proponent will work with MMS to design and implement post-construction monitoring which will be guided by an Environmental Management System (EMS) currently under development as required by MMS. The EMS will be subject to adaptive management as the results of the monitoring are evaluated. The EMS will include the involvement of a technical advisory group.

Rare Species

The FEIR adequately describes the potential impacts of the construction and operation of the electric transmission cables to rare species and measures to avoid, minimize and mitigate the potential impacts. The FEIR states that marine resources within Nantucket Sound will be exposed to temporary project impacts related to pile driving activities and vessel traffic. The project will temporarily introduce additional vessel traffic during construction and decommissioning.

As for the wind farm, the FEIR states that the risk of project vessel collisions with marine mammal and sea turtle species has been determined to be very low because vessel traffic associated with the project will not occur in areas where there have been high concentrations of marine mammal and sea turtle sightings and because project construction vessels will move at slow speeds (14 knots or below), speeds at which vessel collisions are less likely.

To minimize damage to rare species from noise, the proponent has committed to post an observer during the initial phases of construction, suspend construction activities if protected marine mammals are found within 500 meters of the site, and use a soft start-up during monopile installation. Once installed, the operation of the WTGs is not expected to generate substantial sound levels above baseline sound in the area. Noise disturbance impacts associated with operations are not expected to injure or cause behavioral effects to finfish even if an individual were to approach to within 20 m of a monopile when the project is operational.

Relative to the pile driving activities, the National Marine Fisheries Service (NMFS) noise level guidelines to preventing injury or harassment to marine mammal and sea turtle species is 180 decibels (db) beyond a 500 meter (m) safety zone. The proponent has committed to keeping sound levels emanating from project equipment and work boats during construction, operations and decommissioning activities below 180 decibels to protect marine species.

Fisheries Impacts

The FEIR adequately describes the potential impacts of the construction and operation of the electric transmission cables to fisheries and measures to avoid, minimize and mitigate the potential impacts. However, as is the case with avian impacts, there is a dispute over whether the wind farm will harm fisheries, and whether the proponent's data is adequate to reach conclusions about that impact. Again, I note that the MMS process, and not MEPA, is the proper forum to resolve these issues, and I instruct the state agencies that commented on this issue to provide their comments to MMS. The paragraphs below summarizes the information provided by the proponent on this issue.

The FEIR acknowledges that the installation of the monopiles, inner-array cables, and two submarine cable circuits will physically displace sediment at specific locations within the project area. In addition, permanent benthic habitat loss would result from installation of the WTG and ESP monopile foundations. This permanent loss due to occupation of structures would be approximately 0.67 acres or 0.0042% of the total project area.

There will also be temporary impacts to benthic habitat that will result from jet plow embedment of the inner-array cables as well as from construction vessel positioning, anchoring, and anchor line sweep associated with construction of all the project structures. The disturbance of the benthic environment will be localized because many benthic invertebrate species are capable of opportunistically recolonizing benthic sediments after disturbance. In addition, egg and larval stages of demersal species will be temporarily affected by benthic habitat disturbance if present during the time of year for project construction. Pelagic eggs and larvae would be less affected by permanent and temporary benthic habitat disturbance. The temporary displacement of benthic habitat would also likely result in the mortality and/or dispersal of some benthic organisms in the footprints of the construction activities, thereby temporarily disrupting feeding for some benthic-oriented juvenile and adult finfish in the area. Pelagic-oriented juveniles and adults would be less affected by permanent and temporary benthic habitat loss.

The FEIR states that during winter construction periods, demersal finfish may experience higher levels of injury or mortality since avoidance of anchors and anchor cables may be hampered due to sluggish response under cold water conditions. However, the FEIR states that there are no measurable effects on populations.

The FEIR shows that project construction/decommissioning is not expected to result in measurable direct mortality or injury to adult and juvenile pelagic finfish since these life stages

are mobile in the water column, capable of avoiding or moving away from the disturbances associated with construction, and not as closely associated with the bottom as demersal finfish. Adult and juvenile demersal finfish in the direct path of bottom disturbing construction and decommissioning activities may experience some direct mortality or injury.

However, construction activities associated with installing the monopile foundations, scour control mats, and the inner-array cables and submarine cable system will result in a temporary and localized increase in suspended sediment concentrations. Elevated Total Suspended Solids (TSS) can negatively impact the ability of some finfish to navigate, forage, and find shelter. Due to the predominant presence of fine to coarse-grained sand in Nantucket Sound, localized turbidity associated with project construction or decommissioning is anticipated to be minimal and confined to the area immediately surrounding the monopiles, the inner-array cables, and the two submarine cable circuits. Sediments disturbed by construction or decommissioning activities are expected to settle back to the sea floor within a short period of time.

The FEIR acknowledges that impacts to mobile gear fisheries can reasonably be anticipated as a result of the placement of the monopiles and scour protection. The FEIR also states that fees generated from the Outer Continental Shelf (OCS) lease and Chapter 91 license fees will serve to mitigate for this impact.

The proponent has committed to not placing any restrictions on commercial or recreational fishing activities or creating any fishing exclusion zones within the project site during construction or operation. The potential effects of project construction on commercial fishing gear, commercial fishing activities, and recreational fishing activities is expected to be minimal. Commercial and recreational fishing activities may be temporarily disrupted in the immediate vicinity of project construction. However, construction at the WTG array site will occur in a small area, allowing use of most of the surrounding project area. During operation, it is not expected that the monopiles or scour protection will preclude most fishing activity. The area directly occupied by each monopile and scour protection will not be available for bottom trawling, fixed gear, or dragging operations. However, the area remains largely unoccupied and available for these activities. Non-habitat invasive fishing practices such as hook and line, hand line, and rod and reel should be unaffected by the presence of the monopiles and scour mats, which may in fact, enhance recreational fishing for certain species.

Benthic and Shellfish Impacts

The FEIR adequately describes the potential impacts of the construction and operation of the electric transmission cables to benthic and shellfish resources and measures to avoid, minimize and mitigate the potential impacts. The FEIR shows that potential impacts to benthic and shellfish resources associated with the construction and operation of the project will include minor mortality rates which are anticipated due to the placement of the monopile tower foundation on the seafloor. The installation of the submarine cables will result in minimal impacts along the jet plow route.

As the jet plow traverses the planned cable routes, a localized area of suspended sediment will result. These impacts are expected to be temporary in nature, and may settle out of the water column quickly due to the size of the sand grains. Although the jet plowing technique is the preferred installation technology, there are environmental impacts associated with its use that require mitigation and compensation for unmitigated detriments. The FEIR does expand upon the analysis provided in the DEIR regarding the potential impacts to the seabed and benthic organisms from the construction activities related to submerging the transmission cable. A comparison of the impact charts in the DEIR and FEIR indicate a 36% increase in overall impacts (98 to 133 acres) and a similar increase directly related to jet plowing within the cable installation corridor (8 acres to 11 acres). It should be noted that portions of the shoal area are subject to highly dynamic sediment suspension and transport due to wind, wave and tide impacts, it appears likely that the benthic habitat may be disrupted. It is anticipated that benthic invertebrates and shellfish are likely to recolonize areas of disturbance, including the monopile towers and the submarine cable routes.

The FEIR estimates that it will take 1-2 years for the benthos to fully recover. The proposed Section 61 Findings include a limited post-construction monitoring of benthic conditions in those places where pre-construction data has been collected, using Sediment Profile Imaging (SPI) to assess changes in benthic physical conditions and habitat quality along the cable route. I advise the proponent that the post-construction evaluation should include additional comparisons to pre-construction conditions and that a more comprehensive post-construction benthic monitoring program should be developed during the permitting process. In addition, I advise the proponent that in accordance with the Chapter 91 variance regulation, compensation for disruption of resource affecting the benthic habitat will be addressed through the license application review process.

I remind the proponent that the project must also meet criteria concerning designated uses of the water body found in the Surface Water Quality standards at 314 CMR 4.00. To address this requirement, the proponent should review relevant data contained in the FEIR, and collect any necessary additional data, concerning suspended solids resulting from jet plow operations to demonstrate that the plowing operations will not have a significant effect. The FEIR notes that the short duration of the jet plowing activities and the expected rapid settlement of suspended solids are not likely to have impacts greater than the sediment disturbance that occurs along most of the proposed route in Nantucket Sound as a result of natural processes. The benthic monitoring program, including monitoring of eelgrass beds, proposed in the FEIR, will be used to document the expected recovery of benthic habitat function along the cable route. Both the Waterways Regulations and Water Quality Certificate regulations will require the establishment of Time of Year restrictions to minimize adverse impacts on shellfish beds, fishery resource areas, and submerged aquatic vegetation. The FEIR proposes that no in-water work will occur between January 1 and May 1 in Lewis Bay.

I also note that the FEIR shows that the vertical structure that would be created from the installation of wind turbine towers is not anticipated to result in adverse impacts to the ecology of the immediate project area or to Nantucket Sound. Although the walls of the towers represent a

source of new hard substrate with a vertical orientation in an area that has a limited amount of such habitat, this new substrate is not favorable for colonization or reef formation. In addition, direct impacts to lobsters are expected to be minimal. The only mortality expected would be for the less mobile individuals in the direct footprint of the monopile foundations.

Aquatic Vegetation

The FEIR states that the route of the transmission line was chosen to avoid impacts to submerged aquatic vegetation, primarily eelgrass. However, there is concern over the potential effects of the jetting operation on an eelgrass bed identified northwest of Egg Island in Lewis Bay. The FEIR contains simulations of sediment transport and deposition from jet plow embedment of the submarine cable system and the inner-array cables. In the area of the eelgrass bed in Lewis Bay, the bottom sediments are relatively coarse. As a result, the sediments suspended by the jet plow are predicted to fall along the route with bottom deposition predicted to be in the range of 1.0 to 3.0 millimeter (mm) (0.04 to 0.1 in.) at the western edge of the eelgrass bed. The majority of the eelgrass bed is predicted to experience little or no deposition as a result of the jet plow embedment operations. It is anticipated that the natural means of seagrass adaptation to changing sedimentation conditions will allow the eelgrass bed to withstand the short-term jet plow operations that will pass the eelgrass bed.

The FEIR states that the jet plowing associated with laying the transmission cable will result in the deposition of 1-3 mm of sediments in parts of the eelgrass bed within Lewis Bay. The modeling also predicts that water column sediment concentrations will peak at 500 mg/l, stay at 100 mg/l for six hours, and stay greater than 10 mg/l for 12-18 hours in the vicinity of the eelgrass bed. The FEIR predicts the deposition of up to 20 mm of sediment in very close proximity to the eelgrass bed as it was mapped in 2006. Furthermore, eelgrass distribution is dynamic and maps displaying the extent of eelgrass represent a 'snap-shot' in time. The proposed cable corridor passes through water depth and substrate suitable for eelgrass growth.

The proponent has proposed to develop an eelgrass transplanting program if long-term impacts are observed. I strongly advise the proponent that an appropriate methodology and sufficient monitoring of the success of the transplants of eelgrass should be developed in coordination with federal and state resource agencies. In addition, a monitoring plan for existing eelgrass beds should be developed in coordination with state and federal resource agencies.

Visual

All of the visual impact stems from the non-jurisdictional wind farm, rather than the electric transmission cable, because the cable will be buried. The FEIR contains analysis of alternatives to redesign the project in ways that might avoid or minimize the adverse visual impacts to the extent feasible. The project as redesigned for the FEIR minimizes visual impacts to historic properties by 1) reducing nighttime FAA lighting on WTGs, as allowed by the FAA; 2) omitting all daytime FAA lighting on WTGs; and 3) narrowing the breadth of visual impact of the offshore project layout as seen from portions of the surrounding shoreline, as compared with

the previous layout proposed in the DEIR.

The Final EIR contained new baseline data for the project which included revised visual simulations and renderings due to the relocation of the WTGs. In addition, both re-run simulations for far-field appearance under conditions of greater visibility and contrasts were provided and new simulations at two shorefront locations between 14-18 miles. The Final EIR also contained the computation of values for two basic parameters: 1) the amount of ocean-facing shoreline (in miles, and as a percent of the total within Nantucket Sound); and 2) the arc (in degrees, and as a percent of the full seascape view) that describes the horizontal extent to which WTG structures will be noticeable against the water horizon, for all of the separate viewpoints and grouped again according to the three distance categories stated above.

Historic/Archaeological Impacts

Historic/archeological impacts arise from the wind farm, rather than the electric transmission cable. The layout of the project proposed in the DEIR has been revised in the FEIR to avoid disturbance to all areas identified as potentially archaeologically sensitive as a result of marine archaeological reconnaissance survey conducted for the DEIR. Locations of 8 turbines, 7 sections of inner-array cables, and one area of cable convergence near the ESP, as proposed in the DEIR, have been revised for the FEIR specifically to avoid archaeologically sensitive areas, as recommended in the Marine Archaeological Reconnaissance Survey report included in the FEIR.

There are no significant archaeological deposits and historic sites or structures in the upland cable route, and therefore construction, operation, maintenance and decommissioning of the upland cable route portion of the project will cause no impacts to these types of resources. In addition, because the upland cable will be underground, there will be no permanent visual impacts.

The FEIR contains information showing an attempt to reduce the visual impact of the proposed project on areas of historical significance, however, it was determined by Public Archaeology Laboratory (PAL) that the realignment of the project components did not "qualitatively" change the visual experience presented by the proposed project. PAL findings of "Adverse Effect" remain unchanged for two National Historic Landmarks (NHLs) (the Kennedy Compound and the Nantucket Historic District), four historic districts and 10 individual properties.

Noise

The installation and operation of the electric transmission cable is not expected to cause significant noise impact. With respect to the wind farm, the Draft EIR concluded that the project will comply with the state's noise regulations, but that temporary impacts may result from project construction, particularly pile driving. The FEIR states that underwater sound effects from pile driving are unchanged from the results presented in the DEIR, except that elimination of the

closest WTGs in the northeast corner of the project has slightly reduced underwater sound levels along the shore of Cape Cod. Above water sound effects from pile driving are identical to those presented within the DEIR, with the exception of the lowest project sound level being 1dBA less. Pile driving sound will be below existing levels at 8 of 10 upland locations and will therefore be inaudible along most of the coast.

At Point Gammon in Yarmouth, the temporary sound of construction may be barely audible when pile driving is done for the monopiles in the northeast corner of the project closest to the shore (sounds up to 41 dBA when winds are onshore) if existing sound levels are very low (possibly as low as 35 dBA). At Cape Poge on the northeast tip of Martha's Vineyard, the temporary sound of construction may be barely audible when pile driving is done for the monopiles in the southwest corner of the project closest to the Vineyard (sounds up to 40 dBA when winds are onshore) if existing sound levels are very low (possibly as low as 40 dBA). All temporary pile driving sound will be inaudible in Lewis Bay. Sound effects from upland construction activities are unchanged from the results presented in the DEIR.

Land Alteration

The FEIR through technical studies states that impacts on the physical oceanographic environment from installation and operation of the electric transmission cables will be minimal and localized. I remind the proponent that 310 CMR 9.37(4) of the Waterways regulations requires that the cable be buried in a manner that will not present a hazard to navigation, be protected from scouring, will not be uncovered by sediment transport, will not present a hazard to fishing gear. In addition, bottom contours must be restored after burial. The FEIR provides an analysis that estimates that a shallow scar remaining after jet plowing operations will be backfilled through natural processes within a sufficiently short time period (ranging from 1-4 days in sandy areas to 60 days in areas with finer sediments). The FEIR also concludes, however, that portions of the cable buried in sand waves may become exposed within 6 to 8 years, due to sand wave migration, unless unidentified mitigation measures are used. The proponent must provide more information to DEP during the licensing process regarding any monitoring or mitigation measures that are necessary to maintain adequate burial of the cable.

As for the wind farm, the FEIR states that small eddies may develop in the immediate vicinity of the WTGs but are expected to dissipate a short distance from the WTG. Based on the WTG pile diameter and wave characteristics in the area, the presence of the WTGs will not affect wave conditions in the area. The large spacing between the WTGs and the small WTG pile diameter will prevent the effects of each WTG pile on wave and current conditions from affecting adjacent piles.

Wetlands/Drainage

The Draft EIR included a reasonably scaled map that delineated wetland boundaries and buffer zones present in the project area. Wetlands were identified in the vicinity of the project area seaward and within the state territorial limit of Nantucket Sound and Lewis Bay, and along

the onshore transmission cable route.

The FEIR states that the proposed submarine cable system will be pulled beneath Coastal Bank, Coastal Beach, and Land Subject to Tidal Action. After installation, the total onshore wetland resources estimated to be temporarily disturbed along the proposed onshore transmission line route from the landfall location to the NSTAR Electric ROW is approximately 4.9 acres/213,444 square feet. The proponent has committed to use measures to minimize impacts to wetland resource areas. From the landfall to the NSTAR Electric ROW, work would be required within existing paved portions of state- and locally-regulated Land Subject to Coastal Storm Flowage, Riverfront Area, and 100-foot (30.5-meter) Buffer Zone of freshwater and coastal wetland resource areas. No permanent aboveground structures are proposed within Yarmouth's 50-foot (15.2-meter) No-Build Zone, and no vegetation would be disturbed within the local 35-foot (10.7-meter) Vegetated Buffer.

Water Quality

The FEIR adequately describes the potential impacts of the construction and operation of the electric transmission cables to water quality and measures to avoid, minimize and mitigate the potential impacts. The FEIR shows that the installation of WTG foundations and the submarine cable systems will cause temporary and localized physical displacement of sediment at specific locations. The project will temporarily disturb marine sediments, suspend finer fractions and cause turbidity in the water column, largely in near-bottom areas proximal to construction. Chemical analysis of sediment samples in areas that will be disturbed have none of the targeted chemical analytes above the guidelines for marine sediments.

The submarine cables will be installed using low impact hydraulic jet plow equipment, and the foundation structures will be minimized through use of a monopile system. The FEIR shows that the majority of disturbed sediments are expected to settle and refill cable trenches and areas immediately surrounding these trenches shortly after installation. Seabed impacts related to sediment disturbance from anchoring and the resting of work vessels on the seabed within designated work areas will be comparable to disturbance already occurring within Nantucket Sound from natural events and the use of commercial fishing gear. After installation, some localized scour around monopile foundations may occur, depending on the location of the WTG on Horseshoe Shoal and local sediment transport conditions.

The FEIR proposes to return the dredged sediments to nearly replicate the sediment transport attributes of the benthic area prior to dredging. The FEIR has provided greater detail concerning measures to be undertaken to avoid impacts with this phase of construction. The FEIR also appears to have adequately characterized the physical and chemical characteristics of the sediments in this area. The FEIR includes data on sediment grain size along the route that suggests that extensive information exists to confirm the presence of coarse grained sand along the pipeline route. I remind the proponent that the application for a Water Quality Certificate must also include similar analysis of sediments along the cable route, in accordance with 314

CMR 9.07. If necessary, the Water Quality Certificate application should also provide any data that has been collected concerning any possible areas of contaminated sediment along the cable route.

The cable system will generate a limited amount of heat that is absorbed by, and dissipated into, the surrounding subsurface environment. This loss of heat to the sediments is essential for proper operation of cables. Any increase in sediment temperatures resulting from operations of the submarine cables are expected to be on the order of fractions of a degree, which may not be measurable and is not expected to impact water quality. Because the cable would be buried to a depth of approximately 6 feet of cover, this small level of heat dissipation should not result in impacts to seabed sediments, surface waters, or biota in the vicinity of the Project.

Decommissioning Plan

The proponent has committed to fully comply with the decommissioning standards imposed by the MMS, including any financial responsibility requirements. The proponent will provide a financial instrument to the reasonable satisfaction of MMS that will ensure the decommissioning of the facility. It will be utilized at the end of the useful economic life of the project or in the event that the project is abandoned or otherwise rendered inoperable. It is expected that the overall impacts related to the decommissioning of the project in its entirety are expected to be the same or less than those related to the construction of the project. It is estimated that the schedule for completing the decommissioning process would be similar to the estimated initial construction time frame. Based on the use of today's technology it is estimated that the process would involve up to two calendar years to complete, assuming that weather conditions will dictate that the bulk of the work take place between April and November.

Navigation and Transportation

The proponent has revised the 2003 Navigational Risk Assessment in the FEIR to incorporate design changes and new information and to address topics requested by the USCG in its letter of February 14, 2005. In addition, as a result of the reconfiguration of the WTGs, anticipated design changes that would increase rotor height, and the release of new lighting guidelines by the FAA, the proponent has initiated new Aeronautical Surveys by the FAA for each of the proposed turbine locations and is awaiting results.

Telecommunication

An evaluation of the Federal Communication Commission (FCC) permitted antennae in the study area (existing and proposed) was completed by ComSearch in June of 2005. The analysis identified no microwave paths that would have a conflict with the proposed turbine locations (i.e., no impact to line-of-sight telecommunications). The existing, permitted, and proposed FCC antennae on Martha's Vineyard and Nantucket would be able to maintain unimpeded line-of-sight communication with existing and permitted corresponding antennae on Cape Cod. Transmission and receiving of signals between towers on Cape Cod and within or

between the Islands are not along a path that would intersect with the position of the WTGs. As a result, the WTGs would not be expected to create shading effects on existing or proposed telecommunications towers.

The FEIR states that no interference with land based telecommunications towers, marine VHF radios, GPS positioning systems, aviation radar or military radar is anticipated from development of the project. However, the WTGs may produce shadow areas and/or spurious echo effects on vessel mounted radars, requiring mariners utilizing the areas in and around the project site to be made aware of the potential and to more closely scrutinize radar data received. The proponent has committed to work with the USCG to develop information and training opportunities that will be provided to local mariners in order to raise awareness if interference does occur.

The proposed submarine cable system and upland transmission line associated with the project will be buried either beneath the seafloor or on land, and the only potential aboveground section of the 115 kV transmission line is located at the interconnection with the existing Barnstable Switching Station. Most telecommunication devices operate on a line-of-sight basis, the source of the transmission and the receiving antennae communicate in a linear path. No interference with telecommunications is anticipated from the project transmission lines.

Draft Section 61 Finding

The following is a summary of the proposed mitigation for potential impacts on as a result of the electric transmission cables and the wind farm:

Air Quality

- The power produced will reduce demand on fossil-fuel fired facilities and reduce air emissions from these facilities. The project would also reduce the need to construct additional fossil fuel-fired electric generation facilities as energy demand increases, facilitating the Commonwealth's and the region's air quality goals.

Avian

- The proponent has committed to working with MMS to design and implement post-construction monitoring which will be guided by an Environmental Management System (EMS) currently under development as required by MMS. The EMS will be subject to adaptive management as the results of the monitoring are evaluated. The EMS will include the involvement of a technical advisory group.

Marine Resources

- Vessels transporting construction materials to the project site in Nantucket Sound will travel at slow speeds, usually at 10 knots or below.
- Potential vessel impacts (collisions and harassment) to marine mammals and sea turtles will be minimized by requiring that project vessels follow National Oceanic &

Atmospheric Administration (NOAA) Fisheries Regional Viewing Guidelines –Northeast Region (NMFS and NOS, 2006) while in transit to and from the site so as not to disturb any individuals that may be in the area.

- The use of state-of-the-art hydraulic jet plow technology for cable installation to minimize sediment transport and suspended sediments.
- The use of monopile foundations for the WTGs.
- Implementing post-construction monitoring to document habitat disturbance and recovery.
- Potential impacts to marine mammals and sea turtles associated with underwater sound levels created by pile driving will be minimized by conducting a "soft-start" to each piling event.
- Underwater sound monitoring will be performed during initial monopile construction (the first three monopiles).
- A NMFS approved observer will be posted on-site during all pile driving activities to monitor the area during construction. If protected marine species are observed within the 500 m (1,640 feet) Safety Zone by the NMFS approved observer, the observer would ensure that work will cease until the animal is clear of the work area and safety zone.

Fisheries

- Utilization of a state-of-the-art hydraulic jet plow for cable installation, monopile foundations for WTG towers, horizontal directional drilling (HDD) installation at the nearshore area, and post-construction monitoring to document habitat disturbance and recovery.
- The pile driving hammer and jet plow technology that would be used to install the monopile foundations and the submarine cables, respectively, were selected specifically for their ability to keep sediment disturbance to a minimum.
- The proponent has agreed to work with commercial/recreational fishing agencies and interests to ensure that the construction and operation of the project would minimize potential impacts to commercial and recreational fishing interests.
- Measures proposed to minimize or avoid potential impacts to the commercial fishing industry include: no restrictions on fishing activities within the site; marking the WTGs with USCG-approved lighting to ensure safe vessel operation; and burying the inner-array cables and two submarine cable circuits to a minimum of 6 feet (1.8 meters) below the seabed to avoid the potential for conflicts with fishing vessels and gear operation.
- Notification of fishermen well in advance of mobilization as to the location and timeframe of project construction activities, as well as a daily broadcast on VHS marine channel 16 as to the construction activities for that and upcoming days.
- Cable burial depth will be inspected periodically during project operation to ensure adequate coverage is maintained so as not to interfere with fishing gear/activity or with the safe operation of the cable.
- To protect sensitive fish species such as winter flounder, the proponent has committed to avoid in-water construction in Lewis Bay between January 1 and May 1 of any year. No submarine installation or cofferdam/HDD installation will occur during this timeframe.

The proponent has committed to continue to work with NOAA Fisheries and Marine Fisheries to ensure that impacts to finfish species are minimized and mitigated if necessary.

Benthic and Shellfish

- Utilizing state-of-the-art hydraulic jet plow for cable installation in order to minimize seabed disturbance and sediment dispersion during cable embedment.
- Utilizing monopile foundations for WTG towers which minimize the seabed footprint and sediment disturbance while also minimizing opportunities for benthic organism colonization or fish habitat creation.
- Post construction monitoring to document habitat disturbance and recovery.
- The use of mid-line buoys on anchor lines in order to minimize the impacts from anchor line sweep.
- The duration and sequencing of construction has been designed to minimize the period of disturbance.
- Impacts to benthos and benthic habitat in Lewis Bay within 200 feet (61 meters) of shore would be minimized by using HDD methodology to transition the submarine cable system to the shore.
- The proponent has committed to working with the Town Shellfish Constable to appropriately avoid or minimize impacts to designated shellfish areas from installation of the submarine cable. The proponent will provide the Town of Yarmouth with funds to mitigate for the direct area of impact within the Town's designated recreational shellfish bed in accordance with the Town's mitigation policies.

Aquatic Vegetation

- The proponent will not anchor vessels or perform cable installation work in the area near Egg Island where eelgrass beds are located.
- A dive survey will be conducted to confirm the limits of the eelgrass bed near Egg Island (verifying the limits of submerged aquatic vegetation (SAV) previously surveyed in July 2003) prior to the commencement of cable installation in the same calendar year preceding construction, and divers will also be used to confirm correct placement of work vessel anchors.
- If during installation of the submarine cable the eelgrass beds are disturbed, the proponent has committed to replanting eelgrass.
- Pre and post-construction monitoring of the eelgrass bed will be performed and if it is determined that eelgrass has been lost as a result of project activities, replanting will occur.
- The proponent has committed to aerially photograph the entrance to Lewis Bay in the month of July immediately prior to jet-plowing, under conditions conducive to documenting the extent of eelgrass beds, to use the photographs in finalizing the exact location of jet-plowing, and to provide such photographs to the Energy Facilities Siting Board.
- The proponent will denote the edge of the eelgrass bed at the water surface with buoys

near Egg Island. In addition, the proponent will implement a No Wake Zone for its construction vessels at a distance of 200 feet (61 meters) from the edge of the eelgrass bed.

- An eelgrass survey will be performed for the two consecutive years following construction to document the change in density which will be coordinated with the appropriate state and federal agencies.

Visual

- The proponent has removed daytime FAA lighting on the WTGs, formerly proposed in the DEIR
- Potential nighttime visual impacts have been lessened by the reduction in FAA nighttime lighting (from the originally proposed 260 lights down to 57).
- Revisions to the layout have narrowed the breadth of the visual impact as seen from certain areas around the Sound.
- The WTGs will be an off-white color, to reduce contrast with the sea and sky.
- The upland transmission route will be located entirely below ground within paved roads and existing utility ROWs to avoid visual impacts and impacts to potential unidentified archaeological resources.
- If MMS determines there will be an adverse effect (due to visual impacts) MMS will direct a formal consultation process under the requirements of the NHPA, to develop measures to help mitigate these impacts on historic properties.
- The proponent and MMS will continue to consult with MHC, the Wampanoag Tribe of Gay Head Aquinnah (WTGHA) and other consulting parties to address and resolve issues concerning potential visual effects of the project on historic properties.

Historic/Archaeological

- All submerged potentially archaeologically sensitive areas identified during marine archaeological investigations have been avoided, including relocation of eight WTGs and associated cable arrays.
- The interpreted limits of three submerged potential historic resources on the seafloor within the site will be extended by a 100-foot (30.5-m) perimeter that will constitute a no-activity buffer zone. Compliance will be overseen by an environmental inspector.
- In addition, Procedures Guiding the Unanticipated Discovery of Cultural Resources and Human Remains will be provided to construction contractors, outlining measures to be taken in the event that previously unidentified submerged and upland historic/archaeological resources are discovered during Project construction. Compliance with the procedures will be overseen by an environmental inspector.
- The proponent has reduced lighting on the WTGs and revised the layout such that the breadth of visual impact of the array as seen from certain areas is reduced. If the MMS determines that the offshore above water components of the project will result in adverse effects to certain onshore aboveground historic properties due to visual impacts, then the MMS will direct a formal consultation process under the National Historic Preservation Act (NHPA) to develop mitigation measures that would be detailed in a Programmatic

Agreement.

Noise

- The proponent has selected state-of-the-art, very low noise wind turbines.
- Construction noise impacts would be temporary, unavoidable, and are primarily associated with the laying of the Onshore Transmission Line from the transition vault at the shore of Lewis Bay along existing roadways to the Barnstable Switching Station using standard roadway construction equipment. Noise mitigation for this onshore activity would consist of scheduling activities during normal working hours and ensuring that all equipment has properly functioning noise mufflers.
- Onshore construction activities (which include the horizontal directional drilling (HDD) at the landfall), would be temporary, lasting 4 to 6 weeks, and would be audible to persons near the cable corridor. Sound levels would be similar to roadway construction equipment. Noise barrier walls will be constructed at the edge of the HDD pit to shield nearby residences at 32 and 49 New Hampshire Avenue.

Land Alteration

- Scour mats and or rock armoring (rip-rap) will be placed at the foundation of each WTG and each support pile of the ESP to minimize sediment scour.
- The use of state-of-the-art hydraulic jet plow for offshore cable embedment that minimizes sediment disturbance.
- Restoration of the dredged cofferdam area using originally dredged material supplemented with imported clean sandy backfill material if necessary to restore preconstruction contours.

Wetlands/Drainage

- The proposed submarine and onshore transmission cable route would be designed to fully comply with all applicable local, state and federal wetland performance standards.
- Direct wetland impacts will be minimized through the use of hydraulic jet plowing, HDD, and installation of the upland transmission line within existing paved roadways or disturbed electric ROWs.
- The proponent has committed to coordinate with the Yarmouth and Barnstable Conservation Commissions, the DEP, and Natural Heritage Endangered Species Program (NHESP) to prevent impacts to state-listed species as part of the project.
- The project will use best management practices for sedimentation and erosion control and stormwater management.
- A pre-construction survey will be performed to document the occurrence of state-listed rare species along the NSTAR Electric ROW route. If a state-listed species is located within the proposed transmission line route, a Conservation Permit under Massachusetts Endangered Species Act (MESA) would be obtained and efforts would be made to eliminate, minimize, or mitigate for any potential impacts.
- Post-construction monitoring will document habitat disturbance and recovery.
- The upland transmission line system has been sited below grade within existing roadways

and maintained ROW.

- Sediment and erosion controls will be installed prior to construction, and will be inspected and maintained throughout the construction activities.
- A Dewatering Plan will be prepared to address the procedures for handling of any water encountered during excavation.
- The transmission line will not contain any fluids, petroleums, oils, or lubricants.
- The project will not result in any direct discharge of untreated stormwater into wetlands and waterbodies. Once installed, the paved areas will be restored to preconstruction conditions and the NSTAR Electric ROW will be restored to pre-construction contours and revegetated using a suitable upland seed mixture. The existing stormwater collections and management systems for these roadways will remain intact.

Water Quality

- An Oil Spill Response Plan (OSRP), a Stormwater Pollution Prevention Plan (SWPPP), and an Operation & Maintenance (O&M) Plan will be implemented during project construction/decommissioning and operation to prevent potential impacts to water quality from spills and erosion/sedimentation
- The proponent will work with the Yarmouth Shellfish Constable to mitigate for any short-term impacts to shellfish productivity and will provide the Town with funds to mitigate for the direct area of impact.
- To minimize the release of bentonite drilling fluid into Lewis Bay during HDD, freshwater will be used as a drilling fluid to the extent practicable prior to the drill bit or the reamer emerging in the pre-excavation pit.
- Scour protection, in the form of scour control mats and/or rock armor, will be installed around monopiles and ESP piles in order to prevent scouring.

Construction

- Use of state-of-the-art low-impact hydraulic jet plow installation for the marine cables;
- Use of HDD cable installation techniques at the landfall to avoid impacts to the intertidal zone and shoreline in Lewis Bay;
- A temporary cofferdam will be used during construction to minimize sediment resuspension at the interface between the HDD conduit and submarine cable system;
- Use of hollow monopile foundations for WTG towers;
- Installation of scour protection mats and/or rock armor to reduce scour potential near the WTGs; and
- Post-construction monitoring including regular visual inspection of inner array cable routes in areas of migrating sand waves, to ensure the cables remain properly buried.

Navigation and Transportation

- Direct communication would be established between Air Station Cape Cod Search and Rescue (SAR) personnel and the proponent's operation center (manned 24/7) in order to facilitate rapid remote WTG shut down, at the request of the USCG, in the event of bad weather SAR by air.

- The proponent will implement procedures outlined by the USCG to deconflict the areas around ongoing construction activities.
- The proponent has designed the WTG monopiles to withstand the forces of up to six (6) inch (15 centimeter) thick ice floes impacting the monopile.
- The proponent has committed to initiate manual shutdown of WTG(s) experiencing icing conditions if conditions warrant such a shutdown.
- The proponent will use either Seabed Scour Control Mats or rock armor for scour protection to limit changes to bottom contours in the vicinity of the WTGs.
- The proponent will provide private aids-to-navigation (ATONs) (lights and sound signals) within the site to assist mariners..
- The proponent will mark each WTG with its alphanumeric designation to serve as a point of reference for mariners.
- The proponent will provide the USCG; other local, state, and federal agencies and commercial sailors with a plan showing the designations of each WTG.
- The proponent has committed to continue coordinating with the USCG and NOAA regarding inclusion of the project site on NOAA nautical charts covering the area.
- The proponent has committed to immediately shutting down all or a portion of the WTGs upon notification from the USCG that SAR aircraft have been ordered to respond to an incident within or immediately adjacent to the project site.
- The proponent will work with the USCG to develop information that could be used to provide mariners to educate them regarding the potential effects of the WTGs on marine radar.
- The submarine cable system will be buried 6 feet below the present sea bottom.
- Installation of the upland cable system will occur outside of the height of the summer tourist season to minimize any vehicular disruption.
- Trenchless technologies will be used at major intersections and railroad crossings in order keep traffic disruptions to a minimum
- Impacts to land-based transportation will be limited and temporary in nature. A Construction Traffic Management Plan would be prepared in consultation with local and state officials to ensure that safe access is maintained for vehicular traffic during onshore cable system installation, once the final route has been determined.

Telecommunication

- The potential does exist for interference to vessel mounted radar operating within or in close proximity to the proposed project site. The proponent will work with the USCG to develop information and training opportunities that could be provided to local mariners in order to raise awareness if interference does occur.

Conclusion

I find the FEIR to be adequate, and am allowing the project to proceed to the state permitting agencies. The FEIR presents a complete and definitive description and analysis of the jurisdictional portions of the project and its alternatives, and contains an assessment of its

potential environmental impacts and mitigation measures to enable state permitting agencies to understand the environmental consequences of their permit decisions. To the extent that certain aspects of the jurisdictional portion of the project needs additional analysis of technical details, I find that any such issues can be fully analyzed in the state permitting processes, which also provide meaningful opportunities for further public review. With respect to the non-jurisdictional aspects of the project, the DEIR and FEIR provide extensive information, and I fully expect that the comprehensive federal NEPA review conducted by MMS will supplement what has already been provided, provide a forum for continued public input into the non-jurisdictional aspects of the project, and appropriately resolve any lingering issues over the level and adequacy of data provided.

As noted previously, CZM will perform a limited review of the non-jurisdictional portion of this project. CZM has stated that there are still some information gaps and issues that need to be resolved prior to the issuance of CZM's federal consistency decision, but has affirmed that these issues can be resolved via the federal review process, as well as other permitting and licensing, and does not recommend a Supplemental EIR. I concur with CZM's view and therefore find that the FEIR is generally adequate for purposes of enabling CZM to make an informed federal consistency review. The proponent and state agencies should forward copies of the Section 61 Findings to the MEPA Office for completion of the file.

To keep all interested parties fully informed of permitting developments, the proponent should provide notification of local public meetings regarding the project to those parties who commented on the ENF, Draft EIR, NPC and Final EIR. I also request that the proponent send to the commenters notices of any relevant state permitting comment periods, meetings, or other opportunities for public input into the state permitting processes, and also provide notice when the MMS DEIS is submitted.

March 29, 2007

Date



Ian A. Bowles

IAB/dbb/acc