ASSESSING THE EFFICIENCY AND EFFECTIVENESS OF WIND ENERGY INCENTIVES

HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

JOINT WITH THE

SUBCOMMITTEE ON ENERGY

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

TUESDAY, APRIL 16, 2013

Serial No. 113–18

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ASSESSING THE EFFICIENCY AND EFFECTIVENESS OF WIND ENERGY INCENTIVES

TUESDAY, APRIL 16, 2013

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON OVERSIGHT AND SUBCOMMITTEE ON ENERGY
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Subcommittees met, pursuant to call, at 2:28 p.m., in Room 2318 of the Rayburn House Office Building, Hon. Paul Broun [Chairman of the Subcommittee on Oversight] presiding.

LAMAR S. SMITH, Texas
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Subcommittees on Oversight and Energy

Assessing the Efficiency and Effectiveness of Wind Energy Incentives

Tuesday, April 16, 2013
2:00 p.m. to 4:00 p.m.
2318 Rayburn House Office Building

Witnesses

Dr. Frank Rusco, Director, Natural Resources and the Environment, Government Accountability Office

Dr. Robert Michaels, Professor of Economics, Mihaylo College of Business and Economics, California State University, Fullerton

Mr. Robert Gramlich, Interim Chief Executive Officer and Senior Vice President for Policy, American Wind Energy Association

Ms. Audra Parker, President and Chief Executive Officer, Alliance to Protect Nantucket Sound

U.S. House of Representatives
Committee on Science, Space, and Technology
Subcommittee on Oversight and Subcommittee on Energy

HEARING CHARTER

Assessing the Efficiency and Effectiveness of Wind Energy Incentives

Tuesday, April 16, 2013
2:00 p.m. – 4:00 p.m.
2318 Rayburn House Office Building

Purpose

On April 16, 2013, the Subcommittee on Oversight and the Subcommittee on Energy will hold a hearing titled "Assessing the Efficiency and Effectiveness of Wind Energy Incentives." This hearing builds upon an earlier hearing held by the Energy and Environment and Investigations and Oversight Subcommittees that reviewed the impact of tax policies on the commercialization of energy technology[1] as well as a recent hearing held by the Energy Subcommittee that reviewed federal financial support for all energy technologies.[2] While those hearings addressed a broad range of energy technologies, this hearing will focus specifically on the efficiency and effectiveness of federal incentives for onshore and offshore wind technology.

Witnesses

- Mr. Frank Rusco, Director, Natural Resources and the Environment, Government Accountability Office
- Dr. Robert Michaels, Professor of Economics, Mihaylo College of Business and Economics, California State University, Fullerton
- Ms. Audra Parker, President and Chief Executive Officer, Alliance to Protect Nantucket Sound
- Mr. Robert Gramlich, Interim Chief Executive Officer and Senior Vice President for Policy, American Wind Energy Association

Background

According to the Energy Information Agency (EIA):

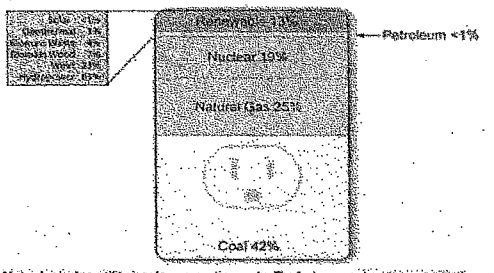
> "[o]ver the lifetime of the plant, electricity from wind power generally costs more than electricity from power plants burning fossil fuels. However, wind power is expected to continue to grow worldwide because of favorable government policies. Multiple types of government support exist, including a production tax

[1] http://science.house.gov/hearing/subcommittee-investigation-and-oversight-subcommittee-energy-and-environment-%E2%80%93-joint-hearing
[2] http://science.house.gov/hearing/subcommittee-energy-federal-financial-support-energy-technologies-assessing-costs-and

credit and State renewable electricity portfolio standards. Although wind farms have relatively low operating costs, capital investment costs are significant. In addition, the intermittent nature of wind results in relatively low capacity factors, such that a wind plant will generate less electricity than a conventional thermal or hydroelectric plant of the same size and over the same period of time. As a result of the high capital costs and intermittency associated with wind, the "levelized cost of electricity" (LCOE) – or the sum of the plant's present value of capital and operating costs, divided by its generation over the plant's lifetime – tends to be higher for wind than for most conventional generation types."[3]

EIA reported that United States wind energy generation increased from approximately 6 billion kilowatt-hours (kWh) in 2000 to 120 billion kWh in 2011. Wind energy accounts for approximately three percent of total U.S. electricity generation.[4]

Sources of Electricity Generation, 2011



Note: Includes utility-scale generation only. Excludes most customer-sited generation, for example, residential and commercial rooftop solar installations.
Source: U.S. Energy Information Administration, *Electric Power Monthly* (March 2012). Percentages based on Table 1.1, preliminary 2011 data.

The National Renewable Energy Laboratory (NREL) noted in a report in 2008 two separate and distinct power system challenges that block widespread adoption of wind energy. The report said: "One challenge lies in the need to reliably balance electric generation and load over time when a large portion of energy is coming from a variable power source such as wind, which, unlike many traditional power sources, cannot be accessed on demand or is 'nondispatchable.' The other challenge is to plan, build and pay for the new transmission facilities that will be required to access remote wind resources."[5]

The frequency with which wind blows and wind turbines actually produce electricity impacts the viability of wind as a reliable energy source. Intermittency impacts energy supply and demand,

[3] U.S. Energy Information Administration. Accessed at http://www.eia.gov/energy_in_brief/article/wind_power.cfm
[4] U.S. Energy Information Administration. Accessed at http://www.eia.gov/energyexplained/index.cfm?page=wind_electricity_generation
[5] DOE, Office of Energy Efficiency and Renewable Energy, *20% Wind Energy by 2030,* July 2008. Accessed at: http://www.nrel.gov/docs/fy08osti/41869.pdf

as well as overall grid stability. For example, when EIA calculates the levelized cost of electricity, they account for a capacity factor, or percentage of time which energy is actually produced. The EIA uses a capacity factor of only 30 percent for wind energy projects, compared to 85 percent for coal and 90 percent for nuclear.[6] When electricity demand is high and wind energy is not being produced, backup sources of electricity are required. Typically natural gas-fired plants serve in this function.

According to the Congressional Research Service (CRS), "[t]wo primary policies provide market and financial incentives that support the wind industry and have contributed to U.S. wind power growth: (1) production tax credits (PTC)—a federal tax incentive of 2.2 cents for each kilowatt-hour of electricity produced by a qualified wind project, and (2) renewable portfolio standards (RPS)—state-level policies that encourage renewable power by requiring that either a certain percentage of electricity be generated by renewable energy sources or a certain amount of qualified renewable electricity capacity be installed."[7] In addition to these policies, numerous other government programs, incentives, and direct spending also support wind energy production.

Production Tax Credits (PTC)

U.S. wind projects that incorporate turbines larger than 100 kW are eligible to receive federal tax incentives in the form of production tax credits and accelerated depreciation for ten years, beginning on the date the facility is placed in service. Originally established as part of the Energy Policy Act of 1992, the PTC played a role in the evolution and growth of the U.S. wind industry, as wind energy producers have been the largest beneficiary of federal production tax credits.[8] Although this tax credit was established in 1992, wind energy capacity did not increase until 1998 when most states began to implement RPS.[9] The PTC cost only $5 million in 1998.[10]

This tax credit has expired and been renewed by Congress on several occasions.[11] Last January, the *American Taxpayer Relief Act of 2012* extended the PTC for one additional year through the end of 2013 at an estimated to cost $12.1 billion.[12] This extension also modified the definition for qualifying projects to "the construction of which begins before January 1, 2014." The Internal Revenue Service (IRS) has yet to issue guidance to clarify this revised definition. Also,

[6] EIA, Levelized Cost of New Generation Resources in the Annual Energy Outlook 2012, July 2012. Accessed at: http://www.eia.gov/forecasts/aeo/pdf/electricity_generation.pdf

[7] Phillip Brown, *U.S. Renewable Electricity: How Does Wind Generation Impact Competitive Power Markets*, Congressional Research Service, November 7, 2012.

[8] Phillip Brown, *U.S. Renewable Electricity: How Does the PTC Impact Wind Markets*, Congressional Research Service, November 7, 2012.

[9] David E. Dismukes, Ph.D., Removing Big Wind's 'Training Wheels,' American Energy Alliance, November 1, 2012.

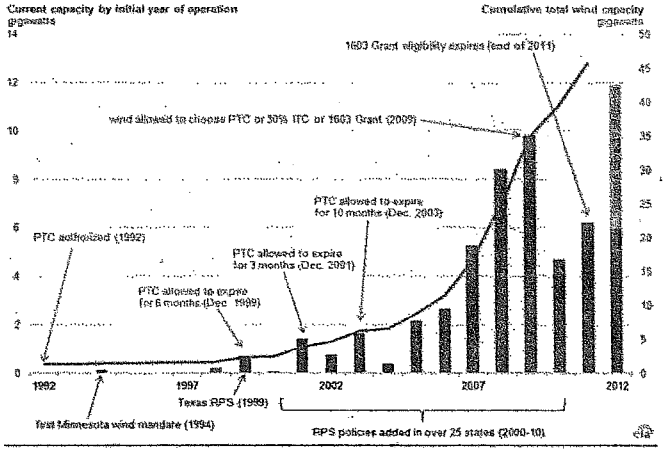
[10] Testimony of Ms. Lisa Linowes, *Impact of Tax Policies on the Commercial Application of Renewable Energy Technology*, U.S. House of Representatives, Committee on Science, Space, and Technology, Subcommittee on Oversight and Subcommittee on Energy and Environment, April 19, 2012.

[11] The PTC was also extended in 1999 (P.L. 102-486), 2002 (P.L. 106-170), 2004 (P.L. 107-147), 2005 (P.L. 108-311), 2006 (P.L. 109-432), 2008 (P.L. 110-343), and 2009 (P.L. 111-5).

[12] The Joint Committee on Taxation, *Estimated Revenue Effects of the Revenue Provisions Contained in an Amendment in the Nature of a Substitute* to H.R 8, The "American Taxpayer Relief Act of 2012," As Passed by the *Senate on January 1, 2013*, January 3, 2013.

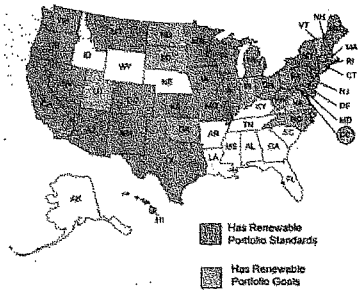
the IRS recently raised the PTC from 2.2 cents per kilowatt/hour to 2.3 cents per kilowatt/hour that created a five percent increase in cost, an additional $500 million cost to taxpayers.[13]

The following chart demonstrates how wind capacity did not grow until states began adopting Renewable Portfolio Standards (RPS).



Renewable Portfolio Standards (RPS)

Most States Have Renewable Portfolio Standards or Goals



Source: Interstate Renewable Energy Council, Database of State Incentives for Renewables & Efficiency (accessed September 2011).

According to the Congressional Research Service (CRS), "States essentially create demand for wind power projects by implementing renewable portfolio standard (RPS) policies that require a certain amount of renewable power to be generated by a certain date. For example, a state-level RPS may require that 25 percent of retail electricity sales be derived from renewable energy sources by 2025. As of September 2012, 29 states and the District of Columbia had established binding RPS policies. Each state RPS policy is unique with respect to its design, goals, and means of compliance."[14] While many sources of renewable energy can meet RPS requirements, wind energy accounts for 90 percent of all new RPS production.[15]

[13] NOTE: See Federal Register/ Vol. 78, No. 64 / Wednesday, April 3, 2013 / Notices. Accessed at http://www.gpo.gov/fdsys/pkg/FR-2013-04-03/pdf/2013-07773.pdf

[14] See supra 4.

Section 1603 Program

The American Recovery and Reinvestment Act (ARRA) in 2009 created the Section 1603 program that offers renewable energy project developers cash payments in lieu of the Production Tax Credit (PTC) or Investment Tax Credit (ITC). The value of the grant is equivalent to 30 percent of the project's cost, except for microturbines where the value is 10 percent.[16] The 1603 Program expired in 2012, though the Department of Treasury continues to make payments to recipients as qualified projects begin energy production. The estimated cost for the years 2011-2015 is estimated at $15.9 billion.[17] As of July 20, 2012, $9.2 billion went to wind projects, accounting for the majority of Section 1603 funding.[18]

Investment Tax Credit (ITC)

The Energy ITC was first established as part of the Energy Tax Act of 1978 (P.L. 95-618) and has since been modified several times. Section 48 of the Internal Revenue Code (IRC) provides a non-refundable income tax credit for business investments in solar, fuel cells, small wind turbines (up to 100 kW in capacity), geothermal systems, microturbines, and combined heat and power (CHP). Solar, fuel cell, and small wind turbine investments qualify for a 30 percent credit. The tax credit for investments in geothermal systems, microturbines, and CHP is 10 percent. For microturbines, the credit is limited to $200 per kW of capacity. Generally, the ITC is available for property placed in service by December 31, 2016. The estimated 2011-2015 cost for all ITC credits, not just wind, is $2.5 billion.[19]

48C Manufacturing Tax Credits

The American Recovery and Reinvestment Act (ARRA) of 2009 also created the Advanced Energy Manufacturing Tax Credit. This provision, commonly referred to as "48C", allows for a credit amounting to 30 percent of investment in manufacturing facilities for clean energy technologies. The 48C program is administered by the Internal Revenue Service (IRS), though the Department of Energy reviews project applications and recommends specific projects based on statutory criteria. The DOE said recently that they also evaluate programs based on "program policy factors" not directed in law.[20]

Tax credits were awarded to 183 projects submitted by 136 different companies. Based on information voluntarily submitted by companies, wind energy companies received 35 tax credits

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[15] See supra 13.

[16] Department of Treasury, Overview of Status Update on the Sec. 1603 program, July 20, 2012, Accessed at : http://ww.treasury.gov/initiatives/recovery/Documents/STATUS%20OVERVIEW.pdf

[17] Phillip Brown and Molly F. Sherlock, *ARRA Section 1603 Grants in Lieu of Tax Credits for Renewable Energy: Overview, Analysis, and Policy Options*, CRS Report R41635, November 9, 2011.

[18] See supra 14

[19] U.S. Congress, Joint Committee on Taxation, *Present Law and Analysis of Energy-Related Tax Expenditures*, JCX-28-12, March 27, 2012. Accessed at http://www.jct.gov/publications.html?func=startdown&id=4414.

[20] Treasury Inspector General for Tax Administration, Assessment of the Internal Revenue Service's Interpretation of *Section 1302 of the Recovery Act: Qualifying Advanced Energy Project Credit*, Reference Number 2013-40-029, March 21, 2013.

or 19.1 percent of total credits, and $258,519,981 or 11.2 percent of total.[21] The IRS recently announced $150 million in funding for additional 48C allocations using funds not fully utilized by previous awardees, which is to be reallocated on a competitive basis.

Loan Guarantees

Section 1703 of the Energy Policy Act of 2005 (EPAct) created a loan guarantee program to support investment in a breadth of energy technology areas and innovative clean-energy facilities. ARRA also added what is known as the Section 1705 loan program to support loans for renewable energy technologies, including wind. The authority for the Section 1705 loan program expired on September 30, 2011, while 1703 authority remains. After receiving numerous complaints alleging impropriety (including the company Solyndra), the Department of Energy's Office of Inspector General placed the Loan Guarantee Program on its "Watch List" for additional oversight.[22]

Over the life of this program, the Department of Energy (DOE) guaranteed loans to 26 projects amounting to $16 billion in financial capital. Of this, four were wind projects that accounted for full or partial guarantees for over $1.6 billion.[23] According to the General Accountability Office (GAO), the DOE is also actively reviewing two additional wind projects for future loan guarantees under the 1703 program and "planned to use all of the remaining $170 million in credit subsidy appropriations to support active applications for energy efficiency and renewable energy projects."[24]

Direct Spending

Additional support for wind energy also comes in the form of direct expenditures such as research and development. The following chart details the funding levels for direct spending, as well as those initiatives previously discussed such as the PTC, ITC, 1603, 48C, and Loan Guarantees.

[21] Derived from 48C award data available at http://www.whitehouse.gov/sites/default/files/48c_selection_011310.xls.

[22] Testimony of Gregory Friedman, Inspector General, DOE, Top Challenges for Science Agencies: reports from the Inspectors General Part 2, *Subcommittee on Oversight, Committee on Science, Space, and Technology*, March 14, 2013. Accessed at: http://science.house.gov/sites/republicans.science.house.gov/files/documents/HHRG-113-SY21-WState-GFriedman-20130314.pdf

[23] DOE Loan Program Office, accessed at https://lpo.energy.gov/?page_id=45

[24] GAO, *Status of DOE Loan Programs: Briefing to Appropriations Committees*, February 2013. Accessed at http://www.gao.gov/assets/660/653064.pdf

Actual and Estimated Obligations for Activities Specifically Related to Wind, by Agency, in Fiscal Year 2011[25]

Agency[a]	Number of wind-related initiatives for which data were provided	Actual obligations	Estimated obligations	Total obligations
Treasury	1	$2,716,933,281	$0	$2,716,933,281
DOE	17	73,940,581	73,161,968	147,102,549[b]
Interior	15	10,206,170	15,778,339	25,984,509
USDA	9	4,850,539	56,000	4,906,539[c]
Commerce	4	2,332,038	415,462	2,747,500
NSF	2	2,104,544	0	2,104,544
EPA	2	30,000	210,000	240,000
Total	**50**	**$2,810,397,153**	**$89,621,769**	**$2,900,018,922**

Source: GAO analysis of agency-provided data

Note Because GAO summarizes obligations data by agency, agency-level data typically reflect a mix of actual and estimated obligations. However, obligations reported for any specific initiative are either actual or estimated. For instance, EPA's data on its two initiatives above reflect one initiative for which actual obligations of $30,000 were reported, and one for which estimated obligations of $210,000 were reported.

a. In addition to the 50 initiatives at the seven agencies listed here, FERC did not provide obligations data for its one wind-related initiative because it noted that all costs to the government associated with the initiative are recovered through charges to regulated entities. SBA did not provide obligations data for either of its two initiatives because, according to agency officials, one initiative provided loan guarantees whose costs were offset by fees, and the second initiative was in the early planning stages in fiscal year 2011.

b. Of the $147 million obligated by DOE for activities specifically related to wind in 2011, about $51 million was obligated for credit subsidy costs—the government's estimated net long-term cost, in present value terms, of the loans it guarantees as part of the Title XVII Section 1705 Loan Guarantee Program. Credit subsidy costs exclude administrative costs and any incidental effects on governmental receipts or outlays. Present value is the worth of the future stream of returns or costs in terms of money paid immediately. In calculating present value, prevailing interest rates provide the basis for converting future amounts into their current equivalents.

c This amount does not reflect a guarantee for a $204 million loan provided for a wind project in fiscal year 2011 through USDA's Direct and Guaranteed Electric Loan Program. USDA officials said that based on the historical performance of the loans and the creditworthiness of applicants for the program, they estimate zero credit subsidy costs for the program.

GAO's Wind Energy Report

The GAO released a report last month titled *Wind Energy: Additional Actions Could Help Ensure Effective Use of Federal Financial Support.* This report found 82 different federal initiatives subsidizing wind energy that are fragmented, duplicative, and overlapping.[26]

Key findings of the GAO report:

- Nine different federal agencies implemented 82 different wind-related initiatives in FY2011. Together, the initiatives incurred about $4 billion of federal support—$2.9 billion in wind-related spending obligations and $1.1 billion in wind-related tax subsidies.
- Almost half of the initiatives (39 of 82) have been launched since 2009, and most (68 of 82) overlapped with at least one other initiative.
- GAO identified ten different initiatives that have provided or could provide duplicative support to deploy wind facilities. For example, a single wind project could receive federal support from a Section 1603 grant, accelerated depreciation, and a DOE loan guarantee,

[25] GAO, Wind Energy: Additional Actions Could Help ensure Effective Use of Federal Support, March 2013. Accessed at http://www.gao.gov/assets/660/652958.pdf

[26] Ibid

along with state support from tax incentives and indirect subsidies due to a state Renewable Portfolio Standard.

- According to financial professionals, federal initiatives have provided cumulative support worth about half of the capital costs for many wind projects.
- GAO also found that "it is it is unclear if the incremental support some initiatives provided was always necessary to build projects. In the event that some wind projects receive more federal funding than is required to induce them to be built, this additional funding could potentially be used to induce additional projects to be built or simply withheld, thereby reducing federal expenditures." GAO recommended that agencies "formally assess and document whether the federal financial support of their initiatives is needed for applicants' wind projects to be built."

Additional Issues for this Hearing:

Spending on Research and Development (R&D) vs. Deployment

While members of the Administration have called for increased funding for renewable energy resources as an investment in innovation, the GAO points out in its report, deployment activities—not research and development—account for the largest number of initiatives in the federal government. The GAO noted that "[o]f the reported $2.9 billion in actual and estimated obligations for wind-related activities in fiscal year 2011, $2.86 billion (99 percent) was obligated by the 58 initiatives that included support for deployment."[27]

Number and Percentage of Federal Wind-Related Initiatives Supporting Each Technology Advancement Activity in Fiscal Year 2011[28]

Technology advancement activity	Number of initiatives	Percentage of initiatives
Basic research	13	16
Applied research	34	41
Demonstration	29	35
Commercialization	24	29
Deployment	58	71

Source: GAO analysis of agency-provided data

Note: Because many wind-related initiatives supported multiple technology advancement activities, the percentage of initiatives does not total 100, and the number of initiatives does not total 82, the number of initiatives identified in our review

Tax Incentives vs. Direct Spending

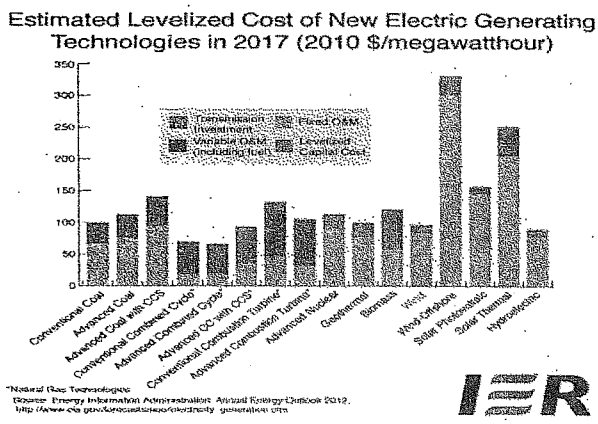
The nonpartisan Congressional Budget Office issued a report last year which stated that tax incentives "are generally an inefficient way to reduce environmental and other external costs of energy." Further saying, "[Tax incentives] often reward businesses for investments and actions

[27] Ibid
[28] Ibid

they intended to take anyway."[29] In GAO's recent report, they also stated that "agencies do not make documented assessments of whether or how much of their initiatives' financial support is needed for projects to be built and, as a result, it is unclear to what extent they assess need in order to determine what amount of support to provide. Moreover, it is unclear whether the incremental support some initiatives provided was always necessary for wind projects to be built."[30]

Onshore vs. Offshore Wind

According to EIA, the cost to build an offshore wind energy facility is nearly $6,000/kw as compared to onshore wind ($2,438/kw) and natural gas ($978/kw combined cycle).[31] Offshore wind is extraordinarily expensive to construct, especially when projects deliver electricity intermittently. With high upfront costs and fewer hours to spread the cost, long-term (15+ year) power purchase agreements with state agencies are required to attract private investor financing.[32]



National Security

An additional factor involved in wind energy production is its impact on radar systems to monitor aircraft and even missile threats against the United States. The Department of Energy (DOE), Federal Aviation Administration (FAA), and Department of Defense (DoD) have evaluated the potential impacts and mitigation strategies associated with large-scale, offshore

[29] CBO, Federal Financial Support for the Development and Production of Fuels and Energy Technologies, March 2012. Accessed at: http://www.cbo.gov/sites/default/files/cbofiles/attachments/03-06-FuelsandEnergy_Brief.pdf
[30] See Supra 23
[31] EIA, Updated Capital cost Estimates for Electricity Generation Plants, November 2010. Accessed at: http://www.eia.gov/oiaf/beck_plantcosts/
[32] See Supra 10

wind turbines. Currently-available wind turbines have blade tips towering over 400 feet above the surface of the water, and some turbines being developed that sweep an area three times the size of a football field.[33] As highlighted in previous testimony before the Committee, "by 2008, nearly 40% of our long-range radar systems were already compromised by wind turbines.[34] We've doubled our wind capacity since then but the problem of radar interference persists. Our military services and federal agencies have conducted numerous studies on the radar question, as have multiple international military and private interests.[35] Not all studies agree on levels of severity and potential mitigations, but all agree that large scale industrial wind turbines have the potential to negatively affect military installations, radar, and navigation aids."[36]

One of the most important radar systems, PAVE PAWS, is located on Cape Cod Air Force Station. PAVE PAWS is designed to detect and track Sea Launch Ballistic Missiles (SLBM) as well as Earth-orbiting satellites. A 2007 report from the Missile Defense Agency reviewed the impact of wind turbines on the radar's effectiveness and concluded that "utility class wind farms could have a significant impact on radars, including the missile defense early warning radars (EWRs), the PAVE PAWS radar at Cape Code AFS, MA, and the Upgrade Early Warning Radar (UEWR) at Beale AFB, CA."[37] In order to mitigate this impact, the report recommended a twenty-five kilometer exclusion zone around the radar, and further study regarding turbine height within this zone. Since these reports, the Cape Wind project reconfigured its towers from a height of 417 ft to 440 ft. It is unknown what impact this increase in tower height would have on the radar.

Health

There is a significant debate within the scientific community as to whether or not wind turbines adversely impact human health.[38]

- A 2001 Report by the National Institutes of Health indicated that infrasound (a very low frequency type of noise caused by wind turbines) can cause vertigo as well as "fatigue, apathy, and depression, pressure in the ears, loss of concentration, drowsiness."[39]
- In 2009, the American Wind Energy Association and the Canadian Wind Energy Association commissioned a report to look at the health impacts of wind turbines and noise and found that "There is no evidence that the audible or sub-audible sounds emitted by wind turbines have any direct adverse physiological effects." Additionally, it found that the vibrations from the turbines are "too weak to be detected by, or to affect,

[33] ClimateWire, Scientific American, *Offshore Wind Turbines Keep Growing in Size*, September 19, 2011. Accessed at: http://www.scientificamerican.com/article.cfm?id=offshore-wind-turbines-keep

[34] Long Range Radar Joint Program Office Wind Farm Brief http://www.windaction.org/?module=uploads&func=download&fileId=2178 (Slide 3)

[35] Department of Defense, Report to the Congressional Defense Committees, *The Effect of Windmill Farms On Military Readiness, 2006*. Accessed at: http://www.defense.gov/pubs/pdfs/windfarmreport.pdf

[36] See Supra 10

[37] MDA, *Wind Turbine Analysis for Cape Cod Air Force Station Early Warning Radar and Beale Air Force Base Upgrade Early Warning Radar*, Spring 2007.

[38] Robert Bryce, *Wind Energy, Noise Pollution*, National Review Online, February 2, 2012. Accessed at: http://www.nationalreview.com/blogs/print/289920

[39] NIH, *Infrasound: Brief Review of Toxicological Literature*, Infrasound Toxicological Summary, November 2001. Accessed at http://ntp.niehs.nih.gov/ntp/htdocs/Chem_Background/ExSumPdf/Infrasound.pdf

humans." However, that same study also said that extended exposure to unwanted noise can cause a number of symptoms, including "dizziness, eye strain, fatigue, feeling vibration, headache, insomnia, muscle spasm, nausea, nose bleeds, palpitations, pressure in the ears or head, skin burns, stress, and tension."[40]

- A 2012 report conducted for the Commonwealth of Massachusetts concluded that generally there were no adverse health impacts;[41] however, the Acoustic Ecology Institute, a non-profit organization, has argued that this study did not fully address all relevant factors.[42]
- An article in the *Bulletin of Science, Technology & Society* with several first-person accounts of residents living near wind farms concluded that "overwhelming evidence that wind turbines cause serious health problems in nearby residents, usually stress-disorder type diseases, at a nontrivial rate."[43]
- An October 2012 article in the international scientific journal *Noise & Health* found that those individuals who lived close to a wind turbine experienced a "lower overall quality of life, physical quality of life, and environmental quality of life. Those exposed to turbine noise also reported significantly lower sleep quality, and rated their environment as less restful. Our data suggest that wind farm noise can negatively impact facets of HRQOL [health-related quality of life]."[44]
- Dr. Alec Salt, a research scientist at the Cochlear Fluids Research Laboratory at the Washington University School of Medicine in St. Louis, has published several articles related to the health impacts of wind turbines and concludes that it "can be hazardous to human health."[45]

While a scientific dispute still remains about the effects of wind turbines adversely affecting human health, numerous state and local initiatives around the world have sought to either prevent future wind turbine construction (such as the moratorium sought in Wisconsin[46]), or remove existing structures (as in Falmouth, MA[47]).

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[40] W. David Colby, M.D. et al, *Wind Turbine Sound and Health Effects: An Expert Panel Review,* December 2009. Accessed at: http://www.awea.org/_cs_upload/issues/siting/7970_1.pdf

[41] Massachusetts Department of Environmental protection, Massachusetts Department of Public Health, *Wind Turbine Health Impact Study: Report of Independent Expert Panel,* January 2012. Accessed at: http://www.mass.gov/dep/energy/wind/turbine_impact_study.pdf

[42] The Acoustic Ecology Institute, January 24, 2012. Accessed at: http://aeinews.org/archives/1782#more-1782

[43] Carl Phillips, *Properly Interpreting the Epidemiological Evidence About the Health Effects of Industrial Wind Turbines on Nearby Residents,* Bulletin of Science, Technology & Society, August 2011. Accessed at: http://www.acousticecology.org/wind/winddocs/health/Phillips%20BSTS%20properly%20interpreting%20epidemiological%20evidence.pdf

[44] Daniel Shepherd, et al, *Evaluating the impact of wind turbine noise on health-related quality of life,* Noise & Health, Vol. 13, October 2011. Accessed at : http://noiseandhealth.org/article.asp?issn=1463-1741;year=2011;volume=13;issue=54;spage=333;epage=339;aulast=Shepherd

[45] Dr. Alex Salt, Cochlear Fluids Research Laboratory, Washington University in St. Louis. Publications referenced at: http://oto2.wustl.edu/cochlea/wind.html

[46] Doug Schneider, *Wisconsin wind turbine Moratorium sought by Sen. Frank Lasee, R-Ledgeview,* Green Bay Press-Gazette, October 11, 2011. Accessed at: http://www.greenbaypressgazette.com/article/20111011/GPG0101/110110429/Wisconsin-wind-turbine-moratorium-sought-by-Sen-Frank-Lasee-R-Ledgeview

[47] Jay Linday, *Mass. Town votes against dismantling wind turbines*, ABC6 News, April 9, 2013. Accessed at: http://www.abc6.com/story/21924817/mass-town-may-be-first-to-tear-down-turbines

Chairman BROUN. Good afternoon. This is a joint hearing of the Subcommittee on Oversight and the Subcommittee on Energy, and it will come to order.

Good afternoon, everyone. I welcome you to today's hearing. In front of you are packets containing the written testimony, biographies and truth in testimony disclosures for today's witnesses.

Before we get started, since this is a joint hearing involving two Subcommittees, I want to explain how we will operate procedurally so all Members understand how the question-and-answer period will be handled. As always, we will alternate between the majority and minority Members and allow all Members an opportunity for questioning before recognizing a Member for a second round of questions, if we do a second round. We will recognize those Members present at the gavel in order of seniority on the Full Committee, and those coming in after the gavel will be recognized in order of their arrival. I now recognize myself for a five-minute opening statement.

Today's hearing is titled, "Assessing the Efficiency and Effectiveness of Wind Energy Incentives." It is no coincidence that we scheduled this hearing the day after the deadline for Americans to file their taxes. Corporations, like people, do their best to take advantage of what the IRS offers to either reduce their taxable income, or receive credit for taking advantage of various financial incentives.

The wind industry, in particular, enjoys a wide variety of tax breaks, which include Production Tax Credits—these are federal tax incentives for U.S. wind projects that incorporate turbines larger than 100 kilowatts; Investment Tax Credits, which provide a nonrefundable income tax credit of 30 percent for business investments in renewable energy, such as those that include small wind turbines; the Advanced Energy Manufacturing Tax Credit, commonly referred to as 48C, which allows for a credit amounting to 30 percent of investment in manufacturing facilities for clean energy technologies, including wind energy companies; Section 1703 of the *Energy Policy Act of 2005*, which created a loan guarantee program to support investment in a breadth of energy technology areas and innovative clean energy facilities, including, again, wind energy; and various other incentives that include direct funding as well as money for research and development.

One of the problems with providing companies with multiple tax breaks is the possibility of duplication by the Federal Government, which is hardly known for its efficiency. A recent GAO report, which we will hear more about later today, provides information that supports my concerns. The report explains that nine agencies implemented 82 federal wind-related initiatives in 2011. Together, the initiatives incurred about $4 billion of federal support: $2.9 billion in wind-related spending obligations, and $1.1 billion in wind-related tax subsidies. These are relatively new initiatives because almost half of them, 39 of 82, have been launched since 2009, and most, 68 of 82, overlapped with at least one other initiative.

Another concern with these initiatives is the question of who is getting these tax breaks. Agencies such as the Department of Energy and the U.S. Department of Agriculture have discretion to consider applicant need for the projects they support. However, as

noted in the GAO report, it is unclear to what extent, if any at all, these agencies analyze applicants' financial situations. In other words, instead of doling out money to applicants who will build these projects anyway, these agencies could help those projects that need it more to fund research to make the technology more cost competitive, because, as GAO further notes, 99 percent of all wind obligations go to deployment rather than to R&D. The real driver of wind energy is Renewable Portfolio Standards, which essentially require electricity producers to provide a portion of their energy from various specified renewable sources. These RPSs typically complement Production Tax Credits, which in turn artificially reduce the cost of wind energy. It is important to note that of the 37 States with RPSs that include wind, my State of Georgia is not one of them. Despite that, we, too, bear the costs of RPSs because Georgia citizens pay for the Federal Production Tax Credit, which incentivizes the production of wind facilities, not in Georgia, but in RPS states.

Given our current fiscal environment, it is now more important than ever that we learn to accomplish more with less. That means reducing duplication and fragmentation within the federal programs spread out over multiple agencies. And when you consider the shadow of sequestration that hangs over federal agencies, Americans would be better served by an administration that reins in questionable tax breaks instead of requiring employees to shoulder the burden of furloughs. I suspect most of my constituents and fellow Georgians who met yesterday's tax deadline will agree that it is better to be paid a full salary than to take home a smaller paycheck because the Federal Government is busy tilting at windmills.

[The prepared statement of Mr. Broun follows:]

PREPARED STATEMENT OF CHAIRMAN PAUL BROUN, SUBCOMMITTEE ON OVERSIGHT

Today's hearing is titled "Assessing the Efficiency and Effectiveness of Wind Energy Incentives." It is no coincidence that we scheduled this hearing the day after the deadline for Americans to file their taxes. Corporations, like people, do their best to take advantage of what the IRS offers to either reduce their taxable income or receive credit for taking advantage of various financial incentives.

The wind industry, in particular, enjoys a wide variety of tax breaks, which include: Production Tax Credits, which are federal tax incentives for U.S. wind projects that incorporate turbines larger than 100 kilowatts; Investment Tax Credits, which provide a nonrefundable income tax credit of 30 percent for business investments in renewable energy, such as those that include small wind turbines; the Advanced Energy Manufacturing Tax Credit, commonly referred to as "48C," which allows for a credit amounting to 30 percent of investment in manufacturing facilities for clean energy technologies, including wind energy companies; Section 1703 of the *Energy Policy Act of 2005*, which created a loan guarantee program to support investment in a breadth of energy technology areas and innovative clean energy facilities, including, again, wind energy; and various other incentives that include direct funding as well as money for research and development.

One of the problems with providing companies with multiple tax breaks is the possibility of duplication by the Federal Government, which is hardly known for its efficiency. A recent GAO report—which we will hear more about later today—provides information that supports my concerns. The report explains that nine agencies implemented 82 federal wind-related initiatives in 2011. Together, the initiatives incurred about $4 billion of federal support—$2.9 billion in wind-related spending obligations and $1.1 billion in wind-related tax subsidies. These are relatively new initiatives because almost half of them—39 of 82—have been launched since 2009, and most—68 of 82—overlapped with at least one other initiative.

Another concern with these initiatives is the question of who's getting these tax breaks. Agencies such as the Department of Energy and the U.S. Department of Ag-

riculture have discretion to consider applicant need for the projects they support; however, as noted in the GAO report, it is unclear as to what extent, if at all, these agencies analyze applicants' financial situations. In other words, instead of doling out money to applicants who will build these projects anyway, these agencies could help those projects that need it more to fund research to make the technology more cost competitive, because, as GAO further notes, 99% of all wind obligations go to deployment rather than R&D.

The real drivers of wind energy are Renewable Portfolio Standards, which essentially require electricity producers to provide a portion of their energy from various specified renewable sources. These RPSs typically complement Production Tax Credits, which in turn artificially reduce the cost of wind energy. It is important to note that of the 37 States with RPSs that include wind, my State of Georgia is not one of them. Despite that, we, too, bear the costs of RPSs because Georgia citizens pay for the federal Production Tax Credit, which incentivizes the production of wind facilities—not in Georgia, but in RPS States.

Given our current fiscal environment, it is now more important than ever that we learn to accomplish more with less. That means reducing duplication and fragmentation within the federal programs spread out over multiple agencies. And when you consider the shadow of sequestration that hangs over federal agencies, Americans would be better served by an administration that reins in questionable tax breaks instead of requiring employees to shoulder the burden of furloughs.

I suspect most of my constituents and fellow Georgians who met yesterday's tax deadline will agree that it's better to be paid a full salary than to take home a smaller paycheck because the Federal Government is busy tilting at windmills.

Chairman BROUN. Now I recognize the Ranking Member, the gentleman from New York, my friend, Mr. Maffei, for an opening statement. Sir, you are recognized for five minutes.

Mr. MAFFEI. Thank you very much, Mr. Chairman. I appreciate that you are holding this hearing, but I do think that wind is one of many different forms of energy, whether we are talking about coal, oil, natural gas, nuclear, solar, biofuels, geothermal and hydroelectric power, and in the United States, we can and should rely on a broad mix of these energy sources, and the Federal Government has a long history of providing incentives to virtually all of these power sources. The U.S. government has provided federal support for fossil fuel development for nearly a century, for example.

Today's hearing, entitled "Assessing the Efficiency and Effectiveness of Wind Energy Incentives," indeed could have been held on any one of these sources of energy, or maybe to be more fair and complete, we should have based one on a review of all of the different sources of energy, which have federal policies that incentivize them. Indeed, the GAO report prepared for this hearing on the effective use of financial support for the wind energy industry could have been produced on any one of the specific forms of energy that I mentioned. Instead, the GAO report focused on the duplication of federal incentives that wind energy is eligible to receive.

Now, I don't know of any Member, and certainly I do not believe that redundant policy initiatives are a good thing, but there is a difference between duplication and redundancy, especially as duplication is defined in this report, such as a project getting both a tax credit and a loan guarantee. It is important to point out that the GAO report doesn't indicate any way in which it found clear evidence of waste in federal support for wind. That doesn't mean that there isn't any, but it is not specifically pointed out. And the same incentives, and in many cases, many more, are available for practically every other type of energy project as well.

My point is, Mr. Chairman, that if we are going to ask for a review of federal incentives for energy sources, I think we need to ensure we review these issues fairly and completely. Indeed, I could have given you the example of the subsidies for oil in the Tax Code that my State pays for, but my constituents don't benefit from, just as you mentioned wind in the case of your constituents in Georgia.

I stand ready to work with you, the other Chairman and the other Ranking Member, Mr. Swalwell, to look at the efficiency and effectiveness of incentives for the oil industry, for example, or for any of these other energy sources. I think that getting rid of waste is something that we should be interested in, regardless of whether the policies pertain to wind or some other energy source.

With that, I look forward to hearing from our witnesses today, and I will yield back the balance of my time.

[The prepared statement of Mr. Maffei follows:]

PREPARED STATEMENT OF RANKING COMMITTEE CHAIRMAN DAN MAFFEI, SUBCOMMITTEE ON OVERSIGHT

Thank you very much, Mr. Chairman. I appreciate that you are holding this hearing, but I do think that wind is one of many different forms of energy, whether we are talking about coal, oil, natural gas, nuclear, solar, biofuels, geothermal, and hydroelectric power. And in the United States, we can and should rely on a broad mix of these energy sources, and the Federal Government has a long history of providing various incentives to virtually all of these power sources. The U.S. Government has provided federal support for fossil fuel development for nearly a century, for example.

Today's hearing, entitled "Assessing the Efficiency and Effectiveness of Wind Energy Incentives," indeed could have been held on any one of these sources of energy, or maybe, to be more fair and complete, we should have based a review on all of the different sources of energy, of which there are federal policies that incentivize them.

Indeed, the GAO report prepared for this hearing on the effective use of financial support for the wind energy industry could have been produced on any one of the specific forms of energy that I mentioned. Instead, the GAO report focused on the duplication of federal incentives that wind energy is eligible to receive. Now, I don't know of any Member who believes, and I certainly do not believe, that redundant policy initiatives are a good thing. But there is a difference between duplication and redundancy, especially as duplication is defined in this report, such as a product getting both a tax credit and a loan guarantee.

It is important to point out that the GAO report doesn't indicate any way in which it found clear evidence of waste in federal support for wind. That doesn't mean that there isn't any, but it is not specifically pointed out. And that the same incentives and, in some cases, many more, are available for practically every other type of energy product as well. My point, Mr. Chairman, is that if we are going to ask for a review of federal incentives for energy sources, I think we need to ensure we review these issues fairly and completely. Indeed, I could have given you the example of subsidies for oil in the tax code that my State pays for but my constituents don't benefit from, just as you mentioned wind in the case of your constituents in Georgia.

I stand ready to work with you and the other Chairmen and the other Ranking Member, Mr. Swalwell, to look at the efficiency and effectiveness of incentives for the oil industry, for example, or for any of these other energy sources. I think getting rid of waste is something that we should be interested in, regardless of whether the policies pertain to wind or some other energy source. And with that, I look forward to hearing from our witnesses today.

Chairman BROUN. Thank you, Mr. Maffei, and I promise you, I am interested in finding duplication throughout the government, no matter where it is.

Now I will recognize the Full Committee Chairman, Mr. Smith, for five minutes.

Chairman SMITH. Thank you, Mr. Chairman.

Wind energy offers potential for increased energy security, more domestic jobs and a better environment. Wind capacity grew by 28 percent last year but still comprises only three percent of our total energy production.

According to the Energy Information Administration, my home State of Texas is the number one wind energy-producing State and accounts for more than 22 percent of America's wind energy generation.

Wind energy also can be competitive but only if it is onshore. Offshore wind energy is two to three times more expensive. That cost, as we will hear today, is paid for not only by the consumers who purchase the electricity but also by every taxpayer whose taxes help pay for the deployment of the projects. We will also hear about other risks posed by offshore wind, such as the disturbance of marine animals, impairment of navigation, and the threat to national security because of radar interference. And the Government Accountability Office will testify about the duplication that exists in wind energy projects. The GAO found that 99 percent of federal dollars for wind-related activities actually went to deploy existing technology rather than to research that would make energy technology more competitive.

The wind industry and the Nation as a whole would be better served by investing in research and technology rather than having taxpayers subsidize offshore wind projects.

The Department of Energy's Loan Program Office is also mired in controversy after numerous high-profile failures such as Solyndra, Beacon Power, and Nevada Geothermal. These failures prompted the DOE Inspector General to place the loan program on its watch list. While DOE has not issued a loan guarantee since September 2011, it now appears that they are considering issuing new loans particularly related to wind projects. It is hard to see how such loans for costly offshore wind turbines could be justified.

Thank you, Mr. Chairman. I look forward to the witnesses' testimony today.

[The prepared statement of Mr. Smith follows:]

PREPARED STATEMENT OF SCIENCE COMMITTEE CHAIRMAN LAMAR SMITH

Wind energy offers potential for increased energy security, more domestic jobs, and a better environment.

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Wind energy also can be cost competitive if it is onshore. But offshore wind energy is two to three times more expensive. That cost is paid for not only by the consumers who purchase the electricity but also by every taxpayer whose taxes help pay for the deployment of the projects.

We also will hear about other risks posed by offshore wind, such as the disturbance of marine animals, impairment of navigation, and the threat to national security because of radar interference.

And the Government Accountability Office (GAO) will testify about the duplication that exists in wind energy projects.

The GAO found that 99 percent of federal dollars for wind-related activities went to deploy existing technology rather than to research that would make energy technology more competitive.

The wind industry, and the Nation as a whole, would be better served by investing in R&D, rather than having taxpayers subsidize offshore wind projects.

The Department of Energy's (DOE's) Loan Program office is mired in controversy after numerous, high-profile failures such as Solyndra, Beacon Power, and Nevada Geothermal. These failures prompted the DOE Inspector General to place the Loan Program on its "Watch List."

While DOE has not issued a Loan Guarantee since September 2011, it now appears that they are considering issuing new loans, particularly related to wind projects. It is hard to see how such loans for costly offshore wind turbines could be justified.

Thank you, Mr. Chairman. And I look forward to the witnesses' testimony and yield back the remainder of my time.

Chairman BROUN. Thank you, Chairman Smith. Now I recognize Mr. Swalwell for his opening statement. You are recognized for five minutes.

Mr. SWALWELL. Thank you, Chairman Broun, for holding this hearing today. I appreciate the opportunity to further discuss the range of instruments that government can utilize to effect change or maintain the status quo in the energy marketplace.

I have stated over and over in this hearing room in my first 100 days that I am here to effect change for reasons that range from establishing U.S. marketplace leadership in the booming global clean energy market to protecting consumers and domestic industries from energy price shocks to protecting our children from the severe impacts of a rapidly changing climate. The status quo in energy is simply unsustainable.

I hope that we on the Science Committee can continue to work together throughout this Congress to craft policies that are both forward-leaning and pragmatic, and that we can take lessons learned from past experiences to right-size the role of government in spurring innovation in our energy sectors.

In the case of wind energy and the report that we are here to talk about today, it is clear that the majority tasked the GAO with finding any evidence of duplication among the Federal Government's wind energy initiatives, but make no mistake: the use of this term is actually very misleading.

To be clear, there are legal prohibitions on combining many of these incentives, so when there is more than one incentive provided to a single project, it turns out that they are very different kinds of support. And while the Treasury's tax incentives are part of the Tax Code established by Congress, so that they are not optional, the Department of Energy and USDA both carry out rigorous, expert assessments of an applicant's need for additional instruments like a grant or loan guarantee before they allow any of those awards to move forward. Throughout the report, GAO also notes that while such examples fall under its broad category of duplication, they can be a productive use of taxpayer dollars since these incentives often address very different needs.

Most importantly, we need to recognize that, as Mr. Maffei pointed out, there is nothing unique about these incentives with respect to the wind industry. Over several decades, or a century, in fact, in the case of oil and coal, the Federal Government has provided hundreds of billions of dollars in support of fossil fuels and nuclear development.

Just to give you a few examples, the current shale gas boom would not have been possible without tax credits and government

R&D investment, and nuclear energy projects are eligible to combine Production Tax Credits, loan guarantees, liability insurance, and other important incentives. So, Mr. Chair, if we are holding this hearing today on just wind incentives, I hope that in the future we will look at duplications in oil and gas or that we would look at duplications that exist in nuclear energy, and my constituents are certainly subsidizing what looks like an $8.3 billion loan guarantee for a nuclear power plant in Georgia, and while this does not directly assist my constituents, I think they understand that these subsidies and incentives are a part of a larger all-of-the-above energy approach that our country has taken. So I am all for eliminating duplications in our tax incentives but this feels isolated and, unfortunately, very politically motivated.

The taxpayers want lower-cost, reliable energy with few, if any, harmful environmental impacts, and they increasingly demand more control and more choices in the fuels and technologies they use. Until our policies start to address the numerous market failures that new concepts face and reevaluate them on a regular basis, we will not lay the groundwork for a truly competitive energy marketplace in the United States.

The people that drive innovation in our economy, from the National Laboratory—and in my congressional district, we have two of them—to the university students who push the frontiers of knowledge to the venture capitalists who put their money on new concepts to the industrial firms that scale up manufacturing and infrastructure, they all know that government has always, has always, has always played a critical role in making the United States the most dominant economy in the world. Our oil, gas, coal and nuclear sectors are a direct result of that. So I have always supported an all-of-the-above approach when it comes to where we receive our energy sources, and I also think we should approach and take the standard that when it comes to our incentives and how we create new energy jobs and how we provide energy, we should still continue to support an all-of-the-above approach.

So it is time that we get serious about incentivizing the next winners and doing whatever it takes, from basic and applied research all the way to innovative financing and tax instruments, to ensure that the United States has cleaner, more sustainable and more affordable energy for generations to come, and I hope that we can have a fuller hearing that covers not just in silos one part of our energy resources but all of our energy resources and find where duplication exists, and then I think we will truly be trying to root out the losers and try and promote the winners when it comes to our energy resources.

And with that, I yield back the balance of my time.

[The prepared statement of Mr. Swalwell follows:]

PREPARED STATEMENT OF RANKING MEMBER ERIC SWALWELL, SUBCOMMITTEE ON ENERGY

Thank you, Chairman Lummis and Chairman Broun, for holding this hearing today. I appreciate the opportunity to further discuss the range of instruments that government can utilize to effect change or maintain the status quo in the energy marketplace.

As I stated in our last hearing on energy incentives, my interest in the subject lies firmly in the category of effecting change. For reasons that range from estab-

lishing U.S. leadership in the booming global clean energy market to protecting consumers and domestic industries from energy price shocks to protecting our children from the severe impacts of a rapidly changing climate, the status quo in energy is simply unsustainable.

I hope that we on the Science Committee can work together throughout this Congress to craft policies that are both forward-leaning and pragmatic, and that we can take lessons learned from past experiences to right-size the role of government in spurring innovation in our energy systems.

In the case of wind energy and the report we are here to talk about today, it is clear that the Majority tasked GAO with finding any evidence of "duplication" among the Federal Government's wind energy initiatives, but make no mistake—the use of this term is actually very misleading.

To be clear, there are legal prohibitions on combining many of these incentives, so when there is more than one incentive provided to a single project, it turns out that they are very different kinds of support.

And while the Treasury's tax incentives are part of the tax code established by Congress—so they're not optional—the Department of Energy and USDA both carry out rigorous, expert assessments of an applicant's need for additional instruments, like a grant or loan guarantee, before they allow any of those awards to move forward.

Throughout the report, GAO also notes that while such examples fall under its broad category of "duplication," they can be a productive use of taxpayer dollars since these incentives often address very different needs.

Most importantly, we need to recognize that there is nothing unique about these incentives to the wind industry. Over several decades—or a century, in the case of oil and coal—the Federal Government has provided hundreds of billions of dollars in support of fossil fuels and nuclear development.

Just to give you a few examples, the current shale gas boom would not have been possible without tax credits and government R&D investment. And nuclear energy projects are eligible to combine production tax credits, loan guarantees, liability insurance, and other important incentives.

We have to acknowledge that the energy marketplace is not a "free" market. For one, as my Republican friends will likely agree, it is heavily regulated at both the State and national level. It is also heavily biased towards favoring incumbent technologies over investments in new, more advanced systems that can deliver cleaner, smarter, more sustainable energy to consumers. Furthermore, the pathway from idea to scale-up is fraught with technical and financial risks that can derail even the most resourceful developers.

The taxpayers want lower-cost, reliable energy with few, if any, harmful environmental impacts, and they increasingly demand more control and more choices in the fuels and technologies they use. Until our policies start to address the numerous market failures that new concepts face, and reevaluate them on a regular basis, we will not lay the groundwork for a truly competitive energy marketplace in the U.S.

The people that drive innovation in our economy—from the National Laboratory and university scientists who push the frontiers of knowledge to the venture capitalists who put their money on new concepts to the industrial firms that scale up manufacturing and infrastructures—all know that government has always played a critical role in making the U.S. the most dominant economy in the world. Our oil, gas, coal, and nuclear sectors are a direct result of that.

It is time that we get serious about incentivizing the next winners and doing whatever it takes, from basic and applied research all the way to innovative financing and tax instruments, to ensure that the U.S. has cleaner, more sustainable, and more affordable energy for generations to come.

Chairman BROUN. Thank you, Mr. Swalwell.

The Chair now recognizes the Chairman of the Subcommittee on Energy, Mrs. Lummis, for her opening statement.

Mrs. LUMMIS. Thank you, Mr. Chairman.

Good afternoon. Welcome to today's hearing.

My home State of Wyoming is the epitome of an all-of-the-above State. We have fossil fuels, renewables and uranium that powers our nuclear plants, and we lead the Nation in wind energy reserves, the subject of today's hearing.

Wyoming's wind is under rapid development. In fact, in Carbon County, Wyoming, a 10,000-turbine wind farm is under construc-

tion, and upon completion it will be the largest renewable energy project in the United States. But building wind farms alone does not guarantee the electricity will be used. Constructing new transmission lines to deliver the electricity is a key barrier that we have to overcome. For Carbon County, Wyoming, wind electricity to be delivered to Nevada and California, a 725-mile, high-voltage transmission line must be constructed, and coal- and gas-fired plants have to be adjusted to protect against power outages when the wind stops blowing. These additional costs and challenges must also be addressed.

The wind industry is now successful and the wind industry is mainstream, so the time has come to wean it from taxpayer subsidies, particularly since our economy is struggling so.

When the wind industry's principal subsidy, the Production Tax Credit, was created in 1992, it was intended as temporary assistance to help an immature energy technology. But here we are, 21 years later, and the subsidy is still in effect. It is time for the industry to look beyond tax credits and cash payments, so I am encouraged by the American Wind Energy Association's proposal to phase out the Production Tax Credit. In addition to the Production Tax Credit, the Government Accountability Office will testify today that the Federal Government supports wind energy through dozens of duplicative and costly initiatives. GAO notes seven initiatives provided duplicative support for single wind projects, so that is known as "double dipping," including the Section 1603 cash grant program and the Department of Energy loan guarantee program.

The extent of these subsidies results in taxpayers bearing project risks while investors collect the rewards. Now, here is why this discussion is not politically motivated, as has been alleged. President Obama's own advisors cautioned against this double dipping. In October of 2010, White House advisors Carol Browner and Larry Summers warned President Obama in writing that federal subsidies should be reconsidered in light of the double dipping and because government assistance may account for greater than 60 percent of a single project's cost. Additionally, Ms. Browner and Mr. Summers warned that subsidies would be provided to projects that would have been built regardless of federal financial support. If only these concerns had been addressed when raised in 2010 by the President's own top advisors, GAO's report today might have been better news for taxpayers.

Given the current budgetary outlook, Congress must reevaluate the need for and value of costly subsidies in every area of our economy, energy, even within the energy sector, renewables and nonrenewables. Subsidies of all kinds must be reevaluated in this economic setting. I hope today's hearing serves as an important step in that process.

Thank you, Mr. Chairman. I yield back.

[The prepared statement of Mrs. Lummis follows:]

PREPARED STATEMENT OF CHAIRMAN CYNTHIA LUMMIS, SUBCOMMITTEE ON ENERGY

Good afternoon and welcome to today's hearing on "Assessing the Efficiency and Effectiveness of Wind Energy Incentives."

Wyoming is rich in all forms of energy: fossil fuels, renewables, and the uranium that powers our nuclear plants. And we lead the Nation in wind energy resources—the subject of today's hearing. Wyoming's wind is under rapid development.

In Carbon County, Wyoming, a 10,000-turbine wind farm is under construction, which, upon completion, will be the largest renewable energy project in the U.S.

But building wind farms alone does not guarantee the electricity will be used. Constructing new transmission lines to deliver the electricity is a key barrier that must be overcome.

For Carbon County wind electricity to be delivered to Nevada and California, a 725-mile, high-voltage transmission line must be constructed, and coal- and gas-fired plants must make adjustments to protect against power outages when the wind stops blowing.

These additional costs and challenges cannot be ignored.

The wind industry is now successful and mainstream, so the time has come to wean it from taxpayer subsidies.

When the wind industry's principal subsidy, the Production Tax Credit (PTC), was created in 1992, it was intended as temporary assistance to help an immature energy technology. But here we are, 21 years later, and the subsidy is still in effect.

It is time for the industry to look beyond tax credits and cash payments. I am encouraged by the American Wind Energy Association's proposal to phase out the PTC.

In addition to the PTC, the Government Accountability Office will testify today that the Federal Government supports wind energy through dozens of duplicative and costly initiatives.

GAO notes seven initiatives provided duplicative support for single wind projects, known as "double dipping," including the Section 1603 cash grant program and Department of Energy loan guarantee program.

The extent of these subsidies results in taxpayers bearing project risks while investors collect the rewards.

Ironically, President Obama's own advisors cautioned against this double dipping. In October 2010, White House advisors Carol Browner and Larry Summers warned President Obama in writing that federal subsidies should be reconsidered in light of double dipping and because government assistance may account for greater than 60 percent of a single project's cost.

Additionally, Browner and Summers warned that subsidies would be provided to projects that would have been built regardless of federal financial support.

if only these concerns had been addressed when raised in 2010, GAO's report today might have better news for taxpayers. Given the current budgetary outlook, Congress must reevaluate the need for, and value of, costly energy subsidies.

I hope today's hearing serves as an important step in that process.

Thank you, Mr. Chairman, I yield back.

Chairman BROUN. Thank you, Chairman Lummis.

I would like to maybe remind my friend from California, the Ranking Member on the Energy Subcommittee, that back on Wednesday, March 13, you all had a hearing entitled "Federal Financial Support for Energy Technologies: Assessing Costs and Benefits," and it was a hearing about all energy technologies at that time. Certainly, I am interested in finding any duplication, any waste, fraud and abuse throughout the Federal Government, certainly in the energy sector too.

So having said that, if there are Members who wish to submit additional opening statements, your statements will be added to the record at this point.

At this time, I would like to introduce our panel of witnesses. Our first witness is Dr. Frank Rusco, the Director of Natural Resources and the Environment at the Government Accountability Office. Our second witness is Dr. Robert Michaels, Professor of Economics at Mihaylo College of—how do you pronounce that, Dr. Michaels?

Dr. MICHAELS. I teach at California State University, Fullerton.

Chairman BROUN. Okay. Anyway, the College of Business and Economics at California State University, Fullerton. Okay, Dr. Mi-

chaels is also a Senior Fellow at the Institute for Energy Research and Adjunct Scholar at the Cato Institute. Our third witness is Mr. Robert Gramlich, the Interim Chief Executive Officer and Senior Vice President for Policy at the American Wind Energy Association, and our final witness is Ms. Audra Parker, President and Chief Executive Officer of the Alliance to Protect Nantucket Sound.

As our witnesses should know, spoken testimony is limited to five minutes each, after which the Members of the Committee will have five minutes each to ask questions. Your written testimony will be included in the record of the hearing. If you would, please, try to restrain yourself to only five minutes.

It is the practice of the Subcommittee on Oversight to receive testimony under oath. If you would now please now stand and raise your right hand. Do you solemnly swear or affirm to tell the whole truth and nothing but the truth, so help you God? Okay. You may be seated. Let the record reflect that all the witnesses participating have taken the oath.

I now recognize our first witness, Mr. Frank Rusco, for five minutes.

STATEMENT OF DR. FRANK RUSCO, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, GOVERNMENT ACCOUNTABILITY OFFICE

Dr. RUSCO. Thank you. Dr. Broun, Chairman Lummis, Ranking Members Maffei and Swalwell, and distinguished Members of the Subcommittees, thank you for the opportunity to discuss federal support for advanced energy technologies.

In past reports, GAO has reported on federal programs and activities that support energy from all sources including coal, nuclear, oil and gas, solar, wind, and hydro. Such support for energy is often part of a broader energy policy aimed at a number of goals including energy security, economic growth, and creating a cleaner and healthier environment.

The mechanisms for support include provisions in the Tax Code, so-called tax expenditures, as well as programs and activities of Federal agencies. Some energy-related policies are seemingly at cross-purposes with one another. For example, the Tax Code provides subsidies for energy from renewable and fossil fuels alike, which encourage domestic energy production and consumption. In contrast, other tax incentives reduce energy consumption by encouraging consumers to weatherize their homes and buy energy-efficient appliances and cars.

Further, because energy policy takes place over time through congressional action and Executive Branch implementation, changes to programs and the Tax Code tend to get layered, creating a system that is difficult to evaluate for effectiveness. For example, tax expenditures are administered by the Treasury Department and generally are non-discretionary on the part of the agency. As a result, once a tax expenditure is put in place, it is difficult to determine when and how intensively it will be used. Similarly, the creation of new offices, departments and subagencies designed to implement Congressional and Administration goals further complicates oversight and evaluation.

In our recent review of federal support for wind energy, nine agencies we surveyed identified 82 initiatives that were either entirely or partially focused on support for wind energy. This support ranged from basic science in R&D to commercialization and deployment of wind technologies through programs and activities including grants, loans, loan guarantees and tax expenditures. Most of the initiatives and the majority of funds expended in FY 2011 were directed at encouraging deployment of wind technologies. A great deal of the money went to support deployment of utility-scale wind energy projects. State and local incentives also frequently exist in the form of tax expenditures or, most notably, the Renewable Portfolio Standards that have been adopted by 39 States and that require or encourage utilities to procure renewable energy.

Among the 82 federal wind initiatives, we focused on 10 that provided a large fraction of total support and that we found had or could be combined to provide support to a single recipient. In many cases, the combination of federal tax expenditures alone can amount to about 40 to 50 percent of the total costs of a project. When combined with other federal, State and local initiatives, the total support could be significantly higher. Overall, it is unclear whether the full amount of federal support would be required for some projects to be built. Any incremental federal dollars spent above what would be required could have been withheld without affecting the outcome of the project and either used to support additional projects or not spent at all.

GAO recommended limited actions that DOE and USDA can take to better determine whether incremental federal funding of wind projects is needed, but these agencies cannot solve the problem on their own. First, the largest amount of support for wind energy comes from tax expenditures that are administered by Treasury, and Treasury does not have discretion in providing this support. In contrast, DOE and USDA have discretion and can apply a needs requirement. However, we found that program officials either did not perform a needs assessment or did not document the steps taken to assess needs or the determination that was made.

It is important to note that the extent to which all incremental federal support for wind energy is needed is unknown. Equally important is the fact that this problem is not unique to wind energy. Many utility-scale energy projects, regardless of fuel or technology, are eligible for some federal, State and local support. To better understand the extent to which the federal support for these energy projects is required for them to be built needs additional study. Such a study would look at individual projects that receive federal support and determine whether the total federal, State and local support was all needed to get the project built.

Thank you. This ends my brief statement. I will be happy to answer any questions you may have.

[The prepared statement of Mr. Rusco follows:]

United States Government Accountability Office

GAO

Testimony

Before the Subcommittees on Oversight and Energy, Committee on Science, Space, and Technology, House of Representatives

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FEDERAL SUPPORT FOR RENEWABLE AND ADVANCED ENERGY TECHNOLOGIES

Statement of Frank Rusco, Director
Natural Resources and Environment

GAO-13-514T

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United States Government Accountability Office
Washington, DC 20548

Chairmen Broun and Lummis, Ranking Members Maffei and Swalwell, and Members of the Subcommittees:

I am pleased to be here today to discuss federal support for renewable and advanced energy technologies. Americans' daily lives, as well as the economic productivity of the United States, depend on the availability of energy, the majority of which comes from fossil fuels. However, faced with concerns over the nation's reliance on imported oil, volatile energy costs, and greenhouse gas emissions, federal policymakers have increased support for deployment of renewable and advanced energy technologies to help meet our nation's energy needs.[1] Federal agencies including the Departments of Agriculture (USDA), Energy (DOE), and the Treasury, among others, provide support for these technologies through tax expenditures,[2] grants, loans, and loan guarantees. This support helps finance production of electricity from wind and solar farms, manufacturing of electric and hybrid vehicles, and construction of advanced nuclear power plants, among other things. Energy produced from nonfossil fuel sources has increased over the last several decades, growing to about 22 percent of total U.S. energy production in 2012, according to projections by DOE's Energy Information Administration, an independent statistical and analytical agency. At the same time, the increase in federal support for renewable and advanced energy technologies and the involvement of multiple agencies in supporting such technologies have raised questions about the effectiveness of this support. In the current fiscally constrained environment, it is especially important to allocate scarce government resources where they can be most effective.

[1]For purposes of this statement, renewable energy technologies include wind, solar, geothermal, hydroelectric, and biomass, among others. Advanced energy technologies generally include new or significantly improved technologies in energy efficiency, renewable energy, nuclear generation, nuclear front-end (i.e., projects to accelerate deployment of new uranium enrichment capacity and distribution), and advanced fossil energy, and more fuel-efficient passenger vehicles and their components.

[2]Tax expenditures are provisions of federal tax laws that (1) allow a special exclusion, exemption, or deduction from gross income or (2) provide a special credit, preferential tax rate, or deferral of tax liability. Tax expenditures result in revenue losses for the federal government, which forgoes some of the tax revenues that it would have otherwise collected. See GAO, *Government Performance and Accountability: Tax Expenditures Represent a Substantial Federal Commitment and Need to Be Reexamined*, GAO-05-690 (Washington, D.C.: Sept. 23, 2005).

We have issued a number of reports related to federal support of renewable and advanced energy technologies including, most recently, the following two reports:

(1) a broad review of federal initiatives that promote wind energy, including the extent to which initiatives may provide duplicative support and the extent to which agencies assess applicant need for the initiatives' support,[3] and

(2) a review of the status of DOE's efforts to use its loan and loan guarantee authorities and remaining credit subsidy appropriations to support projects under its Title XVII Innovative Technology Loan Guarantee Program (LGP), which guarantees loans for projects that, among other things, use new or significantly improved technologies, and Advanced Technology Vehicles Manufacturing (ATVM) loan program, which provides loans for projects to produce more fuel-efficient passenger vehicles and their components.[4]

My statement today presents highlights from these two reports. Additional information on the scope and methodology of our underlying work is available in each report. We conducted this work in accordance with generally accepted government auditing standards.

[3]GAO, *Wind Energy: Additional Actions Could Help Ensure Effective Use of Federal Financial Support*, GAO-13-136 (Washington, D.C.: Mar. 11, 2013).

[4]GAO, *Department of Energy: Status of Loan Programs*, GAO-13-331R (Washington, D.C.: Mar. 15, 2013).

Several Federal Wind-Related Initiatives Provided Some Duplicative Financial Support, and the Extent to Which Applicant Need for Support Was Assessed Is Unclear

The first report I will discuss today is our broad review of federal wind-related initiatives.[5] In summary, we identified 82 federal wind-related initiatives implemented by nine agencies in fiscal year 2011. Most of these initiatives supported deployment of wind facilities and, of these, we identified 7 that provided duplicative support—financial support from multiple initiatives to the same recipient for deployment of a single project.[6] These 7 initiatives included tax expenditures, grants, loans, and loan guarantee programs and were implemented by Treasury, DOE, or USDA. In many cases, wind project developers combined the support of more than one Treasury initiative and, in some cases, received additional support from smaller DOE or USDA grant or loan guarantee programs. For example, projects supported by Treasury's Payments for Specific Energy Property in Lieu of Tax Credits (Section 1603 program)[7]—which provides cash grants worth up to 30 percent of the total eligible costs of wind and certain other renewable energy facilities—also received additional federal tax subsidies,[8] as well as support from DOE- or USDA-administered loan guarantees. Of the 7 initiatives, those implemented by Treasury accounted for more than 95 percent of the federal financial support for wind in fiscal year 2011, based on available estimates from Treasury and the Joint Committee on Taxation. In addition to these 7 initiatives, we identified 3 other DOE or USDA initiatives that did not actually fund any wind projects in fiscal year 2011 but that could be combined with one or more other federal initiatives to provide duplicative support in the future based on the types of projects eligible for their support. Appendix I briefly describes these 10 initiatives that have provided or could provide duplicative support. In addition, our work found that wind projects may receive additional financial support from state tax

[5]We defined a wind-related initiative as a program or group of agency activities serving a similar purpose or function that promoted wind energy technologies through a specific emphasis or focus, even if wind energy was only one part of a broader effort. See GAO-13-136.

[6]All of these initiatives were specifically established by Congress, as opposed to agency-created initiatives. Four of the seven initiatives, including two tax expenditures, a grant program, and a loan guarantee program expired recently or are scheduled to expire for wind projects at the end of 2013.

[7]Section 1603 of the American Recovery and Reinvestment Act created this initiative.

[8]"Tax subsidies" refer to the benefits provided to taxpayers who take advantage of tax expenditures and thus pay lower taxes than they would otherwise have had to pay.

credits and grant and loan programs, as well as indirect support from state policies, most notably renewable portfolio standards.[9]

Although these initiatives have, in some cases, provided duplicative support, their support may address different needs of wind project developers or the communities their projects serve. For instance, according to DOE officials, in many cases, DOE's loan guarantees can address projects' needs for construction and long-term debt financing, and grants under the Section 1603 program and support from Treasury's tax expenditures are available only after the projects have been constructed and are operational. Therefore, the loan guarantees helped support projects that might not otherwise have reached the development stage required to receive tax credits or Section 1603 grants. In addition, in some cases, there are restrictions on the extent to which individual projects can receive support from multiple initiatives. For instance, provisions of the tax code prevent project developers from combining Treasury's Section 1603 program grants with Treasury's energy investment or energy production tax credits to support a specific wind project. In addition, USDA and DOE, in some cases, reduce the value of support provided through their grant, loan, and loan guarantee programs, or deny support altogether, for applicants who receive funding from other initiatives. Despite these restrictions, the initiatives we identified that provided duplicative support were often combined to provide cumulative financial support worth about half of project costs for wind projects, according to financial professionals active in the wind energy industry.

DOE and USDA have discretion—to the extent allowed by their statutory authority—over the projects they support, and Treasury supports projects based on the tax code's eligibility criteria and generally does not have discretion to allocate support to projects. DOE and USDA have used their discretion to allocate support based on projects' ability to meet initiative goals, such as reducing emissions or benefitting rural communities, as well as other criteria, such as financial and technical feasibility.

According to agency officials and program guidance, DOE and USDA also consider applicant need for their initiatives' support, in some cases.

[9]Renewable portfolio standards do not provide direct financial support to particular wind projects; however, by requiring or encouraging that a percentage of the electricity consumed in a state be generated from renewable sources, they are designed to create market demand for electricity from sources such as wind.

For example, a solicitation for DOE loan guarantee applications states that DOE will take an unfavorable view of projects that could be fully financed on a long-term basis by commercial banks or others without a federal loan guarantee. Similarly, USDA considers applicants' need for support from some of its initiatives, according to agency officials. However, neither DOE nor USDA officials provided documentation that indicated how information they collected or examined about applicant need influenced their decisions on whether to provide support, or how much support to provide, under their initiatives for specific projects. As a result, the extent to which applicant need influenced agency decisions is unclear.

Whether initiatives' incremental support was always needed for wind projects to be built is also unclear.[10] According to agency officials and financial professionals active in the wind energy industry, the incremental support provided by each initiative may be necessary, in many cases, for wind projects to be built. However, because agencies do not document assessments of projects' need for support, it is sometimes unclear if the entire amount of federal support provided was necessary. In particular, our review of documentation related to two wind projects suggests that agencies' wind initiatives have sometimes supported projects that may have been built without their incremental support. Federal support that exceeds what is needed to induce projects to be built could potentially be used to induce other projects to be built or could simply be withheld, thereby reducing federal expenditures.

We recommended in this report that, to better support federal agencies' efforts to effectively allocate resources among wind projects, the Secretaries of Energy and Agriculture should, to the extent possible within their statutory authority, formally assess and document whether the incremental financial support of their initiatives is needed for applicants' projects to be built, and take this information into account in determining whether, or how much, support to provide. In commenting on the report, DOE agreed with our recommendation, and USDA generally concurred with the information in the report related to its initiatives. DOE stated that it plans to formally document its evaluation of applicants' assertions regarding their inability to finance projects without a federal loan

[10]The term "incremental support" refers to the support an agency provides to an individual project under one of its wind energy initiatives that is in addition to support provided to that project by that agency or other agencies under different wind energy initiatives.

guarantee and will clarify how it considers the financial need of applicants when determining what amount of support to provide. In addition, USDA noted that, for certain initiatives, loan guarantee applicants are required to state their need for the guarantee on the loan application form. USDA further noted that, for one initiative, financial need is no longer taken into consideration when making awards because the requirement to do so was not included in the provisions of the Food, Conservation, and Energy Act of 2008 and, therefore, USDA removed the requirement from program regulations. GAO believes that, while USDA may not be legally required to formally assess applicants' need for project support for this initiative, making that assessment could help allocate scarce resources just as it would for other initiatives.

DOE Was Actively Considering $15.1 Billion in Applications for LGP, but Not Actively Considering Any Applications for the ATVM Loan Program

The second report I will discuss today is our review of the status of DOE's efforts to use its remaining loan and loan guarantee authorities and remaining credit subsidy appropriations to support projects under its LGP and ATVM loan program, as of January 29, 2013.[11] Before outlining our findings, I would like to provide some context regarding the two programs and their remaining authorities and appropriations. DOE's Loan Programs Office administers LGP and the ATVM loan program. LGP, under Title XVII of the Energy Policy Act of 2005, as amended (EPAct), encourages, among other things, early commercial use of new or significantly improved technologies in energy projects. Under LGP, DOE agrees to reimburse lenders—either the Federal Financing Bank or private lenders[12]—for the guaranteed amount of loans if the borrowers default. EPAct requires that the credit subsidy costs of LGP loan guarantees be paid for by either appropriations or the borrowers.[13] For certain categories of LGP loan guarantees, Congress has provided appropriations to cover credit subsidy costs. The ATVM loan program, as authorized under Section 136 of the Energy Independence and Security Act of 2007,

[11]See GAO-13-331R.

[12]The Federal Financing Bank is a government corporation, created by Congress under the general supervision of the Secretary of the Treasury. It has statutory authority to purchase any obligation issued, sold, or guaranteed by a federal agency to ensure that fully guaranteed obligations are financed efficiently.

[13]Credit subsidy costs represent the estimated net long-term cost of extending or guaranteeing credit, in present value terms, over the entire period the loans are outstanding (not including administrative costs).

provides loans to support development of advanced technology vehicles and associated components in the United States that would increase the fuel economy of U.S. passenger vehicles. The fiscal year 2009 continuing resolution provided the ATVM loan program with appropriations to cover credit subsidy costs of loans provided under the program. DOE has not closed on a loan or loan guarantee or conditionally committed to do so under either program since September 2011 and,[14] as of January 2013, the programs combined had about $51 billion in unused loan and loan guarantee authority and approximately $4.4 billion in unused credit subsidy appropriations. For the LGP, $34 billion in loan guarantee authority and $170 million in credit subsidy appropriations remained. For the ATVM loan program, $16.6 billion in loan authority and $4.2 billion in credit subsidy appropriations remained.

In summary, we found that, as of January 29, 2013, DOE was considering using $15.1 billion of the $34.8 billion in remaining loan guarantee authority for loan guarantees requested by 13 active LGP applications.[15] According to DOE officials, the agency planned to use all of the remaining $170 million in credit subsidy appropriations to support active applications for energy efficiency and renewable energy projects. DOE deemed an additional 27 LGP applications requesting a total of $73 billion to be inactive for various reasons—for example, DOE may have been waiting for additional information or project developments. Nonetheless, the loan guarantee authority and credit subsidy appropriations do not expire. Table 1 highlights the status of DOE's efforts to use the remaining loan or loan guarantee authorities and remaining credit subsidy appropriations for LGP and the ATVM loan program.

[14] A conditional commitment is a commitment by DOE to issue a loan guarantee if the applicant satisfies specific requirements. The Secretary of Energy has the discretion to cancel a conditional commitment at any time for any reason prior to the issuance of a loan guarantee.

[15] The remaining loan guarantee authority amount of $34.8 billion includes DOE's estimate of $848 million in additional loan guarantees that can be supported by the $170 million in credit subsidy appropriations.

Table 1: Remaining Authorities, Active Applications, and Remaining Credit Subsidy Appropriations for LGP and the ATVM Loan Program

Dollars in billions

Program/technology category	Remaining authority	Active applications		Remaining appropriations for credit subsidy costs
		Number	Amount requested	
LGP total	$34.8	13	$15.1	$0.2
Energy efficiency and renewable energy	$2.3[a]	8	$2.0	$0.2[b]
Nuclear generation	$18.5	3	$8.3	
Nuclear front-end	$2.0	1[c]	$2.0	
Fossil energy	$8.0	1	$2.8	
Mixed[d]	$4.0	0[c]	$0.0	
ATVM	$16.6	0	$0.0	$4.2
Total	**$51.4**	**13**	**$15.1**	**$4.4**

Source: GAO analysis of DOE data

[a]This amount represents the combined authority of $1.5 billion in loan guarantee authority and DOE's estimate of $848 million in additional loan guarantees that can be supported by the $170 million in credit subsidy appropriations.

[b]This number is rounded from the $170 million in credit subsidy appropriations for energy efficiency and renewable energy projects

[c]DOE notified Congress that, in order to accommodate more than one project, it expected to use $2 billion of the mixed authority for nuclear front-end projects. A final decision regarding which authority would be used for a specific transaction would only be made if and when the authority is obligated at closing.

[d]The mixed authority could be used for any of the loan guarantee categories.

In addition, we found that, as of January 29, 2013, DOE was not actively considering any applications for using the remaining $16.6 billion in loan authority or $4.2 billion in credit subsidy appropriations available under the ATVM loan program. DOE deemed the seven ATVM loan program applications it has, requesting a total of $1.48 billion, to be inactive for reasons including insufficient sponsor equity in the project or technology that is not ready to proceed. Most applicants and manufacturers we spoke with told us that, currently, the costs of participating in the program outweigh the benefits, citing challenges such as restrictive loan and reporting requirements and negative publicity surrounding DOE programs. Although the ATVM loan program is accepting applications on an ongoing basis, according to DOE officials, DOE is not likely to use the remaining ATVM loan program authority given the current eligibility requirements. As with the LGP, the loan authority and credit subsidy appropriations for ATVM do not expire.

Chairmen Broun and Lummis, Ranking Members Maffei and Swalwell, and Members of the Subcommittees, this concludes my prepared statement. I would be happy to respond to any questions you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff members have any questions, please contact me at (202) 512-3841 or ruscof@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Key contributors to this testimony include Dan Haas, Assistant Director; Cindy Gilbert; Ryan Gottschall; Miles Ingram; Cynthia Norris; MaryLynn Sergent; Karla Springer; and Barbara Timmerman.

Appendix I: Federal Wind-Related Initiatives That Have Provided or Could Provide Duplicative Support

Table 2 below briefly describes the 10 federal wind-related initiatives we identified that have provided or could provide duplicative support—financial support from multiple initiatives to the same recipient for deployment of a single project. For more detailed descriptions of these initiatives, including information on their expiration dates, see appendix II of our March 2013 report.[1]

Table 2: Ten Initiatives That Have Provided or Could Provide Duplicative Financial Support for Deployment of Wind Facilities

Agency	Initiative	Description
Department of Energy (DOE)	Title XVII Section 1703 Loan Guarantee Program (Section 1703 program)[a] Title XVII Section 1705 Loan Guarantee Program (Section 1705 program)	According to DOE, the Section 1703 program provides loan guarantees to support innovative clean energy technologies that are typically unable to obtain conventional private financing due to high technology risks. The law requires that the technologies avoid, reduce, or sequester air pollutants or emissions of greenhouse gases. The Section 1705 program was a temporary program providing loan guarantees for both innovative and commercial technology energy projects that employ wind and other renewable energy systems, electric power transmission systems, or leading-edge biofuels that meet certain criteria. All Section 1705 projects were required to begin construction no later than September 30, 2011. Following the expiration of the Section 1705 program, Congress appropriated $170 million to pay the credit subsidy costs for Section 1703 projects that use renewable energy or efficient end-use energy technologies. The law provides that this funding is also available to such projects that applied under the Section 1705 program prior to February 24, 2011.
Department of the Treasury (Treasury)	Energy Production Credit (PTC) Energy Investment Credit (ITC) Payments for Specific Energy Property in Lieu of Tax Credits (Section 1603 program)	The PTC provides an income tax credit based on the amount of energy produced at qualified facilities, including wind facilities. As an alternative to the PTC, the ITC provides an income tax credit of 30 percent of either the cost or fair market value of new equipment that produces electricity from wind and other renewable energy sources. The payments under the Section 1603 program, which can be taken in lieu of the PTC or ITC, provide cash grants worth 30 percent of a wind project's cost or fair market value.
	Accelerated Depreciation Recovery Periods for Specific Energy Property (accelerated depreciation)[b]	Allows wind energy technologies to be treated as 5-year property—that is, property with costs that are recovered through depreciation deductions from businesses' taxable income over 5 years. The Joint Committee on Taxation generally classifies as tax expenditures cost recovery allowances that are more favorable than those provided under the alternative depreciation system (Internal Revenue Code Section 168(g)), which provides for straight-line recovery over tax lives that are longer than those permitted under the accelerated system. Accelerated depreciation, in effect, reduces the cost of acquiring wind and other properties by allowing businesses to deduct larger amounts from their taxable income sooner than they would be able to do under straight-line depreciation. Reducing tax liability earlier provides a benefit to the taxpayer because of the time value of money—having a lower tax payment today is worth more to the taxpayer than having the lower payment in the future.

[1]GAO-13-136.

Agency	Initiative	Description
U.S. Department of Agriculture (USDA)	Business and Industry Guaranteed Loan Program[a]	Provides guaranteed loans to borrowers in rural areas for a range of eligible projects that improve the economic and environmental climate in rural communities. Eligible activities include the development and construction of renewable energy systems.
	Direct and Guaranteed Electric Loan Program	Provides loans and loan guarantees for a range of eligible projects that establish and improve electric service in rural areas, including renewable energy systems.
	High Energy Cost Grant Program[a]	Provides grants for energy generation, transmission, and distribution facilities serving rural communities with annual average home energy costs that exceed 275 percent of the national average. Eligible projects include on-grid and off-grid renewable energy systems.
	Rural Energy for America Program (REAP)	Provides funding for grants and guaranteed loans to farmers, ranchers, and small businesses in rural areas to assist with purchasing and installing renewable energy systems, such as wind projects.

Source: GAO analysis of agency-provided data.

Note: Each of these 10 initiatives has been or could be used together with 1 or more other initiatives in this table; however, recipients can receive support from only 1 of the following 3 initiatives for a specific project: the PTC, ITC, or Section 1603 program.

[a]The Section 1703 program has not funded any wind or other projects to date, though it has provided conditional commitments to guarantee over $10 billion in loans for nuclear energy projects. However, recipients of Section 1703 loan guarantees are not restricted from receiving support from tax initiatives, such as Treasury's tax credits, and may receive support from such initiatives in the future. In addition, neither the Business and Industry Guaranteed Loan Program nor the High Energy Cost Grant Program funded any wind projects in fiscal year 2011. However, both initiatives specify wind projects as eligible for funding, and USDA officials said that neither initiative restricts their recipients from receiving support under the DOE or Treasury initiatives listed here.

[b]Depreciation—a normal business expense under an income tax system—is an annual deduction from income that allows taxpayers to recover the cost or other basis of certain property used in a business or other income-producing activity over the useful life of the property. In addition to the existing 5-year accelerated depreciation allowed for wind and other properties, 2008 legislation and subsequent laws have temporarily granted a 50 percent first-year bonus depreciation for properties placed in service before January 1, 2014. This allows businesses to deduct 50 percent of the depreciable basis of a broad set of tangible properties, including wind and other renewable energy facilities, from their taxable income in the first year after they are acquired. Furthermore, the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 allowed businesses to deduct 100 percent of the depreciable basis of eligible wind and other facilities from their taxable income after September 8, 2010, and before January 1, 2012. The 50 percent bonus depreciation allowed under the 2008 act narrowed any tax differences between eligible assets, and the 100 percent bonus depreciation introduced in 2010 eliminated those differences altogether under the provision for allowing a full write-off of asset acquisition costs.

Related GAO Products

Wind Energy: Additional Actions Could Help Ensure Effective Use of Federal Financial Support. GAO-13-136. Washington, D.C.: March 11, 2013.

Department of Energy: Status of Loan Programs. GAO-13-331R. Washington, D.C.: March 15, 2013.

Solar Energy: Federal Initiatives Overlap but Take Measures to Avoid Duplication. GAO-12-843. Washington, D.C.: August 30, 2012.

Batteries and Energy Storage: Federal Initiatives Supported Similar Technologies and Goals but Had Key Differences. GAO-12-842. Washington, D.C.: August 30, 2012.

DOE Loan Guarantees: Further Actions Are Needed to Improve Tracking and Review of Applications. GAO-12-157. Washington, D.C.: March 12, 2012.

Renewable Energy: Federal Agencies Implement Hundreds of Initiatives. GAO-12-260. Washington, D.C.: February 27, 2012.

Department of Energy: Advanced Technology Vehicle Loan Program Implementation Is Under Way, but Enhanced Technical Oversight and Performance Measures Are Needed. GAO-11-145. Washington, D.C.: February 28, 2011.

Department of Energy: Further Actions Are Needed to Improve DOE's Ability to Evaluate and Implement the Loan Guarantee Program. GAO-10-627. Washington, D.C.: July 12, 2010.

Department of Energy: New Loan Guarantee Program Should Complete Activities Necessary for Effective and Accountable Program Management. GAO-08-750. Washington, D.C.: July 7, 2008.

Department of Energy: Observations on Actions to Implement the New Loan Guarantee Program for Innovative Technologies. GAO-07-798T. Washington, D.C.: April 24, 2007.

The Department of Energy: Key Steps Needed to Help Ensure the Success of the New Loan Guarantee Program for Innovative Technologies by Better Managing Its Financial Risk. GAO-07-339R. Washington, D.C.: February 28, 2007.

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BIO for Frank Rusco

Frank Rusco is a Director in GAO's Natural Resources and Environment team, leading work on a broad spectrum of energy and science issues, including federal oil and gas management; DOE's energy, science, and loan programs; intellectual property rights issues; NRC oversight; and government-wide science programs and activities. Mr. Rusco holds both a master's degree and doctorate in economics from the University of Washington in Seattle.

Chairman BROUN. Thank you, Dr. Rusco.
Dr. Michaels, you are recognized for five minutes.

STATEMENT OF DR. ROBERT MICHAELS, PROFESSOR OF ECONOMICS, MIHAYLO COLLEGE OF BUSINESS AND ECONOMICS, CALIFORNIA STATE UNIVERSITY, FULLERTON

Dr. MICHAELS. Chairman Broun, Chairman Lummis, Ranking Members Maffei and Swalwell, and Members of the Committee, thank you for the invitation to testify on subsidies for wind power.

Today's hearing is a particularly valuable opportunity that comes at a juncture of two things: the continuing environment of fiscal stress against which these subsidies are being evaluated, and the dawn of a new age of energy, clean, affordable, secure, domestically produced gas.

GAO's report identifies a number of fragmented, sometimes duplicative programs to assist wind energy, which itself has had over 100 years of existence, 20 years of federal support, and for all of these efforts, wind technology, wind energy remains far from cost competitive with conventional controllable power sources.

Unlike dispatchable sources, wind turbines cannot increase production when power demand is high, and their intermittency imposes costs on other power producers and customers. These costs include additional transmission, environmental impacts, and distortions of competitive energy markets.

My testimony will touch on both the operational problems of wind energy itself and how Federal Government support and State requirements such as renewable-energy quotas can aggravate these problems. I will make six basic points.

First, there is no amount of federal support that can make the wind blow. In most regions, it is strongest at night when power demand is lowest and weakest during afternoon peaks. Unpredictable winds contribute to operating reliability problems in economic grids, because the amount of power produced in an area must equal exactly the amount users wish to consume every second, and except for hydroelectric dams, there is no low-cost way to alleviate the problem.

Second, our abilities to forecast wind continue to be fairly weak but improving. System operators and planners cannot count on it as a dependable resource. The grid operator in Texas counts a megawatt of wind generation capacity is equal to only one-twelfth of a megawatt of dependable generation capacity for its system planning purposes. Wind's full costs include those of isolation of wind sources. Of Texas's planned $8.7 billion in new high-voltage lines, fully $5 billion worth will be reaching wind units that produce only 30 percent of the time. But even if we look only at generation costs, the Energy Information Administration forecasts that in 2018, an advanced gas-fired plant will have a 24 percent lower cost per megawatt-hour than an onshore wind unit, and notice that this is inclusive of the fuel cost.

Third, an environmental case for wind may look easy, because no fuel is burnt when it is produced. In reality, intermittency raises costs because it forces the use of costly fossil fuel backups, whose costs are also associated with pollutants and pollution controls.

Where gas-fired backup capacity is limited, as has happened in Colorado and Texas, there are few alternatives to additional operation of coal-fired generators.

Fourth, wind's value depends on the values of other energies. Federal programs like those GAO notes could impact future technologies. But even if they succeed in advancing wind technologies, the value they might create is already falling, for there is growing agreement that America's energy future is changing for the better as advances in natural gas proliferate, increasing its affordability and our security. Today the fears of hydrocarbon scarcity that once informed wind energy subsidies are rapidly receding memories. New supply technologies are being matched by advances in consumer responsiveness that better and accurately adjust to scarcity. In practice, what wind does is, it randomizes and distorts prices in power markets and increases the risks of incorrect and inefficient responses to changing conditions.

Fifth, wind power's actual and hidden costs matter for the many American families who have seen several years of hardship. These costs have to turn up sooner or later in their power bills or in their taxes, and they are costs with very few benefits. A tax means that consumers must pay to buy something that is of low value, and that must harm them. It does create benefits for those whose influence helped it become law. Our case in point now in question is the one-year extension of the Production Tax Credit, which the Joint Committee on Taxation has taxed as a—scored as a $12 billion increase in costs.

Sixth, and finally, wind cannot bring prosperity by bringing green jobs. They have little basis in logic, no visibility in practice. As I showed in earlier testimony, which I have attached today, the National Renewable Energy Laboratory's technique for estimating them is devoid of value, because its only mathematical possible result, regardless of the numbers that are input, is that wind will create jobs. The real question that matters is not green jobs; it is good jobs and for good jobs, America needs abundant energy. That is what makes us more productive, not expensive energy that we cannot rely on.

Thank you.

[The prepared statement of Mr. Michaels follows:]

BIOGRAPHY FOR ROBERT J. MICHAELS

Robert J. Michaels is Professor of Economics at California State University, Fullerton, and an independent consultant to the electricity and natural gas industries. He holds an A.B. from the University of Chicago and a Ph.D. from the University of California, Los Angeles, both in economics. His past positions include Staff Economist at the Institute for Defense Analyses and affiliate of various consulting firms. He is Senior Advisor to the Institute for Energy Research and Adjunct Scholar at the Cato Institute.

His research on regulation and competition in electricity and gas has appeared in peer-reviewed journals, law reviews, and industry publications. He is also co-editor of the peer-reviewed journal *Contemporary Economic Policy*. He has advised state regulatory agencies, electric utilities, independent power producers and marketers, consumers and producers of natural gas, public interest groups, and governments on aspects of regulation and competition. He has provided expert testimony at, among other venues, the Federal Energy Regulatory Commission, the California Public Utilities Commission, the Illinois Commerce Commission, the Vermont Public Service Board, and in three prior appearances before Committees of the U.S. House of Representatives.

U.S. House Committee on Science, Space and Technology
Subcommittee on Energy

Testimony of Robert J. Michaels, PhD

April 16, 2013

I. Introduction and Purpose of Testimony

A. Biographical

My name is Robert J. Michaels. I am Professor of Economics at California State University, Fullerton. I am also Senior Fellow at the Institute for Energy Research and Adjunct Scholar at the Cato Institute. I am also an independent consultant in electricity and natural gas. I hold an A.B. degree from the University of Chicago and a PhD from the University of California, Los Angeles, both in economics. My past employment as an economist includes Staff Economist at the Institute for Defense Analyses and affiliations with various consulting firms. The findings and opinions I am presenting today are entirely mine and not the official views of any of my professional or consulting affiliations. I attach a current biography to this testimony.

For over 20 years I have engaged in research on regulation and the emergence of markets in the electricity and gas industries. My findings have been published in peer-reviewed journals, law reviews, industry publications, and at professional and industry meetings. I am also author of *Transactions and Strategies: Economics for Management* (Cengage Learning, 2010), an applied text for MBA students and advanced undergraduates. My consulting clients have included state utility regulators, electric utilities, independent power producers and marketers, natural gas producers, large energy consumers, environmental organizations, public interest groups and governments. My services have at times entailed expert testimony, which I have presented at the Federal Energy Regulatory Commission, public utility commissions in California, Illinois, Mississippi and Vermont, the California Energy Commission, and in three previous appearances before House committees and one previous appearance before this one. Of particular relevance for today's testimony are appearances before

the Vermont Public Service Board and the Washington State Energy Facilities Siting Committee, both on behalf of environmental organizations critical of proposed large wind installations.[1] My testimonies discussed in some detail the economics of wind energy in the context of electric system operation, planning and power markets. They also examined the environmental consequences of increased reliance on wind and the results of studies purporting to show that the projects would create new employment opportunities. Today's testimony also examines several of these issues in a national context.

My testimony today is presented on behalf of the Institute for Energy Research (IER), a nonprofit organization that conducts research and analysis on the functions, operations and government regulation of global energy markets. IER articulates positions that respect property rights and promote efficient outcomes for energy consumers and producers. The organization was founded in 1989 as a public foundation under Section 501(c)3 of the Internal Revenue Code. Its funding comes from tax-deductible contributions of individuals, foundations and corporations.

B. Purpose of Testimony

This testimony responds to the Committee's request that followed the March release of Government Accountability Office (GAO) Report GAO-13-136 ("GAO Report," cited as "GAO") on federal financial support for wind-generated electricity.[2] That report enumerates and quantifies existing policy incentives, their costs, and possible rationales for their existence. These topics are important in light of the federal role in wind power's growth, which will have consequences for consumers' power bills, reliability of regional power grids, and the environment. GAO confines its report to wind technology, but some aspects of its study may also be relevant for other renewables, particularly those that can only operate intermittently such as solar generators. My testimony is also confined to federal support and deals only in passing with state financial support and

[1] *Deerfield Wind*, Vermont Public Service Board Docket No. 7250 (2008), Testimony on behalf of Save Vermont Ridgelines; and *Whistling Ridge Energy*, Washington Energy Facilities Site Evaluation Council Docket No. 2009-01 (2009), Testimony on behalf of Friends of the Columbia Gorge.

[2] GAO, *Wind Energy: Additional Actions Could Help Ensure Effective Use of Federal Financial Support*, GAO-13-136 (March 2013).

"Renewable Portfolio Standards" (RPS) that set quotas on renewable power that utilities must distribute.

Putting the GAO Report in perspective requires some background on wind power and its place in U.S. electricity. Investment in wind turbines has grown substantially since the late 1990s. Today they produce 3.0 percent of the nation's electric energy, a higher percentage than any other non-hydroelectric renewable source. (GAO, 1) There are many possible sources of that growth, including technologies that have become more efficient, a relative abundance of sites for wind installations, active competition among producers of turbines, environmental regulations that pose lower barriers to wind than other renewables, state-level RPS laws, and the federal incentives that are the subject of GAO's report.

This testimony begins with a discussion of electric system reliability and the effects of increasing use of intermittent power resources such as wind. I document the operational problems that have arisen because wind turbines are not dispatchable by system operators, which are aggravated by the fact that wind in many areas produces the most power when power is least valuable. I then compare the costs of wind and fossil-fuel generation and consider recent findings of shorter useful lifespans for wind generators than originally expected. Further growth of wind in many areas will also require investments in transmission whose only use is to move wind power from isolated facilities to consuming areas. Unlike most other transmission facilities, such lines neither reduce the cost of delivered power nor improve reliability. I then consider the environmental effects of wind's growth, which need not be better than those of alternative generators despite the fact that wind turbines do not burn fossil fuels. I go on to discuss how once-popular reasoning that favored wind as a way to "diversify" generation are becoming irrelevant with the growth of unconventional gas production and increases in gas and oil reserves. Finally, I consider and find reason to reject the frequent claims of wind advocates that federal support policies have brought such macroeconomic benefits as job creation and rising incomes.

With these facts as background I then consider the potential significance of GAO's data on federal support for wind power, an activity entailing at least $4 billion in direct grants to producers and tax expenditures (i.e. selective reductions), as well as loan guarantees and other programs. I then examine how strongly GAO's economic arguments support its stated belief that these programs will bring the economic benefits of improved wind generation technologies. I find that the report's data is likely to be

inconsistent with these arguments, and that neither the data nor the arguments provides a sound rationale for the programs under investigation. Specifically, less than one percent of these funds are spent on development activities that could potentially improve wind generation technologies, and the remaining 99 percent do no more than support deployment of established technologies. This testimony is in no way intended as a criticism of GAO's findings or methods. I am an economist with no expertise in federal auditing, and I understand that the scope of the report requested from GAO is in some ways narrower than subsumed in my comments. GAO's data are important and useful, but any conclusions that the Office might reach on the basis of a wider study need not necessarily match those I have reached in this testimony.

II. The Value of Wind Energy

A. Operational Costs

Any electric system should operate as economically and reliably as possible. Excepting some industrial users who will pay low prices for interruptible supplies, most households and businesses place a high value on reliability. The integration of wind energy into an electrical grid poses peculiar and costly problems because wind turbines only produce power when the wind blows. The physical properties of electricity greatly complicate the operation of an electrical system whose resources include substantial amounts of generation capacity that produces only intermittently. Maintaining area-wide reliability requires at all times that the amount of power being produced equal the amount users wish to consume. Mismatches of less than one second will produce region-wide blackouts, whether production exceeds consumption (which overloads lines) or the reverse (which destabilizes power flows). Storing large amounts of power is prohibitively costly (except behind hydroelectric dams) and researchers have yet to produce economical batteries or other storage devices on the necessary scale. A system operator is also constrained by the fact that electric grids have no "valves" that could be used to control power flows along individual lines. This complicates operations because it means that reliability also depends on which particular generators are operating and their individual output levels.

Nonstoreability and uncontrollable flows complicate the planning of a power system's operations over a day. Reserve generators must be operating or in readiness

to meet high loads that are expected in late afternoon and early evening. The grid operator must have access to resources that respond to both predictable and unpredictable events. These include operating generators ("spinning reserves") that can instantaneously make up for the unexpected loss of other generators or transmission lines, e.g. from lightning strikes. These inescapable engineering and operating problems point up the importance of generators that the operator can dispatch to cope with whatever specific difficulties might arise. A wind turbine whose output cannot be directly controlled complicates operations by adding new risks associated with wind's unpredictability. Our abilities to forecast wind over intervals that are relevant for reliability are still quite weak, and the general characteristics of wind further aggravate the problems. In most wind-rich regions the ability to generate wind power is greatest when that power is least valuable (late at night) and least during the late afternoon hours when it would be most valuable.

Wind power's inability to increase production at times of high power demand means that the most inefficient (and often most polluting) fossil-fuel generators must operate to maintain reliability and cannot be replaced by wind units. Even if wind turbines are widely dispersed around a region, the operator cannot expect with near-certainty that high wind power output in one subregion will make up for low wind power output elsewhere. California was early to put in place a substantial base of wind generation, dispersed over the differing climates of its north and south. Early in the summer of 2006 (and on later occasions as well), California faced record heat conditions that strained its ability to meet peak daily demands of 50,000 megawatts (MW). The resources included 2,323 megawatts (MW) of wind capacity. Wind's average on-peak contribution over the month of June was only 256 MW, barely 10 percent of potential production had capacity been fully utilized.[3] Data on installed wind capacity are of little or no value in predicting the actual power the system can get from it at peaks. The California Independent System Operator has on many occasions expressed concerns about its ability to maintain reliability in the face of a 33 percent RPS for 2020 that will require a tripling of wind and solar power production.[4] Likewise, the nonprofit Electricity

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[3] Robert J. Michaels, "Run of the Mill, or Maybe Not," New Power Executive, July 28, 2006, 2. The calculation used unpublished operating data from the California Independent System Operator.

[4] California Independent System Operator, *Reliable Power for a Renewable Future, 2012-2016 Strategic Plan.* http://www.caiso.com/Documents/2012-2016StrategicPlan.pdf

Reliability Council of Texas (ERCOT) is responsible for dispatching the state's generation, administering its energy markets, and monitoring the adequacy of resources to meet growing demand. For planning purposes ERCOT treats a megawatt of wind capacity as equivalent to only 8.7 percent of a megawatt of dispatchable fossil-fueled capacity.[5]

Exhibit 1 illustrates the intermittency problem from several perspectives.[6] The green line in its top panel shows average monthly output of wind power as a fraction of ERCOT system load between June 2011 and June 2012. (The red and blue lines are maximum and minimum percentages attained over the month.) The seeming steadiness of the green line vanishes when we examine the daily averages of hourly production shown in Exhibit 1(B). From day to day the average percentage of ERCOT load served by wind often varies from nearly zero to over 25 percent. Exhibit 1(C) shows another aspect of unpredictability. It breaks down wind power production as a percentage of load for individual hours during May and June of 2012. Randomness is so pervasive that even hour-to-hour responses to wind availability and changing loads are difficult to predict. Given the variability of wind shown in this exhibit, further additions of wind capacity are likely to increase rather than decrease the necessary adjustment in the outputs of non-wind generation, further worsening the system's operational problems.

B. Planning for Wind Power

Many windy areas are isolated and require transmission to consuming areas. A gas-fired generator can be located (near a pipeline) where it contributes the most value to the grid, but a wind generator must be located where the wind blows and the rest of the system must accommodate itself to that locational constraint. A radial line that links a consuming area to an isolated windy site has no other uses than transmitting that power and makes only a minimal contribution to reliability. A line to a baseloaded generator will be fully loaded for more of the time with more kilowatt-hours (kwh) to

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[5] Lawrence Risman and Joan Ward, "Winds of Change Freshen Resource Adequacy," *Public Utilities Fortnightly*, May 2007, 14 -18, 18; ERCOT, *Transmission Issues Associated with Renewable Energy in Texas, Informal White Paper for the Texas Legislature*, Mar. 28, 2005, 7. http://www.ercot.com/news/presentations/2006/RenewablesTransmissi.pdf

[6] Graphics are from ERCOT, System Planning Monthly Status Report, June 2012.

spread its capital cost over than a line to a wind source with a lower load factor.[7] The costs of wind-related transmission can be quite substantial. Over the next five years ERCOT plans on building $8.7 billion of new high-voltage transmission, approximately $5 billion going to facilities that will be solely used to transmit wind power from central and western Texas to consuming areas.[8]

Adding wind power need not require that reserves stand ready to compensate for every kwh of wind power produced, and there is some predictability that a system operator can use to economize on scheduling conventional generation. Any saving in operating costs from wind generation, however, comes with an increase in capital costs. As shown in Exhibit 2, The U.S. Energy Information Administration's forecasted levelized [i.e. annualized] capital costs of new generation for 2018 show that advanced gas-fired plants will have costs per megawatt-hour (MWh) approximately 24 percent lower than onshore wind units. The capital cost and capacity factor disadvantages of wind power are so substantial that the per-MWh total cost, including fuel, of a modern gas-fired unit is lower. Even if we could control the output of the wind unit its full cost per kwh produced would exceed that of a conventional plant. In reality the wind unit's value to the grid is considerably lower because it cannot be depended upon.[9] The difference depends on particulars of the situation, including the prices of fuels and the abilities of consumers to shift their power use over the day, as some will have with the expansion of the smart grid.[10]

As experience with wind generation has accumulated some researchers in the United Kingdom and Denmark have found that the life-cycle productivity of wind turbines has been overstated. A typical onshore wind turbine in the UK starts with a normal load factor (operating hours as a fraction of total hours) of around 25 percent. After five years

[7] If winds across a region are highly correlated, then several wind installations in a particular locale will bring the same operating problems as if they comprised a single installation.

[8] "Nearly $8.7 billion in transmission projects planned over next five years," ERCOT Press Release, Jan. 16, 2012. Total transmission investment in ERCOT between 1999 and 2012 was approximately $6.6 billion. http://www.ercot.com/news/press_releases/show/475

[9] Perhaps paradoxically, this reasoning gives solar power an availability advantage over wind. While it too is of little use on cloudy days, the sun is always potentially available during afternoon hours when demand is likely to peak. A full analysis of solar power is beyond the scope of this testimony.

[10] See e.g. Paul L. Joskow, "Comparing the Costs of Intermittent and Dispatchable Electricity Generation Technologies," MIT, (Revised version Feb. 2011) for some numerical comparisons.

the average factor is 15 percent, after ten years it is 10, and after 18 years it is 2 percent. Most cost-benefit calculations of wind units have assumed economic lifespans of 20 to 25 years and slower declines in productivity. If these figures continue to hold, a fifteen-year economic lifespan would substantially raise wind's capital cost above its already high figure.[11] Offshore data are more limited and its technologies are newer, but available evidence suggests that rates of productivity decline for offshore wind turbines in Denmark exceed those of onshore installations.[12]

III. Wind Power and the Environment

Reliable electricity and a clean environment are both desirable, and both are costly to obtain. Wind power's operating costs are indeed negligible and wind turbines do not burn fossil fuel, but these facts alone cannot suffice to make a case for it. Economic analysis requires consideration of both the costs and benefits of wind power, and comparisons between them and relevant alternatives. Those costs include both the direct use of materials and labor to build and install turbines, and support costs that include additional fuel for reserves, new transmission lines, etc. As noted above, the per-MWh capital costs of wind exceed all-in (capital plus fuel) costs of modern gas-fired plants, even if we do not include the support costs necessitated by wind's intermittency. The capital costs of wind are incurred in manufacturing processes that, like those for fossil-fuel generators, can also release emissions that are costly to eliminate or mitigate.

Any environmental case for policies that favor wind power requires a showing that the value of additional power from wind net of all its costs exceeds the corresponding figure for dispatchable powerplants. Intermittency raises the cost of wind power by necessitating costly support to maintain reliability, a requirement that is lower for dispatchable powerplants. Fossil-fuel plants, on the other hand, must bear the added cost of pollution controls that are necessary to reduce health risks from their operation. As a practical matter, these costs (at least for gas-fired plants) remain quite

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[11] Gordon Hughes, *The Impact of Wind Power on Household Energy Bills*, Global Warming Policy Foundation, 2012.

[12] Gordon Hughes, *The Performance of Wind Farms in the United Kingdom and Denmark*, Renewable Energy Foundation, 2012.

manageable.[13] The lowest cost ("economically efficient") way to eliminate harm from pollution is generally to attack the pollutant directly, as happens under regulations that mandate the installation of controls on powerplants or that introduce a cap-and-trade system. Indirect methods, such as requiring that power be produced by a certain (wind) technology to the exclusion of others will almost surely achieve their benefits at a higher cost than is necessary.[14]

In most of the U.S. wind power displaces power generated from gas. Coal-burning generators remain largely base-loaded, while gas-fired units adjust the system to both predictable and unpredictable changes in load. Gas produces relatively small amounts of EPA "Criteria Pollutants" (including particulates and oxides of nitrogen and sulfur) that substantially raise the costs of mitigating coal-based pollution. It also emits less carbon per kwh generated and does not have the long-term disposal issues of nuclear energy. If wind generation proliferates and gas-fired capacity is limited a system operator must use coal-fired units to balance the grid, as happens at times in Colorado, Texas and elsewhere. Gas marketer Bentek Energy recently found that using coal-fired generators instead of gas for this purpose has actually led to increases in emissions of Criteria Pollutants (and no reduction in greenhouse gases), even after netting out the emissions reductions due to wind. Bentek's controversial conclusion was that total load in these areas could have been served with lower total emissions of these pollutants had the wind units never existed.[15]

IV. Wind Power in Changing Energy Markets

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[13] Whether they will remain manageable in the event carbon control becomes national policy is a question beyond the scope of this testimony.

[14] For expositions of this reasoning, see Robert J. Michaels, "National Renewable Portfolio Standard: Smart Policy or Misguided Gesture?" *Energy Law Journal* 29 (No. 1, 2008), 79-119; and Robert J. Michaels, "A National Renewable Portfolio Standard: Politically Correct, Economically Suspect," *Electricity Journal* 21 (April, 2008), 9-28.

[15] Bentek Energy, *How Less Became More: Wind, Power and Unintended Consequences in the Colorado Energy Market* (April 10, 2010). http://docs.wind-watch.org/BENTEK-How-Less-Became-More.pdf The American Wind Energy Association's attempt to refute the Bentek findings is at http://www.awea.org/newsroom/realstories/upload/110720-The-Facts-about-Wind-Energy-and-Emissions.pdf.

At best, wind power is questionably economic, but that value depends on market conditions beyond those for electricity. Federal programs like those discussed in the GAO Report could (but need not necessarily) affect the energy sector's future development. Even if the programs succeed in advancing wind technology, the value of those advances is already falling. Policies favoring renewable electricity have long been justified with claims that they would ease the nation's adjustment to widely expected changes in energy markets and environmental policies. In particular, fostering wind development would help the economy adjust to ever-dwindling hydrocarbon supplies and their international complications. It could also aid in implementing climate policies that reduce carbon use.

Today, there is growing agreement that America's energy future has definitively changed for the better with the development of technologies for extracting natural gas and liquids from hitherto-inaccessible shales and tight sands. These technologies are cost-competitive with existing ones and environmentally acceptable. Renewables policies were based in large part on an expectation that the end of inexpensive gas and oil was near. Instead of exhaustion, the nation now looks forward confidently to centuries of clean, inexpensive and secure energy. Instead of a "bridge fuel" to a renewable future, shale-based hydrocarbons are now the future. When the end of natural gas appeared in sight, renewable power subsidies could have had a role to play in facilitating adjustment to it. It is now time to write them out of the drama.

Resource abundance is advancing and at the same time technological changes are expanding the roles of energy efficiency and the abilities of consumers to adjust to changes in power prices. As supplies become more abundant so do our abilities to respond to market changes. Even small users are gaining the ability to respond in real time to changes in energy prices that they could not even observe prior to smart grid and telecom technologies. In all of this, the presence of costly and intermittent wind power will convey even less value to users with new abilities to control and plan their consumption. Wind adds a costly and random element to energy prices that can only make it difficult for many customers to make rational decisions about how to use power.

V. Wind Power and the Economy

Wind power's costs must eventually turn up in consumers' power bills, of if not there in future taxes. A tax that consumers must pay to buy something of low value inflicts harm on their budgets and produces benefits for those interests that succeeded in getting it enacted. Additional federal support for otherwise uneconomic technologies cannot possibly produce "green jobs" and prosperity. How could it possibly happen if that support raises energy prices for everyone? Quite simply, taxing Person A and spending the money to employ a new green job holder must at the same time destroy a job held by Person B who would have otherwise received the taxed-away income.[16] It does not matter whether the tax takes the form of a higher power price or a collection by the IRS.

In my research I have analyzed (to my knowledge) every existing argument that attempts to link support for renewables to green jobs. In every case I have found the arguments sadly lacking, both in logic and in any measured effects.[17] I have also submitted testimonies to state regulators (on behalf of environmental groups) showing that the job creation arguments of wind advocates fail, as matters of logic, as quantitative predictions, and in actual results. DOE's National Renewable Energy Laboratory (NREL) utilizes a computer model ("JEDI") which uses input-output analysis to estimate additional employment that will result from a given renewable project. The model was discussed during my 2010 testimony before this Subcommittee, when Dr. David Mooney of NREL responded to a member's question by discussing JEDI's favorable predictions for wind investments. I responded that NREL's model is constructed so that any renewable project *must* create jobs, i.e. it is mathematically impossible for a user of that model to ever find adverse effects of wind power on employment. I also noted that NREL had as of that time had yet to compare any predicted employment effects with what actually happened. At the Committee's request, I submitted supplemental testimony on this subject, which I have attached to this testimony. The Committee also invited Dr. Mooney to submit testimony in support of his assertions about job creation. I have no record that such testimony was ever submitted.

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[16] I acknowledge that there are many technical complications to this reasoning in economic theory, but the sentence in the text suffices to make my point.

[17] See Robert Michaels and Robert Murphy, *Green Jobs: Fact or Fiction*, Institute for Energy Research, Washington D.C., Jan. 2009; also references in note 14 above.

VI. The GAO Report

A. Introduction

This background on wind power allows us to examine the GAO Report in greater depth. The Report describes and measures the various mechanisms for federal support that GAO compiled. This support includes [1] direct grants to developers including the Treasury's recently expired Section 1603 program; [2] "tax expenditures" including the Production Tax Credit (PTC) and accelerated depreciation; [3] loan guarantees, including Treasury's Section 1705 programs; and [4] research-related grants and minor programs. The report enumerates 82 distinct activities, describes them and discusses their interactions and redundancies where applicable. GAO also noted the lack of a well-defined process to assess the funding needs of grant recipients and loan guarantees, as well as the need for documentation of criteria used to determine the winners.

These initiatives "supported a range of wind issues that included siting, expediting permits, offshore wind installations, and, most commonly, utility scale and distributed land-based wind." (GAO, 10) The superficially diverse activities are in reality quite concentrated. A single tax expenditure (the Production Tax Credit) and a grant initiative, both at Treasury, accounted for nearly all federal financial support." (GAO, 10) Total 2011 actual and estimated obligations were $2.90 billion, of which the Treasury's Section 1603 grant program (no longer in existence) accounted for $2.7 billion (94 percent). (GAO, 13-14) In addition, tax expenditures accounted for "at least $1.1 billion for activities specifically related to wind," (GAO, 10) almost all from the PTC of 2.2 cents per kwh generated by qualifying installations.[18] On April 3, 2013, indexation raised the credit to 2.3 cents per kwh, a 5 percent increase.

GAO acknowledges that its 2011 calculation of $4 billion in outlays and tax expenditures is incomplete because other important programs provide only totals over several sources rather than allocations specific to wind power. For example, wind is responsible for an unknown percentage of the $350 million in tax expenditures that result from accelerated depreciation. Disregarding the PTC, total tax expenditures from

[18] There are smaller but similar credits for other renewables including landfill gas and small hydroelectric facilities. Most solar technologies are eligible for their own investment tax credits. (GAO, 18)

programs identified by GAO as potentially affecting wind power are $1.75 billion, but non-wind energy producers are also eligible for some of these benefits.[19]

B. Outlays and Tax Expenditures Under The Programs

Since the early twentieth century economists have theorized about the possible value of governmental research funding and attempted to measure its actual consequences. We are all familiar with claims that governmental support was essential for the rise of digital technology and the Internet, but numerical evidence that might verify these conclusions is largely missing. For every claim about its importance (or unimportance) counter-examples seem easy to find. Was governmental support necessary to bring about the Internet? Was the development of hydraulic fracturing achieved with little or no governmental research funding?

GAO makes no claim that absent these policies wind technology development would be at a standstill. It made no attempt to value of the programs' accomplishments with the amounts spent.[20] The Report, however, contains some assertions about value, along with references to economic theory that could support a case for the efficacy of the programs. GAO listed the activities that could support innovation as including "basic research, applied research, demonstration, commercialization and deployment," (GAO, 7) before restating established economic logic:

> ... [U]nless the government intervenes, the amount of research and development (R&D) that the private sector undertakes is likely to be inefficiently low from society's perspective because firms cannot easily capture the "spillover benefits" that result from it. That is particularly true at the early stages of developing a technology. Such research can create fundamental knowledge that can lead to numerous benefits for society as a whole but not necessarily for the firms that funded that research; thus government funding can be beneficial. (GAO, 6 – 7)

This theory could be a foundation for governmental support, but the case for it depends critically on the types of programs being funded and the incentives they provide

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[19] GAO, 80. This total includes $350 million from accelerated depreciation, which GAO says is the upper limit on that category.

[20] Because ideas take time to become marketable technologies, there is also the possibility that the policies discussed in the document will be long-term successes. There is no evidence either way on this.

for recipients. In particular, both the PTC and formerly available Section 1603 grants appear quite unsuitable as rewards for innovation. Instead of being directed to research the PTC is given to existing wind installations (roughly) in proportion to their output rather than being based on superior efficiency (e.g. as in incentive-based utility regulation). Likewise, Section 1603 funds were an alternative to the PTC whose payments did not bear any relation to the actual efficiency of a plant. Some programs discussed by GAO probably do incentivize the development of new technologies. An actual count of inventions and improvements generated by this funding apparently does not exist, and there are also no available calculations of the overall effect of the programs on the costs of producing wind power. The fact that newer turbines are more efficient than older ones cannot possibly suffice for a conclusion that the funds in question have spurred technological progress. It is important to note that while R&D-specific funding is more likely to advance technology than deployment subsidies there has been no demonstration of the former's cost-effectiveness. Nothing in this testimony should be construed as support for such funding.

Another look at the data casts additional doubt on that case. The Report's calculations show that in 2011 the PTC and Section 1603 accounted for all but a few percent of total federal support for wind. Disregarding the PTC, total Treasury obligations (which it has little discretion about paying) were $2.7 billion of a $2.9 billion federal total. (GAO, 10) Further, "less than half of the [remaining] initiatives [i.e. the $0.2 billion difference] supported other types of recipients such as public and private researchers or individuals." (GAO, 10) Thus approximately 99 percent of the payments discussed in the report went to support deployment. Without additional evidence GAO cannot justifiably claim that deployment itself is a "technology advancement activity" (GAO, 18) In summary, GAO argues on theoretical grounds that the programs serve to advance technology, but almost all of the funds in these programs go to activities that are very unlikely to generate such advances.[21]

Likewise, GAO presents well-known data showing that in years when the PTC was in effect investment in wind was high, and the opposite for those years when it was

[21] GAO cites as possible support the 2011 *Wind Technologies Market Report* issued by the Department of Energy's Energy Efficiency and Renewable Energy Division, which it says shows that "recent improvements in the cost and performance of wind energy technologies contributed to the growth of wind energy in 2011." (GAO, 9) I can find no statements in that report that link the programs under discussion with improvements in cost and performance.

not. (GAO, 8) This too cannot possibly demonstrate the value of the programs since it is simply a statement that investors will increase their commitments when assured of higher returns by the PTC. More importantly, it is hard to classify the PTC as a "federal investment," (GAO,8) since the credit goes to any qualified wind facility that chooses it over a Section 1603 payment.

I conclude that GAO has produced no evidence that links improvements in wind technology to the outlays and tax expenditures compiled in its Report.

VII. Conclusions

1. GAO has produced a useful summary and breakdown of federal activities to support wind energy development. Economic theory suggests that to support technological progress in the development of wind power technologies funds should be allocated directly to those who are attempting to invent better technologies, rather than to support production by existing wind operators. In reality, approximately 99 percent of total federal support takes the form of subsidies to deployment rather than investment in basic or applied research. There is no evidence that these subsidies have played any important role in advancing the technology.

2. The question of federal support for wind generators should be reconsidered in light of what is known about the limited contributions that wind power actually makes, and the high cost of obtaining them in light of wind's intermittency.

3. Wind power's effects on the environment are not necessarily benign, even if the production of wind power burns no fuels directly. Wind requires additional backups in the form of generators that burn fossil fuel, the capital costs of wind generators are higher than those of comparable gas-fired units, and supplementary investments in transmission are frequently necessary to connect wind generators.

4. Wind's value depends on the costs and benefits of alternative sources of power. The revolution in hydrocarbon technologies that began quite recently eliminates

any rationale for continuing to support wind power on grounds that natural gas and oil are being rapidly exhausted.

5. Wind cannot be supported on grounds that it produces "green jobs." There is no evidence that it does so and no theoretical support in economics for claims regarding green jobs. Existing methods of estimating green jobs are in fact one-sided contrivances whose only possible prediction is that building renewables must increase employment. The conclusion is not based on observations, but is built into the mathematics that underlies the prediction.

Exhibit 1(A)

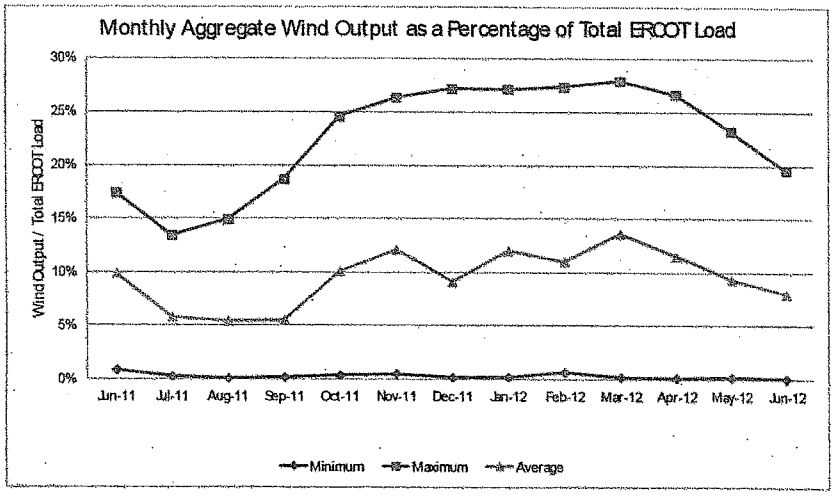


Exhibit I (B)

One-hour average of total wind power output as a percentage of ERCOT load.

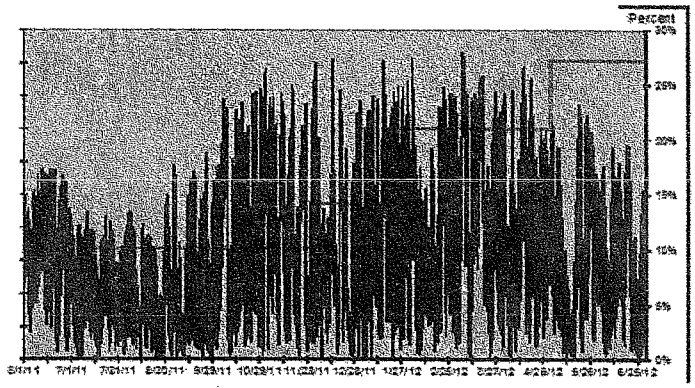
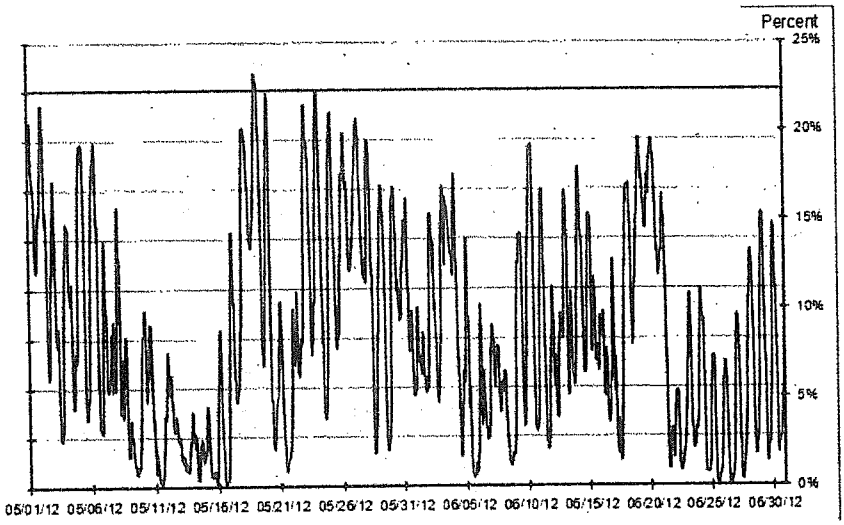


Exhibit 1 (C)

Hourly ERCOT Wind Generation as Percent of Load (Detail)



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Industrial organization; antitrust analysis; regulation, deregulation, and competition in the electricity and gas industries

EMPLOYMENT HISTORY

- X Professor of Economics, Mihaylo College of Business and Economics, California State University, Fullerton, 1978-present
- X Daniel P. Hann Distinguished Scholar in Law and Economics, California State University, Fullerton, 2008-present
- X Affiliate, Tabors, Caramanis & Associates, Cambridge, MA, 2001-2004
- X Special Consultant, Econ One Research & Consulting, Inc., Los Angeles, 1999-present
- X Senior Advisor, Hagler Bailly Consulting, Arlington, VA, 1996-1998
- X Consultant in Economics and Finance, JurEcon, Inc., Los Angeles, CA, 1992-1996
- X Lecturer, Graduate School of Business Administration, University of Southern California, Irvine Campus, 1993
- X Lecturer in Economics, Claremont Graduate School, Claremont, CA, 1992Associate Professor of Economics, California State University, Fullerton, 1975-1978
- X Research Staff Member, Program Analysis Division, Institute for Defense Analyses, Arlington, VA, 1973-1975

EDUCATION

University of California, Los Angeles, PhD, Economics, 1972
University of Chicago, AB, Economics, 1965

PROFESSIONAL EXPERIENCE

Electric Industry Experience

2011: Retained by Institute for Energy Research to produce monograph on "rebounds" from increased energy efficiency and their consequences for federal policy.

2010-11: Retained by attorneys for Friends of the Columbia Gorge to testify before Washington State Energy Facilities Site Evaluation Council (Whistling Ridge Energy, Docket No. 2009-01) regarding renewable power markets in the Pacific Northwest and California, and the value of additional wind generation capacity. Prepared written direct and rebuttal testimonies.

2010: Retained by Institute for Energy Research to produce monograph on design and implementation of California Carbon Control programs

2010: Retained by Texas Public Policy Foundation to produce study of mandatory energy efficiency programs under the Public Utility Commission of Texas (Project No. 37623). Co-authored summary of study filed at the Commission.

2009: Retained by Mississippi Public Service Commission Staff (Docket 09-UA-19) to produce written and oral testimony on need for and alternatives to lignite-fired powerplant with carbon sequestration proposed by Mississippi Power Company. Co-authored written testimony and testified at hearings.

2008: Retained by attorneys for landowners' association to testify before Vermont Public Service Board (Docket No. 7250) on consistency of proposed wind energy project with utility planning procedures. Prepared written testimony and testified at hearing.

2006-7: Retained by Texas Public Policy Foundation to prepare report on effectiveness of retail electricity competition in Texas and evaluate proposed legislation.

2006: Retained by agents for merging parties to perform market analyses in proposed merger of Constellation Energy and FPL Group.

2004-6: Retained by Tokyo Electric Power Company and Japan Electric Power Information Center, Inc. as consultant on regulation and industry restructuring in Japan.

2002-4: Retained by Southern California Edison as expert on power supplies and fuel price forecasting in connection with potential municipal utility formations.

2002: Retained by counsel in for surety bond issuer as expert on trading policies and market monitoring in connection with bankruptcy of the California Power Exchange.

2001: Retained by Duke Energy to analyze California electricity market data in connection with Federal Energy Regulatory Commission [FERC] proceedings and related litigation.

2001: Retained by Japan External Trade Relations Organization. Produced study document on lessons of U.S. state electricity restructurings for Japan.

1999: Retained by Alliance for Retail Markets, consisting of five of the largest retail power marketers operating in California, to testify on post-transition ratemaking and the effects of proposed rules governing default suppliers on future competition. Testimony included evaluation of utilities potential market power in the California Power Exchange [PX], the effects of proposals to modify PX buy/sell rules in effect during the transition, and the effects of post-transition performance-based ratemaking for utilities as default suppliers. Filed testimony in California Public Utilities Commission Dockets A.99-01-019 and 99-02-029 and appeared for cross-examination at hearing.

1999: Retained by independent power producer and marketer Dynegy, Inc. to analyze reports by Market Monitoring Committee of California Power Exchange and Market Surveillance Committee of California Independent System Operator on competition in the states electricity markets and restructuring of Reliability Must-Run [RMR] generator contracts. Filed affidavits in Federal Energy Regulatory Commission Docket Nos. ER98-2843-006 *et al* [two affidavits] and ER98-2843-007 *et al* commenting on these reports, and on consequences of certain RMR-related proposals for future competition.

1997: Retained by attorneys for group of consumers and potential competitors to analyze competitive effects of Long Island Power Authority's acquisition of assets of Long Island Lighting Company, Federal Energy Regulatory Commission (FERC) Docket No. EC97-45-000. Filed affidavit defining markets and identifying new barriers to competition that the acquisition will put in place. Docket concluded without further testimony.

1997: Retained by staff of Illinois Commerce Commission to analyze effects of merger between Union Electric Company and Central Illinois Public Service company on future retail competition in Illinois. Performed innovative market analysis of the merger's effect on the prospects for retail competition in Illinois, in conjunction with Mr. Steven Mitnick using Hagler Bailly's RAMP UP™ data on power generation in the area. Parties to the docket reached settlement prior to formal hearing.

1997: Presentation at annual retreat of Board of Directors of major electric-gas utility, The Convergence of Energy Markets.

1994-1996: Consultant on electricity competition in California, testified in California Public Utilities Commission restructuring proceeding (for Coalition for Choice in Electricity) and California Energy Commission Biennial Resource Plan Docket (for Enron Corporation). [See below for docket details.]

1979-1990: Consultant to defendant in federal antitrust cases Cities of Anaheim et al v. Southern California Edison and City of Vernon v. Southern California Edison. Performed work in market definition, analysis of competition, and economics of access to essential transmission facilities. Also performed work in competitive analysis in FERC price squeeze dockets, including competition between investor-owned utilities and municipal systems for location of industrial loads.

1988-1989: Appointed Consultant to New Zealand Treasury to analyze competitive implications of the creation of State-Owned Enterprise selling and wheeling power to local distributors under that country's antitrust law. Research included travel to New Zealand and production of a report.

Gas and Oil Industry Experience

2008-9: Retained by American Petroleum Institute to perform study on changes in structure of oil industry that have produced changes in allocation of funds for exploration and development by major producers. A research report is currently in process.

2001: Retained by Department of Law, City of Chicago to testify before Illinois Commerce Commission in Peoples Gas, Light and Coke Company annual Reconciliation docket. Testified on prudence of company's gas purchase and hedging practices. Filed written testimony, rebuttal testimony, and appeared for cross-examination.

1987: Consultant to Natural Gas Supply Association (producer trade group), co-author of report on feasibility of unrestricted capacity repackaging and retrading for interstate pipelines, used by client as input to testimonies filed at FERC.

Other Relevant Experience

1996: Retained by Attorney General of California to analyze the effect of merger between Union Pacific and Southern Pacific Railroads on competition in California. Prepared reports used as input to Attorney General's intervention at the U.S. Surface Transportation Board.

TESTIMONY

Public Utility Commission of Texas, Project No. 40000, filed testimony (co-author Andrew N. Kleit) in proceeding on generation adequacy, presented comments on proposed markets for capacity and demand response within the Electricity Reliability Council of Texas (ERCOT), Oct. 24, 2013.

U.S. House of Representatives, Committee on Natural Resources Subcommittee on Water and Power. Submitted invited testimony on renewable power resources in connection with legislation to limit financing authority of Western Area Power Administration, Sept. 22, 2011.

U.S. House of Representatives, Committee on Science and Technology, presented and submitted invited testimony and supplemental testimony on Real-Time Forecasting for Renewable Energy Development and the Value of Improved Short-Term Wind Forecasts, June 16, 2010.

Mississippi Public Service Commission, Docket No. 09-UA-14, on need for new generation facility proposed by Mississippi Power Company, Testimony on behalf of Mississippi Public Service Commission Staff, Oct. 5 – 7, 2009.

U.S. House of Representatives, Subcommittee on Energy and Environment, Invited Testimony on Allocation Standards for Carbon Emissions Allowances, April 23, 2009.

Federal Energy Regulatory Commission, Docket No. AD07-8-000, Rulemaking on Market Monitoring Policies, Invited Testimony before Commissioners, April 5, 2008.

California State Board of Equalization, Hearings on Proposed tax Increase for Flavored Malt Beverages. Presented written and oral testimony on behalf of Distilled Spirits Council of the United States and Diageo PLC, evaluating intervenor studies of taxation and underage drinking, Sacramento, Oct. 13, 2007.

Texas House of Representatives, Committee on Regulated Industries, Testimony on behalf of Texas Public Policy Foundation re electricity markets, Austin, Mar. 27, 2007.

Illinois Commerce Commission v. Peoples Gas, Light, and Coke Company, Docket 00-720, Reconciliation of Revenues Collected under Gas Adjustment Charges with Actual Costs Prudently Incurred, testified on behalf of City of Chicago, Aug. 28, 2001.

California Public Utilities Commission, Dockets A.99-01-019 and A.99-02-029, investigation and rulemaking on post-transition ratemaking, testified for the Alliance for Retail Markets, San Francisco, Sept. 1, 1999.

Federal Energy Regulatory Commission, Dockets No. ER98-2871-008 et al, testimony on behalf of Dynegy Corporation California generation LLCs evaluating reports on competition filed at FERC by the California Power Exchange and California Independent System Operator Market Monitoring units. Testified on their treatment of generation withholding, indicators of competitive bidding, and possible redesign of Reliability Must-Run (RMR) contracts with generators, various dates 1999.

Federal Energy Regulatory Commission, Docket No. 97-45-000, testimony on behalf of large consumers and potential competitors adversely affected by the State of New York's (Long Island Power Authority) takeover of Long Island Lighting Co, June 1997.

Illinois Commerce Commission, Docket No. 95-0551, testimony on behalf of the Commission regarding the potential effects on future retail competition of Union Electric Company's (later Ameren Energy) merger with Central Illinois Public Service Company, April 27, 1997.

U.S. House of Representatives, Subcommittee on Energy and Power, invited testimony on "Financial Aspects of Electrical Restructuring," Washington, D.C., Mar. 28, 1996.

California Public Utilities Commission, Docket R-94-04-031, Rulemaking on California Retail Electricity Competition, expert testimonies for Coalition for Choice in Electricity, June 15, 1994; July 1, 1994; Sept. 16, 1994; and one later date.

California Energy Commission, Docket 93-ER-4, Preparation of the 1994 Electricity Report, expert testimony for Enron Corporation, Oct. 25, 1994, and Dec. 8, 1994; 1996 Electricity Report, expert testimony for Institute for Energy Research, Feb. 16, 1996.

Superior Court of California (Various cases, none related to electric and gas industries).

SELECTED PUBLICATIONS

CoAuthor (with Andrew N. Kleit, Pennsylvania State University), "If You Buy the Power, Why Pay for the Powerplant? Reforming Texas Electricity Markets." Forthcoming, *Regulation* 36:2 (Summer 2013).

Co-Author (with Andrew N. Kleit, Pennsylvania State University), *Does Competitive Electricity Require Capacity Markets? The Texas Experience.* Texas Public Policy Foundation, Feb. 2013.

Energy Efficiency and Climate Policy: the Rebound Dilemma. Institute for Energy Research, Washington, July 2012. This is also source of Wall Street Journal Op-Ed "The Hidden Flaw of Energy Efficiency," Aug. 20, 2012.

Co-Author (with William Peacock, Texas Public Policy Foundation), *Energy Efficiency: Is Texas Getting Its Money's Worth ?* Texas Public Policy Foundation and Institute for Energy Research, June 2010.

Transactions and Strategies: Economics for Management. Mason OH: Cengage Learning, 2010.

The Other Half of Waxman-Markey: An Examination of the Non-Cap-and-Trade Provisions, Monograph, Institute for Energy Research, Washington, D.C., Oct. 2009.

Co-author (with Robert Murphy, Institute for Energy Research), *Green Jobs: Fact or Fiction*; Monograph, Institute for Energy Research, Washington D.C., Jan. 2009.

"The Case Against a Federal Renewable Power Requirement," *Electric Light & Power* 87 (Jan. 2009), 50-53.

"Renewable Portfolio Standards: Still No Good Reasons," *Electricity Journal* 21 (Oct. 2008), 18-31.

"Electricity Market Monitoring and the Economics of Regulation," *Review of Industrial Organization* 32 (No. 2, 2008), 197-216.

"National Renewable Portfolio Standard: Smart Policy or Misguided Gesture?" *Energy Law Journal* 29 (No. 1, 2008), 79-119.

"A National Renewable Portfolio Standard: Politically Correct, Economically Suspect," *Electricity Journal* 21 (April, 2008), 9-28.

"A Primer on Electricity," "Electricity in Texas," and "Competition in Texas Electric Markets," Three Monographs for Texas Public Policy Foundation, Mar. 2007, at www.texaspolicy.org

Co-author (with J. Jolly Hayden, FPL Group), "Merchant Transmission Redux," *Public Utilities Fortnightly*, Sept. 2006, 58-61.

"Electric Utility Regulation" and "Natural Gas Regulation," topic articles in David Henderson (Ed.), *The Concise Encyclopedia of Economics* (Liberty Fund, 2005).

"Vertical Integration: the Economics that Electricity Forgot," *Electricity Journal*, Dec. 2004.

"California's Electricity Policy, Evolving and Retrogressing," *Natural Gas and Electricity*, Oct. 2004, 10-14.

"Watching the Watchers: Can RTO Market Monitors Really be Independent?," *Public Utilities Fortnightly*, July 15, 2003, 35-38.

Energy Markets and Capacity Values: How Complex Should Pricing Be?," *in* Ahmad Faruqui and Kelly Eakin (Eds.), *Electricity Pricing in Transition, Topics in Regulatory Economics and Policy Vol. 42*, (Kluwer Academic Publishers), 2002.

Co-Author (with Nguyen Quan, Digital Safetynet), Market Power in California: Misunderstanding the Opportunities, *Electricity Journal* 15 (May, 2002), 30-42.

Venues and Markets: Regulating Competitive Electricity in the West, *Energy Law Journal*, V. 22 (No. 2, 2001), 335-359.

FERC's California Fix: Opportunities Lost and Found,"*Public Utilities Fortnightly*, Jan. 1, 2001, 32-34.

Co-Author (with Nguyen Quan, Digital Safetynet), Games or Opportunities: Bidding in the California Markets, *Electricity Journal* 14 (Jan.-Feb. 2001), 99-108.

Can Non-Profit Transmission Be Independent? *Regulation* V. 16 (No. 3, 2000), 61-65.

The Governance of Transmission Operators, *Energy Law Journal*, V. 20 (No. 2, 1999), 233-262.

ISO or Transco? It's Not the Profit, But Who Gets the Reward, *Public Utilities Fortnightly*, August, 1999, 52-54.

Co-author (with Jerry Ellig, George Mason University), Electricity: Price Spikes by Design, *Regulation* V. 15 (No. 2, 1999), 20-22.

Preparing for Gas-Electric Convergence: Mergers or Alliances, in Ahmad Faruqui and J. Robert Malko (Eds.), *Customer Choice: Finding Value in Retail Electricity Markets*, (Public Utilities Reports, Inc.), 1999, 79-94.

Co-Author (with Jerry Ellig, George Mason University). Price Spike Redux: A Market Emerged, Remarkably Rational, *Public Utilities Fortnightly*, Feb. 1, 1999, 40-47.

Co-Author (with Jerry Ellig, George Mason University), *Electricity Passes the Market Test: Price Spikes in the Summer of 1998*, Mercatus Institute Monograph, George Mason University, Nov. 1998.

How Gas-Electric Convergence Mergers Affect Competition, *Natural Gas* V. 15 (Sept. 1998), 13-17.

Securitized Transition Costs: Rethinking Who Wins and Who Loses, *The Electricity Journal* V. 11 (June 1998), 58-65.

MW Gamble: The Missing Market for Capacity, *The Electricity Journal*, V. 10, Dec. 1997, 56-64.

Would Anyone Invent Public Power Today? Can Anyone Reinvent It? *The Electricity Journal*, V. 10, Nov. 1997, 52-58.

Stranded in Sacramento: California Tries Legislating Competitive Electricity, *Regulation*, V. 20, Spring 1997, pp. 52-56.

Co-author (with Steven Isser, Hagler Bailly): Stranded Investment: Utility Estimates or Investor Expectations? *Public Utilities Fortnightly*, June 1, 1997, pp. 26-30.

Electric Utility Mergers: The Answer or the Question? *Public Utilities Fortnightly*, Jan. 1, 1996, pp. 20-23.

Electric Utility Mergers: The Wrong Strategy at the Wrong Time, *The Electricity Journal*, V. 8, Jan. 1996, pp. 28-36.

Reducing Risk, Shifting Risk, and Concealing Risk: Why Are There Long-Term Gas Contracts? in J. Ellig and J. Kalt (eds.), *New Horizons in Natural Gas Deregulation* (Praeger, 1996), pp. 195-208.

Stranded Investments, Stranded Intellectuals, *Regulation*, V. 19 No. I, 1996, pp. 47-51.

After Stranding Recovery, What? *Public Utilities Fortnightly*, June 1, 1996, pp. 14-18.

Long-Term Capacity Turnbacks: Not a Short-Term Problem, *Natural Gas*, V. 12, June 1996, pp. 7-11.

Markets of the Future, Utilities of the Past, *The Electricity Journal*, V. 9, Oct. 1996, pp. 58-65.

Mergers and Market Power: Should Antitrust Rule? *Public Utilities Fortnightly*, Nov. 15, 1996, pp. 42-44.

Market Power in Electric Utility Mergers: Access, Energy, and the Guidelines, *Energy Law Journal*, V. 17 No. 2, 1996, pp. 401-424.

Stranded Investment: Pay Up or Mark Down? *Public Utilities Fortnightly*, May 15, 1995, pp. 21-25.

PoolCo: Inventing the Wrong Market, *Public Utilities Fortnightly*, July 1, 1995, pp.43-46.

Regulation Meets Competition: Antitrust in the New Gas Distribution Industry, *Natural Gas*, Nov. 1995, pp. 15-19.

Co-author (with Arthur S. De Vany): Market-Based Rates for Interstate Gas Pipelines: The Relevant Market and the Real Market, *Energy Law Journal*, V. 16 No. 2, 1995, pp. 299-346.

Co-author (with Charles G. Stalon): Decontrol of Wellhead Prices and the First Wave of Gas Industry Restructuring, in Arlon Tussing and Bob Tippee, *The Natural Gas Industry, 2nd. Ed.* (PennWell Books), 1995, pp. 185-220.

Wholesale Pooling: The Monopolist's New Clothes, *The Electricity Journal*, V. 7, Dec. 1994, pp. 64-76.

Unused and Useless: The Strange Economics of Stranded Investment, *The Electricity Journal*, V. 7, Oct. 1994, pp. 12-22.

Co-author (with Andrew Kleit): Antitrust, Rent-Seeking, and Regulation: The Past and Future of Otter Tail, *Antitrust Bulletin*, V. 39, Fall 1994, pp. 689-725.

Fuel Adjustment Clauses: An Idea Whose Time Has Gone, *The Electricity Journal*, V. 7, Feb. 1994, pp. 78-85.

Co-author (with Thomas Hazlett): The Cost of Rent-Seeking: Evidence from Cellular Telephone License Lotteries, *Southern Economic Journal*, V. 59, Jan. 1993, pp. 425-435.

The New Age of Natural Gas: How the Regulators Brought Competition, *Regulation*, V. 16, Winter 1993, pp. 68-79.

Not Quite Free Wheeling: The Energy Policy Act of 1992, *Regulation, V.* 16, Winter 1993, pp. 19-23.

Electric Utility Regulation and Natural Gas Regulation, in *Fortune Encyclopedia of Economics* (Warner Books), 1993.

When Captive Customers Bear the Risk, *Public Utilities Fortnightly*, V. 131, Nov. 15, 1993, pp. 13-16.

Reason for Pessimism: Politics and Policy Cloud the Future of Electricity Competition, *Public Utilities Fortnightly*, V. 131, Sept 15, 1993, pp. 16-20.

Co-author (with Andrew Gill): Does Drug Use Decrease Earnings? *Industrial and Labor Relations Review, V.* 45, April 1992, pp. 419-434.

Deregulating Electricity: What Stands in the Way, *Regulation*, V. 15, Winter 1992, pp. 38-47.

What's Legal And What's Not: The Regulation of Opiates in 1912, *Economic Inquiry*, V. 30, Oct. 1992, pp. 696-713.

Comment on Lee and Ellert, *Research in Law and Economics* V. 13 No. 1, 1991, pp. 213-219.

Co-author (with Andrew Gill): The Determinants of Illegal Drug Use, *Contemporary Policy Issues*, Vol. 9, July 1991, pp. 93-105.

Co-author (with Rodney Smith and Arthur DeVany): Defining a Right of Access to Interstate Natural Gas Pipelines, *Contemporary Policy Issues*, Vol. 8, April 1990, pp. 142-158.

Conjectural Variations and the Nature of Equilibrium in Rent-Seeking Models, *Public Choice*, Vol. 60, Jan. 1989, pp. 31-40.

Reorganizing Electricity Supply in New Zealand: Lessons for the United States, *Contemporary Policy Issues*, Vol. 7, Oct. 1989, pp. 73-90.

Addiction, Compulsion, and the Technology of Consumption, *Economic Inquiry*, Vol. 26, Jan. 1988, pp. 75-88.

The Design of Rent-Seeking Competitions, *Public Choice*, Vol. 56 No. 1, 1988, pp. 17-29.

Co-author (with Rodney Smith and Arthur DeVany): An Open Access Rights System for Interstate Natural Gas Pipelines, prepared for Natural Gas Supply Association, Washington, D.C., 1988.

Regulatory and Market Options for Electricity in New Zealand, prepared for New Zealand Treasury, 1987.

Reinterpreting the Role of Inflation in Politico-Economic Models, *Public Choice*, Vol. 48 No. 2, 1986, pp. 113-124.

Co-author (with Lionel Kalish): The Incentives of Regulators: Evidence from Banking, *Public Choice*, Vol. 36, 1981, pp. 187-192.

Bureaucrats, Legislators, and the Decline of the State Mental Hospital, *Journal of Economics and Business*, Vol. 32, Spring 1980, pp. 198-205.

Long Term Political Agreements and the Origins of Bureaucratic Power, *Public Choice in New Orleans* (G. Tullock, Ed.), 1980, pp. 37-48.

Hedonic Prices and the Structure of the Digital Computer Industry, *Journal of Industrial Economics*, Vol. 27, March 1979, pp. 263-275.

Co-author (with Robert E. Kuenne et. al): A Proposal to Protect the U.S. from Oil Import Interruptions, *Policy Analysis*, Vol. I, Fall 1975, pp. 572-597.

Explorations in a Two-Sector Vintage Model of Economic Growth, dissertation, University of California, Los Angeles, June 1972.

SELECTED RECENT APPEARANCES

1/11/13	Texas Public Policy Foundation, Policy Orientation for the Texas Legislature, Austin TX. Invited Presentation "Electricity's Future in Texas: Which Markets, and Why?"
11/5/12	U.S. Association of Energy Economists, North American Conference, Austin TX. Invited Presentation (with Andrew Kleit) "Can Electricity Restructuring Survive Without Capacity Markets? Lessons from the ERCOT Experience,"
5/4/12	Gulf Coast Power Association, Workshop on Resource Adequacy in ERCOT, Invited Presentation "ERCOT: The Past and Future of Energy-Only Markets."
9/22/11	U.S. House of Representatives, Committee on Natural Resources, Subcommittee on Water and Power. Invited Testimony on Renewable power resources in connection with legislation to limit financing authority of U.S. Western Area Power Administration.
12/9/10	Texas Public Policy Foundation, Conference on Competition, Green Energy, and the Texas Electricity Market, Austin. Invited Presentation "Nodal Texas: The Present and Future of Markets in ERCOT."
6/16/10	U.S. House of Representatives, Committee on Science and Technology, Invited Testimony on Value of Improved Short-Term Wind Forecasts.
5/17/10	Heartland Institute, Fourth International Conference on Climate Change, Chicago. Invited Presentation "Renewable Energy Quotas: Wrong Crisis, Wrong Remedy."
3/20/10	Pacific Research Institute, Conference on the Politics of Aspiration, Newport Beach, Invited Presentation "Reviving Electricity and Water Markets."
4/23/09	U.S. House of Representatives, Subcommittee on Energy and Environment, Invited Testimony on Allocation Standards for Carbon Emissions Allowances.
6/21/08	Rutgers University, Center for Research in Regulated Industries, 21st Annual Western Conference, Monterey CA, Invited Presentation "Why So Little Compliance with State Renewable Electricity Requirements?"

9/17/07	Institute for Energy Research, National Press Club, Washington D.C., Invited Presentation "A Renewable Portfolio Standard: Does It Benefit Consumers?"
6/28/07	Rutgers University, Center for Research in Regulated Industries, 20th Annual Western Conference, Monterey CA, Invited Presentation "State Renewable Electricity Standards: Efficiency or Rent-Seeking?"
3/5/07	American Antitrust Institute, 7th Annual Energy Round Table, Arlington VA, Invited Presentation "Electricity Market Monitoring and the Economics of Regulation."
2/8/07	Texas Public Policy Foundation, Annual Policy Orientation for the Texas Legislature, Austin. Invited presentation, "Will Competition Keep the Lights on in Texas?"
2/21/06	Louisiana State University Center for Energy Studies, Baton Rouge, LA, Conference on "Rebuilding Utility Infrastructure: Challenges and Opportunities." Invited presentation "Utilities and Disasters: The Regulatory Compact Meets the Social Contract."
1/23/06	American Antitrust Institute, Sixth Annual Energy Roundtable Forum, Arlington, VA, Invited panelist on "Competition and the Energy Policy Act of 2005."
6/22/05	Rutgers University 18th Annual Western Conference on Regulation, San Diego, CA, Presentation of paper "Rethinking Vertical Integration in Electricity."
1/11/05	American Antitrust Institute, Fifth Annual Energy Roundtable Forum, Arlington, VA, Invited Panelist on "Open Access Revisited."
10/27/04	Marin County Council of Governments, Larkspur CA, Invited Presentation "Energy in California: New Crisis, or Business as Usual?"
10/21/04	California State University / McGraw-Hill-Irwin Conference on New Teaching Methods in Economics, Fullerton, Panelist on Internet Applications for Business Students.

6/28/04 Rutgers University 17th Annual Western Conference on Regulation, San Diego, Invited Presentation "The Economics of Participant-Funded Electricity Transmission."

10/8/03 Center for Business Intelligence, Conference on Transmission Expansion, Alexandria, VA, Invited Presentation "Participant Funding: does Competitive Generation Require Competitive Transmission?"

6/25/03 Rutgers University 16th Annual Western Conference on Regulation, San Diego, Invited Presentation "Monitoring Electricity Markets: what Can We Learn from the Economics of Regulation?"

6/20/02 Rutgers University 15th Annual Western Conference on Regulation, Lake Tahoe, Invited Presentation "Measuring and Mitigating Market Power in Electricity: is Supply Margin Analysis Superior?"

5/14/02 Power Association of Northern California, Spring Meeting, Pleasanton, California. Invited Presentation "Electricity: What California Must Do and What FERC Will Allow."

3/12/02 Western Farm Credit Bank, Stockholders Annual Meeting, Dana Point, California. Invited Presentation "Enron: What Matters and What Doesn't."

12/1/01 Interviewed as one of several "prominent economists and policy leaders" for "Crawling from the Wreckage: Can California's Energy Market Be Saved?" joint initiative of the John D. and Catherine MacArthur Foundation, Rockefeller Foundation, and others. Report summarized in *Public Utilities Fortnightly*, April 1, 2002.

10/4/01 Intellibridge Corporation, Energy Community Forum, Arlington, Virginia. Panelist on "Alternative Electricity Scenarios after California."

7/24/01 George Washington University National Institute for Governmental Innovation, Conference on Managing Electric Power Through Deregulation, Sacramento. Invited speaker "Managing Electricity Demand: the Roles of Government and the Market."

6/29/01 Rutgers University 14th Annual Western Conference on Regulation, San Diego. Invited Presentation "Competitive Power Markets: What Economics Have Regulators Learned?"

6/28/01	National Association of Industrial and Office Properties Energy Forum, Irvine. Invited speaker "California Electricity: What Past, What Future?"
6/7/01	Orange County Business Council, Irvine. Invited presentation "Electricity Price Caps: No Theory, No Practice, No Way."
5/31/01	Mercatus Institute (George Mason University) Energy Program for Congressional Staff, "Managing Electrical Demand: Prices or Interventions?" U.S. Capitol, Washington D.C.
5/8/01	Orange County, State of the County Conference, Invited Address "Electricity in California: How Did Things Go So Wrong?" Anaheim
4/27/01	Canadian Association of Petroleum Landmen Annual Conference, Calgary. Invited presentation "Canadian Gas and the Future of Competitive Power in the U.S."
4/10/01	National Regulatory Research Institute Market Power Conference, Columbus. Invited paper "Market Power In California: Misunderstanding the Opportunities."
3/19/01	Independent Power Producers Society of Alberta Annual Conference, Banff. Keynote address, "California's Electrical Disaster and the Future of Competitive Power."
3/9/01	Institute for Infrastructure Finance, Roundtable of the Americas, Coral Gables, Florida. Invited presentation "California Energy Crisis, Version 3.0: Same Solution, Same Mistake."
12/1/00	U.S. Department of Energy and National Association of Regulatory Utility Commissioners, North American Summit on Harmonizing Business Practices in Energy Restructuring, Dallas. Invited panelist in Accords Forum to formalize policy proposals.
11/17/00	Energy Bar Association Mid-Year Meeting, Washington. Invited panelist, "Retail Markets: Where are We and Why?"
11/9/00	International Association of Energy Economists, Houston. Invited presentation at Petroleum Club of Houston, "Electricity Restructuring: Will Texas Be the Next California?"

10/12/00	*Energy Market Report* Conference on Volatile Energy Prices, Portland. Invited Presentation "Gas Markets and Power Markets: Half of Them Function Well."
7/6/00	Rutgers University 13th Annual Advanced Workshop on Regulation and Competition, Monterey. Invited Presentation "Default Supply in Restructured Electricity Markets."
3/15/00	Energy Expo 2000, Houston. Invited Panelist "The Future of the Energy Industry Driven by Technology and Restructuring."
7/8/99	Western Economic Association 74th Annual Conference, San Diego. Invited Presentation "ISOs vs. Transcos."
7/8/99	Rutgers University 12th Annual Advanced Workshop on Regulation and Competition, San Diego. Invited presentation "Governance: The Unexamined Economics of the ISO."
1/21/99	Canadian Institute of Energy Conference on Integration of Regional Energy Markets, Vancouver. Invited Speaker "East and West Take the Market Test: Price Spikes in the Midwestern Energy and California Ancillary Services Markets."
12/16/98	Co-Chair, The Energy Institute Conference on Western Wholesale Power Markets, Las Vegas. Invited Opening Address "California's Market: What Works and What Doesn't," and Speaker on "Market Power, Gaming, and Antitrust: What Happened to Ancillary Services?"
11/16/98	McGraw-Hill Conference Southeast Power Markets: Strategies for Restructuring, Miami. Invited Speaker on "California's Electrical Restructuring in Retrospect: All Things Considered, Would I Rather Be in Philadelphia?"
10/8/98	The Energy Institute Conference on Northeast Wholesale Power Markets, New York. Invited Speaker on "Debating the Transmission Pricing Options: The Case for Exchangeable Physical Rights."
9/25/98	Law Seminars International, Seminar on Restructuring Electricity in California, Sacramento. Invited Speaker on "After the Morning After Restructuring: Vision or Myopia?"
8/19/98	American Legislative Exchange Council Annual Meeting, Chicago. Invited Speaker on "June 1998: Electricity Markets in Chaos."

7/9/98 Rutgers University 11th Annual Advanced Workshop on Regulation and Competition, Monterey, California. Invited speaker on "Stranded Costs: Theory Meets Practice in California."

6/30/98 Western Economic Association, 73rd Annual Conference, Lake Tahoe. Invited speaker at general session panel on power markets. Invited presentation on "California's Electrical Restructuring: What Economists Did Well and Poorly." Other panelists included Richard Bilas [President, Calif. Public Utilities Commission], Kenneth Lay [CEO, Enron Corporation], and Gordon Smith [CEO, Pacific Gas & Electric].

6/25/98 Co-Chair, The Energy Institute and National Energy Marketers Association Conference on Buying and Selling Electricity in the Western Wholesale Power Market, Las Vegas. Invited address "California's First 100 Days: What Has Changed, What Hasn't, and What Will," and panelist on "Antitrust and Market Power as Monitored by the PX and ISO."

4/27/98 Alberta Energy and Utilities Board and National Energy Board of Canada [CAMPUT] Annual Conference, Banff, Alberta. Invited speaker on "Visions of Regulatory Renewal: A Reality Check from California."

2/19/98 The Energy Institute and Price Waterhouse Conference New Tax Policies and Your Bottom Line, Washington D.C. Invited presentation "Rate-Reduction Securitization Bonds."

2/18/98 Co-Chairman, The Energy Institute and Hagler Bailly Conference on Antitrust in the New Electric Industry. Also presented opening address "Where Will Competition Happen? Relevant Markets and the New Industry," and prepared remarks for panel "Forming an Antitrust Strategy: Plaintiffs and Defendants."

1/29/98 Invited Testimony on Competitive Issues in Electricity Restructuring, National Association of Attorneys General Hearings on Utility Deregulation, San Francisco.

1/21/98 Canadian Institute of Energy Annual Conference, Vancouver B.C. Invited presentation on "The Reality and Unreality of Gas-Electric Convergence."

PROFESSIONAL AFFILIATIONS AND HONORS

X Member, American Economic Association
X Member, Western Economic Association
X Member, Energy Bar Association (non-attorney)
X Named Daniel P. Haan Distinguished Fellow in Economics and Regulation, California State University, Fullerton, 2008-present.
X Resident Scholar, Center for Advancement of Energy Markets, 1999 - 2004
X Co-Editor, *Contemporary Economic Policy*, peer-reviewed journal of the Western Economic Association, 1999 - present
X Adjunct Scholar and Senior Fellow, Institute for Energy Research, 1995 - present
X Adjunct Scholar, Cato Institute, 1995 - present
X Outstanding Professor, School of Business and Economics, 1989
X NSF research award to study financial institutions deregulation, 1979

MISCELLANY

X Author of bi-weekly column "Power Moves," appearing in *New Power Executive* and *The Desk*
X Numerous appearances in print and broadcast media, and before non-industry groups

Chairman BROUN. Thank you, Dr. Michaels.
Mr. Gramlich, you are recognized for five minutes.

STATEMENT OF MR. ROBERT GRAMLICH, INTERIM CHIEF EXECUTIVE OFFICER AND SENIOR VICE PRESIDENT FOR POLICY, AMERICAN WIND ASSOCIATION

Mr. GRAMLICH. Chairwoman Lummis, Chairman Broun, Ranking Member Swalwell, Ranking Member Maffei and Members of the Committee, thank you for inviting me to testify here today. My name is Robert Gramlich. I am the Interim Chief Executive Officer of the American Wind Energy Association. We represent 1,200 companies involved in all aspects of wind energy production, manufacturing, supply chain, construction companies, et cetera.

Americans are getting a good deal on wind energy, and there is nothing in this GAO report that changes that claim.

I hope the Subcommittees keep in mind that a program per se is not an incentive, and an energy program for which wind is one of the eligible resources does not make it a wind program.

The wind tax credits, PTC and ITC, still account for almost all federal support, which we all already knew, and of course, all energy resources receive some sort of federal incentive.

Americans are getting a good deal on wind energy. Last year, wind energy was the number one source of new electric generation capacity. Wind energy provided over 80,000 full-time U.S. jobs and injected $25 billion of private investment into the U.S. economy in a single year.

Today, wind projects in 39 states and Puerto Rico generate enough electric power for over 15 million American homes. At least 74 electric utilities bought or owned new wind power installed in 2012, up 50 percent from just a year ago. Already, Iowa and South Dakota produce enough wind energy to meet more than 20 percent of their electricity needs, and wind energy now produces more than 10 percent of the electricity in nine states.

Wind projects in the United States bring economic growth to rural communities. They pay roughly $400 million in property taxes or similar payments to communities, and annual lease payments to farmers and ranchers amount to around $120,000 per turbine over its lifetime. And wind energy is helping to revitalize American manufacturing, with 550 manufacturing facilities in 44 states supplying the industry as domestic content has shot up to almost 70 percent made in the United States.

We see nothing in this report that would show anything other than Americans are getting a good deal on wind. The report suggests that 82 initiatives support wind when only two are truly wind specific. It counts dozens of initiatives that are defunct, rarely or never financially supported wind energy, or are regulatory in nature. Regulatory programs are not incentives. They don't drive development. It counts some initiatives twice or more. Even the biggest potential for supposed program duplication identified by GAO was relevant less than one percent of the time.

GAO's report stated that, and I quote, "Nearly all federal financial support for wind energy was in two programs," and one of those programs, the 1603 program, has expired, so again, it is the wind tax credits, PTC and ITC, that we all knew about.

Only two initiatives are truly wind only, meaning 97 percent are available for other activities or have equivalent programs that are; and one of these two, Bonneville's wind integration effort, is aimed at non-discriminatory transmission service, and it is not a wind incentive either.

Half of the initiatives listed specifically support non-renewable sources of energy as well or have equivalent programs at the same agency that do so. There are many other programs that support non-renewable technologies that were not addressed in this report.

GAO acknowledges that nearly 90 percent of the initiatives identified here provided little to no financial support for wind energy. In fact, the vast bulk of the support was still just those two incentives.

Even in the area where GAO identified the biggest potential for duplicate financial support, namely with tax credits, grants, and loan guarantees, there is no basis for countering the claim that wind is still a good deal. The GAO report fails to note that fewer than one percent of wind projects installed from 2009 through 2012 took both a tax incentive and a DOE loan guarantee. That is four projects out of 500. All four of those succeeded and are projects with long-term contracts to sell the power, so there is no cost to the taxpayer. There are statutory prohibitions against claiming several of the tax incentives on a single project.

So we believe that any full and accurate picture of incentives for wind energy will find that the limited incentives available to wind energy are of great value to the country.

Thank you again for the opportunity to appear today. I am happy to answer any questions.

[The prepared statement of Mr. Gramlich follows:]

Rob Gramlich
American Wind Energy Association
Testimony before the House Science Committee
April 16, 2013

Chairwoman Lummis, Chairman Broun, Ranking Member Swalwell, Ranking Member Maffei and Members of the Committee, thank you for inviting me to testify today. My name is Rob Gramlich and I am the interim Chief Executive Officer of the American Wind Energy Association, or AWEA.

AWEA represents over 1,200 businesses that have been transforming the American energy sector over the past decade.

Americans are getting a good deal on wind energy and that's why they want more of it. There is nothing in this report by GAO to change that conclusion.

A recent Gallup Poll found that 71 percent of Americans want more emphasis on developing our wind resources. According to another poll by George Mason and Yale universities, more than three-quarters of self-identified Republicans said the nation should use more renewable sources of energy, with 69 percent saying renewables should be used immediately.

Last year, wind was the number one source of new electric generation capacity. Wind energy provided over 80,000 full-time U.S. jobs and injected $25 billion of private investment into the U.S. economy in a single year. Today, wind projects in 39 states and Puerto Rico generate enough electricity to power over 15 million American homes. At least 74 electric utilities bought or owned new wind power installed in 2012, up 50% from a year ago. Already, Iowa and South Dakota produce enough wind energy to meet more than 20 percent of their electricity needs, and wind energy now produces more than 10 percent of the electricity in nine states. Chairwoman Lummis' home state of Wyoming is almost there, with 9.9% of its electricity coming from wind energy.

Wind projects in the U.S. bring economic growth to rural communities. They pay roughly $400 million in property taxes or similar payments to communities. And annual lease payments to farmers and ranchers amount to around $120,000 per turbine over its lifetime.

And wind energy is helping to revitalize American manufacturing, with 550 factories in 44 states supplying the industry as domestic content has shot up to almost 70 percent "made-in-the-USA."

Americans are getting a good deal on wind energy. The benefits described above come at a very modest cost. A single incentive, the Production Tax Credit, is by far the dominant policy driver for wind energy in the US. The budget impact of less than $2 billion per year is more than paid back in taxes, and that amount leverages up to $25

billion in private capital that would not otherwise be invested in the country. That is over a ten-to-one matching of taxpayer funds with private investor capital.

Contrary to some of the news reports about this study, clean energy incentives are on the decline. A report last year by the Brookings Institute points out that federal support for renewable energy was scheduled to drop 75% by 2014.

We see nothing in this report that changes the conclusions above. Wind energy and the federal tax credits that support it are still a great deal for America. It would be wrong to use this report to conclude otherwise, as:

- It suggests that 82 initiatives support wind, when only two are truly wind-specific.
- It counts dozens of initiatives that are defunct, rarely or never financially supported wind energy[1], or are regulatory in nature.
- It counts some initiatives twice, or more.
- Even the biggest potential for supposed program "duplication" identified by GAO was relevant less than 1% of the time.

I will elaborate on these points briefly:

AWEA's analysis of the GAO report and appendices turns up only two initiatives that are truly wind-only[2], meaning 97% are available for other activities or have equivalent programs that are. And, one of these two – Bonneville's wind integration efforts – is aimed at non-discriminatory transmission service and is not a wind incentive.

Half of the initiatives listed specifically support non-renewable sources of energy as well, or have equivalent programs at the same agency that do so. There are many other programs that support non-renewable technologies that were not addressed in this report.

Given the widespread eligibility for the initiatives, it is simply not credible to label them as wind energy initiatives.

GAO acknowledges that nearly 90% of the initiatives provided little to no financial support for wind energy. In fact, the vast bulk of the support was just two incentives, the PTC and 1603, the latter of which is no longer even available to new wind projects.

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[1] For example, (1) Of the Bureau of Reclamation Programs cited, one of them does not appear to have funded a single project related to wind and the other funded only two from 2005-2011. (2) Of the 275 ARPA-E projects, only 16 are cited by the agency as wind-related, and of those, 11 are actually on magnets, which have limited relevance for wind. (3) The various smart grid and storage initiatives mentioned are not particularly relevant to wind energy.

[2] Joint Wind Energy Program; Atmospheric Velocity Gradients (NOAA), Bonneville Power Administration Wind Integration (DOE)

Even in the area where GAO identified the biggest potential for duplicate financial support – namely with tax credits, grants and loan guarantees – there is no basis for countering the claim that wind is a great deal. The GAO report fails to note that:

- Fewer than 1% of wind projects installed from 2009-2012 took both a tax incentive and a DOE loan guarantee. That is four projects out of 500, and all four of those succeeded and are generation projects with long-term contracts to sell power, so there is no cost to the taxpayer.

- There are statutory prohibitions against claiming several of the tax incentives on a single project.

- Several of the other grant and loan guarantee programs identified by GAO also appear to have been utilized rarely, if at all, by wind energy facilities.

Finally, at least seven of the initiatives identified by GAO are either expired or explicitly no longer support wind energy.[3]

Also, the report double counts one program[4] and by having separate line-items for various aspects of the BLM and BOEM permitting processes[5], which is different from how the Forest Service permitting program is accounted for by GAO, the results are further inflated and misleading.

We believe that any full and accurate picture of incentives for wind energy will find that the limited incentives available to wind energy are a great value to the country.

Thank you again for the opportunity to appear today. I am happy to answer any questions you may have.

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[3] Bioenergy National Program (USDA), Conservation Security Program (USDA), USDA/Navy MOU, Green Technology Pilot Program (U.S. Patent Office), 1705 loan guarantee program (DOE), Desalination and Water Purification R&D Program (Bureau of Reclamation), 1603 payment in lieu of ITC (Treasury).

[4] Marine Cadastre is counted under both BOEM and NOAA.

[5] BLM activities were cited as three separate initiatives and BOEM activities were cited as nine separate line items while the

Rob Gramlich
Narrative Biography

Rob Gramlich is Interim CEO of the American Wind Energy Association, the national trade association of over 1000 entities involved in all aspects of wind energy production, based in Washington DC. Rob joined AWEA in 2005 leading the policy and regulatory teams. He has testified before the US Congress, Federal Energy Regulatory Commission (FERC) and state regulatory commissions, and has served on the U.S. Department of Energy's Electricity Advisory Committee. He has published articles on wind integration, wind markets and policy, economic incentives for environmental protection, market power regulation, and electricity capacity markets.

Rob served as Economic Advisor to FERC Chairman Pat Wood III, and has worked for PJM Interconnection, PG&E National Energy Group, World Resources Institute, and the Lawrence Berkeley National Laboratory.

Rob has a Master's degree in Public Policy from UC Berkeley and a BA with honors in economics from Colby College.

Chairman BROUN. Thank you, Mr. Gramlich. It is interesting testimony, particularly in view of Dr. Michaels' testimony. You all just contradicted each other.

Let us hear from Ms. Audra Parker. You are recognized for five minutes.

STATEMENT OF MS. AUDRA PARKER, PRESIDENT AND CHIEF EXECUTIVE OFFICER, ALLIANCE TO PROTECT NANTUCKET SOUND

Ms. PARKER. Good afternoon, Chairmen Broun, Smith and Lummis, Ranking Members Maffei and Swalwell and Members of the Committee. My name is Audra Parke,r, and I am the President of the Alliance to Protect Nantucket Sound.

The Alliance is a nonprofit environmental group dedicated to the protection of Nantucket Sound, a sheltered body of water located between the pristine shorelines of Cape Code, Martha's Vineyard, and Nantucket. The Alliance formed in response to the multiple threats posed by Cape Wind, a near-shore industrial-scale wind project. We represent ratepayers, local fishermen, small businesses, and tens of thousands of residents who oppose this project. Nantucket Sound is the economic engine of the Cape and islands, a vacation destination for millions. As an irreplaceable national treasure, it should be off-limits to industrial development.

Cape Wind would consist of 130 wind turbines, each 440 feet tall, spanning an area the size of Manhattan. First slide, please [slide]. This first slide shows the project footprint in the center of the Sound surrounded by the Cape and islands and dangerously close to the navigational lifelines that connect them.

As you can see in the next slide [slide], showing just one day of flights, it would be in the center of three of our State's busiest airports, threatening over 400,000 flights per year. In an area with 200 days of fog and rapidly changing weather, Cape Wind would threaten safety, create navigational hazards for thousands of vessels and aircraft, interfere with marine radar, air-traffic control and the PAVE PAWS early warning missile defense system. Furthermore, the project would impose billions in added electricity costs and hurt commercial fishermen and tourism, leading to the loss of thousands of local jobs.

For years, Cape Wind has been propelled forward by process shortcuts, bending of rules and a political agenda. For example, safe separation zones between routes and wind turbines are being used to identify other offshore areas but were ignored in Nantucket Sound. In another example, Interior ignored its own regulations in approving Cape Wind's construction plan and granted Cape Wind exemption from conducting surveys of the sea bed prior to approving that plan, even though such surveys are required by regulation just so Cape Wind could meet deadlines for expiring subsidies.

Today, Cape Wind stands as a prime example of excessive duplication of financial incentives. It could receive an Energy Investment Credit, a loan guarantee, accelerated depreciation, renewable energy credits, and rate premiums. For a $2.6 billion project, it could receive $4.3 billion in state and federal incentives.

The GAO report states that even with antidouble-dipping provisions, public financial support has been half of project costs for many wind projects and up to 65 percent for Shepherd's Flat. This slide [slide] shows the potential subsidies for Cape Wind are even higher at 167 percent. That equates to $86 million for each of the only 50 permanent jobs Cape Wind claims it would create.

Special state legislation has enabled Cape Wind to force $3 billion of added costs onto already struggling households, businesses and towns. This slide shows Cape Wind's starting price of 19 cents per kilowatt-hour. Current market rates are seven cents. With a guaranteed annual increase, the price reaches 31 cents per kilowatt-hour in the last year, again, $3 billion of added costs for ratepayers.

In the current fiscal environment where vital federal services are being cut, it is absurd to give billions of dollars of scarce state and federal money to a single private project like Cape Wind, especially one that poses so many conflicts. With massive state incentives already secured, it would be a waste to allocate additional federal funds. In addition, ongoing legal challenges present a serious risk to the project's viability, and one federal lawsuit against the project has already been won when the U.S. Court of Appeals revoked the FAA's 2010 ruling.

With clear duplication of federal and state incentives and high risk that this project will not go forward, Cape Wind's application for a loan guarantee should be rejected. On the heels of Solyndra and other poorly conceived projects, funding Cape Wind would simply sacrifice the opportunity to support other viable projects.

In closing, the Alliance respectfully requests that the Committee instruct the GAO to conduct an independent assessment of Cape Wind. It should include a cost-benefit analysis, taking into account economic, historic, tribal, environmental, safety and other public interest factors, and evaluate if the federal decision-making agencies involved predetermined the outcome of their reviews. The question must be asked as to whether overly lenient standards were applied based on a policy favoring expedited development of renewable energy regardless of cost. We also ask that the Committee direct that action on the loan guarantee and Energy Investment Credit be suspended until this independent report is complete and the five pending lawsuits are resolved.

Thank you.

[The prepared statement of Ms. Parker follows:]

Testimony of Audra Parker
President and Chief Executive Officer, the Alliance to Protect Nantucket Sound
House Committee on Science, Space, and Technology
Subcommittees on Oversight and Energy
April 16, 2013

Introduction

Chairman Broun, Chairman Lummis, Ranking Members Maffei and Swalwell, and members of the Committee, thank you for the opportunity to provide testimony to you on behalf of the Alliance to Protect Nantucket Sound.

The Alliance to Protect Nantucket Sound is a non-profit 501(c)(3) environmental organization dedicated to the long term protection of Nantucket Sound, located in the Commonwealth of Massachusetts. Nantucket Sound is a historically significant and environmentally sensitive body of water that lies between Cape Cod and the islands of Martha's Vineyard and Nantucket. It is an area that should be off limits to industrial development.

The Alliance was formed in 2001 in response to the multiple threats posed by Cape Wind, an industrial offshore wind project which consists of 130 wind turbines, each 440 feet in height, spanning an area the size of Manhattan, and a 10 story transformer substation holding 40,000 gallons of oil. The project would not only devastate the seascape, the rich history, sacred Tribal lands, and the very essence of the vibrant tourist industry on the Cape and Islands, but would also pose threats to the environment, put public safety at risk, and burden both ratepayers and taxpayers with excessive costs.

Significant adverse economic impacts

Cape Wind would result in a high net cost to the public due to duplicative subsidies and tax credits, increased electric costs, and negative impacts to tourism, jobs, and property values. The project would impose billions of dollars in additional electricity costs for businesses, households, and municipalities throughout Massachusetts. Scores of commercial fishermen, who earn the majority of their income in the area of the proposed site, believe this project would displace commercial fishing and permanently threaten their livelihoods. (Exhibit 1) A decline in tourism would lead to the loss of up to 2,500 jobs according to the Beacon Hill Institute at Suffolk University. Property values would also decline by $1.35 billion.

Risks to public safety

Located in an area with over 200 days of fog per year and quickly changing weather, Cape Wind would create significant navigational hazards for thousands of commercial and recreational

vessels and pose an unacceptable hazard to aviation safety. It would cause both marine and aviation radar interference and be dangerously close to shipping lanes and Air Traffic Control operations. It would be located between the three navigation channels and shipping lanes connecting the Cape and Islands and in the center of three of Massachusetts' busiest airports, threatening over 400,000 flights per year. The project would crowd main navigation channels for ferries, cargo ships, and fishing boats, posing a serious risk of collision. The local ferry lines, which transport more than three million passengers every year, have called the project "an accident waiting to happen." (Exhibit 2) All three local airports strongly oppose the project and have expressed safety concerns for the millions of passengers flying over the Sound each year. The Town of Barnstable, which owns and operates the Barnstable Municipal Airport on Cape Cod, has filed an appeal of the 2012 Federal Aviation Administration (FAA) Determination of No Hazard which is currently pending. This is the second appeal filed by Barnstable, in conjunction with the Alliance, after a win in the U.S. Court of Appeals revoking the FAA's 2010 Determination.

Significant impacts to sacred tribal lands and historic properties

Nantucket Sound is an irreplaceable national treasure. The near-shore lands of the Sound are packed with historic structures, districts, and landscapes, including two National Historic Landmarks (NHLs) - Nantucket Historic District NHL and the Kennedy Compound NHL. In 2010, the National Park Service deemed Nantucket Sound to be eligible for listing on the National Register of Historic Places as a Traditional Cultural Property (TCP) because of its cultural significance to the local Wampanoag tribes. (Exhibit 3) The Sound is now recognized as the largest water body TCP ever determined eligible for listing in the National Register. Nantucket Sound is also on the Site Evaluation List for National Marine Sanctuary status.

The Massachusetts Historic Commission, the National Trust for Historic Preservation, and the Advisory Council on Historic Preservation have all expressed concerns about the impact of Cape Wind on Tribal and historic properties.

The Mashpee Wampanoag Tribe on Cape Cod and the Wampanoag Tribe of Gayhead/ Aquinnah on Martha's Vineyard believe that Cape Wind would not only desecrate sacred land, but also harm their traditional religious and cultural practices. In their vocal opposition to Cape Wind, these Tribes have the support of the United States Eastern Tribes (USET), a group of 25 federally-recognized Tribes. Wampanoag means "People of the First Light" and, as such, an unobstructed view of the sun rising over Nantucket Sound is integral to their way of life and traditional practices. (Exhibit 4) The Tribes have repeatedly stated that Cape Wind's effects on Tribal and historic properties would be profound and cannot be mitigated - except by relocating the project to another site. The Wampanoag Tribe of Gayhead/Aquinnah currently has a lawsuit pending in U.S. District Court in DC.

Adverse environmental effects

Nantucket Sound is home to several species of endangered and protected birds and marine mammals and has been designated an Essential Fish Habitat. Cape Wind's construction and operations would threaten this rich and fragile environment. Numerous environmental organizations led by Public Employees for Environmental Responsibility have a lawsuit pending for violations of the Endangered Species Act and the Migratory Bird Treaty Act.

The Cape Wind project, with its transformer substation holding over 40,000 gallons of oil, would introduce the chance of a devastating oil spill into Nantucket Sound. Cape Wind's own studies indicate a 90% chance that oil from the transformer substation would reach the shoreline of the Cape & Islands in less than five hours in the event of a spill.

Dredging, pile driving, and jet plowing to install 130 turbines and nearly 100 miles of cable in the seabed would devastate the sea floor, potentially harm marine mammals, smother bottom dwelling organisms, kill juvenile fish, and drive off adult fish. The project would endanger the dense population of songbirds, sea ducks, and federally protected piping plovers and roseate terns. Moreover, the project would devastate the struggling commercial fishing industry in Nantucket Sound and is vehemently opposed by numerous commercial and recreational fishing groups.

<u>Better alternatives</u>

Because of the many conflicts and risks posed by Cape Wind in its proposed location just off the coastline in Nantucket Sound, the Alliance and the project's multiple opponents have long advocated relocation to a less conflicted alternative site. In November of 2010, Interior launched an aggressive offshore wind energy development program called "Smart from the Start" to facilitate the siting, leasing, and construction of new offshore projects. Wind Energy Areas (WEAs) have been announced along the east coast from Massachusetts to North Carolina, confirming the current availability of numerous alternative sites all along the East Coast.

Despite the fact that historically Cape Wind claimed that there were no viable alternatives for its project, Energy Management, Inc., Cape Wind's private developer, has now formally expressed interest in two new lease areas offshore in the joint Massachusetts/Rhode Island WEA. Furthermore, numerous stakeholders opposed to Cape Wind in its current proposed location in Nantucket Sound, have supported the project in an alternative location further south outside of the sacred tribal lands and congested marine and aviation routes of the Sound in an area called South of Tuckernuck Island (STI). STI was one of the alternatives evaluated in the federal review of Cape Wind under the National Environmental Policy Act.

While relocation does not address the following issues related to the exorbitant financial cost of the project to the public, it would resolve the many tribal, environmental, and public safety conflicts inherent in Cape Wind's present siting.

Exorbitant federal and state incentives

Cape Wind is a real world example of the duplication of existing financial incentives identified in the recent Government Accountability Office (GAO) report. It is a project that is controversial, extremely expensive, and one that has been propelled forward by process shortcuts, bending of rules and political favoritism.

Federal incentives could be in excess of $1.3B

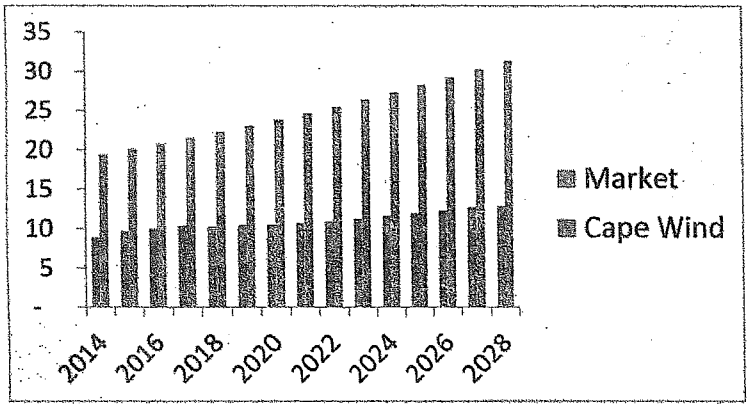
The GAO report states: "It is possible for a single wind project to receive federal support from a section 1603 grant, accelerated depreciation, and a DOE loan guarantee, along with state support from tax incentives and indirect subsidies due to a state RPS." This perfectly describes the Cape Wind boondoggle. At a $2.6 billion estimated cost of construction, Cape Wind could receive a $780 million energy investment credit. At the same time, Cape Wind could also get a Department of Energy (DOE) loan guarantee. FOIA documents released to the Alliance show that Cape Wind originally sought nearly $2 billion under the now expired 1705 program. (Exhibit 5) Recent media reports have indicated that a lower amount in the $350 million range is now under consideration. In addition to the energy investment credit and loan guarantee, Cape Wind would also qualify for accelerated depreciation. Based on the lower cost of the land-based Shepherd's Flat example provided in the GAO report, it appears that the value of this accelerated depreciation to Cape Wind would be in excess of $200 million. Thus, the total federal incentive package could be over $1.3 billion or more than 50% of the $2.6 billion project.

State incentives approach $3B

In addition to these federal incentives, Cape Wind would also receive massive state incentives. The Commonwealth of MA not only has an RPS requirement, but also passed the Green Communities Act in 2008 for Cape Wind's advantage. The Green Communities Act was passed to require utilities to purchase long term renewable energy contracts from MA generators and allow significant above market contract costs to be forced on MA ratepayers. This Act enabled Cape Wind to secure two Power Purchase Agreements for a total of 77.5% of its power in very expensive above market contracts whose surcharges would be passed through to MA households, businesses, and municipalities. For example, the NSTAR contract for 27.5% of Cape Wind's power calls for a starting price of over 19 cents per kilowatt hour (kWh), with a guaranteed annual increase of 3.5% over the 15 year contract life, culminating in a final year

price of over 31 cents per kWh. This is an average rate of 25 cents per kWh, in contrast to current MA rates of only 7 cents per kilowatt hour. According to NSTAR's calculations, the above market cost would be nearly $1 billion for its customers. (Exhibit 6) This contract was signed only because the Patrick Administration made the purchase of Cape Wind's power a condition of approving its merger with another utility. Combining the NSTAR contract with National Grid's contract to buy an additional 50%, the above market cost to Massachusetts commercial and residential ratepayers would approach $3 billion.

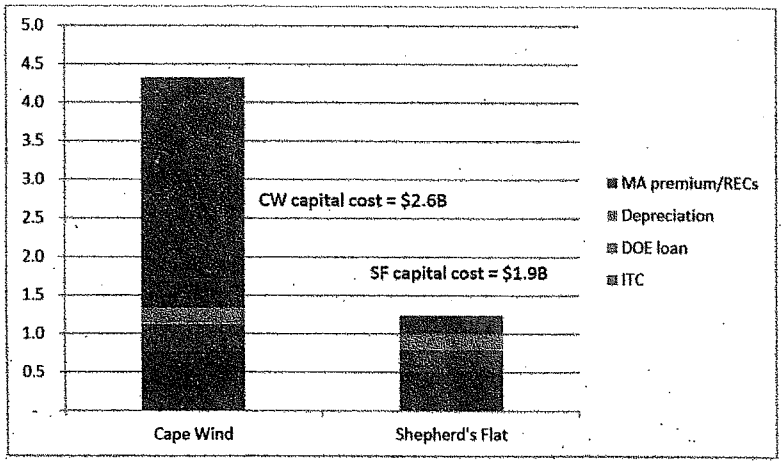
The following chart shows Cape Wind contract price versus market in cents per kilowatt hour.



Federal and state incentives combined are $4.3B

The GAO report states that even with anti-double dipping provisions, "federal initiatives have provided cumulative financial support worth about half of project costs for many wind projects." For a large wind project in Oregon cited in the report, it was 65% of project costs. Incredibly, for Cape Wind, a state and federal incentive package of $4.3B actually exceed the capital costs at 167% of the estimated $2.6 billion project. Furthermore, for Cape Wind's claims of creating only 50 permanent jobs, this amounts to a staggering public cost of $86 million per job.

The following chart shows a possible total incentive package of $4.3B for the estimated $2.6B Cape Wind project (167%) versus $1.2B for the $1.9B Shepherd's Flat project (65%).



In the currently constrained fiscal environment and with goals of increasing renewable energy production, it is outrageous to allocate billions of dollars of state and federal money to one single project that poses so many conflicts to local stakeholders.

Net job losses

One of the purported claims to support massive federal and state incentives for Cape Wind is local job creation. However, not only would Cape Wind cause net job losses due to higher electricity costs, many of the claimed green jobs would be overseas. Cape Wind plans to use Siemens turbines from Germany, is working with the Bank of Tokyo to obtain financing, and recently turned its back on an agreement to use a local Massachusetts company to manufacture the bases of its wind turbines to instead go overseas. Cape Wind now plans to buy its massive foundations from a European firm, abandoning Mass Tank after using the company for political gain and local public relations. In a recent press article, Stephen Lynch, Executive Vice President of Mass Tank, stated, "Cape Wind basically is going to be built by foreign suppliers. If they had gone with us, it would have supported about 150 permanent jobs. We don't think taxpayers should have to finance the project if it's not going to create jobs in the U.S."

Furthermore, increases in electricity costs will lead to job losses in the U.S. According to a 2010 paper by Dr. Jonathan Lesser, President of Continental Economics, "Subsidized renewable resources will drive out competitive generators, lead to higher electric prices, and reduce economic growth." Dr. Lesser refers to Cape Wind as the "poster child for green energy excesses," stating that "the billions of dollars Massachusetts ratepayers will be forced to pay for the electricity it generates will not provide economic salvation but will simply hasten the exodus of business, industry, and jobs from the state." (Exhibit 7)

Dr. Lesser estimates that for each $100 million in increased electricity costs, 640 jobs would be lost. As Cape Wind's own claims for permanent job creation number only 50, because of increased electricity costs for MA businesses, thousands of jobs would actually be lost by forcing consumers and businesses to buy above-market power. These job losses would far exceed the temporary construction and permanent maintenance jobs created by Cape Wind.

Political favoritism

Cape Wind is also an example of a project that has profited from special legislation, process short-cuts, political favoritism, and coordinated decisions across agencies and between federal and state administrations.

The Obama and Patrick Administrations are closely allied and working together to push Cape Wind forward for political advantage. The Patrick Administration has consistently pressured and collaborated with Interior to get Cape Wind approved. Throughout the process, rules were broken and corners were cut to advance Cape Wind.

Documents received through Alliance FOIA requests and through the House Oversight Committee show:

There was significant coordination between the Patrick and Obama Administrations through the Department of Interior (DOI) to push Cape Wind forward and gain financial assistance for Cape Wind through the loan guarantee program.

For example, a June 24, 2011, email describes a request by the White House to include Cape Wind in an economic briefing for the President on the loan guarantee program. "The WH was very direct about what should be included in the slides so we don't have much flexibility." The email specifically stated that the White House wanted "1 slide on status of Cape Wind (because he [the President] has heard from Gov. Patrick a few times -- they are close friends)." (Exhibit 8) In the months prior and after Cape Wind was notified that its application for section 1705 assistance was put on hold, there were numerous meetings and calls between MA state officials including Governor Patrick with senior officials at DOE and the Loan Guarantee Program, including Jonathan Silver and Secretary Chu.

Interior overrode federal historic agency recommendations to deny or relocate Cape Wind. MA coordinated a lobbying effort for a multi-state letter to influence and provide cover for Interior to do so.

As previously mentioned, in 2010, the National Park Service deemed Nantucket Sound to be eligible for listing on the National Register of Historic Places as a Traditional Cultural Property because of its cultural significance to the Wampanoag tribes. This greatly increased the significance of the national historic consultation process and made the role of the federal Advisory Council for Historic Preservation (ACHP) particularly important. After Interior Secretary Salazar terminated historic consultation—a procedure rarely invoked—the ACHP issued formal comments to deny or change the location of Cape Wind and criticized Interior for its belated and inadequate consideration of impacts to cultural resources. The ACHP recommended that Interior not approve the Project, stating that "The indirect and direct effects of the Project on the collection of historic properties would be pervasive, destructive, and, in the instance of seabed construction, permanent. By their nature and scope, the effects cannot be adequately mitigated at the proposed site." (Exhibit 9)

MA responded to the ACHP letter by engaging in a lobbying campaign to get Governors of New England and Mid-Atlantic states to urge Secretary Salazar to overturn the ACHP recommendation to reject Cape Wind. Six Governors signed the Massachusetts orchestrated letter, urging Secretary Salazar to reject the Advisory Council recommendation to reject Cape Wind. As urged by the MA coordinated Governors' letter, Secretary Salazar ignored ACHP's recommendations and instead approved Cape Wind.

The timing of key permits was orchestrated to be issued within very short timeframes for maximum press impact to create the perception of project inevitability as well as to keep the project on track for expiring federal subsidies and tax credits.

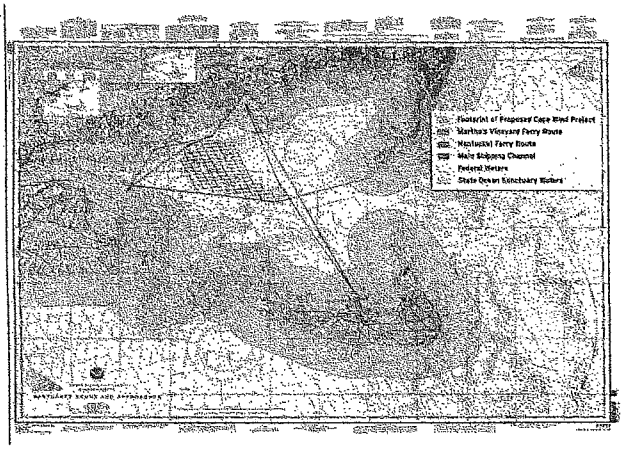
For example, the Record of Decision to approve Cape Wind was issued April 28, 2010, followed closely by the National Grid contract on May 7, 2010, and the FAA Determination of No Hazard on May 10th. Similarly, the National Marine Fisheries Service issued its revised biological opinion under the Endangered Species Act, dismissing impacts on right whales on December 20, 2010, followed by the Army Corps of Engineers permit on January 5, 2011, and the EPA Clean Air Act Permit on January 7, 2011.

Rules that have been used elsewhere have not been applied to Cape Wind.

Safe separation zones between navigational routes and wind turbines are being used to identify offshore wind energy areas for development. However, these buffer zones were not applied in Nantucket Sound, sacrificing public safety for the sake of approving Cape Wind.

This is particularly egregious because the Cape Wind project site spans a 25 square mile area surrounded by three main shipping routes and is a highly congested area used by shipping operators, ferry lines, commercial fishermen, and recreational mariners. The two ferry operators alone transport 3 million passengers per year between Cape Cod and the Islands, with much of this traffic concentrated in the few summer months. The risk of collision, including high speed passenger ferries with the turbines, would increase especially during the frequent fog and storms for which the area is known.

The following navigational chart shows Cape Wind's proposed location:



A 2012 U.S. Coast Guard Port Access Route Study states: "any areas <1 NM from existing shipping routes pose a high risk to navigational safety and are not considered acceptable for the placement" of offshore renewable energy installations. The Cape Wind site is unacceptably close to navigation routes with some of the turbines less than only 0.2 NM from the channel boundary. (Exhibit 10)

Another blatant example of rule bending is the fact that Interior ignored its own offshore renewable energy regulations in approving Cape Wind's Construction and Operating Plan (COP). It gave Cape Wind an exemption from conducting required surveys of the Nantucket Sound seabed prior to COP approval as required in the Outer Continental Shelf regulations solely in deference to Cape Wind's economics and the pursuit of federal subsidies.

A September 2010 Interior email regarding a memo for Interior Secretary Salazar on Cape Wind COP options states, "I agree with the memo. What it misses is the litigation angle. Cape Wind

Associates (CWA) is doubtful it will be able to attract financing until it has won a federal district court victory against its critics. Initially, CWA pushed the Government not to raise ripeness defenses to the four pending lawsuits, but it now recognizes that the court might decide the case on these grounds whether or not we raise it. Therefore CWA has concluded that it needs to pursue fairly prompt approval of a construction and operations plan (COP) and draw a fully ripe challenge on the broad array of issues raised by its critics. For that reason, and because it does not now have approximately $30 million to expend on geological/cultural survey work, it has asked BOEM not to put into the lease a term requiring that the surveys be conducted before it submits a COP for approval." The email continues with, "As the briefing paper acknowledges, this conflicts with a BOEM regulation which requires core drilling results be submitted with the COP. Therefore BOEM would have to grant a 'departure' (that's their term for variance) to the regulations." (Exhibit 11)

Less than two weeks later, on October 4, 2010, Interior sent a letter to Cape Wind granting it the requested departure from the regulations. The letter stated, "The BOEMRE has decided that it will not require surveys to be completed prior to COP submittal to afford CWA an opportunity to obtain the financing necessary to support the additional survey work." (Exhibit 12)

Agencies have prioritized the financial interests of the developer over public safety and to the detriment of the environment.

The USCG prioritized the financial interest of the developer over the safety of mariners and the public. The USCG initially recommended a buffer zone of 1.5 nautical miles (nm) between the proposed footprint and the main channel, but later removed it due to the economic interests of the developer.

U.S. Coast Guard emails discovered through FOIA include:

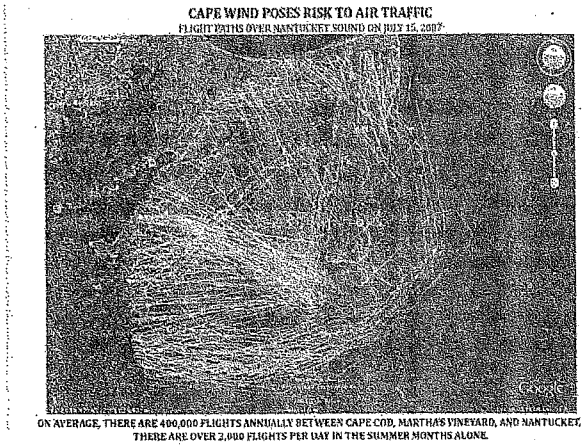
- "If 1.5 NM offset applied to Cape Wind proposal in Nantucket Sound, this would drastically reduce the size of the wind farm footprint (might well scuttle it)." (Exhibit 13)
- "If Cape Wind were to use these measures, the proposed wind farm would hold too few WTGs to be economical." (Exhibit 14)
- Referring to the local port Captain, "He purposely did not recommend the creation of "buffers of navigation" around the turbine array because he believes that would have caused a change in the "footprint of the project" that could unnecessarily "kill the project". (Exhibit 15)

In another example, the U.S. Fish and Wildlife Service (USFWS) found that Cape Wind should shut down wind turbines on a temporary and seasonal basis to reduce bird kills in its draft biological opinion, but did not require such mitigation in the final opinion solely because Interior and Cape Wind rejected a shut down as too costly. USFWS stated that it "considered"

temporary shut-down as a reasonable and prudent measure to minimize impacts on listed species, but that "it was determined by BOEMRE and [Cape Wind Associates] to not be reasonable and prudent." (Exhibit 16) USFWS itself never made an independent finding of whether a temporary shut-down would be reasonable.

Despite FAA's safety-first mandate, it made mitigation recommendations to accommodate Cape Wind's profitability at the expense of public safety. The proposed 25 square mile, 440 foot high Cape Wind footprint lies in the center of three busy airports in a heavily trafficked low altitude airspace. 400,000 flights per year traverse the airspace over Nantucket Sound transporting millions of passengers through an area characterized by frequent fog and quickly changing weather patterns. However, despite objections by all three local airports and even after acknowledging multiple aviation safety impacts and expressing uncertainty regarding the effectiveness of proposed mitigation options, the FAA deferred to Cape Wind's economics and bottom line. In discussion of potential unresolved radar interference due to Cape Wind, the acting head of the FAA's Obstruction Evaluation group stated, "Shutting them down midstream will create an undue burden on the developer and could possibly bankrupt them." (Exhibit 17)

The following map shows one day of flight paths over Nantucket Sound:



FAA succumbed to political pressure in its previous aviation safety determinations and issued new regulatory notices to try to circumvent rulings by the U.S. Court of Appeals.

The FAA has consistently ignored the warnings of the local aviation community, including airplane pilots, regional airports, and airline owners that the proposed Cape Wind project would pose unacceptable risks to the safety of local pilots and passengers. It also ignored concerns from its own technical experts. FAA documents obtained through FOIA make clear that FAA has made decisions based on political and economic factors rather than the recommendations of the pilots, who use this airspace every day, thereby failing to discharge FAA's statutory safety-first mandate and protect the pilots and passengers who use this airspace.

Internal FAA emails received by the Alliance in response to a FOIA request clearly show political pressure and White House and Department of Energy involvement. FAA personnel openly acknowledge the political sensitivity of the project, pressure to rush the review to meet deadlines despite the clear risks, and difficulty to deny the project given the political pressure to promote a green energy agenda by the federal administration.

A May 3, 2010, FAA PowerPoint presentation to Eastern Service Area Directors includes a slide titled "Political Implications" which states, "The Secretary of the Interior has approved this project. The Administration is under pressure to promote green energy production. It would be very difficult politically to refuse approval of this project." (Exhibit 18)

A December 27, 2006, email from Cape TRACON, the radar air traffic control facility for the Cape Cod and Islands airspace, outlining its concerns states, "I will tell you that this will have an adverse impact on our operation..." The FAA response to this email states, "Keep in mind that if an objection is issued, it will be based pretty much on your comments, so no smoke, please. Any 'objection' to a wind turbine project will be scrutinized at the highest level (White House, DOE, etc.) so be thorough and exact." (Exhibit 19)

A Congressional investigation for undue political influence was launched in July 2012 by both the House Oversight and Government Reform Committee and the Transportation and Infrastructure Committee.

Furthermore, the FAA's 2010 Determination of No Hazard was challenged in the U.S. Court of Appeals by the Alliance and the Town of Barnstable, which owns and operates the Barnstable Municipal Airport on Cape Cod. In October, 2011, the U.S. Court of Appeals revoked the ruling, remanding it back to the FAA, and faulted the FAA for several factors including: "fail[ing] to supply any analysis of the record evidence concerning the wind farm's potentially adverse

effects on VFR operations"; "cut[ting] the process short ... and never calculate[ing] the risks in the first place"; and "catapult[ing] over the real issues and the analytical work required." (Exhibit 20)

On remand, the Court directed the FAA to "address the issues and explain its conclusion." Rather than follow this Court's instructions, FAA not only repeated the same misinterpretation of its Procedures for Handling Airspace Matters, but also relied on a last-minute amendment to its Handbook, issued after the public comment period had closed, to once again avoid issuing a Hazard Determination which would halt Cape Wind's ability to begin construction. In August of 2012, just two months after its last-minute amendment, the FAA issued another Determination of No Hazard, which is once again under appeal by the Alliance and Town of Barnstable.

National security issues may not be resolved.

Several emails written shortly before the FAA issued its 2010 Determination of No Hazard express concern that the Cape Wind turbines may pose threats to national security. It is unclear whether the proper agencies addressed this issue especially given the scenario that aircraft operating without a transponder could remain unseen.

- An April 1, 2010, email questions, "Has anyone checked to see if we have any national security issues if we filter primary data out around the windmills that are in the middle of the bay along the coast?" (Exhibit 21)
- An April 5, 2010, email states, "Tech Ops would not coordinate security issues under the Obstruction Evaluation either. Based on our study it is possible that a plane without a transponder could essentially not be picked up over the wind farm." (Exhibit 22)
- A May 3, 2010, PowerPoint presentation to Eastern Service Area Directors includes a slide titled "National Security Issues" which states, "The masking of primary RADAR data along the coast may have national security implications." (Exhibit 18)

Furthermore, studies done in 2006 and 2007 by the Department of Defense confirm the threat of wind turbines to national security. The 2006 study entitled "The Effect of Windmill Farms on Military Readiness" concluded "wind farms located within radar line of sight of air defense radar have the potential to degrade the ability of that radar to perform its intended function. The magnitude of the impact will depend upon the number and locations of the turbines. Should the impact prove sufficient to degrade the ability of the radar to unambiguously detect and track objects of interest by primary radar alone this will negatively influence the ability of U.S. military forces to defend the nation." (Exhibit 23)

It also concluded that the "previous study of the impact of the proposed Cape Wind project on PAVE PAWS at Cape Cod Air Force Station was overly simplistic and technically flawed." PAVE

PAWS is one of the only two early warning missile defense radars in the continental U.S. In 2007, an additional study was conducted entitled "Wind Turbine Analysis for Cape Cod Air Force Station Early Warning Radar and Beale Air Force Base Upgraded Early Warning Radar." This study confirmed that "utility class wind farms could have a significant impact on radars, including missile defense early warning radars" and recommended a wind project offset zone of 25 km from missile defense radar systems. (Exhibit 24)

However, the study's recommended offset zone of 25 km is too close for comfort; Cape Wind would be located only 26 km from PAVE PAWS. It is also unclear from the study whether the current height of the turbines at 440 feet was used or an outdated lower height was improperly used, potentially affecting the radius of the safe offset zone for the PAVE PAWS early warning radar system.

DOE loan guarantee for Cape Wind poses taxpayer risk

Following the bankruptcies of Solyndra and other failed projects, the DOE loan program has been mired in controversy. For Cape Wind's private development, the financial risk to federal taxpayers is high.

First of all, numerous lawsuits face the federal government for its flawed reviews of Cape Wind. Lawsuits have been filed by the Wampanoag Tribe of Gayhead/Aquinnah, Public Employees for Environmental Responsibility, the Town of Barnstable, the Alliance, and others, challenging determinations by Interior, the U.S. Fish and Wildlife Service, the Federal Aviation Administration, the U.S. Army Corps of Engineers, and the U.S. Coast Guard, among other agencies, for violations of the National Environmental Policy Act, the Endangered Species Act, the National Historic Preservation Act, and the Outer Continental Shelf Lands Act. The National Trust for Historic Preservation has also filed an amicus brief to support the Tribal lawsuit. These ongoing legal challenges present a serious risk to the viability of the Project. The Alliance and the Town of Barnstable have already won one federal lawsuit in the October 2011 revocation of the FAA's Determination of No Hazard for Cape Wind by the U.S. Court of Appeals. DOE should not waste any additional taxpayer resources on this highly conflicted proposal and reject Cape Wind's application for a loan guarantee. DOE should not sacrifice the opportunity to fund other viable projects in the name of one risky, heavily subsidized, and extremely expensive project. At a minimum, the pending lawsuits which could clearly halt the construction of Cape Wind should first be resolved before committing hundreds of millions of taxpayer dollars.

Secondly, Cape Wind's power is not fully sold and there is no guarantee Cape Wind will have a buyer for the remaining 22.5 percent of its output. More importantly, under the terms of the power purchase contracts, if Cape Wind does not commence physical construction by December 31, 2015, both contracts will be terminated leaving Cape Wind with no buyers for its power. (Exhibit 25)

Approval of this controversial and problematic proposal would be a terrible legacy. It would devastate the regional economy and environment, threaten public safety, put taxpayers at risk, and saddle MA ratepayers with billions of dollars in additional electricity costs to primarily create manufacturing jobs overseas. It would also further undermine the long-term credibility of the offshore renewable energy program.

Conclusion

In its proposed location in Nantucket Sound, the Cape Wind industrial project would devastate the local tourist based economy, pose threats to the environment, and put public safety and potentially national security at unacceptable risk. It would saddle MA ratepayers with excessive electricity costs, result in net job losses, and burden taxpayers with an inordinate amount of cost through overlapping federal and state financial incentives.

Throughout this review process, rules were broken and corners were cut to advance Cape Wind. Cape Wind has profited from special legislation, process short-cuts, political favoritism, and coordinated decisions across agencies and between federal and state administrations – all at the expense of the public.

The Alliance respectfully requests that the Committee instruct the Government Accountability Office to conduct an independent assessment of the Cape Wind project, including a cost-benefit analysis. This analysis should include economic, historic, tribal, environmental, public safety, and other public interest factors. It should also assess if the federal agencies involved in decision making had predetermined the outcome of the review and applied overly lenient standards for review and action based on a policy goal favoring the expedited development of renewable energy. We also request that the Committee require that no action be taken on loan guarantee or investment tax credit decisions until this independent report is complete and pending lawsuits are resolved to minimize potential taxpayer risk.

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Experience

2003 – current **Alliance to Protect Nantucket Sound** Hyannis, MA
President and Chief Executive Officer
- Develop state political and legal strategy for high profile environmental non profit
- Solicit private donations
- Direct communications and grassroots, provide media interviews and participate in public debates and events

1997 - 1999 **MapInfo Corporation** Troy, New York
Director and General Manager, Desktop Business Unit
- Increased revenue stream and profitability for $30 million core software business
- Developed business strategy and plans including pricing, product portfolio, and marketing
- Established technology and marketing partnerships for new products

1990 - 1997 **Bull Worldwide Information Systems** Paris, France
Director of Customer Satisfaction, Bull HN Information Systems
- Established United States customer satisfaction program to increase customer retention

Strategy Consultant, Groupe Bull Strategy and Business Development
- Pioneered use of benchmarking to improve financial and operational performance across businesses and geographic markets
- Improved customer services division performance through cost reduction programs

1989 - 1990 **Quantum Associates** Lynnfield, Massachusetts
Strategy Consultant
- Increased revenue for a $450 million jewelry manufacturer
- Targeted new business through lead generation and creation of project proposals

Summer 1988 **Microsoft Corporation** Redmond, Washington
Associate Product Manager, Macintosh Excel
- Managed marketing programs, including a direct mail promotion for corporate trainers
- Designed market research to examine software usage patterns and purchase behavior

1986 - 1987 **Alliance Consulting Group** Cambridge, Massachusetts
Associate Consultant
- Improved market position for clients in health care, textiles, and high technology
- Increased profitability for the $25 million hospitality carpet division of a textile manufacturer

1984 - 1986 **Braxton Associates** Boston, Massachusetts
Research Associate
- Enhanced state government resource allocation through examination of budgetary process
- Optimized client businesses through portfolio analysis, linear programming, and regression

Education

M.I.T. Sloan School of Management Cambridge, Massachusetts
Master's of Science degree in Management, 1989
Concentration in Marketing and Corporate Strategy
GPA 4.9/5.0

Brown University Providence, Rhode Island
Bachelor's of Science degree in Applied Mathematics/Economics, 1984

Chairman BROUN. Thank you, Ms. Parker, and I want to thank all of the witnesses for your testimony. Reminding Members that Committee rules limit questioning to five minutes, the Chair at this tiime will open the first round of questions. I recognize myself for five minutes.

My home State of Georgia does not have a Renewable Portfolio Standard. However, Georgians' taxes are impacted by the Production Tax Credit. Dr. Michaels, should the citizens of Georgia pay to deploy wind projects in order to comply with another State's RPS?

Dr. MICHAELS. It seems to violate both principles of equity and principles of economic efficiency. I think that there should be a free market, as free as possible, in sources of power generation where people make choices on the basis of the full costs of what is happening, not having those choices subsidized to one degree or another by people from other States if, in fact, your description of Georgia's situation is correct.

Chairman BROUN. I am sure Georgians would agree with that.

Dr. Rusco, your report points to a great deal of potential overlap in federal wind incentives but is largely silent on the impact of State incentives such as RPS. Should we also review whether State incentives are duplicative with federal incentives?

Dr. RUSCO. Yes, I think that what is unknown about the extent to which federal funding incrementally is necessary would require a look at all the incentives, the sum of all the incentives, and then to see whether additional incentives from federal tax code or programs is warranted.

Chairman BROUN. Very good. Thank you, sir.

Dr. Michaels, the GAO report indicates that 99 percent of the incentives for wind go to deployment of existing technologies rather than into research and development. What is a better investment of scarce tax dollars, research and development to make the technology more competitive or corporate handouts for projects that may be built anyway?

Dr. MICHAELS. The issue is one, it is a fairly well-known theory in economics. There are these cases which GAO talks about the possibility of spillovers of knowledge, which might warrant certain types of federal intervention in that process. However, that is for a very narrow class of technological supports, encouragements to research and the like. Here, deployment, deployment is about plants that are already there, and it gives those plants an advantage that doesn't necessarily have any consequences that I have been able to find for any future progress in wind technologies.

Chairman BROUN. Dr. Michaels, Energy Secretary Steven Chu said that wind is a "mature technology." Mature technologies should not be permanently subsidized, yet time and again when the PTC and Investment Tax Credit are approaching expiration, the wind industry advocates for another extension. Do you agree with Secretary Chu's statement that wind is a mature technology?

Dr. MICHAELS. To the extent I understand what he is saying when he means "mature," I believe so. Wind has been a technology that has been in existence in various forms for literally hundreds of years. The types of turbines that we are developing today are continually being increased in size, but everybody knows the sci-

entific principles and there doesn't seem to be any reason to expect that additional expenditures from taxes are going to noticeably improve that. We expect entrepreneurs elsewhere to do things and make improvements purely for their own profit, and I would suspect wind should be there too.

Chairman BROUN. Very good. And last year, Dr. Michaels, the wind industry claimed that the PTC and Investment Tax Credit had to be extended in order to preserve capacity gains in job growth. It turns out that capacity grew over 25 percent last year, more than 5,000 jobs were created, according to the wind industry's claims, despite the impending loss of PTC and the EIC. Why are deployment incentives necessary given this type of growth? At what point will wind be cost competitive with traditional electric generation without any subsidies?

Dr. MICHAELS. I favor competitive markets that let the less-efficient technologies fall by the wayside or occupy minor roles. I don't see that the continuation of the Production Tax Credit is going to have much in the way of favorable results for consumers, whatever results it has for people who are in the wind business, and as such, I don't see much justification for the continuation, and that may be what I was seeing there.

Chairman BROUN. Thank you, Dr. Michaels. My time is about expired, so I will recognize now my friend, Mr. Maffei, for five minutes.

Mr. MAFFEI. I thank the Chairman, my friend from Georgia.

Just a couple of things to try to add, again, some context. I appreciate the Chairman's pointing out that there was a hearing, "Federal Financial Support for Energy Technologies: Assessing Costs and Benefits" in the Subcommittee on Energy on March 13. However, that hearing also focused primarily on renewable energy and energy efficiency. So again, my issue with this discussion is not it doesn't need to happen. I appreciate you having it. It is just that I would like to have it include other things. For instance, Chairwoman Lummis's point about wind being a mature technology—well, oil seems very mature and yet we still have the exploration tax credits, a number of other credits that incentivize oil production. So my focus here is not that we shouldn't get to the bottom of whatever——

Chairman BROUN. Would the gentleman yield?

Mr. MAFFEI. Of course, I will yield to the chairman.

Chairman BROUN. Just for a second. I believe we ought to find any duplication and any expenditure of the Federal Government that is not warranted, and we are just focusing on wind today. Thank you for yielding.

Mr. MAFFEI. Reclaiming my time from the distinguished Chairman, that is good. I would like to work on that, and maybe we can have Dr. Rusco work on—I don't know if it would be you or somebody else at GAO but some of the other kinds of things too.

I would like to, I guess, ask Mr. Gramlich—why, Mr. Gramlich, do you think that wind has come under this much fire if indeed, as you say, it is a good deal for the American people? Why would so many groups be targeting wind? For instance, I have a letter from a number of different groups addressed to governors of various States that have not put forth renewable-energy preferences,

and it calls on them to work to defeat the extension of the Production Tax Credit. Why would these groups be targeting wind so much?

Mr. GRAMLICH. Well, that is a very good question. I am not sure I can answer that. It does appear to be the case. You know, five or 10 years ago, when wind was relatively small, not many people noticed it, but being the largest developer of new generating capacity last year, being sort of number one other energy sources and those affiliated with those energy sources do seem to take notice.

Mr. MAFFEI. Thank you.

Dr. Michaels, actually I guess I want to ask you a similar question. I listened to your testimony very carefully, and you brought up a lot of good arguments, but I could use those same arguments against oil production or various other kinds of things, and yet you have made your work more focused on being critical of wind than those other modes of energy that are highly subsidized. Why is that?

Dr. MICHAELS. In terms of the actual contributions and operations of the electrical system, there is a lot to be said. There are questions about oil, other minerals. I would say investigate them as you wish. The real question that I am trying to ask is a narrower one: what is a proper role for wind technology and support for wind technology in the context of operations of an electrical system and in the context of long-term investments in efficient and clean power sources? And so I did concentrate on wind, because I think that relative to other technologies, there are certain things in which wind is lacking, and it really deserves, I believe it deserves to be brought to public attention.

Mr. MAFFEI. Okay. Thank you. You do do some—in addition to your academic position, you do do some consulting work for other energy industries, though, correct?

Dr. MICHAELS. I consult for people in all corners of the industry—consumers, producers, public interest groups. I testify on behalf of environmental groups.

Mr. MAFFEI. It says particularly, here, the natural gas industry in your bio, which I assume you provided for the Committee.

Dr. MICHAELS. Yes.

Mr. MAFFEI. Okay.

Dr. MICHAELS. Yes.

Mr. MAFFEI. I just want to make it clear. I am not interested in criticizing. I just thought in the interest of full disclosure.

Dr. Rusco, is it correct to say that your report didn't look necessarily with any prejudice at whether a program just because it may be duplicative may be meritorious. Is it possible for a program to be duplicative and meritorious still, or does duplicative in this case mean truly wasteful?

Dr. RUSCO. So we make a distinction between duplicative and unnecessarily duplicative, and there are—because of the way government operates and policy is made, it's made over time and things get layered on, you do find that there are programs that provide funding to the same recipient for the same purpose, and that is what we call duplicative. However, in our report, as we said, and as I said in my opening statement, we do not know the extent to which the incremental federal funding is required for projects to be

built. We think that is a very important question, and we think that to the extent there is unnecessary incremental spending that that should not continue.

Mr. MAFFEI. I concur. Again, I think it applies to all sorts of other projects—oil, nuclear, natural gas, etc.

Mr. Chairman, I am over time and I apologize. I yield back.

Chairman BROUN. No problem. I took up a little bit of your time. I was going to give you some leeway, and I always will. Now I recognize the Full Committee Chairman, Mr. Smith from Texas, for five minutes.

Chairman SMITH. Thank you, Mr. Chairman.

Dr. Michaels, let me direct my first question to you, because I think there are a number of differences, say, between wind energy and other forms of energy. At a hearing last month, we heard that offshore wind energy costs two to three times more than onshore wind energy, and I noticed in your written testimony today, you talked about the fact that offshore wind production might be exaggerated. I wonder if you would tell us why it might be exaggerated and how that might impact the cost of offshore wind energy.

Dr. MICHAELS. Certainly. One of the issues that plagues all of these costs figures is that so many of these technologies have been in existence for such a short time, we can't monitor their lifetime productivities very well, and we have several results from Europe saying that lifetime productivities of land-based wind units are considerably lower than were expected at the time investments were planned. There is even less experience with offshore wind units. There is some evidence from Europe that they also—production tails off in them quite quickly. As far as the actual costs of offshore wind relative to onshore wind, I would leave that to my colleague, Ms. Hutzler, who testified on these matters. She is the true expert in that.

Chairman SMITH. It was her testimony that I was referring to when she said two to three times the cost. Thank you, Dr. Michaels.

Let me address my next question to Ms. Parker. Another distinction, I think, between wind energy and other forms of energy, is the dangers of locating wind turbines close to radar facilities, and I wanted to ask you if the Federal Aviation Administration and the Department of Defense have recognized the threat that wind turbines might form to their activities and whether or not those agencies have adequately protected the public safety.

Ms. PARKER. Thank you. Both the Department of Defense, the FAA as well as the Coast Guard, have looked at the radar interference issue. It is a well-known fact that the spinning blades of the turbines do cause radar interference to marine navigation, air-traffic control operations, and early warning missile defense systems. The FAA has, multiple times, issued determinations of no hazard despite safety concerns by their own internal people, as well as safety concerns from the local airports on the Cape and islands. They have ultimately recommended unproven technical fixes that have not worked elsewhere, and in fact have resulted in restricting airspace to transponder-equipped-only aircraft. The problem with that is that a flight operating without this type of equipment would

not be detected, resulting in flight safety risks as well as potential national security risks.

With respect to the Department of Defense, they did a specific study to PAVE PAWS, which is one of only two early warning missile defense systems in the United States, and concluded that they needed to establish an offset zone around that radar installation of 25 kilometers. Unfortunately, Cape Wind is 26 kilometers, and from a defense perspective, that is perhaps too close for comfort. It is also not clear whether the DOD used the correct height of the turbines, which would affect that offset zone because the height of the turbines has increased. I think it would be prudent to revisit this issue.

On the FAA, the U.S. Court of Appeals has revoked an earlier determination by the FAA, and currently it is pending under appeal as well, because of the safety issues, to air-traffic control and, you know, potential risk to the millions of passengers that use the airspace over the Sound.

Chairman SMITH. Okay. Thank you. Let me squeeze in one more question here. You have got the Department of Energy Inspector General's findings regarding the loan program, and then you have got the GAO's finding in regard to perhaps duplicative projects as well. How do the findings of those two agencies color the views that we should have towards any offshore wind farm? I know there are at least two, or two to four that are in process at some point, but how do those findings determine how we should look at the offshore wind farms?

Ms. PARKER. I think it is a question of, you know, what the best way is to allocate scarce federal resources, and as I showed earlier in my testimony that Cape Wind, because of the massive Massachusetts premiums and renewable energy credits, is already getting subsidies or could qualify for subsidies including the loan guarantee far in excess of the actual project cost, a $4.3 billion package versus a $2.6 billion project cost. I think that DOE could use that same pool of money elsewhere. In addition, Cape Wind is a very risky project. There are five lawsuits currently pending against it with one win, and it is likely that the project will never be built.

Chairman SMITH. Thank you, Ms. Parker. Thank you, Mr. Chairman.

Chairman BROUN. Thank you, Chairman Smith. I now recognize the Ranking Member on the Energy Subcommittee, Mr. Swalwell, for five minutes.

Mr. SWALWELL. Thank you, Mr. Chair.

And Ms. Parker, the Alliance to Protect Nantucket Sound, their biggest financial contributor is Bill Koch. Is that correct?

Ms. PARKER. We have about 5,000 donors, and it is a well-known fact that Bill Koch is a large contributor of ours, and the community is fortunate to have the means to fight a very wealthy private developer.

Mr. SWALWELL. He is the largest, though?

Ms. PARKER. He is our largest donor. He has probably contributed about 20 percent of our funds. We have, as I mentioned, 5,000 donors. We get gifts from $5 to six-figure gifts, and again, it is tens of thousands of people that we are representing, and we feel fortunate to live in a community that can in fact fight this project.

Mr. SWALWELL. And Bill Koch's company, they refine oil. Is that right—Koch Industries?

Ms. PARKER. Bill Koch is not with Koch Industries. That is his brothers.

Mr. SWALWELL. Oxbow?

Ms. PARKER. Oxbow.

Mr. SWALWELL. Okay, Oxbow.

Ms. PARKER. It is petroleum coke, yes.

Mr. SWALWELL. And he also has a waterfront home on Cape Cod. Is that right?

Ms. PARKER. He has a waterfront home on Cape Cod and is concerned about not just the impacts to the Cape and islands where Nantucket Sound is the heart and soul of the area but also the fact that Cape Wind is an economic boondoggle.

Mr. SWALWELL. Dr. Rusco, thank you for your testimony earlier, and it raises questions about the ability to layer multiple financial incentives for a single project, but this is not unique to wind energy. In fact, isn't it true that a single new nuclear facility is potentially eligible for multiple incentives such as a DOE loan guarantee under Section 1703, a Section 45(j) Nuclear Power Production Tax Credit, a Section 468A special tax accounting rule for nuclear decommissioning costs, and a 15-year accelerated depreciation schedule? Would you agree that to the extent that it is fair to question potential for duplication in the wind energy side, it is also fair to do so on the nuclear energy side?

Dr. RUSCO. I think it is fair to look at all energy sectors and all fuel types in a similar way and look for opportunities to reduce federal funding wherever it becomes unnecessary to get projects built.

Mr. SWALWELL. And isn't it true that with respect to oil and gas companies, they are eligible for multiple incentives for projects such as capped spill liability insurance, a Section 199 tax deduction, an enhanced oil recovery tax credit, a percentage depletion allowance, an intangible drilling cost tax deduction, and master limited partnerships? So you would agree also with respect to oil just as you said with nuclear energy, we should look at any duplication that exists?

Dr. RUSCO. I believe that is generally true across all of government.

Mr. SWALWELL. And also, when we talk about coal, again, multiple incentives—mining expenses, Production Tax Credit for Carbon Capture, Investment Tax Credit for Advanced Coal Facilities, Section 199 deduction, percentage depletion allowance, DOE loan guarantees for advanced coal, and again, master limited partnerships. So coal, nuclear, wind, we are seeing duplicative efforts as far as tax incentives. Would you agree on that?

Dr. RUSCO. I don't know the extent to which these are duplicative, and if they are duplicative, I don't know the extent to which they are unnecessarily so, but I do agree that all sources in all fuels should be subject to the same sort of analysis.

Mr. SWALWELL. And for the handful of programs you looked at that actually provide support for wind projects, are you saying that any element of that support was unnecessary?

Dr. RUSCO. We don't know the extent to which it is unnecessary, and as I said in my opening statement, I think further study is

needed to look at all of the different funding streams that can go towards development of utility-scale electricity projects, and that goes across all fuels.

Mr. SWALWELL. To some people and some folks, the word "duplication" sounds like waste. Did you find any waste with respect to wind energy tax credits or tax incentives?

Dr. RUSCO. So our definition of duplication for this body of work where we are looking across government is, we are looking for programs or activities, federal programs or activities, that provide support to the same recipient for the same purposes, and when we find that, we call it duplicative. However, we are very careful to say we don't know unless we do, whether that duplication is necessary for the project to go forward.

Mr. SWALWELL. Does your report conclude that the Production Tax Credit for wind energy is unnecessary, uneconomic, or bad public policy?

Dr. RUSCO. We have not concluded that.

Mr. SWALWELL. Thank you. Thank you, Mr. Chair.

Mr. SCHWEIKERT. [Presiding] Thank you. Chairwoman Lummis.

Mrs. LUMMIS. Thank you, Mr. Chairman.

Mr. Gramlich, am I correct to understand that the Production Tax Credit is not being phased out, but rather has been significantly expanded?

Mr. GRAMLICH. Well, it is due to expire yet again at the end of this year. It has been a sporadic incentive, unlike the incentives provided to other energy resources.

Mrs. LUMMIS. But it has been expanded, correct?

Mr. GRAMLICH. Yes, it did get extended at the end of the year.

Mrs. LUMMIS. Extended and expanded because isn't it true that projects that you just turn a shovel and it is going to be eligible for a Production Tax Credit going forward?

Mr. GRAMLICH. No, there are actually tight restrictions that are just out from the IRS outlining only those projects that truly start construction in 2013.

Mrs. LUMMIS. And what does "start construction" consist of?

Mr. GRAMLICH. Well, there are clear rules again just issued. Continuous construction is a key component of them, so you have to start, and you can't just sort of walk away and come back later. You have to continuously keep constructing that same project. It is similar to the standards in other tax policy precedent.

Mrs. LUMMIS. Okay. Thanks.

Ms. Parker, you had mentioned concern about ferry safety, air travel, marine life. Have any independent groups conducted assessments of the impact of Cape Wind on those issues, specifically ferry safety, air travel, and marine life, in the Nantucket Sound?

Ms. PARKER. There was an Inspector General's report that came out that looked at various issues with respect to Cape Wind and had concluded that in some cases, agencies had taken shortcuts in their reviews and that the safety concerns were not addressed from the point of users: ferry lines, air-traffic controllers and local airports. There is also a pending inquiry from the Oversight Committee looking into whether there was undue political influence on the FAA in terms of some of the decisions that they had made in terms of issuing a favorable determination for Cape Wind, despite

the fact that there were safety concerns expressed by their own internal experts, and I believe that is still ongoing.

Mrs. LUMMIS. Okay,thank you.

A question for Dr. Michaels. Some say that wind generation combined with gas-fired electricity would be sufficient to meet our energy needs. Do you agree with that statement?

Dr. MICHAELS. At this point, I think the jury is certainly not in on all this yet. I think that currently you have a large number of efficient power plants of many different types—coal, nuclear. All of them have their pluses and their minuses and all of them have costs. What is unique about wind is that wind, unlike the other power sources, raises the cost of operating a power system, because it necessitates more in the way of reserves than otherwise, it puts the system at greater risk of intermittence, and it is harder to put into pricing and energy markets. That is why wind is different. Whatever the tax angles on all of these different sources are concerned, that is the characteristic of wind I think we should be concentrating on.

Mrs. LUMMIS. Okay.An additional question. I am going to ask you the same question that I asked Mr. Gramlich. Do you agree that the Production Tax Credit has been expanded under its current iteration?

Dr. MICHAELS. I do not pretend to be a lawyer, and I cannot give you an opinion on that question.

Mrs. LUMMIS. Okay.

Ms. Parker, do you have any information in that regard

Ms. PARKER. I do not.

Mrs. LUMMIS. There is an Advisory Council for Historic Preservation that recommended that the Department of the Interior not approve Cape Wind because the effects of the project would be pervasive, destructive, and in the instance of seabed construction, permanent. Secretary Salazar approved the project in spite of those recommendations. Is it unusual for the Secretary of the Interior to disregard recommendations of the Advisory Council for Historic Preservation, Ms. Parker? Do you know the answer to that?

Ms. PARKER. I do, and in general it was a very unusual situation, because Secretary Salazar himself was involved personally in the historic and tribal consultation of Cape Wind. It had been determined to be eligible for listing on the National Register of Historic Places because of its cultural significance to local tribes. He ended up terminating that consultation, and then the Advisory Council had to give a recommendation. They rejected—they advised him to either relocate the project, to deny it in its current location, and my understanding is that the Advisory Council gets involved in about a hundred—low hundreds of recommendations each year, and only about one of them ends up in a rejection by Interior, so probably less than one percent.

Mrs. LUMMIS. Thank you. I thank the witnesses, and Mr. Chairman, my time is expired.

Mr. SCHWEIKERT. Thank you, Chairwoman Lummis. Mr. Veasey.

Mr. VEASEY. Thank you, Mr. Chairman.

I wanted to ask Dr. Michaels specifically, has he been following wind in Texas; because the reason why I wanted to ask you specifically about that is because in Texas, we have produced about 8,000

to 9,000 jobs directly related to the wind industry. I have actually visited some of the wind farms in Texas, and the advancements that have been made have been, you know, quite impressive, and you stated earlier that you didn't think that we were really gaining very much in advancement as far as wind is concerned.

Dr. MICHAELS. By advancement, I meant improvements in the technology, not expansion in the amount of installations outstanding, but in Texas, you have what is in many ways a good example of why we should think twice about the Production Tax Credit in the seeming growth of the industry. The transmission lines that link the windy regions of Texas with the consuming regions of Texas are chronically overloaded, and what happens in Texas is that when they bid into the state's power market systems—they must—wind generators essentially now when the lines are crowded, they bid negative prices. They will pay to get their power on the lines. They do so because the advantage they get from the Production Tax Credit is sufficiently large that essentially they will be willing to pay to get power on the lines. There is a real question then about what the value of those credits are in the case where you have what would otherwise be economically irrational behavior.

Mr. VEASEY. But aren't there other energy supplies that are also getting discounted under that same model?

Dr. MICHAELS. No, everybody in Texas pays what is called a nodal pricing system, and you pay prices that depend on the scarcity of transmission and generation. It is a very elaborate system that varies with the geography of the State. But the case of the wind units is pretty well documented, and unfortunately it is becoming more common.

Mr. VEASEY. Now, I represent Fort Worth. That is one of the cities that I also represent, which is home to Barnett shale, one of the—a lot of natural gas drillers. Of course, in the 1970s, you know, people were saying basically what you are saying and no, you are never going to get that gas, it is not going to happen, and of course, with technologies, technologies that were, you know, aided with intangible drilling costs and what have you, eventually made it to where that product could be brought to market. And so why don't you think we should make that same investment in wind? Because a lot of people sitting where you are right now back then were saying that it wasn't going to happen.

Dr. MICHAELS. The first thing I don't do, unlike most economists, is I try not to predict the future because I have been wrong too often. The difficulty that we have here is the question of what exactly did the interventions do in the case of shale oil. A technology got invented, and after that, the industry was able to stand on its feet. The wind industry is simply not standing on its feet at this point, and there is no reason to believe that continuing the Production Tax Credit is going to necessarily change that situation. I can't predict this with certainty, but I think that there is not a very good analogy between shale and wind.

Mr. VEASEY. Thank you, Mr. Chairman.

Mr. SCHWEIKERT. Thank you, and Mr. Posey.

Mr. POSEY. Thank you, Mr. Chairman. My questions are for Ms. Parker.

The first is really a two-part question. In your testimony, you discussed the high costs of offshore wind. On a cost-per-year kilowatt-hour basis, I am interested in knowing how much it cost as compared to other forms and also on the consumer's ability to pay their electric bills.

Ms. PARKER. Essentially, offshore wind is not just more expensive than conventional energy or current market, but also more expensive than an alternative like land-based wind. So, for example, in Massachusetts, we have two big utilities, NSTAR and National Grid. NSTAR went through a competitive solicitation to satisfy a Massachusetts law called the Green Communities Act, and they ended up securing three land-based wind projects that came in at about 9 to 10 cents per kilowatt-hour and they were fixed over time. Cape Wind, by contrast, starts at 19 cents per kilowatt-hour, is guaranteed an annual escalator of 3–1/2 percent and ends up at 31 cents per kilowatt-hour. So you are looking at 25 cents on average versus about 9 or 10 for land versus current market rates of about 7. The net effect of that is for three-quarters of Cape Wind's power, Massachusetts households, businesses and municipalities will be saddled with an additional $3 billion of cost.

Mr. POSEY. Wow, that is staggering, truly. Have you seen any evidence that the rules and regulations have been bent or ignored in Cape Wind?

Ms. PARKER. Absolutely. There has been a strong pattern of that. In fact, we have a timeline of all the events that have happened in the 12-year review of Cape Wind, and I would be happy to submit that if the record is still open, but just to give you a few: in the Coast Guard, they had originally recommended safe separation zones between the turbines and navigational routes. Those were essentially abandoned, as we saw through FOIA responses, because the Coast Guard appeared to be concerned about Cape Wind's bottom line and the fact that imposing these kind of buffer zones would remove some of the turbines from the footprint and hurt the economics of Cape Wind. This is an agency with a safety-first mandate that is concerned about the economics and bottom line of Cape Wind. We have also seen more recently Coast Guard reports that have come out recommending or saying that anything closer to one nautical mile between a route and a turbine is unacceptable from a risk perspective. For Cape Wind, it is not one nautical mile, it is two-tenths of one nautical mile—that close to the turbines. So clearly, rules that have been applied in other places have been ignored in the case of Cape Wind, and again, there are numerous examples, and if I could, I would be happy to submit a timeline with additional examples.

Mr. POSEY. I would appreciate it.

Is there any evidence—now it begs for the next question. Is there any evidence that those in charge of the rulings and decisions were subject to any influence by interested parties?

Ms. PARKER. As I mentioned previously, we had received a number of FOIA documents from the FAA which showed that the FAA felt they were under political pressure. There was a PowerPoint presentation that stated—I am paraphrasing—but something to the effect of, "you know, the Administration has a strong green-energy agenda, Secretary Salazar has already approved the project,

it would be difficult for us politically to refuse approval of the project." There were enough of those types of emails and documents that it ended up having a Congressional investigation by the House Oversight Committee and requested additional documents from the FAA. So that is just one example, and I think when you look at all the different agencies, there is definitely a very strong pattern of a predetermined outcome—"we need to approve Cape Wind, figure out how to make it happen."

Mr. POSEY. Thank you, Mr. Chairman. I yield back.

Mr. SCHWEIKERT. Thank you, Mr. Posey. A couple questions for myself. Dr. Rusco, help me work through the modeling of how, first off, you would actually analyze subsidies that would be in, let us first use wind energy, because that is what we are talking about. You had sort of the direct tax credits, you had, you know, depreciation, many of those other items that are sort of across the board of all types of business. How did you come back and then model states, corporation commissions, railroad commissions around the country that had also had mandatory set-asides for renewables? How do you build that model?

Dr. RUSCO. So, this is work that we think is useful to do, but we have not done it yet, but ultimately what you would do to look at that is, you would have to identify all the support that goes to individual projects. You would have to select projects and find all the support that they can access, and then you would have to build up basically the internal rate of return for the project.

Mr. SCHWEIKERT. So you would actually model by looking at—on that side instead of the market distortion of, okay, renewable here is generating this price into the mandatory purchasing of a utility?

Dr. RUSCO. You could look at that question as well, but I think from the perspective of sort of what is the efficacy of federal policies to support——

Mr. SCHWEIKERT. I am actually trying to break it down to more than just federal. It is also state policy. And we actually have some unusual market-distorting facts. You know, my friend is from California here, and California is doing some things where cutting off access to coal generation. I am from a State, you know, Arizona, right next door that will have some coal generation, so did he raise their prices and provide some excess availability to our population. So, what is also happening at the State level—and I have never seen that actually on paper of trying to understand that all these sort of cross-subsidizations were creating in these set-asides, how far does that go in distorting just regional, national energy markets?

Dr. RUSCO. Those are very good questions and also extremely complicated. I would hate to venture a guess right now how we would do it.

Mr. SCHWEIKERT. Dr. Michaels, if I wanted to find out what is actually happening, what level of distortions we are creating, and please listen, I look at this from a personal standpoint, I want all types of energy to compete with each other and may what is best win.

Dr. MICHAELS. The question about that is becoming much more interesting in the West because California, as you noted, is in the process of trying to close itself off from coal-fired power. What is

really interesting about it is that that is not going to change the amount of coal-fired power that is produced, because it is a market that covers the entire West, and that is going to be what determines. Californians have selectively chosen to impoverish themselves, not uncommon in California, and our problem is that what are we really doing for the environment and what is really happening to prices. The market is much bigger than that, and you are going to have a lot of trouble analyzing how selective subsidies somehow get transmitted when you have those complications, that curious mix of free trade and restrictions.

Mr. SCHWEIKERT. The amazing thing, we hiked actually the Grand Canyon about three weeks ago, and a couple of folks I was with do energy economics, and we were even trying to discuss mandatory line sightings—build a wind farm here if it is, you know, so often has been this far off the grid. Do you also have to calculate in even the mileage of additional line sighting that would have been outside of a typical, you know, energy production corridor?

Dr. MICHAELS. I would say that yes, you would have to add that to some of the costs, and remember that the costs wouldn't just be capital costs, they might include costs of environmental degradation.

Mr. SCHWEIKERT. So if I sat and went and read over the report, it is mostly right now just sort of federal direct subsidization, would I find anywhere out there where I could actually see all the other subsidization, either regulatory or other types of restrictions?

Dr. MICHAELS. I don't know where you could find that directly. You could start looking in some Washington think tanks like Brookings and Resources for the Future, which handle some of these issues, but even that is not going to give you anywhere near a complete picture, at least of the West.

Mr. SCHWEIKERT. Okay, let me have a quick conversation over here. My friend from California wants to at least defend his State, and then we will go back and do a repartee of how we are trying to steal all of the jobs.

Mr. SWALWELL. I would take umbrage that California has impoverished itself, and I would argue that we are moving more towards clean natural gas. In fact, in the city of Hayward, California, which I represent, we have a project of Calpine Corporation, a Russell City energy plant. It is going to be a 600-megawatt, natural gas-fired combined cycle electric-generating facility. It is going to open in July. It has created hundreds of jobs. And we will take the clean air and the new jobs, and I think that just happens to be the way that we should be looking forward. So thank you, Mr. Chair. I don't have any further questions.

Mr. SCHWEIKERT. I appreciate this, and I am going to sort of break the rules and throw out one sort of conceptual statement. How many of you remember sitting through hearings or watching hearings like this a decade ago or 12 years ago and how much of the meeting, the discussion would have been about peak oil? Remember, we had all hit peak oil? There was never going to be another incremental additional barrel of energy produced. We don't talk about that anymore, and there is our problem of the arrogance of predicting the future and choosing winners and losers. The fact of the matter is, we don't do it well.

So, with that, we are going to close the hearing. I thank the witnesses for their valuable testimony and the Members for their questions. The Members of the Committee may have additional questions for you, and we will ask you to respond to those in writing. The record will remain open for two weeks for additional comments and written questions from the Members.

The witnesses are excused. This hearing is adjourned. Thank you for everybody's participation.

[Whereupon, at 3:51 p.m., the Subcommittees were adjourned.]

Appendix I

Answers to Post-Hearing Questions

ANSWERS TO POST-HEARING QUESTIONS

HOUSE COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY
SUBCOMMITTEE ON OVERSIGHT AND SUBCOMMITTEE ON ENERGY

"Assessing the Efficiency and Effectiveness of Wind Energy Incentives"

Questions for the Record, Dr. Frank Rusco, Government Accountability Office

Questions submitted by Dr. Paul Broun, Chairman, Oversight Subcommittee and The Honorable Cynthia Lummis, Chairman, Energy Subcommittee

1. **Your testimony indicates that applicants and manufacturers GAO spoke with believe the costs of participating in the DOE Advanced Technology Vehicles Manufacturing (ATVM) loan program outweigh the benefits because of restrictive requirements and negative publicity surrounding DOE programs.**
   a. **What alternatives did these manufacturers find to fund their projects?**
   b. **Did GAO identify any patterns, such as perhaps need, size, or location, of the types of applicants more likely to seek ATVM assistance despite the program's restrictive requirements?**

Response:

The objective of our review was to determine the status of DOE's efforts to use the remaining loan authority and credit subsidy appropriations, so the work we conducted was not designed to answer these questions. However, we can provide partial answers where our work touched on the issues raised.

For question 1a, these applicants and manufacturers did not identify alternatives to fund their proposed ATVM loan projects. Subsequently, one applicant signed an agreement to fund and produce its product in China.

For question 1b, GAO did not identify any patterns among the applicants and manufacturers we spoke with. Addressing this question fully would entail analyzing all of the previous ATVM loan applications. As of January 29, 2013 DOE was not actively considering any applications. DOE had received 144 ATVM loan applications: 5 received loans, 7 were considered inactive, and the rest were either rejected or withdrew.

IER

May 21, 2013

Please find below responses from Dr. Robert Michaels to questions submitted for the record.

1. It was recently announced that wind was the largest source of newly installed electricity capacity during 2012, and the wind industry regularly touts this growth as a sign of the technology's growing competitiveness and maturity level. However, in the 'Fiscal Cliff' deal, the Production Tax Credit (PTC, the primary tax subsidy for wind), was extended for another year at a cost of $12 billion.

a. Is wind cost-competitive without the PTC? If not, when – if ever - is it expected to be?

Without the PTC, wind is generally not competitive, even if we disregard the added grid operation costs that its intermittency imposes. The U.S. Energy Information Administration expects this situation to continue. Exhibit 2 to my filed testimony shows EIA's 2018 forecast of total levelized [i.e. annualized capital and operating] costs per megawatt-hour (MWh) of gas-fired and onshore wind generation. All-in costs [i.e. inclusive of fuel] per MWh for gas are approximately 24 percent lower than those for wind. Without the PTC subsidy, power from the wind unit will not be cost-competitive. The comparison worsens after we account for the added costs imposed by wind's intermittency. They include those of fuel that extra reserve generators must burn, investments in transmission (which generally operates at less than capacity) whose only use is to reach isolated windy sites, and losses of power associated with that transmission. Even if turbine technology somehow improves to eliminate the 24 percent premium discussed above, there are no substitutes for transmission and little prospect that its costs will fall. The improbability of massive improvements in turbine efficiency, and the unavoidability of extra reserve and transmission costs all strongly suggest that wind will never be competitive with conventional power.

b. How have sustained low natural gas prices impacted the competitiveness of alternative energy sources, specifically wind?

As the likelihood of low gas prices over the forthcoming decades increases (See, e.g. recent EIA forecasts), wind can only become less competitive. Further, the security, accessibility and growth of America's gas reserves are rendering

irrelevant any arguments that wind power will be of value for maintaining fuel diversity or national security.

2. Which has a greater impact on wind capacity growth – subsidies, such as the Production Tax Credit, or mandates, such as state renewable portfolio standards (RPS)?

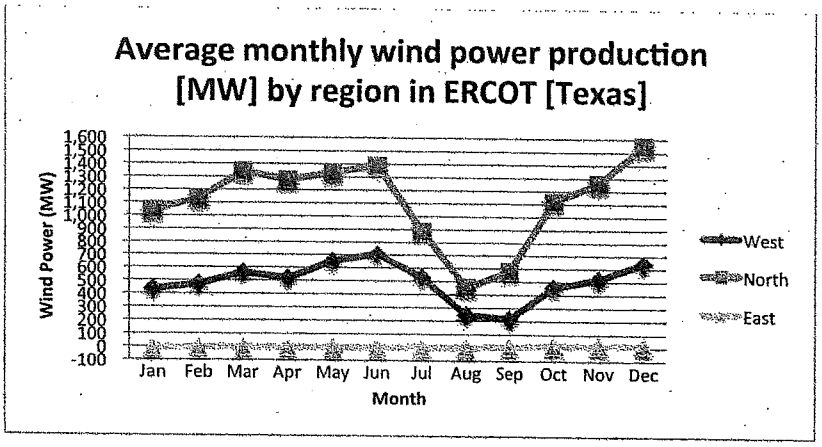
Economists are still attempting to untangle the influences of these two factors and have yet to arrive at a consensus. In many areas wind power is the least-cost way to meet a RPS (In a few others geothermal and biomass are competitive). The problem is that wind-poor states appear less likely to enact RPS, for example most states in the southeast are without one. Thus wind power often thrives in areas that are best suited for it, in which investors build more plants that qualify for the PTC.

Whatever the actual influence of the PTC, we should note that if a state RPS effectively compels investment in wind the federal PTC becomes redundant. To induce RPS compliance state regulators must set rates that are high enough to ensure the returns of wind developers. A PTC in effect compels residents of non-RPS states to subsidize the wind investment in RPS states. These tax payments by residents of non-RPS states provide them with no discernible benefits. These comments expand on those that I made at the hearing in an exchange with Chairman Broun. (Tr. 40)

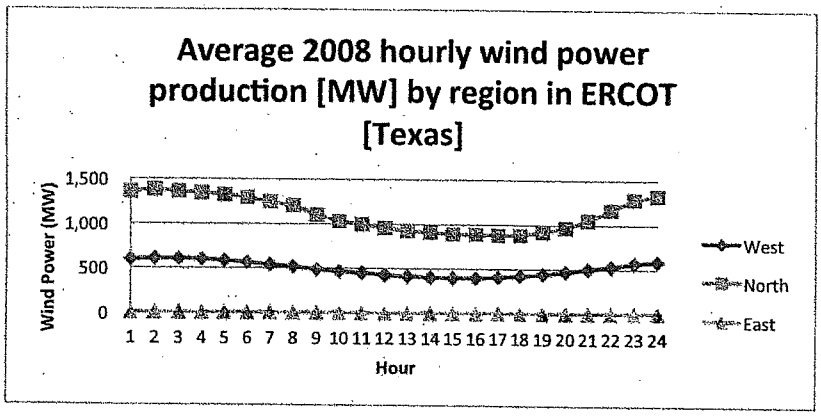
3. Your written testimony notes that data on installed wind capacity are of little or no value in predicting the actual power the system can get at peak times. Please explain the source of the discrepancy between the data and reality.

The following three graphics may be helpful supplements to those in my filed testimony. All use hourly and daily data from the Electricity Reliability Council of Texas [ERCOT], which operates the grid that serves 80 percent of the state's households and businesses.

The first shows how average wind power output per hour varies over the year for turbines in western, northern and eastern Texas. (The very low "eastern" line reflects that area's small generation capacity.) High air conditioning loads drive the demand for power to its peak between July and September, precisely the period at which the average output of wind power falls to its minimum. Conversely, average wind power production is highest during the winter and spring when the need for supplemental power is least.

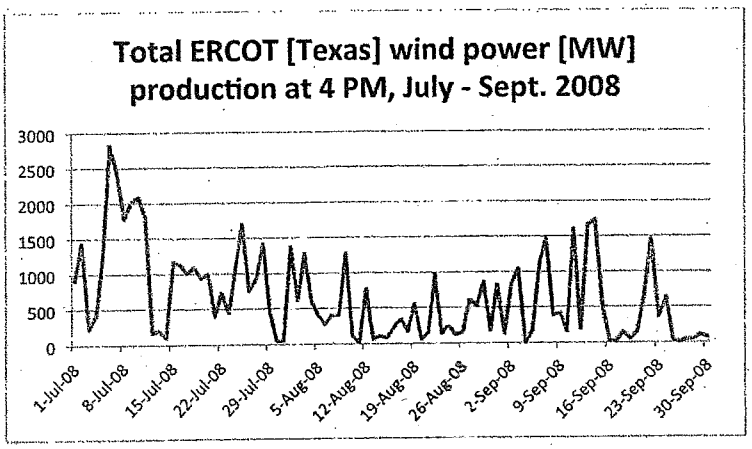


The next chart shows average hourly production of wind power in ERCOT regions over the course of 2008, e.g. the figure above "15" corresponds to the average between 2 and 3 PM (15:00) over 365 days. Again, average wind power output is at its lowest during the hours when it is most valuable. Power consumption by households and businesses typically peaks in afternoon and early evening, when average wind power output is at its lowest.



The next figure uses the same data to illustrate the peak-hour forecasting problem. It plots daily ERCOT wind power output at 4 PM for July, August and September 2008. The fluctuations are *not* reflective of hourly movements.

Rather (e.g.) three consecutive points show 4 PM wind power outputs on three consecutive days. The degree of correlation between nearby points is minimal – a high-wind day is as likely as not to be followed by a high, low or average day. Thus not only does 4 PM wind power output vary dramatically (on one day it reached zero). It varies in ways that make near-term predictions very difficult. The randomness has an important cost consequence: unpredictability requires the commitment of larger reserves of gas-fired generation. If the wind suddenly stops blowing and reserves are not instantly available, even a momentary gap between supply and demand will bring blackouts in its wake.



4. Your testimony discusses how the unpredictable nature of wind power makes it difficult for customers to make decisions about power consumption.

A. How has this challenge affected customers in states already utilizing significant amounts of wind energy?

The issue is not currently relevant for most power consumers, but promises to become so as intermittent power sources grow and as "smart grid" innovations and changes in state-regulated rates come to affect more users. In the growing number of states with competitive power markets energy prices fluctuate, sometimes over five minute intervals, with changing supplies and demands. In a market without intermittent power sources, competitive generators are likely to improve price stability – e.g. an expectation of high prices at the peak will induce some higher-cost generators to operate, and their added production will reduce the severity of possible price spikes. Unpredictable wind generation must also be bid into the market. Unpredictability means that unexpected changes in wind

velocity will ultimately bring greater randomness in power prices, and this can have consequences for operating efficiency. A sudden wind upswing may bring prices lower than were expected by generators that had previously committed themselves to operate. The randomness of wind means that prices become less predictable, both for generators and for those customers who receive power at real-time prices. The number of customers who face time-varying prices will soon only increase as "smart grids" encourage the use of "home area networks" that allow users to time-shift their consumption.

Beyond making prices more random, federal wind policy is already affecting longer-term investments in new generation resources. Donna Nelson, Chairman of the Public Utility Commission of Texas, recently testified on the causes of a looming generation shortage in her state:

> "Federal incentives for renewable energy... have distorted the competitive wholesale market in ERCOT. Wind has been supported by a federal production tax credit that provides $22 per MWh of energy generated by a wind resource. With this substantial incentive, wind resources can actually bid negative prices into the market and still make a profit. We've seen a number of days with a negative clearing price in the west zone of ERCOT where most of the wind resources are installed.... The market distortions caused by renewable energy incentives are one of the primary causes I believe of our current resource adequacy issue... [T]his distortion makes it difficult for other generation types to recover their cost and discourages investment in new generation." (Testimony before Texas Senate Natural Resources Committee, Sept. 6, 2012)

B. How have the energy market and the economy in those states been affected?

As noted in my response to (A), these problems are already affecting investment in conventional generation. Forthcoming developments in real-time pricing will add to the difficulties in decision-making that wind poses for consumers. Any continuing growth in wind power can only make adaptation to these changes more difficult.

5. In the White House memo on the "Shepherds Flat" loan guarantee project in Oregon, the President's top economic and climate advisors – Larry Summers and Carol Browner – warned the President that the Shepherds Flat project was double dipping to the tune of $1.2 billion in subsidies for a project that (a) would generate an estimated return on equity of 30%; and (b) would likely move forward even without a Federal loan guarantee.

What can be learned from this example, and what is the best way to ensure federal spending on wind – if it is to proceed at all – is only directed to projects that would otherwise not go forward?

My testimony noted that despite GAO's allusions to the contrary the economic rationales for federal subsidies (as well as loan guarantees) reduce to just one. Specifically, allocations to develop wind technology might be theoretically justified if in fact markets do not give inventors rewards that suffice to induce innovative activity. This reasoning could in principle justify subsidization of those attempting to devise new basic technologies, but it cannot rationalize subsidies like the PTC that encourage deployment of already-existing technologies. Over 98 percent of the funds studied by GAO, however, support deployment rather than invention. The subsidies for both Shepherds Flat and Cape Wind as described by Ms. Parker (April 16 Testimony, 6) appear to be entirely for deployment rather than innovation, and as such are economically unwarranted.

Looking only at federal support for invention, GAO's theoretical arguments cannot by themselves justify such a policy. Empirical justification is also required, and GAO provides none. The wind turbine industry is global and dominated by large corporations (e.g. General Electric and Mitsubishi) that can fund innovative activities internally, and it is clear they do so as part of their competitive strategies. Further, wind innovators can and do have access to patents that protect their intellectual property against infringement. Other industries as "mature" as wind continually see competition to invent without reliance on subsidies, and I see no differences that might justify special treatment for wind.

One must ask why DOE even entertained requests for support from a developer who forecasted a return on equity of 30 percent for its project. The capital markets are eager to fund investments that promise such wealth to investors who are quickest to spot them. As for projects that "would not otherwise go forward," it appears likely that the capital markets have already judged them to be wasteful of the world's scarce resources. It is hard to believe that civil servants (spending taxpayers' money instead of their own) will have either the ability or the motivation to outperform markets in evaluating the best uses of the economy's scarce capital. Profitable projects do not need a federal payment, and unprofitable projects should never get one.

6. Please find attached a letter and fact sheet from a representative of the Cape Wind project addressing portions of your testimony for the hearing. Do you have any comments in response to the attached documents?

My testimony was intended to portray wind power issues in general terms rather than to evaluate Cape Wind, which I have never studied in detail and about which I have no firsthand knowledge. Cape Wind's transmission path to the regional grid will indeed be relatively short, but the same can be said about all but a few potential projects in a region as small and dense with transmission lines as New England. I also have no direct knowledge of Cape Wind's expected power production pattern over days and seasons. I am; however, aware that both supporters and opponents of the project agree that the prices to be paid for Cape Wind's power are considerably higher than those at which it can currently be obtained from reliable sources.

Question from Rep. Randy Neugebauer

1. Ability to generate wind power is greatest when that power is least valuable (at night), and least during the late afternoon, when the power is most valuable.

a. What technological gaps would need to be bridged in order to more easily facilitate storage of wind power and lower the cost of doing so?

Both governmental and private researchers are trying to develop technologies they hope will ultimately allow storage of wind-generated power that can transfer it to times when it is most valuable. Technologies under scrutiny range from compressed air to flywheels to advanced batteries, as well as pumped hydro storage in the few areas with appropriate geology. At present these technologies are neither economic nor scalable, but few in or out of government can claim much expertise in predicting what will be invented, and when. The U.S. should not base wind policies on a hope that inventions will materialize, and even if they do so there remain the problems and costs of integrating new technologies into the grid. Further, whether or not new storage technologies emerge the high costs of wind generation itself will probably remain.

b. Is any power lost in transmission, and if so, how much?

Power is lost in transmission due to resistance inherent in transmission lines. The Energy Information Administration estimates that in 2010 approximately 6.3 percent of all power generated in the U.S. was lost in this way. [*State Electricity Profiles 2012*, Table 10] Because electricity from all sources is commingled in the grid, there is no way to calculate the line losses of power from an individual generating plant.

Questions submitted by Dr. Paul Broun, Chairman, Oversight Subcommittee and The Honorable Cynthia Lummis, Chairman, Energy Subcommittee

1. Your testimony notes that annual budget impact of the Production Tax Credit (PTC) is less than $2 billion; however, as you know, the PTC is claimed over a ten year period. The Joint Committee on Taxation estimated the one-year PTC extension had a lifetime cost over $12 billion. Additionally, since the one-year extension, the Treasury Department increased the value of the tax credit almost five percent, thus increasing the PTC lifetime cost by about $450 million.

Further, an academic study by an Obama Administration Treasury Official found that even before the massive subsidies included in the 2009 Stimulus bill, the wind industry has an effective tax rate of -163.8 percent. In other words, for every one dollar the industry paid in taxes, it received $2.63 in subsidies. How do you reconcile the extensive cost of the PTC and effective tax rate with the figures included in your testimony?

As the Joint Committee on Taxation (JCT) has documented, the actual budgetary outlay of the PTC available to wind energy production for existing wind projects taking the credit was $1.3 billion for fiscal year 2012.[1] In comparison, annual private investment in wind energy in the United States totaled $25 billion last year. This comparison shows the value to American taxpayers and our economy on an annual basis. When the energy and other benefits such as pollution reduction, decreased water consumption, protection against fuel price spikes, establishing an entirely new manufacturing sector, and rural economic development are included, the benefits far exceed the costs. In addition, every new tax dollar of the PTC delivered to spur domestic wind energy development is returned in full in the form of tax payments to federal, state and local governments.[2]

Further, JCT staff includes the inflation adjustment whenever they estimate the ten-year budgetary impact of a PTC extension. Therefore, the lifetime cost of the PTC has not increased by $450 million, but rather has already been taken into account.

2. In December 2012, AWEA sent a letter to Congress indicating support of a six-year phaseout of the Production Tax Credit, with no PTC in 2019 or afterwards. This phase-out would "sustain a minimally viable industry, able to continue achieving cost reductions." In the letter, AWEA CEO Denise Bode wrote "we seek to work with Congress to extend the PTC *for a reasonable period of time, as described-above."* (Emphasis added.) However, President Obama's recent budget proposal requests a permanent extension of the PTC. Does AWEA stand by the December 2012 letter calling for a six-year permanent phase-out of the PTC?

We continue to support the statements in the December 2012 letter. In fact, we recently included the letter in our April 15 public submittal to the House Energy Tax Reform Working Group. It is important to note that the letter outlined an analysis of what would be necessary to "sustain a

[1] https://www.jct.gov/publications.html?func=startdown&id=4503
[2] http://www.nexteraenergyresources.com/pdf_redesign/wind_ptc.pdf

minimally viable industry," in a context where all energy technology incentives are reevaluated. The letter also emphasized that any credit reduction should be coordinated with other energy policies.

In addition, the letter stated, "Policy certainty is the only way the industry will be able to make long-term investment decisions that can solidify this American success story." The continued lack of long-term market certainty due to periodic short-term PTC extensions prevents investment in the remaining cost-reducing research and development and manufacturing operations required to make wind energy fully cost-competitive. A longer term extension of the PTC would provide the certainty required for companies to make these investments.

Questions from Rep. Joe Kennedy

1. Despite the continued insistence of a few witnesses both in this hearing and in previous Science, Space, and Technology hearings this year, I believe we are just beginning to reach our potential when it comes to wind energy. According to Dr. Malcolm Woolf of the Advanced Energy Economy who testified in front of this Committee on March 13, wind energy became the number one source of new U.S. electric generating capacity in 2012, providing 42 percent of new generating capacity. It's still a small percentage of overall energy production, but growing rapidly.

For more than a century, the government has provided important subsidies and benefits for other energy producers, such as oil and gas, to assist with the development and deployment of those technologies. I'm not here to discount those efforts, but rather to look at the most effective and efficient way to adapt our energy investments to advance new technologies, like wind.

The President's FY14 budget request includes $365 million for Department of Energy R&D focused on innovative energy-efficient and clean energy manufacturing processes and materials technologies.

My question is, do you believe that these types of manufacturing investments will help ensure we create new jobs in this growing sector here in the U.S.? What are the other top priority investments that you believe the federal government needs to make in order to level the playing field with incumbent energy technologies?

Yes, these types of manufacturing investments are helpful in ensuring that U.S. manufacturers can effectively compete with manufacturers abroad while bringing down costs to save consumers money. However, manufacturing investments without an extension of the underlying deployment tax incentive, the PTC, will have a much more limited impact because manufacturers will have a smaller market to sell into, which reduces interest and economies of scale. We also support the President's request to increase funding for the Department of Energy (DOE) wind program to bring down wind energy technology costs, promote offshore wind energy development, and improve electric grid integration.

Policy certainty and stability are needed to make sure wind energy continues to be a part of a diverse national energy portfolio. The continuation of the PTC is the best way to deliver this certainty if provided in a long-term stable manner. The PTC is an excellent example of an effective tax incentive that cost $1.3 billion for fiscal year 2012, while private investment in wind energy in the United States totaled $25 billion last year. The price of wind turbines has decreased 33% in the last three years, but continued policy support through the PTC is needed to keep wind competitive with traditional energy sources that have enjoyed permanent, decades-long support through the U.S. tax code.

2. In Cape Wind's case, this project is the first of its kind, and initial investment is expensive. This is no reason to stop the project and not move forward, but if the government follows the recommendations you provided in response to the previous question, do you believe that the wind industry can reach economies of scale? Can it get to a point where federal incentives are no longer necessary for the industry to be competitive at a large scale, assuming similar incentives are removed for incumbent technologies? If so, when?

Yes, we do believe that with longer-term policies that provide certainty for businesses, such as the PTC, the wind industry will become cost-competitive with all other energy technologies. As you mentioned above, other traditional energy technologies have benefited from tax incentives and other policy support for decades. As the cost of wind energy continues to decrease, assuming all incentives and other federal policy support are removed for other technologies, there will be a point in time when federal incentives would no longer be necessary for the wind industry. Given the dynamic nature of energy markets and the uncertain pace of technological change, it is difficult to pinpoint the exact date when wind energy could compete on costs without federal policy support. Certainly, establishing a level playing field and making sure health costs and environmental benefits are captured in the price of all fuels would be good public policy and make wind energy competitive with other energy sources in the long-term.

SAVE OUR SOUND
alliance to protect nantucket sound

May 21, 2013
House Committee on Science, Space, and Technology
Subcommittees on Oversight and Energy
2321 Rayburn House Office Building
Washington, DC 20515-6310

Dear Oversight Chairman Broun and Energy Chairman Lummis:

I am writing to respond to the additional questions posed by Members of the Committee on Science, Space, and Technology provided to me in your letter of May 8, 2013. I appreciate the opportunity to address your questions as well as to comment on the letter submitted by Cape Wind.

Question 1

"Your written testimony states that the $4.3 billion in state and federal incentives that the Cape Wind project could receive would only create 50 permanent jobs at a cost of $86 million per job. The project originally planned to use a local company for construction, but now appears it would use a foreign company. What do you know about how and why that decision was made? Are there American Companies that could be competitive contenders for those contracts?"

There are absolutely American companies that could be competitive contenders for these contracts, which would be a far better use of taxpayer dollars than sending jobs overseas at taxpayer expense. Mass Tank of Middleboro, Massachusetts, serves as a perfect example of creating a local supply chain. However, Cape Wind recently turned its back on an agreement with Mass Tank to manufacture the bases of its wind turbines to instead go overseas. In a January 28, 2013, letter from Mass Tank to the Department of Energy, President Carl Horstmann wrote that after signing a letter of intent with Cape Wind, "Mass Tank worked tirelessly for the next two years reaching our Cape Wind required milestones"... but that Cape Wind had "recently affirmed that Mass Tank will not be used on its project. It's our understanding that Cape Wind apparently intends to deal directly with a foreign business, bypassing Mass Tank completely and out-sourcing the work to a foreign, rather than a local business." (EXHIBIT 1)

Further, in a recent press article, Stephen Lynch, Executive Vice President of Mass Tank, stated, "Cape Wind basically is going to be built by foreign suppliers. If they had gone with us, it would have supported about 150 permanent jobs. We don't think taxpayers should have to finance the project if it's not going to create jobs in the U.S." (EXHIBIT 2)

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Cape Wind has a long history of making promises that it does not keep. The latest situation with Mass Tank is a classic bait and switch – moving jobs promised to a local MA company overseas. Mass Tank was used by Cape Wind to garner public and political support under the guise of creating local jobs. However, the reality is that if Cape Wind is allowed to move forward, ratepayers and taxpayers would be subsidizing jobs in Europe, not here.

Question 2

"The town of Falmouth, MA has been in the news for its attempts to take down two wind turbines that were put into operation recently. Complaints about these windmills cover the gamut of reasons ranging from noise to illness, and the residents of the town were so desperate that they went as far as considering a tax increase on themselves to dismantle the turbines. Understanding that the Cape Wind project is an off-shore proposal, what lessons can be learned from the pain and suffering of the Falmouth experience?"

The experience in Falmouth clearly shows that locating turbines in appropriate sites and understanding the true impacts of these projects, both onshore and offshore, is critical. Wind projects are not benign in all locations, and because they require a large footprint to generate a fairly small amount of power, they need to be sited appropriately in areas where impacts can be minimized. Furthermore, the Falmouth example shows the extreme financial burden to the public of a poorly sited project.

Cape Wind's proposed offshore site in Nantucket Sound is another poor choice from a public interest standpoint. It would pose risks to public safety, significant impacts to sacred tribal lands and historic properties, and adverse environmental effects. Located in an area with over 200 days of fog per year and quickly changing weather, Cape Wind would create significant navigational hazards for thousands of commercial and recreational vessels and pose an unacceptable hazard to aviation safety. It would cause both marine and aviation radar interference and be dangerously close to shipping lanes and Air Traffic Control operations. Cape Wind would desecrate sacred tribal land and harm traditional religious and cultural practices for the two local tribes. It would also cause permanent and pervasive damage to the rich history of the Sound. Cape Wind would also threaten the environment, including several species of endangered and protected birds and marine mammals as well as Essential Fish Habitat. The Cape Wind project, with its transformer substation holding over 40,000 gallons of oil, would introduce the chance of a devastating oil spill into Nantucket Sound. Finally, Cape Wind would burden the public with increased electricity costs as well as federal and state incentives. These impacts are described in further detail in my written testimony of April 16, 2013.

To avoid the many conflicts and risks posed by Cape Wind in its proposed location just off the coastline in Nantucket Sound, the Alliance and the project's multiple opponents have long advocated relocation to a less conflicted alternative site. Extensive Wind Energy Areas (WEAs) have been identified by the Department of Interior along the east coast from Massachusetts to North Carolina, confirming the current availability of numerous alternative sites all along the East Coast. In fact, Energy Management, Inc., Cape Wind's private developer, has now formally expressed interest in two new lease areas offshore in the joint Massachusetts/

Rhode Island WEA. While relocation does not address the issues related to the exorbitant financial cost of the project to the public, it would resolve the many tribal, environmental, and public safety conflicts inherent in Cape Wind's present siting and avoid another situation such as the smaller scale one in Falmouth.

Question 3

"During the spring of 2011, more than 200 right whales (about half the species' known population) were spotted off Cape Cod. While that was a record number of sightings, two years later, the federal government appears to have dismissed those events and given Cape Wind a pass on the issue of threatened or endangered species. A March 29, 2013, Federal Register notice states: "The presence of right whales in Nantucket Sound is not common and NMFS (National Marine Fisheries Service) believes that the possibility of a survey vessel striking a right whale is unlikely."

a. **Have you noticed a trend to the extent to which wind projects have to comply – or not comply – with federal environmental laws?**

Yes. Under the current Administration, wind developers have received preferential treatment with regard to compliance with certain environmental laws. This trend applies across the board to virtually any environmental law, but the problem can be best illustrated by how the Administration has given wind developers a free pass at complying with the Migratory Bird Treaty Act and has refrained from prosecuting wind developers for bird deaths caused by wind turbines.

The Associated Press (AP) conducted an investigation on the Administration's enforcement activities related to prosecuting wind energy projects and oil companies over bird deaths. (EXHIBIT 3) What the AP uncovered is that the Administration has never prosecuted, or even fined, a wind energy company for the death of birds due to a project's operation. This is in stark contrast to the Administration's track record on the same issue with oil companies, as discussed below. According to the investigation, more than 573,000 birds are killed annually by the nation's wind energy projects. The AP interviewed a federal official, who confirmed that wind projects have killed more than four dozen golden eagles since 2009 in the State of Wyoming alone. Wyoming also recently approved the Chokecherry and Sierra Madre site for what is slated to be the largest wind project in the U.S. that will consist of 1,000 turbines. It is predicted this project will kill 46 to 64 eagles annually.

Another example of this preferential treatment is illustrated by the U.S. Fish and Wildlife Service's recent decision to exempt Terra-Gen Power's wind energy project in the Tehachapi Mountains, Alta East, from criminal prosecution for the accidental death, or "take" under the Migratory Bird Treaty Act, of a California condor during the project's 30 year operating span. This is the first time the Service has ever agreed to allow a developer to take a California condor and not face legal consequences.

The Administration has also taken great strides to amend the Service's regulations, which govern the incidental and non-purposeful take of eagles, to accommodate wind and other renewable energy developers. Last year, on April 13, 2012, the Fish and Wildlife Service issued a proposed rule to revise its current regulations to extend the term for programmatic permits for the incidental take of eagles under the Bald and Golden Eagle Protection Act from 5 years to 30 years. *See* Eagle Permits; Changes in the Regulations Governing Eagle Permitting (77 Fed. Reg. 22,267, Docket No. FWS-R90MB-2011-0054) Programmatic permits authorize take that is recurring over the long-term, is not caused solely by indirect effects, and is unavoidable even after implementation of advanced conservation practices. According to the Service, input from proponents of renewable energy projects and review of programmatic eagle permit applications led the Service to amend its regulations to better accommodate the timeframe for development of renewable energy projects. Specifically, the Service concluded that programmatic permits for the incidental take of eagles should be extended from 5 years to 30 years to enable permittees to secure funding, lease agreements, and other assurances to advance their projects.

On the other hand, oil, electric, and other traditional energy companies have been highly scrutinized by the Administration for bird deaths and have been held to a different and higher standard. In 2009, Exxon Mobil pled guilty to charges by the Government for killing 85 birds in five states, and agreed to pay $600,000. BP was also fined $100 million for bird deaths as a result of the 2010 Horizon oil spill, and PacifiCorp paid more than $10.5 million in 2009 for charges by the Government that its project operations resulted in the electrocution of 232 eagles along power lines and at substations. In the summer of 2011, the U.S. Department of Justice, at the direction of the Fish and Wildlife service, brought criminal indictments against three oil companies operating in the Bakken shale oil field of North Dakota, Brigham Oil & Gas, Newfield Production, and Continental Resources, for violations of the Migratory Bird Treaty Act for the accidental deaths of birds that drowned in the oil companies' reserve pits. Most recently, in December of 2012, SM Energy Company pled guilty to misdemeanor charges brought by the Government also for violations of the Migratory Bird Treaty Act due to deaths of migratory birds in the company's oil pits. The company agreed to pay a total of $30,000 in fines and spend an additional $300,000 on a compliance plan to avoid similar bird takes in the future.

Of course, perhaps the best example of this lax, and unlawful, approach to applying environmental, and even public safety laws, is demonstrated by the Cape Wind project. In my previous testimony, I listed numerous examples of how the Obama Administration has gone to extraordinary lengths to approve Cape Wind and to do so under a time frame that meets the developer's financial goals and, in some cases, the political goals of Governor Patrick - who has made Cape Wind a "poster child" issue in his campaigns.

There are far too many examples of pro-Cape Wind favoritism to describe here, but I will offer two examples.

First, in April 2009, Secretary Salazar published final regulations governing offshore renewable energy. One of the key requirements is that an offshore wind developer must submit so-called "G&G" surveys of geohazards,

archaeological resources, benthic communities, and seafloor sediments as part of an application for Construction and Operations Plan (COP) approval. A COP is the key decision necessary to build. Department of the Interior staff repeatedly criticized Cape Wind's application because it did not include G&G survey information, explaining how important it was. Cape Wind protested that such surveys were too expensive and that financing was not yet available. Department of the Interior policy officials then over-ruled the staff and gave Cape Wind a waiver of the requirement. In doing so, Interior did not even meet the criteria for a waiver. To this date, long after Cape Wind lease issuance and COP approval, Cape Wind still has not completed the surveys.

Another example concerns the location of the staging area for Cape Wind. In all federal environmental documents, Cape Wind says it will stage the project out of Quonset, Rhode Island. In October, 2010, however, Governor Patrick announced as part of his campaign that New Bedford would be the staging location for Cape Wind and other offshore wind projects. Cape Wind joined in that announcement, again proclaiming local jobs. Repeatedly since then, the Governor's Office and Cape Wind have heralded the coming economic boom to New Bedford, but nothing has been done to change the federal environmental reviews.

Cape Wind quickly realized that the Quonset/New Bedford "bait and switch" had been discovered and would require supplemental environmental studies. Cape Wind appealed to the highest political levels of Interior to not require supplemental NEPA review with a public comment period on the COP, which is exactly what happened. In addition, Cape Wind forewarned New Bedford officials that they could not confirm the plan to switch from Quonset because additional environmental review would be required.

b. Are wind projects treated differently than energy projects involving fossil fuels?"

Yes. As evidenced in the previous section addressing the Administration's treatment of wind companies compared to oil and gas companies with regard to environmental compliance, wind projects are favored. This appears to be true in the context of federal financial incentives for wind projects versus oil and gas projects, as well. As I noted in my prior testimony to the Committee, the current Administration has provided a number of financial incentives for the offshore wind industry. In particular, the Administration made available billions in federal funding under the American Recovery and Reinvestment Act of 2009 for innovative energy technologies, which included offshore wind, but excluded oil and gas projects. Additionally, the President signed into law the American Taxpayer Relief Act in December 2012, which extended the Investment Tax Credit and the Production Tax Credit for the wind industry. The Act extended the credit expiration deadline for wind energy facilities through 2013 and revised the eligibility requirements for these projects to only require that an eligible project begin construction by the end of the year rather than be placed in service. This change was made to accommodate the lengthy construction schedule for many wind energy projects. The Administration did not provide similar incentives to the oil and gas industry or for more traditional energy companies.

1. Another example is found in the approach to lease issuance. For offshore oil and gas development, a rigorous process is applied requiring a full Environmental Impact Statement (EIS) at the lease sale stage, followed by additional National Environmental Policy Act (NEPA) review at the seismic survey, explanatory drilling, and project development stages. An EIS offer is required during this post-lease sale issuance stage, and detailed Environmental Assessments (EA) are at a minimum required.

For offshore wind, Interior seeks to avoid competitive lease sales whenever possible. It only requires an EA for lease issuance, deferring the EIS to the COP stage, after a property right has already been established for the offshore wind developer's lease. In addition, as discussed above for Cape Wind, the survey step was completely skipped prior to COP approval. When it comes to offshore renewable energy, and especially Cape Wind, almost any environmental law is fair game for an exemption, shortcut, or result-oriented decision that gives short shift to public involvement.

Question 4

Please find attached a letter and fact sheet from a representative of the Cape Wind project addressing portions of your testimony. Do you have any comments in response to the attached documents?"

The letter from Cape Wind to the Members of the Committee is self-serving, rife with inaccuracies and most notable for the issues on which Mr. Duffy has remained silent.

NIMBY claims

In an attempt to trivialize opposition to its project, Cape Wind has repeatedly referred to the Alliance to Protect Nantucket Sound ("Alliance") as a NIMBY group funded by Bill Koch and formed solely to benefit waterfront homeowners. The fact is that the Alliance has over 30,000 supporters from all demographic segments including small business owners, tribal members, commercial and recreational fishermen, chambers of commerce, and others. The attached editorial by Peter Kenney from South Coast Today on May 14, 2013, accurately describes the membership and origin of the Alliance as a grassroots organization. (EXHIBIT 4)

"The Alliance was formed in 2001 by a small group of local residents who believed that Cape Wind was the wrong project in the wrong place. The Alliance is not now and never was an anti-wind effort, it is anti-Cape Wind. Bill Koch was not involved in the Alliance until 2005. For four years, the Alliance lived hand-to-mouth, scraping by on small donations from more than 25,000 individuals and local business people. Local musicians provided entertainment, there was occasionally wine and cheese as ordinary people gathered from time to time to commiserate about the Cape Wind plan and build an opposition. Not once did I see a coal magnate or oil baron at any of these affairs. I did see local commercial fisherman, wildlife protection advocates, ferry operators, pilots, working people whose houses do not have views of the Sound and many people whose careers have been dedicated to environmental protection and reform, people whose careers are marked by successful efforts to stop polluters. Colorful children's beach buckets were passed around to catch the contributions of these ordinary people, dollar bills and five- and ten-dollar bills."

The Alliance continues to be privately funded by local residents and receives donations from approximately 5000 supporters as well as substantial donations of pro bono assistance. The following statements provide an idea of the true sentiments motivating our donors to support our mission to protect Nantucket Sound:

- $15 donor – "I'm elderly and on a limited income, but I gladly offer this small amount because I do not want to leave this earth with the sound desecrated."
- $25 donor – "You will never know how much we appreciate all that SOS [Save Our Sound or the Alliance to Protect Nantucket Sound] has done to protect our sound! Thank you - thank you- thank you!"
- $50 donor – "I feel that we in the Alliance and other concerned citizens will be remembered for generations for working to site wind turbines intelligently and for standing up strongly against the corporate greed and short-sightedness of groups like Cape Wind."

The following note came from a supporter after Secretary Salazar's announcement to approve Cape Wind in 2010: "Thank you so much for all you folks are doing to save one of the most beautiful pieces of water in the world. When the news came down the other day, I was devastated; frankly, I took it much harder than expected. It is unfathomable to me that a group of investors can simply swoop in lay claim to a national treasure. This is the greatest theft in Massachusetts history. Cape Wind has devastated not only the Native Americans for whom this is hallowed ground, and not only the hundreds of fishermen who will lose the fertile Horseshoe Shoal, but also the untold number of people who hold this pristine place close. Cape Wind will leave broken hearts, shattered dreams and tarnished memories in its wake if the project is allowed to proceed. We must fight this project to the very end, but not just for the sake of us; for most of my life, I've had the privilege of enjoying the same Nantucket Sound that my parents and grandparents enjoyed. I've seen and felt the magic of these waters. It has been an inspiration, a healer, a source of strength, and one of the great loves of my life. But what about my daughter? Will she grow up in the shadow of an industrial monstrosity? Will she ever have the opportunity to glide over the Sound and look out towards Muskeget and the Vineyard with nothing but unblemished horizon in front of her? It breaks my heart to think that future generations will never know or feel the same magic. I will fight with you, every step of the way. I'm proud to stand alongside you."

Finally, the Alliance, with its 30,000 supporters, is not alone in filing lawsuits against Cape Wind. Numerous other organizations have previously filed legal challenges, have currently pending legal challenges or have filed an amicus brief against Cape Wind. This clearly shows the strength and breadth of opposition to this expensive and controversial project. These parties include:

- Associated Industries of MA, representing the 6000 largest employers in MA
- New England Power Generators Association
- TransCanada Power Marketing, which owns and operates land based wind projects among its businesses
- The Wampanoag Tribe of Gayhead/Aquinnah
- The Town of Barnstable

- Public Employees for Environmental Responsibility
- Cetacean Society International
- Three Bays Preservation
- Californians for Renewable Energy
- Lower Laguna Madre Foundation
- National Trust for Historic Preservation

Air and Maritime Safety

In his April 24, 2013, letter, Mr. Duffy dismisses legitimate concerns about public safety. While the US Coast Guard, the Federal Aviation Administration and the Department of Defense have all been involved in the review of Cape Wind and its impacts to public safety, Mr. Duffy is incorrect in stating that these agencies have rejected all of our public safety concerns. In addition, external investigations and Court decisions have shown that these agencies did not sufficiently or appropriately address safety concerns.

For example, the January 2010 report by Interior's Office of Inspector General (OIG) revealed that the USCG "indicated that the timeline imposed by Minerals Management Services (MMS) pressed them into acting atypically, restricting their ability to be as thorough as they would have liked in conducting such a review." (*See* Alliance Testimony, Exhibit 15, dated April, 16, 2013) The OIG report also stated that days before the Final Environmental Impact Statement (FEIS) was published "MMS learned that the FAA had concluded a study that determined that the project would result in a "Presumed Hazard" to aircraft, yet MMS published the final EIS without acknowledging this new FAA finding, and instead allowed the final EIS to be published with FAA's outdated finding of "no adverse effect.""

Furthermore, in a January 28, 2010, cover letter from OIG, Acting IG Mary Kendal confirmed that public safety concerns were not adequately addressed for marine and aviation stakeholders. (EXHIBIT 5) "In addition to the concerns expressed by cooperating federal agencies regarding MMS' timeline for the final EIS, our investigation also determined that several transportation entities located in the Cape Wind Project area, including all three local airports and the two major ferry operators, feel their concerns and comments about the impact of the project to the navigational safety of the area were not adequately considered by MMS. "

Documents revealed through the Administrative Record (AR) in court proceedings and Freedom of Information Act (FOIA) requests show that both USCG and FAA expressed safety concerns. USCG personnel continually expressed serious safety concerns regarding the proposed Cape Wind project, including the following documents from the AR and included in the Alliance's written testimony of April 16, 2013:

- "Someone will run into one of these eventually" and "will impede SAR [Search and Rescue] efforts" January 5, 2002
- "one additional point that the AIRSTA made, was that they often cut across that area at low altitude when returning from patrols ...the wind farm will certainly impact this practice." January 29, 2003

- With respect to SAR: "the probability of detecting these targets will be decreased due to the presence of the wind farm." January 29, 2003
- In 2006, Captain Nash wrote "The ferry routes that skirt three sides of Horseshoe shoals would likely become more congested, as fishermen and recreational boaters seek to avoid running into a tower"
- On December 8, 2008, Kovatch wrote to Leblanc, "Won't we have to consider this an un-navigable area? All those towers so close together over such a large area. I would not want to go into that field. Of course, fishermen will because fish and wildlife will flock to the towers underwater so where the fish go the boats will go, which means the CG will have to go but a helicopter couldn't fly into there to hoist a guy from a sinking boat so you'd have to wait for a small boat which would take much longer. Seems like a pretty big impact to me."
- Captain Bushy wrote to Captain Perry on January 3, 2009, "During the TSC presentation, the presenter himself, presumably after numerous viewings of the radar images, became disoriented when trying to ascertain a small boat within the cluster of wind turbines. I could not help but infer from this that the inexperienced radar observer would not be able to discern moving radar echoes within the wind farm." Also "The only safe way to mitigate danger is to impose a safety zone separating the mainstream waterways from the wind farm." A January 13, 2009, document showed that USCG concurred with Captain Bushy's comment that radar echoes near the wind farm "could create confusion by the inexperienced radar observer and would present dangers to navigation not present today in Nantucket Sound"
- A January 13, 2009, document stated, "From the Gladdening and Hearn website (builder of hi-speed ferries), the stopping distance while at full speed (30 knots) is 2 to 2.5 times the length of the vessel. The Grey Lady is 106' long, so it should be able to stop within 250 feet or so. But should it execute a "crash stop", I imagine passengers would be injured."
- March 23, 2009, Beck wrote to Colt, "The most significant conclusion is that it is going to take a lot of effort to figure out which targets are real and which are false echoes..."

Furthermore, the attached report by the McGowan Group entitled "A Comparative Analysis of the Development and Application of Marine Navigation Safety and Marine Environmental Protection Criteria for Offshore Renewable Energy Installations (OREI) dated March 11, 2013, shows that navigational safety standards being used elsewhere were not applied to Cape Wind in Nantucket Sound. The report states "the Nantucket Sound Standards provide far less protection for navigation safety than the comparative measures established or proposed for every other OREI location." (EXHIBIT 6)

Numerous FOIA responses express safety concerns by Cape TRACON (Terminal Radar Control) as well as FAA personnel involved in the review of Cape Wind. Cape TRACON's concerns are documented over several years, beginning in 2006 and continuing through 2010.

- A December 29, 2006, email from Cape TRACON to FAA personnel outlines detailed concerns regarding Cape Wind including impacts on low altitude flights, variation in traffic, IFR [Instrument Flight Rules] and VFR [Visual Flight Rules] impacts, and congestion.

- A May 4, 2009, email again from Cape TRACON to FAA includes a detailed list of impacts at FMH and Cape TRACON including approaches, search and rescue, loss of targets, and clutter.
- A July 17, 2009, draft memo of Cape Wind proposal options states that ASR 8 "clutter is a major distraction to ATC [Air Traffic Control]. ATC flight following for non-transponder equipped aircraft would be compromised over WT. Approximately 12% of traffic do not have transponders."
- On February 24, 2010, When asked by FAA personnel, "When your office reviewed the playback demo from the test that was conducted to simulate the wind turbines, what was AT's opinion as to whether the wind turbines were going to be an issue? AT responded on March 2, 2010, "While not the official AT response, I offer the following: Based on what we observed in the playback test, the radar reflections of the simulated wind turbines would exceed an acceptable level and will be an issue."
- A February 10, 2011, mitigation strategy memo regarding the FMH Reimbursable agreement acknowledges that, "Establishment of a wind turbine project that consist of many individual wind turbines that are closely spaced presents performance issues for FAA radar... The effects will exist as unwanted clutter...unwanted moving targets..."
- An October 31, 2011, email states, "I don't think air traffic could keep a low flying search-only VFR from running into a wind turbine."

Mr. Duffy also states in his letter that Cape Air and Hy-Line Cruises both support the Project. What he omits is that Island Air, another smaller regional carrier, as well as all three local airports, oppose the project with the Barnstable Airport appealing both the 2010 and 2012 FAA determinations. In addition, Steamship Authority, the larger of the two local ferry lines, remains strongly opposed to Cape Wind, and until recently, Hy-Line Cruises was on record expressing grave safety concerns, referring to Cape Wind as an "accident waiting to happen." It is unclear why the Hy-Line has changed its position after long and consistent opposition other than plans to enter into an ecotourism business partnership with Cape Wind.

Mr. Duffy also incorrectly states that the Alliance "mischaracterized a Court of Appeals decision regarding the FAA's third positive determination, which simply remanded the decision back to the FAA for clarification of its decision-making, resulting in its fourth positive determination."

It is unclear what mischaracterization to which Mr. Duffy refers. The Court revoked the FAA's ruling specifically stating in its decision "The petitions for review are accordingly granted, and the FAA's determinations are *Vacated and Remanded*. The Court also faulted the FAA for several factors including: "fail[ing] to supply any analysis of the record evidence concerning the wind farm's potentially adverse effects on VFR operations"; "cut[ting] the process short ... and never calculate[ing] the risks in the first place"; as well as "catapult[ing] over the real issues and the analytical work required." (*See* Alliance Testimony, Exhibit 20, dated April 16, 2013)

PAVE PAWS Military Radar:

Mr. Duffy claims that the "allegation that the Project would interfere with the Pave Paws radar system is both irresponsible and patently false." Not only does Mr. Duffy misrepresent our position, but he offers only outdated evidence to support his position, failing to mention that his source of information is from 2004, and ignores ensuing studies by the Department of Defense as a result of the 2006 National Defense Authorization Act. The Alliance's written testimony raises issues and questions that would be prudent to address if in fact there is a potential issue to military defense.

Mr. Duffy's sole and undocumented source appears to refer to a 2004 letter by the US Air Force. In 2004, Air Force Space Command was asked to investigate if the proposed Cape Wind project would interfere with PAVE PAWS radar operations. The study determined the proposed turbines were too far below the radar's main beam to have any effect.

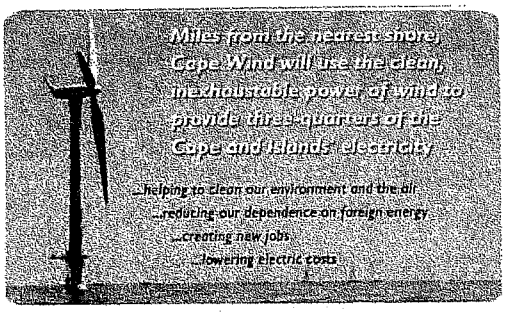
However, two years later, the 2006 National Defense Authorization Act required the Department of Defense (DOD) to prepare a report both on the effect of wind-turbine interference on military readiness and on possible mitigation measures. The report entitled "The Effect of Windmill Farms on Military Readiness" concluded that there was indeed significant impact from wind turbines, stating that "wind farms located within radar line of sight of air defense radar have the potential to degrade the ability of that radar to perform its intended function." The 2006 DOD report also stated that "The analysis that had been performed for the early warning radar at Cape Cod Air Force Station was overly simplified and technically flawed. A more comprehensive analysis followed by development of appropriate offset criteria for fixed-site missile early warning radars should be performed on an expedited basis." Thus, Mr. Duffy's source does not support his position.

In 2007, an additional study was conducted entitled "Wind Turbine Analysis for Cape Cod Air Force Station Early Warning Radar and Beale Air Force Base Upgraded Early Warning Radar." This study confirmed that "utility class wind farms could have a significant impact on radars, including missile defense early warning radars" and recommended a wind project offset zone of 25 km from missile defense radar systems. As acknowledged by the Alliance, the Cape Wind project is outside of this offset zone at 26 km away. However, because of this extremely small margin of error, the Alliance remains concerned that the study's recommended offset zone of 25 km is too close for comfort. It is also unclear from the 2007 study whether the current height of the turbines at 440 feet was used or an outdated lower height was improperly used, potentially affecting the radius of the safe offset zone for the PAVE PAWS early warning radar system. It would be wise to verify.

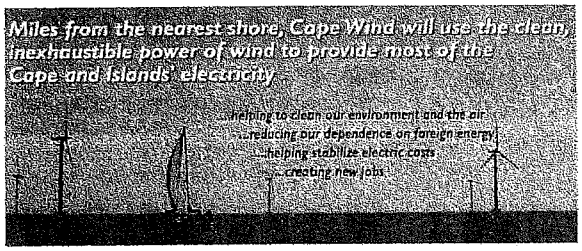
Finally, my written testimony of April 16, 2013, provides several quotes from FAA emails in 2010 which also express concerns that the Cape Wind turbines may pose threats to national security. It is unclear whether the proper agencies addressed this issue especially given the scenario that aircraft operating without a transponder could remain unseen. Again if there is any question of impacts or accuracy, it would be prudent to revisit the issue to ensure there are in fact no adverse impacts to military defense posed by Cape Wind's proposed 130 wind turbines.

Electric Bill Impact/Lower Electric Market Prices:

Mr. Duffy's criticism of the Alliance's arguments is not supported by fact and is only partially explained. He essentially presents a cost-benefit analysis without the cost portion. He also refers to a MA Energy Facilities Sighting Board (EFSB) decision that was made prior to Cape Wind's contracts with National Grid and NStar to sell its power at huge price premiums. Cape Wind has long misrepresented the high cost of Cape Wind to the public, claiming that this expensive project would reduce costs. The following shows a screenshot of Cape Wind's web site in 2006 claiming lower electricity costs for the public.



A 2010 screen shot now shows a change to claiming the project would help stabilize electricity costs. The fact of the matter is that Cape Wind would increase costs as represented clearly in both the NStar and National Grid Power Purchase Agreements (PPAs).



Mr. Duffy's argument of reduced prices relies on a price suppression effect from a reduction of market clearing prices. However, the above market premiums to MA ratepayers represented in the PPAs already account for the price suppression effect and still result in billions of additional costs for MA ratepayers. In the direct testimony of Mr. James Daly, Director of Electric and Gas Energy Supply for NStar during the NStar contract proceedings held by the Ma Department of Public Utilities, Mr. Daly acknowledges this. He states: "The costs for energy, capacity and RECs under the contract are higher than the Levitan forecast of market prices for energy, capacity and RECs during all years of the contract. The contract's nominal above-market

cost over the life of the contract is estimated to be $940 million should the project qualify for investment tax credits and $967 million should the project not qualify for any tax credits." Further Mr. Daly states that "The Levitan Forecast includes the Cape Wind project as part of the resource mix so it includes the price suppression effect of Cape Wind. " (EXHIBIT 7)

Thus, even with Cape Wind's price suppression effect, MA ratepayers would pay nearly $1 billion more, for just the 27.5% of its power under contract to NStar. For 100% of Cape Wind's power, the above market cost – including price suppression - would approach $4 Billion. In addition, because these estimates were performed prior to recent downward adjustments to electricity prices in MA due to falling natural gas prices, the above market cost could very well be even higher.

Undue Influence

Mr. Duffy claims that the OIG report concluded "that no agency was affected by outside pressures." But the OIG report confirms that the federal review of Cape Wind was a flawed process and agencies were unduly pressured into reaching findings without a full and unrushed review of the dangers the project poses to commerce, aviation and marine safety and travel. In addition, Secretary Salazar issued a written response to the report acknowledging an opportunity to improve the administrative process in the future.
The OIG report states that both the US Fish and Wildlife Service and the USCG "indicated that the timeline imposed by MMS pressed them into acting atypically, restricting their ability to be as thorough as they would have liked in conducting such a review." Also on January 28, 2010, Acting IG Mary Kendal wrote, "In addition to the concerns expressed by cooperating federal agencies regarding MMS ' timeline for the final EIS, our investigation also determined that several transportation entities located in the Cape Wind Project area, including all three local airports and the two major ferry operators, feel their concerns and comments about the impact of the project to the navigational safety of the area were not adequately considered by MMS. "

In the report, the EPA, the federal agency responsible for performing the overall review of the FEIS, expresses frustration that the timeline that was imposed by Interior "unnecessarily limited the amount of interagency coordination needed for such a large, complex project."

There is also ample evidence to show that the section 106 review under the National Historic Preservation Act was rushed, started far too late, and was terminated abruptly. After Interior Secretary Salazar terminated historic consultation—a procedure rarely invoked—the ACHP issued formal comments to deny or change the location of Cape Wind and criticized Interior for its belated and inadequate consideration of impacts to cultural resources. The ACHP recommended that Interior not approve the Project, stating that "The indirect and direct effects of the Project on the collection of historic properties would be pervasive, destructive, and, in the instance of seabed construction, permanent. By their nature and scope, the effects cannot be adequately mitigated at the proposed site." This recommendation was ignored. Because of the late start of the section 106 process, the historic consultation process was not even addressed in the OIG report.

Finally, the OIG report was conducted based on activity which occurred during the Bush Administration, which took no final agency actions on the Cape Wind project. It is only under the Obama Administration that final agency actions were taken including:

- The Record of Decision issued in April of 2012 – shortly after the section 106 process was terminated and recommendations of the ACHP to relocate or deny the project were ignore by Interior
- The issuance of the Cape Wind lease in November of 2010
- The approval of the Construction and Operations plan in February of 2011
- The issuance of three separate permits within days by the National Marine Fisheries Service which issued its revised biological opinion under the Endangered Species Act, dismissing impacts on right whales on December 20, 2010, followed by the Army Corps of Engineers permit on January 5, 2011, and the EPA Clean Air Act Permit on January 7, 2011

There has been no review by the OIG of federal agency actions taken under the Obama Administration.

Further delays for additional study:
Mr. Duffy claims that the Alliance's call for an independent assessment is driven solely by the desire to further delay the project. The reality is that there is clear evidence that the review of Cape Wind has been rushed, shortcuts have been taken, and agencies have been under pressure to approve Cape Wind. An independent study would be a prudent course of action and one that would pose no additional delay. As previously mentioned, no independent study has been done for decisions made under the Obama Administration. Furthermore, Cape Wind is not in a position to begin construction regardless of any independent study, i.e. a study would not delay the project. Cape Wind cannot currently begin construction because it is required to:

- conduct additional surveys of Nantucket Sound to assess the benthic environment and the presence of cultural artifacts
- conduct preconstruction baseline avian and bat monitoring studies
- obtain an Incidental Harassment Authorization for construction from the National Marine Fisheries Service, among other permits required by the Construction and Operations Plan

It would be prudent to assess agency review and final agency actions taken under the Obama Administration. For example, under the Obama Administration, Interior ignored its own offshore renewable energy regulations in approving Cape Wind's Construction and Operating Plan (COP). It gave Cape Wind an exemption from conducting required surveys of the Nantucket Sound seabed prior to COP approval as required in the Outer Continental Shelf regulations solely in deference to Cape Wind's economics and the pursuit of federal subsidies.

Mr. Duffy also states that the Alliance is doing everything in its power to delay the lawsuits filed in federal Court. However, the Alliance court actions to date have been taken to secure important documents and communications that have been inappropriately withheld in the Administrative Record. Finally, since the date of Mr. Duffy's letter, the Court has issued its order setting a briefing schedule for the lawsuits with initial briefs due very quickly - June 14, 2013.

Mr. Michaels
Mr. Duffy claims that Mr. Michaels' comments are not relevant to offshore wind due to wind production patterns specific to offshore wind. However, no wind speed data has been made available to the public based

on the measurements taken from Cape Wind's meteorological tower in Nantucket Sound. Thus, there is no ability to validate Mr. Duffy's claims of offshore wind production producing the strongest winds during peak demand periods.

Missing rebuttals

Mr. Duffy's letter is notable for being silent on many of the issues raised during my testimony. Specifically, Mr. Duffy has not rebutted the crux of my testimony as it relates to the massive duplication of federal and state subsidies available to Cape Wind. In fact, public financial support is so high, that it exceeds not only the 65% ratio of public support to capital costs shown for the Shepherd's Flat project, but actually exceeds the projected capital cost of Cape Wind. $4.3B of potential state and federal monies would be equivalent to 167% of Cape Wind's $2.6B project cost. This level of support equates to a staggering public cost of $86 million per job.

In addition, because of increased electricity costs for MA businesses, thousands of jobs would actually be lost by forcing consumers and businesses to buy above-market power. Not only would Cape Wind cause net job losses due to higher electricity costs, many of the claimed green jobs would be overseas. The Associated Industries of Massachusetts (AIM), the state's largest nonprofit nonpartisan association of MA employers, in its letter to Department of energy (DOE) on April 24, 2013, states, "Surprisingly, despite the billions in ratepayer money that will be committed to this project, there is absolutely no guarantee that any of the money will be used to purchase products from suppliers in Massachusetts, New England, or even the United States. Cape Wind has already cancelled an agreement with a Massachusetts business (*See* January 28, 2013 letter from Mass Tank Sales Corp, Middleboro, MA, Carl C. Horstmann, President, to Mr. Todd Stribley, U.S. Department of Energy). While there may be some construction jobs related to the project (although there is no guarantee that Massachusetts businesses will be awarded the contracts), dollar for dollar these jobs will come at a high price in reduced employment in other areas of the state - primarily from companies adjusting to the most significant rate increase in recent memory, perhaps ever." (EXHIBIT 8)

In the currently constrained fiscal environment and with goals of increasing renewable energy production, it is outrageous to allocate billions of dollars of state and federal money to one single project that poses so many conflicts to local stakeholders. Further detail and a breakdown are provided in the Alliance's written testimony of April 16, 2013.

Mr. Duffy has also not objected to the Alliance's testimony which stated that a DOE loan guarantee for Cape Wind would pose great taxpayer risk. First of all, numerous lawsuits face the federal government for its flawed reviews of Cape Wind. Secondly, Cape Wind's power is not fully sold and there is no guarantee Cape Wind will have a buyer for the unsold balance of its output. More importantly, under the terms of the power purchase contracts Cape Wind has secured with the aid of the state Administration, if Cape Wind does not commence physical construction by December 31, 2015, both contracts will be terminated leaving Cape Wind with no buyers for its power. In addition, new information since the issuance of the FEIS and EA's which DOE has adopted requires DOE to do additional review of Cape Wind prior to making any final loan guarantee decision. The Alliance has written five separate letters to DOE documenting this new information. (EXHIBIT 9)

Mr. Duffy also fails to mention that he has previously stated that Cape Wind does not need a loan guarantee in order to obtain financing. In pre-filed testimony pertaining to the NStar-Cape Wind contract, Mr. Duffy admitted "Based on our conversations with the financing community, Cape Wind is confident that the PPAs with National Grid and NSTAR will be sufficient to finance the Project, while Cape Wind continues to pursue sales of the remaining output." AIM cited to this in its letter to DOE on April 24, 2013.

Approval of this controversial and problematic proposal would be a terrible legacy. It would devastate the regional economy and environment, threaten public safety, put taxpayers at risk, and saddle MA ratepayers with billions of dollars in additional electricity costs to primarily create manufacturing jobs overseas. It would also further undermine the long-term credibility of the offshore renewable energy program. To the Alliance's knowledge, DOE has still not provided documents responsive to the Committee's request.

Conclusion

The letter from Cape Wind to the Members of the Committee is self-serving, full of inaccuracies, and intended to trivialize and distract from the very legitimate concerns opposition has consistently expressed. NIMBY labels used by Cape Wind are nothing more than an attempt to marginalize and minimize the breadth of individuals and groups who oppose this controversial project.

Nothing in Mr. Duffy's letter effectively refutes the fact that Cape Wind would saddle MA ratepayers with excessive electricity costs, result in net job losses, and burden taxpayers with an inordinate amount of cost through overlapping federal and state financial incentives.
The Alliance respectfully reiterates its request to the Committee to instruct the Government Accountability Office to conduct an independent assessment of Cape Wind and assess if the federal agencies involved in decision making had predetermined the outcome and applied overly lenient standards. We also request that the Committee require that no federal monies or guarantees be committed to Cape Wind until this independent report is complete and pending lawsuits are resolved to minimize potential taxpayer risk. Thank you.

Sincerely,

Audra Parker
President and CEO

4 Barnstable Road, Hyannis, Massachusetts 02601
▫ 508-775-9767 ▫ Fax: 508-775-9725

www.saveoursound.org

a 501 (c)(3) tax-exempt organization

Appendix II

Additional Material for the Record

EXHIBIT 1: LETTER TO MR. TODD STRIBLEY, U.S. DEPARTMENT OF ENERGY, FROM MR. CARL HORSTMANN, PRESIDENT, MASS TANK SALES CORP., JANUARY 28, 2013

Exhibit 1

Mass Tank Sales Corp.
29 Abbey Lane
Middleboro, MA 02346

January 28, 2013

Sent Via: Fed Ex Overnight
Tracking #864147056084

Mr. Todd Stribley
U.S. Department of Energy
DOE Loan Programs Office, LP-10
1000 Independence Ave, SW
Washington, DC 20585

RE: EIS 0470: U.S. Department of Energy Loan Guarantee Energy Project on the Outer Continental Shelf of Nantucket Sound

Dear Mr. Stribley:

This letter is Mass Tank's official statement of record to be submitted for the DOE Loan program review period with regards to the Cape Wind Loan Application. Cape Wind is not committed to achieve the claims it submitted in its loan application to the DOE. We urge the DOE to fully examine Cape Wind's assertions in the application specifically that "Cape Wind's development is crucial to off-shore wind development in the United States. The project's success is crucial to the development of the off-shore wind industry in the United States, and helping the country meet clean energy goals. In addition to revitalizing underutilized regional port facilities, the development of the first project will facilitate the construction of the infrastructure, job training and manufacturing support (i.e." supply chain") necessary for the US to reach the full potential off-shore wind entails." Cape Wind also submitted in the application that "Cape Wind is expected to create between 600-1000 green jobs in the US." This last reference is directly related to Mass Tank's intended participation in the project.

It was Mass Tank's intention to help fulfill those claims through performance of the foundation contract. Mass Tank was prepared to establish a new manufacturing facility at an underutilized regional facility (Fore River Ship Yard, Quincy MA). We planned to upgrade the facility, retrofit with state of the art clean tech machinery, and hire 150-300 permanent clean tech manufacturing jobs.

Mass Tank is based in Middleboro, MA and is an eighty year old manufacture and an international leader in the steel tank industry. Our steel tanks range from single wall tanks to large complex field erected projects. Mass Tank's customer service representatives and engineers work alongside clients to provide leadership and guidance from a project's inception to well beyond installation. This longstanding commitment to quality and service has made Mass Tank an international industry leader in tank manufacturing. Mass Tank is a team committed to achieving continuous growth by providing quality products and services with integrity and value which meets our customers' needs and exceeds their expectations.

As President of Mass Tank, I have been closely following the development of the Cape Wind off-shore wind project. As the manufacturer of steel tanks the building of monopiles and transition pieces is an obvious progression to our core business and is evidenced by some of the foundation fabricators in Europe whose origins were in tank fabrication. We analyzed the design, and utilizing our experience in steel fabrication, we formulated a price to manufacture the monopiles and transition pieces. After learning that our pricing structure was competitive we were contacted by the Cape Wind team and met with Jim Gordon, President of Cape Wind and Craig Olmstead, Vice-President of Cape Wind. They visited our facility and we discussed the positives of building the monopiles here in Massachusetts. After much due diligence and achieving Cape Wind's requirements, on October 10, 2010 we received a "Letter of Intent" from Cape Wind to manufacture the monopiles and transition pieces here in Massachusetts. I stood with Jim Gordon, Tim Mack of EEW, Ian Bowles, Energy and Environmental Affairs Secretary Commonwealth of Massachusetts and Governor Patrick on October 13, 2010 at the Federal Wind Test Blade Center in Charlestown MA announcing the "Letter of Intent" to provide the foundations for this project. This helped in the designation of "first mover status" and creation of 150-300 plus potential permanent clean tech manufacturing jobs in MA. The State of Massachusetts, the offices of Congressman Frank, Keating, and Markey have all been very supportive and firmly behind the benefits of this large construction project. In addition, I have been contacted at various times by federal and state officials asking me to confirm the positive job consequences of the Cape Wind Project and to make public statements to that effect. Cape Wind used our intended participation to garner public support for the project.

Understanding the critical path of this contract and the risk associated with the first US off-shore wind project, we were issued a series of mandates by Cape Wind to be reached prior to formulizing our contract. Mass Tank, worked tirelessly for the next two years reaching our Cape Wind required milestones. Obtaining a contract was a prerequisite for our technical and financial partners.

I am writing now to inform you that Jim Gordon has recently affirmed that Mass Tank will not be used on its project. It's our understanding that Cape Wind apparently intends to deal directly with a foreign business, by-passing Mass Tank completely and out-sourcing the work to a foreign, rather than a local business. As a result of decisions made by Jim Gordon, the original vision of the nation's first off-shore wind project bringing a new manufacturing industry to Massachusetts apparently will not come to pass.

Mass Tank attempted to satisfy any and all conditions Cape Wind set out as necessary to meet the needs of the first-in-the-nation off-shore wind development. Cape Wind's lack of commitment and support to this relationship opened the door for a foreign company to go direct to Cape Wind. They have made it clear that they have no intention of doing business with Mass Tank. That is not only our own loss, but more importantly, the loss of the Commonwealth's and the nation's.

From the very beginning Cape Wind made it clear that several components were vital for us to be successful. We worked very hard to insure that we were in a position to meet those requirements.

1. **Technical partner.** Understanding Mass Tank does not have experience in supplying off-shore wind foundation components but does roll and weld similar products for on-shore, Cape Wind required technical expertise so as to ensure we not only delivered the foundations on time but also ones of the highest quality. We travelled to several leading foundation factories in Europe and came to an agreement with EEW in Germany, the leading off-shore foundation fabricator. In addition, we travelled to large steel fabricators in the US and came to an agreement with Gulf Island Fabricators (GIF), the largest steel fabricator on the Gulf Coast in Louisiana.

2. **Schedule.** One of the advantages in creating the joint venture with EEW and GIF was to ensure any schedule could be met. We have the option to front load any delivery from several factories of our joint venture partners. Additionally, if there are weather, labor or government conflicts, the joint venture provided great flexibility to address changing conditions rapidly.

3. **Terms and conditions.** Mass Tank's joint venture group, submitted the industry standard terms and conditions for the project.

4. **Price and scope.** We are the only supplier to provide "100% buy American" compliant offer.

5. **Facility.** We executed a "Memorandum of Understanding" to lease the Fore River ship yard in Quincy, MA. This document would be formalized once our contract was executed with Cape Wind. Quincy provided many positives to this project.
    a. Deepwater port - Designated Port Area (DPA)
    b. Rail access for support
    c. Close proximity to the project
    d. Adequate permitting requirements
    e. Good local support and presence of skilled labor
    f. Facility would utilize "Cape Wind's electricity"

Without Mass Tank's participation it now appears that virtually all of the manufacturing for the project will be performed outside Massachusetts, and likely outside of the country. It is most disheartening to learn that, for all intents and purposes, Cape Wind's components may all be a foreign import. We at Mass Tank and our joint venture partners worked very hard to address these conditions in order to meet them and provide local content.

When I stood with Jim Gordon and Governor Patrick that day in Charlestown I felt certain that we would be able to come to terms and bring the full economic benefits of off-shore wind development to Massachusetts. Because of the broad common ground I saw in Cape Wind's "Letter of Intent", we were initiating a mutually beneficial business arrangement that would pay dividends to the state and the region in jobs and economic development. But now I can only conclude that I was wrong, and question whether Cape Wind's commitment to Mass Tank and the local manufacturing jobs was ever made in good faith.
Mass Tank remains committed to the vision of wind energy manufacturing on-shore and off-shore in Massachusetts, as we have shown by our new efforts to serve the on-shore wind industry with towers manufactured at our Middleboro facility. Clean energy is the nations, and the region's future, as it is Mass Tank's.

In closing, The Federal government, the Commonwealth of Massachusetts, the US taxpayers, local governments, and electric rate payers are all financially supporting this project. Cape Wind must be held accountable for the support it has received through this process. We encourage due diligence and proper review of the Loan Guarantee and claims made by Cape Wind in its application for this source of funds.

Sincerely,

Carl C. Horstmann

Carl C. Horstmann
President

CC Dr. Steven Chu, Secretary, U.S. Department of Energy, 1000 Independence Ave, SW, Washington, DC 20585

David Frantz, Acting Executive Director, DOE Loan Programs Office, U.S. Department of Energy, 1000 Independence Ave, SW, Washington, DC 20585

Congressman Edward Markey, 7th District Massachusetts, 2108 Rayburn House Office Building, Washington DC 20515

Congressman William Keating, 9th District Massachusetts, 315 Cannon House Office Building, Washington DC 20515

EXHIBIT 2: "POLS URGE CASH FOR CAPE WIND AMID BLOWBACK," *Boston Herald*, April 6, 2013

Exhibit 2

Boston Herald

APRIL 06, 2013

POLS URGE CASH FOR CAPE WIND AMID BLOWBACK

Foe: 'It's another Solyndra waiting to happen'

By Marie Szaniszlo

The Bay State congressional delegation yesterday sent a letter urging departing Energy Secretary Steven Chu to approve massive loan guarantees for Cape Wind, but opponents blasted it as a political power play and warned of another costly, Solyndra-like clean energy blunder.

"It's appalling that in the current fiscal situation, the Massachusetts delegation would knowingly support an expensive project that would put taxpayers at risk, as well as saddle Massachusetts ratepayers with billions of dollars in additional electricity costs — all to send jobs overseas," said Audra Parker, president and CEO of Cape Wind foe The Alliance to Protect Nantucket Sound. "The Department of Energy should not be risking taxpayer money on a project that's heavily litigated and has strong potential for losing its customers. It's another Solyndra waiting to happen."

Solar-panel maker Solyndra landed $535 million in government loans before going bankrupt in 2011.

Cape Wind defended the delegation's letter, noting that the loan guarantee program was set up almost eight years ago by a Republican White House with bipartisan support in Congress for cutting-edge, clean-energy projects.

"Cape Wind is a good example of that," spokesman Mark Rodgers said, adding that the project would create 600 to 1,000 jobs in the construction phase and 50 operations jobs in Falmouth Harbor.

Rodgers wouldn't provide details of Cape Wind's financing, except to say it would be a combination of equity from investors and debt, including the Energy Department loan guarantee and loans from the Bank of Tokyo and possibly other commercial banks.

Rodgers wouldn't disclose how much of a loan guarantee Cape Wind is seeking. But in 2011, the Energy Department denied it one for $1.97 billion under a program that expired that year, according to Parker.

"Now they're once again applying under a different program," she said, adding that there's no deadline, but Cape Wind would need to begin construction by the end of this year to qualify for an additional subsidy that's a 30 percent investment tax credit.

The $2.6 billion Cape Wind project would construct 130 wind turbines in Nantucket Sound that would be 440 feet tall at their highest point.

"Cape Wind promised if they sold their power, that would be enough to get financing," said Bob Rio, senior vice president of the Associated Industries of Massachusetts. "They sold three-quarters of their power to National Grid and Nstar at the highest rates ever known in Massachusetts, and somehow, even this wasn't enough to get financing? Exactly how much money should we give a project no one wants to invest in?"

A Bay State company that had expected to gain jobs from the project accused Cape Wind of handing it off to foreign suppliers.

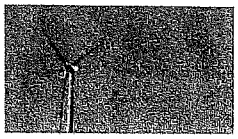
"Cape Wind basically is going to be built by foreign suppliers," said Stephen Lynch, executive vice president of Mass Tank in Middleboro. "If they had gone with us, it would have supported about 150 permanent jobs. We don't think taxpayers should have to finance the project if it's not going to create jobs in the U.S."

EXHIBIT 3: *Washington Post*: AP IMPACT, Associated Press, May 14, 2013

Exhibit 3

Washington Post: AP IMPACT: Obama administration allows wind farms to kill eagles, birds despite federal laws

By Associated Press
May 14, 2013



In this April 18, 2013, photo, a golden eagle is seen flying over a wind turbine... (Dina Cappiello/Associated...)

CONVERSE COUNTY, Wyo. — The Obama administration has never fined or prosecuted a wind farm for killing eagles and other protected bird species, shielding the industry from liability and helping keep the scope of the deaths secret, an Associated Press investigation has found.

More than 573,000 birds are killed by the country's wind farms each year, including 83,000 hunting birds such as hawks, falcons and eagles, according to an estimate published in March in the peer-reviewed Wildlife Society Bulletin.

Each death is federal crime, a charge that the Obama administration has used to prosecute oil companies when birds drown in their waste pits, and power companies when birds are electrocuted by their power lines. No wind energy company has been prosecuted, even those that repeatedly flout the law.

Wind power, a pollution-free energy intended to ease global warming, is a cornerstone of President Barack Obama's energy plan. His administration has championed a $1 billion-a-year tax break to the industry that has nearly doubled the amount of wind power in his first term.

The large death toll at wind farms shows how the renewable energy rush comes with its own environmental consequences, trade-offs the Obama administration is willing to make in the name of cleaner energy.

"It is the rationale that we have to get off of carbon, we have to get off of fossil fuels, that allows them to justify this," said Tom Dougherty, a long-time environmentalist who worked for nearly 20 years for the National Wildlife Federation in the West, until his retirement in 2008. "But at what cost? In this case, the cost is too high."

Documents and emails obtained by The Associated Press offer glimpses of the problem: 14 deaths at seven facilities in California, five each in New Mexico and Oregon, one in Washington state and another in Nevada, where an eagle was found with a hole in its neck, exposing the bone.

One of the deadliest places in the country for golden eagles is Wyoming, where federal officials said wind farms had killed more than four dozen golden eagles since 2009, predominantly in the southeastern part of the state. The officials spoke on condition of anonymity because they were not authorized to disclose the figures. Getting precise figures is impossible because many companies aren't required to disclose how many birds they kill. And when they do, experts say, the data can be unreliable.

When companies voluntarily report deaths, the Obama administration in many cases refuses to make the information public, saying it belongs to the energy companies or that revealing it would expose trade secrets or implicate ongoing enforcement investigations.

EXHIBIT 4: SOUTHCOASTTODAY: 5/14/13 YOUR VIEW: BY PETER A. KENNEY

Exhibit 4

SouthCoastToday: 5/14/13 Your View: National Wildlife Fund's senior communications director made incorrect statements (see referenced Our View from 4/14/13 below)

By PETER A. KENNEY
Peter A. Kenney lives
in South Yarmouth.

On April 14, SouthCoastToday printed a piece written by Miles Grant, identified by the National Wildlife Fund as a senior communications director living in New Bedford ("Your View: Polluter blockade of New Bedford wind jobs finally falling"). The thrust of Mr. Grant's piece is that Cape Wind is environmentally safe and that its chief opposition is no more than a front for oil and coal polluters. Grant also writes enthusiastically about Cape Wind's benefits to the local economy. It is surprising that Mr. Grant is so unaware of the facts about Cape Wind.

The claim that Cape Wind is environmentally safe is bizarre. If it is, why is there a federal lawsuit pending in which a retired senior official of the U.S. Fish and Wildlife Service charges that the proper and required studies of possible harm to birds and other animals in the Cape Wind project area were never done? And, why is this same man claiming that he was disciplined after a long and distinguished career when his comments about Cape Wind became known? Does Mr. Grant believe that whistleblowers should be driven out of their jobs? Is Mr. Grant not aware that Cape Wind, if built, will set the precedent for all future offshore wind project reviews and even for other energy projects on land? Why not just kill all the migrating shore birds in the Nantucket Sound flyway and be done with it? Ten years ago, Massachusetts Audubon stated in written testimony that Cape Wind is projected to cause as many as 6,000+ bird kills annually.

Is the National Wildlife Fund aware that the Interior Department Inspector General's report on Cape Wind states that the project's review was "rushed"? Would Mr. Grant or NWF say that rushing such a review is wise?

Then there are the three Koch brothers whom Grant characterizes in very unflattering environmental terms. Actually, there are four brothers. Fred, the oldest, apparently does not count. And, as far as I know, only Bill Koch is involved with the Alliance To Protect Nantucket Sound. Describing the anti-Cape Wind advocacy group based in Hyannis, he says, "A coalition of big polluters and big money landowners on the Cape conspired to fund the 'Alliance to Protect Nantucket Sound,' a front group that's spent millions to keep Cape Wind tied up in red tape." The red tape comment is odd; since when are four federal lawsuits, accepted by the courts, considered merely red tape? As for the other claims, is Mr. Grant serious when he charges conspiracy? In my neighborhood, what he calls conspiracy is considered cooperation. Bill Koch does live in Florida. But, Massachusetts had been his principal residence for decades. He left the commonwealth after he won a lengthy court case over his claim that Massachusetts had overtaxed him; Koch won a $46 million judgment.

Facts: The Alliance was formed in 2001 by a small group of local residents who believed that Cape Wind was the wrong project in the wrong place. The Alliance is not now and never was an

anti-wind effort, it is anti-Cape Wind. Bill Koch was not involved in the Alliance until 2005. For four years, the Alliance lived hand-to-mouth, scraping by on small donations from more than 25,000 individuals and local business people. Local musicians provided entertainment, there was occasionally wine and cheese as ordinary people gathered from time to time to commiserate about the Cape Wind plan and build an opposition. Not once did I see a coal magnate or oil baron at any of these affairs. I did see local commercial fisherman, wildlife protection advocates, ferry operators, pilots, working people whose houses do not have views of the Sound and many people whose careers have been dedicated to environmental protection and reform, people whose careers are marked by successful efforts to stop polluters. Colorful children's beach buckets were passed around to catch the contributions of these ordinary people, dollar bills and five- and ten-dollar bills. Was this a conspiracy?

Mr. Grant appears unaware of these facts and ignorant of the facts of the Cape Wind project itself, the environmental harm it will do to Nantucket Sound and the millions of shore birds using its migratory flyway every year. How odd it is that Mr. Grant works for something called the National Wildlife Fund. Clearly also Mr. Grant has no idea of the truth about the economics of Cape Wind. But, that is a subject for another day.

I attempted to speak with Miles Grant, leaving a detailed message at each of the two telephone numbers available for him at the NWF. To date (May 9), I have received no response.

EXHIBIT 5: LETTER FROM KEN SALAZAR, SECRETARY OF THE INTERIOR, TO DEPUTY INSPECTOR GENERAL, FEBRUARY 3, 2010

Exhibit 5

THE SECRETARY OF THE INTERIOR
WASHINGTON

FEB 03 2010

Memorandum

To: Deputy Inspector General

From: Secretary Ken Salazar

Subject: *Cape Wind Associates, LLC* Investigative Report

Thank you for your investigative report entitled *Cape Wind Associates, LLC*, which examines the handling of the Cape Wind permit application process by the Minerals Management Service in 2008 and early 2009. As explained in the report, the primary concern addressed in your investigation was whether the final Environmental Impact Statement for the Cape Wind project was compromised due to the previous Administration's desire to publish the EIS before leaving office.

As summarized in your memorandum to me: "Our investigation determined that MMS did not violate provisions of NEPA in completing the final EIS for the proposed offshore wind farm." You noted, however, that "several of the Federal agencies that worked with MMS in preparing the final EIS were concerned that its completion was unnecessarily rushed by MMS' desire to publish the report prior to the end of the previous administration." Your conclusion that "none of the agencies believes that MMS' timeline affected their overall conclusions" is particularly important. Concerns raised by agencies that the timelines "prevented them from being as thorough in their reviews as they would have desired" indicates that there was room for improvement in the previous Administration's handling of the process.

In reaching the conclusion that the final EIS was not the subject of improper influence or otherwise deficient, your report set forth a substantial amount of background information regarding the environmental impact analysis that the MMS conducted for the project, as well as reviews conducted by the U.S. Fish and Wildlife Service, United States Coast Guard, Federal Aviation Administration, and U.S. Environmental Protection Agency. In order to ensure that our Department provides due consideration to your report, I am directing Deputy Secretary David Hayes to work with our Solicitor, Ms. Hilary Tompkins, to review the report and provide recommendations to me regarding those issues that are material to the Department's upcoming Cape Wind decision.

Although the Cape Wind permitting process began several years before the establishment of the offshore renewable energy regulations that we finalized in April 2009, I want to ensure that we are considering how your report's recommendations might further strengthen this new framework, which we expect will bring added clarity and certainty to the permitting of future offshore renewable energy permits. To this end, I am directing Deputy Secretary Hayes and Assistant Secretary for Land and Minerals Management Wilma Lewis to develop recommendations for me on optimizing the permitting of offshore wind projects in a manner that comports with all legal

requirements, including the Department's new regulations that apply to all future offshore wind projects. The Cape Wind project application process and your report provide an important opportunity to learn lessons that will be beneficial for future projects of this nature. I ask you to provide your help and insights into these recommendations.

Thank you for your help in this matter.

Exhibit 6

Report of:
A Comparative Analysis of The Development and Application of Marine Navigation Safety and Marine Environmental Protection Criteria for Offshore Renewable Energy Installations

March 11, 2013

The MCGOWAN Group, LLC
405 Georgia Avenue
Fernandina Beach, FL 32034-4843
(904) 556-6143
Fax (202) 330-4600
Jfmcgowan @earthlink.net

"A Comparative Analysis of the Development and Application of Marine Navigation Safety and Environmental Protection Criteria for US Offshore Renewable Energy Installations

March 2013

Introduction

In recent years, the Department of the Interior's (DOI) Bureau of Ocean Energy Management (BOEM) and the U.S. Coast Guard (USCG) have taken a series of significant steps to establish a process and to introduce standards for the leasing of areas for the future development of Offshore Renewable Energy Installations (OREIs) on the U.S. Outer Continental Shelf (OCS). BOEM, like its predecessor agency the Minerals Management Service (MMS), has taken the government lead for this alternative energy development.

USCG has exerted decade-old regulatory authority over oil and gas exploration and recovery vessels and mobile units on the OCS. It only took a similar stance in 2006 in OREI development. Specifically, USCG embarked in 2006 on evaluating, setting and applying standards to safeguard marine safety and marine environmental protection for the siting and operation of these energy installations on the nation's waterways and oceans. It has moved forward with the general OREI navigational safety process since then. In addition, in response to special legislation enacted in 2006[1], the USCG was required to establish navigational safety terms and conditions for Nantucket Sound due to the proposal for the large-scale Cape Wind Associates (CWA) OREI.

This report provides a comparative analysis of the terms and conditions for Nantucket Sound under section 414 and the navigational safety actions taken elsewhere or now under development by USCG and BOEM. As this report concludes, the Nantucket Sound Standards provide far less protection for navigation safety than the comparative measures established or proposed for every other OREI location.

U.S. Beginnings of Offshore Wind Energy Development – CWA

In November 2001, CWA applied to the US Army Corps of Engineers (ACOE) and to the Commonwealth of Massachusetts for a permits to construct a commercial scale, wind energy project on and around Horseshoe Shoal in Nantucket Sound to supply the New England power grid. The CWA facility would eventually be described as 130 wind towers, each 440 feet tall, built into the Sound's seabed over approximately a 24 square mile area, miles of cable and a transformer substation holding 40,000 gallons of

[1] Coast Guard and Maritime Transportation Act of 2006 (Public Law 109-241) Section 414.

transformer oil.. Recently, the project has been scaled back to 101 turbines, but CWA still claims it will eventually develop the entire facility.

The site and the design (Nantucket Sound and Cape Wind)

Nantucket Sound is not only a heavily used body of water, but one of the most dangerous places to navigate in the US. In fact, the seamanship handbook, The Coast Pilot[2], singles out Nantucket Sound for special caution due to the frequent occurrence of wind, fog and high velocity currents that characterize Nantucket Sound, particularly during storms.

The USCG Waterway Analysis and Management System (WAMS) is a national process administered to analyze and review the aids to navigation in the nation's waterways. USCG's recent WAMS survey for the area notes the extremely foggy conditions year round, 2 – 3 knot currents, and that the Sound "hosts thousands of recreational vessels daily from May to October, and commercial vessels and ferries year round." The WAMS report characterizes the area which includes both Main and North channels as a "navigationally critical waterway."[3]

Horseshoe Shoal is a well known and marked hazard whose rocks are seldom visible above the Sound's surface. Water depths in and around the Shoal vary from 2 ft. to nearly 60 ft. The Shoal is bounded for vessels by the North Channel, which runs below Great Neck and Hyannis, and the Main Channel, which runs from Vineyard Sound from the west to the Atlantic Ocean to the east. The Main Channel that the CWA facility would abut has a controlling depth of thirty feet. It, or specifically Cross Rip Shoal, was first designated as a federal navigation project at that depth in 1930. The Coast Pilot[4] singles out Nantucket Sound for special caution due to wind, fog and high velocity currents that occur particularly during storms. The proposed project site is also virtually surrounded by general anchorages for vessels awaiting entry into port, conducting repairs or escaping or riding-out bad weather or visibility that is common in Nantucket Sound.

USCG has continuously maintained the navigational aids along the Main and North channels and their connecting waterways. The USCG Waterway Analysis and Management System (WAMS) is a national process administered to analyze and review the aids to navigation in the nation's waterways. USCG's recent WAMS survey for the area notes the extremely foggy conditions year round, 2 – 3 knot currents, and that the Sound "hosts thousands of recreational vessels daily from May to October, and commercial vessels and ferries year round." The WAMS report then characterizes the area which includes both Main and North channels as a "navigationally critical

[2] U.S. Coast Pilot 5, 40th Edition 2012; http://www.nauticalcharts.noaa.gov/nsd/coastpilot_w.php?book=5
[3] US Coast Guard Waterway Analysis and Management Survey (WAMS) Review of Nantucket Sound Main Channels, January 2004.

[4] U.S. Coast Pilot 5, 40th Edition 2012; http://www.nauticalcharts.noaa.gov/nsd/coastpilot_w.php?book=5. Exhibit 1.

waterway."[5] The proposed CWA facility location is also virtually surrounded by general anchorages for vessels awaiting entry into port, conducting repairs or to escape or ride-out bad weather or visibility that is known to be common in Nantucket Sound.

The conclusions of the 2004 WAMS report are similar to the 1997 report. The USCG Waterway Analysis and Management System (WAMS) is a national process administered by each CG region or district to analyze and review the aids to navigation in the nation's waterways. The most recent WAMS study for Nantucket Sound describes its waters as follows: "The main thoroughfare through the Sound is Nantucket Sound Main Channel. This Environmentally and Navigationally Critical waterway hosts recreational vessels, numerous deep draft cruise ships, and commercial fishing vessels & passenger ferries year round. The majority of Cape Cod and the Islands' recreational ports access Nantucket Sound resulting in severe vessel congestion during summer months. In the event that the Cape Cod Canal is closed due to ice, fog or marine incident, Nantucket Sound is the primary route, along with Martha's Vineyard Sound, that vessels use to transit around the Cape.'"

Other than marked channels and charts, there are no Traffic Separation Schemes (TSS), vessel traffic reporting or control systems or practices in place or required in Nantucket Sound. Regionally the port of Boston, Buzzards Bay, the Cape Cod Canal and Rhode Island all have had TSS ship routes or in the case of Cape Cod Canal and Buzzard's Bay vessel reporting systems in place for years. These systems, managed by USCG, have proven to significantly mitigate navigational risk and play a prominent role in the navigational risk assessment for other areas being considered as potential sites for offshore wind facilities on the Atlantic coast. The absence of TSS makes navigational risk in Nantucket Sound subject to comparatively greater risks.

While the Main Channel in Nantucket Sound can support a variety of vessels with drafts up to 24 ft. including visiting cruise liners, it also serves as the main artery for passenger and vehicle ferries connecting the Sound's islands and for an estimated 250 large ocean-going commercial fishing vessels many based out of New Bedford. The proposed site for the CWA facility borders on all its sides the channels and routes extensively used year-round by the ferry systems some of which offer high-speed service at 30 knots.

The CWA proposal would place the WTGs directly adjacent to these busy vessel routes in some cases to be constructed within 975 ft.– to 1,200 ft. from the edge of the North and Main channels, respectively. Without an additional buffer or safe setback from these routes, an allision with the nearest WTGs would occur in a mere 60 seconds, at normal speeds, for a vessel or boat that leaves the channel. A high speed ferry would have a 20 seconds to detect, take action and respond to avoid such allisions. Collision risk with vessels traveling within or adjacent to the project site also would be a problem due to WTG interference with radar.

[5] US Coast Guard Waterway Analysis and Management Survey (WAMS) Review of Nantucket Sound Main Channels, January 2004.

The Process and Review

The ACOE established and led an interagency cooperative group of US government and Commonwealth agencies in the preparation of an Environmental Impact Statement (EIS) for the CWA permit application.

USCG assembled and reportedly provided CWA with a three page document in February 2003[6] informing the ACOE that the document listed the assessments that would be needed from the developer (CWA). USCG committed to review and comment on the CWA assessments to assist in the ACOE preparation of an Environmental Impact Assessment (EIS) of the proposed facility. USCG requested three assessments from CWA covering: Navigational Safety, Search & Rescue, and Communications, Radar and Positioning Systems. The USCG cited no standards, criteria or guidelines in the document. In their letter to the ACOE, the USCG demurred in their effort stating:

> We are prepared to review and comment on the completed assessments and on other marine navigation related information associated with the preparation of the EIS. We are not, however in a position to undertake data collection, conduct EIS analysis, or prepare sections of the draft or final EIS as staff and resources are fully tasked in other obligatory programs.[7]

As a result, as of 2003, it would appear that USCG may not have eagerly anticipated or viewed the navigation safety and marine environmental protection review and approval of the CWA proposal as obligatory.

ESS Group, Inc. prepared two Navigation Risk Assessments for CWA and submitted them to USCG. The USCG accepted these assessments even though they were based on faulty vessel traffic assessments, applied no buffers or safe separation distances from the established vessel routes and channels in Nantucket Sound, ignored or underestimated interference with navigation radar, and took the position that vessel accidents due to the facility's obstructions (WTGs) were unlikely.[8]

A detailed critique of the CWA risk assessment was completed by The McGowan Group in April 2004 and submitted to USCG, ACOE, and MMS. Several of that critique's major conclusions are excerpted below:

- The United States is far behind many other countries in setting national energy goals, promoting non-traditional energy sourcing such as offshore wind power and in

[6] USCG MSO Providence letter 16670 dated February 10, 2003.

[7] *Id.*

[8] ESS Group, Inc. "Navigation Risk Assessment, Cape Wind Project, Nantucket Sound," Project No. E159-004.8, August 18, 2003 and Revision dated November 16, 2006.

establishing regulatory programs to support those goals. Most countries that have offshore wind energy facilities operating, under construction, or in the planning and evaluation stages have or are developing statutory and regulatory regimes specifically for the siting, licensing, design, construction and operation of these facilities.

- The United Kingdom (UK), through its Maritime and Coastguard Agency recently issued comprehensive national navigation safety standards that apply to wind energy facilities to be built off the UK coast. The UK standards compare favorably with US Coast Guard requirements developed and issued by the Captain of the Port, Providence, RI. The major difference lies in the identification and proposal of mitigation measures as part of the UK's risk assessment process.

- The UK standards if applied to the Cape Wind proposal, would assign its most demanding "Higher risk" designation to the project due to its location in deeper water and placement within 500 yards of active shipping channels. Other offshore wind energy facilities operating overseas would receive lesser demanding risk designations due to their placement in shallow water and at great distances from shipping channels.

- There is a substantial discrepancy between common international practice and the minimal mitigation measures for navigation issues proposed by the Cape Wind assessment. Cape Wind proposes navigational lighting, sound signals, private aids, markings and notations on charts as the only safety features to offset the risks posed by the new energy facility to current shipping, boating and fishing interests. International practice has employed total or partial exclusion of selected groups, or, in some cases, all marine traffic, and outright prohibition on trawl fishing or anchoring in proximity to the offshore wind farm areas.

- The Cape Wind navigation safety risk assessment and Nantucket Sound project proposal is fatally flawed due to its failure to:

    - Develop and apply design criteria showing that placement of the proposed wind energy facility adjacent to active shipping channels is compatible with the needs of marine transportation, and poses necessary and reasonable risks to cruise ship and ferry vessel, oil transport, fishing and recreational users.
    - Propose a tower structure whose strength was sufficient to withstand a collision without complete failure of the tower and blade and/or the tower foundation;
    - Utilize recognized methodology or to perform a complete risk assessment by examining and predicting collision frequency calibrated against actual marine casualty and marine pollution histories;
    - Conduct an accurate measure of the types, routes, and density of the current marine users of the waters of Nantucket Sound;

- Assess the safety and pollution consequences, including injury and loss of life, resulting from vessel collisions with a wind tower;
- Consider the aggravating effects of wind, fog, and current on safe navigation;
- Recognize the inherent risk of vessel collisions in a realistic manner, without overemphasizing common safeguards such as the COLREGS[12] and their burden on vessel operators, or navigation systems and/or of navigational aids;
- Identify and propose realistic "best practice" mitigation measures to offset the safety and environmental risks identified;
- Explore the negative impact to the Nantucket Sound fishing industry by acknowledging that these projects will effectively cut-off all trawling/dragging within the entire confines of the wind farm; and
- Highlight the threat the wind turbine blades pose to a substantial number of sailing or other vessels (including cruise vessels) with mast heights exceeding seventy-five feet."[9]

Section 414

In 2005, Congress enacted Section 414 of the etc. Section 414 of the Coast Guard Maritime Transportation Act of 2006 (CGMTA) requires the U.S. Coast Guard (USCG) to "specify the reasonable terms and conditions the Commandant determines necessary to provide for navigational safety with respect to the proposed lease, easement, or right-of-way and each alternative to the proposed lease, easement or right-of-way considered by" the Secretary of the Interior for an offshore wind energy facility in Nantucket Sound. Pub. L. No. 109-241, § 414(a), 120 Stat. 516, 540 (2006) (codified at 14 U.S.C. § 1 note). Section 414 further provides that "[i]n granting a lease, easement, or right-of-way for an offshore wind energy facility in Nantucket Sound under section 8(P) of the [OCSLA], the Secretary shall incorporate in the lease, easement, or right-of-way reasonable terms and conditions the Commandant determines to be necessary to provide for navigational safety." *Id.* § 414(b). Section 414 requires the Commandant to protect existing navigational uses of the Sound and to dictate changes to the proposed lease to maintain the navigational status quo.

> Section 414 makes it clear that the T&C are to protect the navigational status quo, not to protect CW in accordance with the wishes of its private developer. The USCG can fulfill this duty only by developing T&C that ensure the project does not present navigational risks, including the possible need to alter the project design through the establishment of a buffer zone from existing shipping and ferry routes, or to deny the lease application at the proposed location. The burden to

[9] The McGowan Group, LLC (TMG) report "A Navigational Risk Assessment Review," April 26, 2004.

provide for navigational safety belongs to CW, not to mariners, fishermen, or the public.

The floor statements of the bill's sponsors confirm the far-reaching nature of USCG's duty to protect existing uses of the Sound. Congressman Young explained that section 414 "will require the Coast Guard to establish terms and conditions that are necessary to safeguard recreation and commercial vessel traffic in Nantucket Sound before any draft environmental impact statement is made available for public review." 152 Cong. Rec. H 4525 (daily ed. June 26, 2006) (statement of Rep. Young). The purpose of this requirement is to allow offshore wind development "in a way that *does not jeopardize the safety and security of the maritime community of Nantucket Sound.*" *Id.* (emphasis added). Responding to Chairman Young, Representative Brown confirmed that section 414 "will allow the Commandant to set the terms and conditions on any leasing of federal waters in Nantucket Sound that may be necessary to protect navigational safety." *Id.* Citing the ferry system and its 3 million annual passengers, Brown said "it is vitally important to protect the navigational safety of those vessels." *Id.*

USCG's NVIC 2007 Marine Safety Guidance for OREIs

Beginning late in 2005, USCG met with other international officials and reviewed standards and "best practices" with an authorized navigation safety advisory committee to produce the first U.S. guidelines for OREIs.[10] The USCG's NVIC 2007 marine safety guidance for OREIs were specifically tailored for offshore wind facilities but written so that they could also be applied to marine current turbines, wave generators and offshore solar generating facilities. These USCG guidelines were broad covering:

- risk-based decision making and systematic navigation safety risk assessment,
- standards and "best practice" utilization,
- vessel accidents and ability of structures to withstand allision by vessels,
- impacts to navigational, radar and communications equipment and aids,
- vessel traffic surveys, density and route projections,
- pollution incident response including those originating from vessel allisions; and
- research and proposal of mitigation strategies including safety zones, radar monitoring and minimum distances from shipping routes.

The new USCG's NVIC 2007 marine safety guidance for OREIs partially modeled the first-ever OREI recommendations which were published in the United Kingdom (UK) by

[10] US Coast Guard Navigation and Inspection Circular No. 02-07 Guidance on the Coast Guard's Roles and Responsibilities for Offshore Renewable Energy Installations (OREI), March 9, 2007.

the Maritime and Coastguard Agency.[11] The guidelines represented USCG's marine safety and marine environmental protection standards for the siting, design, and operation of OREIs.

The USCG never applied the NVIC 2007 guidelines to the only offshore wind energy generation project which it had under its review at that time, the CWA proposed. It failed to do so even USCG staff repeatedly stated that the NVIC would be applicable and even held up the CWA recommended terms and conditions for the release of the NVIC. It is clear that NVIC 2007 continued numerous provisions that could not be met by CWA as discussed in the April 2005 report prepared by the McGowan Group.

As concluded by the McGowan Group:

> The Cape Wind project is "fatally flawed," as currently designed and sited. It is incompatible with the needs of marine transportation in Nantucket Sound and is an unnecessary and unacceptable threat to the current-day and future users of Nantucket Sound's waterways. The proposed project's design violates the very definition of navigation safety delineated in the new 2007 Coast Guard Guidelines developed specifically for Offshore Renewable Energy Installations (OREIs).[12]

This expert study had determined that when compared against seventeen essential navigation safety and marine environmental protection factors found in the 2007 Guidelines for OREIs, the Cape Wind project failed to meet twelve of those factors and only partially met four. The project as designed, sited and assessed appeared to meet only one of the seventeen navigation safety and marine environmental protection elements found in the USCG 2007 guidelines. The study determined the following for one of the failed safety factors called "Assess site's alignment/proximity to shipping":

> The proposed Cape Wind site has been positioned to encroach on both the Main and North Channels of Nantucket Sound and in direct vicinity of long-established ferry routes. The distance or CPAs[13] of the closest WTGs[14] to both the Main and North Channels have decreased to 1,190 ft. and 975 ft., respectively. The turbine array proposed in the ESS Revised Navigational Risk Assessment (DEIS Report No. 4.4.3-1) increases the risk of collision, allision and grounding for vessels following the North Channel and provides no additional relief or distance between the ships

[11] UK Maritime and Coastguard Agency "Proposed Offshore Renewable Energy Installations (OREI) – Guidance on Navigational Safety Issues," MGN 275 (M), 8/04.

[12] "An Evaluation of the Cape Wind Project under New 2007 US Coast Guard Guidelines for Offshore Renewable Energy Installations," April 2008; The McGowan Group (TMG), LLC, p. 18.

[13] CPA stands for Closest Point of Approach or the minimum distance that a vessel will pass by or approach another object.

[14] WTG stands for Wind Turbine Generator or the towers, nacelles and rotor assemblies of a wind farm.

> and ferries traveling in the Main Channel. A vessel traveling at 12 knots in the North or Main Channels that has a failure and leaves the channel will strike the nearest WTG is less than 60 seconds. High speed ferries would have approximately one-third the time to react near their top speeds. Ferries passing WTGs in the southeastern sector of the project could pass with CPAs as close as 0.8 to 1.6 nautical miles at the project's corner.
>
> The distance and orientation separating WTGs and vessel routes provides far too short a time for even the best equipped and trained crew to take action that would be likely effective in avoiding allision with a WTG.[15]

The 2009 MMS FEIS

Considerable dispute occurred over USCG's duty to implement section 414. In the fall and winter of 2008, USCG altered its approach that would have addressed navigation safety concerns by including changes to the project, to adopt the position that the project should be taken as pre-determined. As a result, all burden for safety was placed on mariners and USCG declined to recommend a safety separation zone. MMS adopted this position in its FEIS for CWA issued on January 19, 2009. Since then, neither USCG nor CWA has taken any action to revise the navigational safety terms and conditions for Nantucket Sound. Several lawsuits are pending against the CWA project, including the USCG terms and conditions.

BOEM's EAs

BOEM began implementing the DOI's "Smart from the Start" initiative in 2011 with USCG and other agencies, which collaborated to produce a series of environmental assessments (EAs). The initiative called for the identification of areas on the Atlantic OCS that appeared most suitable for commercial wind energy development and the availability of those areas for leasing and detailed site assessment. During 2011 BOEM published Notices identifying those ocean areas and requested public comment. Three of the resulting EAs published in 2012 covered OCS areas off the coasts of Massachusetts, Rhode Island and Massachusetts; and New Jersey, Delaware, Maryland, and Virginia.[16] A fourth EA though announced[17,18] has not yet been published for North Carolina. A USCG

[15] Ibid, p.15.

[16] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New Jersey, Delaware, Maryland, and Virginia, January 2012."

[17] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts, October 2012."

[18] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Rhode Island and Massachusetts, June 2012."

workgroup reported that it had designated "significant amounts of areas of the potential wind energy area as Red, meaning there is high conflict with vessel navigation. At the time of this writing, the NC Call Areas have not been finalized."[19]

Significant public comment/concern was received from maritime interests in response to the BOEM Notices. Major changes were made to the various Wind Energy Areas (WEAs) identified to accommodate those concerns. Public concern with marine safety and protection of the marine environment was recorded from: 1) marine interests (including pilot organizations) concerned with accommodating the safety and flow of the current and future marine transportation system; 2) fishing interests concerned over displacement from traditional fishing areas and activities and the impact on fishing stocks; and 3) tug and barge interests concerned with displacement from traditional routes and safe shelter areas and with the premature setting of standards.

BOEM chose not to accommodate the following request from U.S. tug and barge industry representatives, American Waterway Operators (AWO), to halt the EA process until USCG could complete an on-going study.

> AWO strongly recommends BOEM refrain from moving forward with leases until after the PARS[20] study is completed, the results are analyzed by and discussed with the navigation industry, and fairways are established.[21]

BOEM in cooperation with USCG, however, made significant exclusions from the announced WEAs addressing the tug and barge interests concerns with marine navigation safety and displacement of their operations.

The criteria which emerged from these EAs represent BOEM's standards for defining a WEA and, more specifically, the guiding site selection criteria which should be applied by a would-be developer contemplating construction of wind powered OREI. Similarly, the USCG's marine safety and marine environmental protection criteria emerged and were applied through BOEM in the EAs excluding both whole and partial lease blocks from each of the WEAs to avoid conflicts with established and projected shipping and fishing activity. These actions represent USCG marine safety standards for OREI site selection and, indirectly, their design.

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[19] "Atlantic Coast Port Access Route Study Interim Report", Docket Number USCG -2011 – 0351, ACPARS Workgroup, 13 July 2012, App. VII, p.6.

[20] PARS is the USCG national Port Access Route Study. Later references are made to a portion of PARS called the USCG Atlantic Coast Port Access Route Study (ACPARS) which covers the U.S. Atlantic Coast.

[21] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New Jersey, Delaware, Maryland, and Virginia, January 2012," p. 340.

The following are excerpts from the BOEM EAs which reflect the application of the USCG's marine safety standards to the final WEAs for the states of Massachusetts, Rhode Island, New Jersey, Delaware, Virginia and Maryland:

- After considering public input on the RFI and based on further consultation with the Task Force, the potential WEA was developed to avoid the following areas:

    1. Shipping lanes, traffic separation schemes (TSS);
    2. Nantucket Lightship Habitat Closure Area; and
    3. Commercial fishing areas of interest (this resulted in removal of the eastern half of the RFI area from further consideration).

  In total, 189 whole OCS blocks (an OCS block is 3 statute miles by 3 statute miles) and 144 partial OCS blocks were removed. ... the area considered for lease issuance was reduced to approximately half the size of the RFI area. [22]

- However, on September 26, 2011, BOEM received information from the United States Coast Guard (USCG) indicating that, should lessees attempt to develop commercial-scale renewable energy facilities in certain areas of the WEA offshore Virginia, substantial risks to navigational safety would likely arise. Although BOEM is not currently considering approving any COPs[23] for wind energy generation facilities in any area offshore the Mid-Atlantic States, it would make little sense to give priority to issuing leases in areas that the USCG currently believes would not be suitable for development in the future (see also Section 2.3 of the EA). Therefore, and for the same reasons it eliminated USCG "Category A" areas from priority leasing in the Maryland WEA during scoping ... [24]

The referenced EA offered the following definition: "Category A – areas that USCG believes should not be leased because, should these leases be ultimately developed in the future, they would pose navigational risks due to existing and anticipated future increase in vessel traffic density."[25]

- Recommended vessel routes for deep-draft vessels and tugs/barges transiting Rhode Island Sound, Narragansett Bay, and Buzzards Bay are established by the USCG Captain of the Port, Providence, in cooperation with the Southeastern Massachusetts

[22] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts, October 2012", p.9.

[23] COP is a Construction and Operation Plan for the development and building of an offshore facility.

[24] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New Jersey, Delaware, Maryland, and Virginia, January 2012,", p. vi.

[25] Ibid, p.18.

and Rhode Island Port Safety and Security Committees (NOAA, NOS 2010).The USCG anticipates providing BOEM with additional navigational safety recommendations when the Atlantic Coast Port Access Route Study (ACPARS) is complete in 2012.[26]

- Based on the USCG's recommendation and BOEM's own preliminary analysis of vessel traffic data ... these areas identified by AWO and USCG would be excluded from leasing decisions under this action (see Figure 2.2). As a result, an area slightly less than 20 OCS blocks in the Virginia WEA would be considered for leasing and subsequent site assessment activities ....[27]

The site selection criteria that emerged from the BOEM EAs, appear fully compatible with the USCG's NVIC 2007 marine safety guidance for OREIs. However, the EAs also provide for the first time significant detail on the mitigation of marine navigation risk by outright exclusion of areas that could produce navigation or fishing conflict and by providing safe buffer zones between WEAs and vessel routes. In sum, the following marine safety criteria are evident from the final selection of blocks that were identified as lease candidates and from those blocks which were excluded from consideration:

- The presence of Traffic Separation Schemes (TSS) or other vessel Routing measures facilitate the safe designation of WEAs in ocean areas bearing volumes of marine traffic and/or fishing activity.
- Safety Buffer zones of 1 nm from TSSs and from shipping routes should be applied in WEA identification as well as in subsequent site selection.
- Marine traffic routes and fishing areas should be identified and their densities estimated and projected for future growth and expansion in defining the limits of WEAs.
- In selecting the size, orientation and content of WEAs, blocks should be excluded which would conflict with the safe operation and transit of shipping on recognized routes and from vessels working in traditional fishing areas.

It is clear the marine safety criteria contained in the BOEM EAs as evidenced by the exercise of exclusion, buffer, separation zones and distances are welcome and sorely needed by a marine transportation and fisheries systems looking to preserve marine safety and the primacy of navigation. It is also clear that none of these criteria were applied to the siting, size and shape of the CWA proposed facility for Nantucket Sound.

Fishing Vessels

The following excerpts from the BOEM EAs reflect the concern for and application of marine safety standards for fishing interests found in the final WEAs:

[26] Ibid, p.183.

[27] Ibid, p.20.

- During the Area Identification process (March through May 2012), BOEM excluded some of the OCS blocks that overlapped with high value sea duck habitat and areas that, if ultimately developed with commercial wind energy facilities, would likely cause substantial conflict with commercial and recreational fishing activities."[28]

- Potential effects on commercial and recreational fishing include two broad categories: (1) displacement of fishing activities, and (2) alteration of target species availability. Impacts on fish or fish habitat could affect the availability of target species. ... Prior to selection of the final WEA, major areas of fishing interest were removed to minimize potential conflict between activities.[29]

The marine safety, non-displacement and species protection criteria contained in the BOEM EAs as evidenced by their exclusion of traditional fishing areas is positive and significant. It also stands in sharp contrast to the dismissive view of fishing needs and concerns evidenced in the BOEM/MMS/USCG review of the CWA facility proposed for the fishing grounds of Horseshoe Shoal in Nantucket Sound. The fishing interests who strenuously and repeatedly objected to the CWA facility siting and to the potential loss of traditional fishing grounds on and surrounding Nantucket Sound's Horseshoe Shoal were simply told they would need to find somewhere else to fish. In a December 5, 2008 conference call, Ed Barrett commented that "collision avoidance within the wind farm is problematic and may be above and beyond what mariners should have to do," and asked if, "in mitigating these problems is the Coast Guard considering channels through this wind park that would involve removing some of the turbines? Secondly, will the Coast Guard be considering changing of the spacing given the fact that 1/3 of a mile will be unsafe for us with mobile gear to fish within that park thereby making this a 24 square mile closure?" USCG Capt. Perry responded, "I think basically no on both of those. We only go forward with our analysis with the project that is proposed. It's like you build a house. You've got to go with the plans that are presented to you... We're going forward with the plan that Cape Wind has put forward to all the agencies and MMS.... As we said before, the impacts beyond, just looking at navigational safety, now when you start adjusting the footprint or the tower locations or anything then that goes into things outside the Coast Guard realm because of the economic impact and so on. We do recognize that you know, certain activities in here, they're going to have to operate a little bit differently and the fishing fleet is one of them. Just because of the nature of your business and there probably is an impact to you."

Captain Perry went on to state that fishing territory was outside the realm of navigational safety, security, and environmental concerns, was thus not the Coast Guard's responsibility, and that the fishermen could fish someplace else.

[28] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts, October 2012", p.10.

[29] Ibid, pps. 190 & 191.

USCG ACPARS

Concurrent with the BOEM "Smart from the Start" process, in 2011 USCG embarked on a separate study whose scope would influence OREI facility siting and design. While not formerly linked to the BOEM EAs, the results, as they developed from USCG's in-house "Atlantic Coast Port Access Route Study," are acknowledged and reflected in the BOEM EAs. One example of this exchange is offered from the Offshore Massachusetts EA:

> The USCG is expected to provide additional navigational safety recommendations when the Atlantic Coast Port Access Route Study (ACPARS) is complete. The main purpose of the ACPARS is to enhance navigational safety by examining existing shipping routes and waterway uses and, to the extent practicable, reconcile the paramount right of navigation within designated port access routes. ... The data gathered during the ACPARS and its analysis results may suggest that the USCG modify the existing routing measures, create one or more precautionary areas, and/or identify area(s) to be avoided.[30]

The ACPARS is being conducted by an in-house USCG group of experts. This Workgroup (WG) issued its first and interim report in July 2012.[31] The final report is not expected to be issued until the end of 2013, after a vessel Automated Information System (AIS) data analysis is completed by a contracted entity.

Building on its prior work published in the USCG's 2007 marine safety guidance for OREIs and adding critical new risk assessment and mitigation detail, the interim report offers the following in the summary of its efforts:

> However, the WG has developed a methodology for initially classifying lease blocks as: not suitable (Red), may be suitable with more study (Yellow) or suitable (Green), based on proximity to shipping routes. This methodology has been used by the CG to provide input to the Bureau of Ocean Energy Management (BOEM) regarding the potential impact to navigation of areas being proposed for wind energy development. The WG has determined, given the lack of complete AIS data and rudimentary analysis to date, that recommending even preliminary routing measures is not appropriate at this time.[32]

In other words, USCG switched the emphasis and goal in ACPARS from recommending changes in shipping routes to accommodate the BOEM identified WEAs to recommending whole or partial exclusion of blocks within the WEAs to provide for

[30] Ibid, p. 198.

[31] "Atlantic Coast Port Access Route Study Interim Report", Docket Number USCG-2011-0351, ACPARS Workgroup, 13 July 2012.

[32] Ibid, p.i.

buffers and separation for the safe navigation of shipping on their traditional and projected routes. USCG, as part of the continuing study, also committed to better research vessel routes and their AIS density and possibly to make additional recommendations in the future.

The ACPARS efforts offer a substantial addition to the evolving body of USCG guidance, safety and marine environmental protection standards and criteria in the siting, design and operation of OREIs. The ACPARS embraced the following key principles in forming its navigation safety recommendations for the proposed WEAs offered in the preliminary BOEM Notices:

- Any WEA or block for potential development must be examined/evaluated for its impact on maintaining or enhancing marine navigational safety.
- The selection and design of proposed WEAs must address and reconcile the needs of and the paramount right of marine navigation.
- The Red-Yellow-Green suitability criteria (R-Y-G Methodology) were developed and applied in ACPARS to directly address known navigational risks to vessels from allision, collision and grounding posed by wind farms and their induced navigation radar interference.
- A rigorous methodology should be applied to assess marine navigational risk of proposed wind farm areas (including vessel collision/allision/grounding), routing and mitigation measures.
- The navigation risk assessment methodology applied should also account for future changes in shipping and marine uses in addition to current conditions.
- Navigational risk assessment must recognize and address that changes to traditional shipping routes (including their combination) could increase vessel density and also result in the mixing of previously segregated vessel types.
- Current AIS data collection is neither complete (lacking detection of smaller commercial, recreational, fishing and passenger vessels) nor amenable to analysis regarding shipping routes or their densities.

The core of the USCG ACPARS analysis and the basis for its recommended exclusions from the WEAs proposed in the BOEM Notices for Massachusetts, Rhode Island, New Jersey, Delaware ,Virginia and North Carolina is the R-Y-G methodology. This methodology was developed from standards and criteria for OREIs applied in the UK by its MCA. [33] These are the same standards which USCG loosely modeled its earlier 2007 marine safety guidance for OREIs. The ACPARS report defined the R-Y-G methodology as follows:

[33] UK Maritime and Coastguard Agency "Offshore Renewable Energy Installations (OREIs) - Guidance on UK Navigational Practice, Safety and Emergency Response Issues, MGN 371 (M&F), August 2008.

As part of Phase 2 the WG developed a methodology based primarily on the UK Maritime Guidance Note 371 to make preliminary determinations of suitability of proposed wind development areas with regard to navigation. MGN 371 provided three break points between WEAs and vessel traffic routes that were thought to be most significant and useful to this determination:

- 1 NM - The minimum distance to the parallel boundary of a TSS. At this distance there would still be S band radar interference and ARPA is affected. This is also the boundary between High/Medium navigational safety risk.
- 2 NM – The distance where compliance with COLREGS becomes less challenging, mitigation measures would still be required to reduce risk As Low as Reasonably Practicable (ALARP). This is also the boundary between Medium/Low navigational safety risk.
- 5 NM –The distance where there are minimal impacts to navigational safety and risk should be acceptable without additional mitigation. This is also the boundary between Low/Very Low navigational safety risk."[34]

ACPARS examined the shipping routes and patterns for each area as well as individual blocks in the WEAs proposed by BOEM. Blocks that were determined to be hazardous to marine navigation and to the marine environment were "colored" RED which the group defined as:

> RED BLOCKS: Those blocks, or portions of blocks, that cannot / should not be developed now or in the future because of vessel traffic usage. Development of these blocks would have an unacceptable impact to navigational safety and precludes development. Traffic usage may also increase in these blocks based on the development of adjoining / adjacent blocks.
>
> YELLOW BLOCKS: Those blocks, or portions of blocks, that require further study /analysis of existing traffic usage / patterns as well as projected future traffic increases based on development of adjoining / adjacent blocks. Development of these blocks would potentially have an unacceptable impact on navigational safety which requires additional study to determine the risk and possible mitigation if developed.
>
> GREEN BLOCKS: Those blocks, or portions of blocks, whose development would, based on available information, pose minimal to no detrimental impact to navigational safety. Traffic using these blocks can be "re-routed" around developed alternative energy sites. These blocks would require minimal, if any, mitigation.[35]

[34] "Atlantic Coast Port Access Route Study Interim Report", Docket Number USCG – 2011-0351, ACPARS Workgroup, 13 July 2012, p.12.
[35] Ibid, Encl.2.

The ACPARS group capped their marine navigation safety analysis with the recommendation excerpted below:

> Recommendation: Although consensus was not reached, the majority of the ACPARS Workgroup recommended the use of a 1NM separation distance from shipping routes for determining the boundary between Yellow and Red Blocks. As stated above there was consensus for using 5NM as the minimum distance from shipping routes for Green Blocks. The following is the agreed upon process for designating the color of the blocks:
>
> 1) Identify existing vessel routing/management measures, i.e. TSSs, fairways, anchorages and - designate all areas within 1NM as Red
>
> 2) Using seasoned CG waterway management professionals, approximate and bound commercial shipping routes outside of TSS/fairways using best available AIS data; however, a minimum of 1 year of data is recommended. Designate all areas within 1 NM as Red ...[36]

Comparison Between Nantucket Sound and Other OREI Navigational Safety Measures

The attached Figure 4-12 has been excerpted from the BOEM EA for Massachusetts and displays the WEA proposed from offshore Massachusetts, the TSS schemes for Rhode Island Sound, the Port of Boston and the approaches to NY.[37] Exhibit 3. It was derived from the AIS data gathered from larger commercial vessels (exceeding 300 gross tons and other vessel types carrying AIS recorders) and shows "High" density vessel tracks in a yellow to salmon color scheme. BOEM did not disclose the age of the AIS data or the period during which it was collected. However ,it is assumed that it was gathered and analyzed from the year 2009 as defined by the Northeast Ocean Data Portal Working Group's website.

Exhibit 4, that follows, is derived from the same source, data and analysis method as that of Figure 4-12 (Exhibit 3) and as used by BOEM for other areas. Exhibit 4 displays the "High" density vessel tracks for larger commercial vessels using the Rhode Island Sound TSS (purple), the coastal route from New York and Long Island Sound to the Cape Cod Canal (light green), through Vineyard Sound and through Nantucket Sound passing to the Atlantic Ocean and to Nantucket Harbor (yellow to salmon tracks). Using BOEM's analysis for AIS data, Exhibit 4 shows commercial vessels use Nantucket Sound, specifically its Main Channel, as previously described in the Coast Pilot, in heavy volumes very similar to those studied for the proposed WEAs in the Massachusetts and in the Rhode Island & Massachusetts EAs produced by BOEM.

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[36] Id.

[37] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts, October 2012", p.200.

What is not shown in these Figures is the disparity of marine navigation risk and of displacement of fishing activities that would be created by the siting and design of OREIs in the various WEAs as compared to the CWA proposed facility.

Using the WEA area described in the Rhode Island & Massachusetts BOEM EA (RIMAWEA)[38] as a comparison to the proposed CWA site, several significant factors emerge that drive starkly different navigational and operational risk environments that transiting vessels must overcome.

The RIMAWEA would be located adjacent to the high density TSS in Rhode Island Sound. The vessel one-way lanes of the TSS are each 1 nm wide with water depths ranging from 60 – 120 ft. The Main Channel directly adjacent to the CWA site on Horseshoe Shoal can be visualized as a single-lane carrying vessel traffic in multiple directions which narrows to ¾ nm between two dangerous shoals with 30 – 60 ft. of water at the junction of heavy vessel traffic crossing from east to west and north to south. There are few shoals and ledges in the direct vicinity of the RIMAWEA and the Rhode Island TSS. Vessels leaving the TSS by design or in emergency have "sea room" to maneuver and recover in water depths ranging from 60 – 160 ft. Utilizing both BOEM EA and ACPARS criteria, a troubled vessel seeking to avoid a casualty with a WTG placed near the TSS or with another vessel hidden in radar interference from the facility would have a 1 nm buffer space between the TSS and other vessel routes to safely react. The USCG ACPARS Workgroup examined the vessel routes and traffic density for the RIMAWEA proposed for Rhode Island Sound, the region most akin to the navigation conditions found in Nantucket Sound. The results of that examination were reported in Appendix VII of their report. USCG requested that BOEM exclude a total of 16 blocks from the RIMAWEA to safeguard navigation safety for vessels on routes or within the TSS which would pas within a safety buffer of 1 nm from the WEA. USCG also requested the BOEM include the following statement in the EA:

> The Coast Guard has a responsibility to ensure the safety of navigation under the Ports and Waterways Safety Act. The navigational safety risk posed by building structures in the proximity of shipping will be affected by numerous factors including but not limited to: vessel size, vessel type, density of traffic, prevailing conditions, cumulative impacts of multiple obstructions (wind farms), existence of multiple shipping routes (crossing or meeting situations), radar/ARPA interference, and existence of mitigating factors such as navigational aids, vessel traffic services, pilotage, etc. There currently is no standard recommended separation distance between OREIs and shipping routes. As an interim measure, the Coast Guard intends to apply the

[38] DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Rhode Island and Massachusetts, June 2012"

> UK Maritime Guidance Note MGN-371 and the expertise of waterways SME's to evaluate and/or identify individual BOEMRE RFIs/CFIs. Based o nMGN-371, any areas <1 NM from existing shipping routes pose a high risk to navigational safety and are not considered acceptable for the placement OREIs. Areas >5NM from existing shipping routes are considered to pose minimal risk to navigational safety. Everything between 1NM and 5NM would require analysis to determine if mitigation factors could be applied to bring navigational safety risk to within acceptable levels. Please note that impacts to radar and ARPA still occur outside of 1 NM which will have to be evaluated along with other potential impacts. The above are only planning guidelines and a full navigational risk assessment will be required as part of the EIS prior to approving construction of any OREIs.[39]

In contrast USCG accepted the design and siting of the CWA facility without challenge and without imposing any buffer or minimum separation distance between the surrounding vessel routes and channels and the facility's WTGs. The CWA facility design and placement of its WTGs would provide the crew of a passenger ferry or boat that leaves the channel a mere 60 seconds, at normal speeds, and a high speed ferry 20 seconds to detect, take action and respond to avoid an allision with an adjacent WTG.

Another significant disparity is evident in the treatment of the safety and operational needs of commercial fishing vessels. The BOEM EAs examined then excluded entire blocks and sections of the proposed WEAs to prevent the displacement of those vessels and their traditional fishing activity. BOEM appears to have adopted the position that commercial fishing vessels and their operating techniques make for an unacceptable safety risk when operating within or in the vicinity of a WEA. BOEM, MMS and USCG took the opposite tack in their review and acceptance of the CWA proposal. The repeated complaints of fishing industry representatives in Nantucket Sound that the CWA facility would make it unsafe for them to fish with long-established techniques on or adjacent to the rich fishing grounds at Horseshoe Shoal were simply ignored or obfuscated. A marine and navigational safety consultants' report by Cinnon/McGowan responding to the MMS DEIS reported:

> A partnership of 18 commercial fishing organizations in a news release, dated August 23, 2006, stated that the following "Navigation of mobile

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[39] "Atlantic Coast Port Access Route Study Interim Report", Docket Number USCG-2011-0351, ACPARS Workgroup, 13 July 2012, App. VII.

> fishing gear between the 130 wind towers would be hazardous or impossible." The commercial fishing industry has stated that the only realistic compromise would be to space the turbines a minimum distance of 1 to 2 nautical miles apart from each other. There is simply no other form of safety mitigation measure which would effectively help commercial fishermen. However, the fishing industry maintains that this is a compromised solution and structures placed in a heavily fished area are purely hazards to navigation.[40]

The report went on to state: "The WTG spacing proposed by Cape Wind is not large. The design fails to even meet the minimum spacing recommended in the UK just to safely allow small boat operations much less commercial vessel and ferry operations. The spacing is too narrow to safely permit fishing trawls, requiring a minimum 0.5 to 1 nautical miles turning radius (equating to a 1 to 2 nautical mile minimum spacing between each WTG) which have been used for decades in and around the project's waters.[41]

MMS subsequently issued the FEIS making no change to the CWA facility site, its encroachment on the adjacent ferry routes or the North and Main Channels of Nantucket Sound, to the facility's design or to the number and placement of the 130 WTGs.

Conclusion

After examining the development of guidance, standards and criteria in the U.S. as evidenced by the various EISs, EAs, the USCG's NVIC and ACPARS Study as well as reports by various experts relative to the navigation safety and marine environmental pollution aspects of the siting, design and operation of wind powered OREIs the following conclusions are offered:

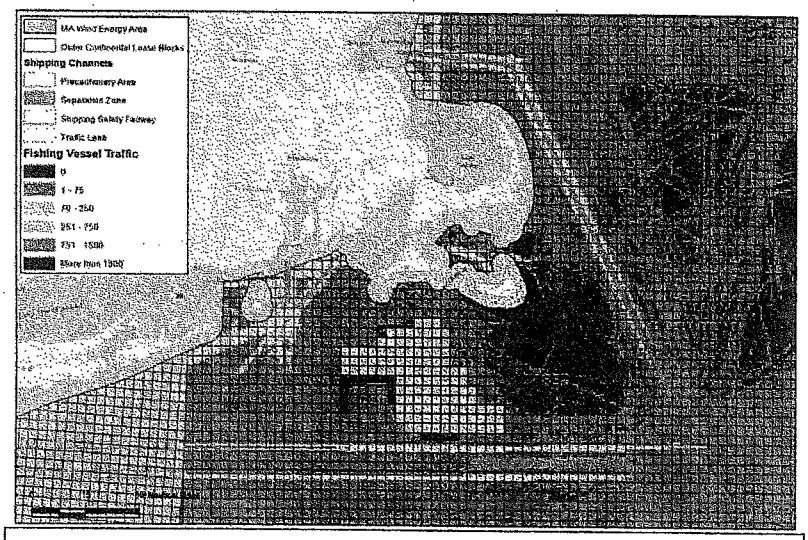
1. As a general matter, since 2006 USCG and BOEM have made substantial progress in developing and applying marine safety and marine environmental protection standards, criteria and guidance for the siting, design and operation of wind powered OREIs in the U.S. OCS.
2. The application of safe buffer zones in the design of offshore WEAs and the exclusion of ocean blocks to eliminate potential conflicts with the marine navigation safety needs of vessels in the U.S.'s marine transportation system are substantial and positive mitigation to vessels' potential navigation risk. BOEM, USCG and prospective developers should continue to apply safety buffers and exclusion areas in the future to enhance marine safety and to facilitate these offshore developments. The

[40] "ANALYSIS OF THE TREATMENT OF Navigation Safety, Marine Environmental Protection, Commercial Fishing, Defense & Security, Electromagnetic Emissions, Communication and Search and Rescue (SAR) IN THE MINERALS MANAGEMENT SERVICE (MMS) CAPE WIND PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT," Linnon and McGowan, April 2008, p.3.

[41] Ibid, p.4.

application of safe buffer zones in the design of offshore WEAs and the exclusion of ocean blocks to eliminate potential conflicts with the marine navigation safety needs of vessels in the U.S.'s marine transportation system are substantial and positive mitigation to vessels' potential navigation risk. These two measures have been uniformly appled to all WEAs with the exception of Nantucket Sound. BOEM, USCG and prospective developers should continue to apply safety buffers and exclusion areas in the future to enhance marine safety and to facilitate these offshore developments.

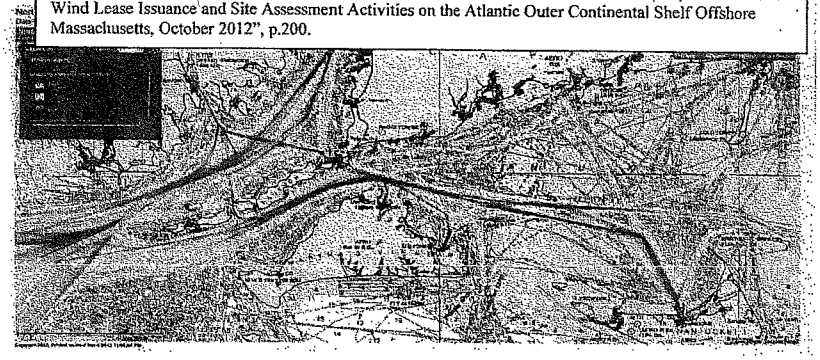
3. The application of safe buffer zones in the design of offshore WEAs and the exclusion of ocean blocks to eliminate potential conflicts with the marine safety and operational needs of commercial fishing vessels are substantial and positive mitigation to these vessels' potential navigation risk as well as to prevent displacement of these valuable activities. BOEM, USCG and prospective developers should continue to apply safety buffers and exclusion areas in the future to enhance marine safety and to maintain a strong fishing industry and stocks in the U.S.
4. The USCG, MMS and BOEM began review of the CWA proposed facility in Nantucket Sound before any meaningful navigation safety or marine environmental protection standards and criteria had been developed. That stage of the CWA was still very early in project permitting, and approximately 10 years ago.
5. USCG has failed to effectively apply the marine navigation safety and environmental protection standards, guidance and criteria (or, their equivalents) it developed for OREI's in the U.S. to the CWA facility.
6. There are strong and continuing indications backed by research that neither a sufficient and meaningful site assessment nor an accurate and detailed vessel traffic assessment has been conducted for the CWA proposed facility.
7. There are also indications that a realistic or detailed navigational risk assessment (to a recognized standard) has not been conducted nor have adequate and effective marine safety mitigation actions been identified for the CWA facility.
8. Finally, there are strong and continuing indications backed by maritime concerns and experts as well as recent guidance, standards and criteria developed by BOEM and USCG that the CWA facility is fatally flawed as currently designed and sited. It is incompatible with the needs of marine transportation in Nantucket Sound and is an unnecessary and unacceptable threat to the current-day and future users of Nantucket Sound's waterways.



Source: Modified from Northeast Ocean Data Portal Working Group, 2011

Figure 4-12. Vessel traffic density derived from AIS data, shipping channels, and the WEA

Note: Figure 4-12. Above was excepted from DOI/BOEM Environmental Assessment (EA) "Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts, October 2012", p.200.



Source: *Modified by The McGowan Group, LLC from Northeast Ocean Data Portal Working Group, 2013*

Figure 1. Commercial vessel "High" density traffic derived from AIS data (2009), shipping channels/routes and aids to navigation for Nantucket and Rhode Island Sounds and Buzzards Bay

EXHIBIT 7: TESTIMONY OF JAMES G. DALY, COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES

Exhibit 7

Exhibit NSTAR-JGD-1

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES

Petition of NSTAR Electric Company for Approval of a Proposed Long-Term Contract for Renewable Energy with Cape Wind Associates, LLC Pursuant to St. 2008, c. 169, § 83	D.P.U. 12-30

DIRECT TESTIMONY OF

JAMES G. DALY

ON BEHALF OF

NSTAR ELECTRIC COMPANY

2.2(g)).

V. PRICING AND MARKET ANALYSIS

Q. How do the costs under the Cape Wind PPA for energy, capacity and RECs compare with the market prices for energy, capacity and RECs?

A. The costs for energy, capacity and RECs under the contract are higher than the Levitan forecast of market prices for energy, capacity and RECs during all years of the contract. The contract's nominal above-market cost over the life of the contract is estimated to be $940 million should the project qualify for investment tax credits and $967 million should the project not qualify for any tax credits. On a net present value, the corresponding amounts equal $489 million and $508 million, respectively.

Q. How was the total above-market estimate derived?

A. The Company prepared Exhibit NSTAR-JGD-3, which calculates the annual above-market costs for energy, capacity and RECs for each year of the contract. This was done by applying the forecasted output from the Cape Wind contract proposal to both the Cape Wind contract pricing terms (Exhibit NSTAR-JGD-2) and the market prices provided in the Levitan forecast (Exhibit NSTAR-JGD-3). The net difference in costs plus the appropriate remuneration equals the above-market costs to be recovered from customers.

Q. Did the Company consider price suppression in its analysis of the Cape Wind PPA?

A. Not explicitly. The Levitan Forecast includes the Cape Wind project as part of the resource mix so it includes the price suppression effect of Cape Wind. However, as presented in the testimony of Mr. Duffy, a projection of wholesale price suppression with and without Cape Wind has been prepared and submitted for the Department's review, in

Exhibit 8

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ORIGINAL BY EMAIL

April 24, 2013

Mr. Matthew McMillen
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Mr. Todd Stribley
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Re: Request for Comments - Department of Energy's adoption of the Final Environmental Impact Statement for the Cape Wind Project issued on January 1, 2009 by the Minerals Management Service of the U.S. Department of the Interior, "*EIS No. 20120401, Final EIS, DOE, MA,* Adoption" 78 Fed. Reg. 9388 (Feb. 8, 2013)

Dear Messrs. McMillen and Stribley:

Associated Industries of Massachusetts (AIM) is pleased to submit these comments for the DOE Loan Application referenced above.

AIM is the state's largest nonprofit, nonpartisan association of Massachusetts employers. AIM's mission is to promote the well-being of its thousands of members and their employees and

the prosperity of the Commonwealth of Massachusetts by improving the economic climate, proactively advocating fair and equitable public policy, and providing relevant, reliable information and excellent services.

AIM would like to go on record opposing a Department of Energy (DOE) loan guarantee for Cape Wind because such a loan guarantee is not in the best interests of taxpayers, ratepayers, or the environment, and is not consistent with the goals of the DOE Loan Program.

There is no evidence submitted on the record in any of the proceedings related to this project which indicate that construction of Cape Wind will be jeopardized if it does not receive the DOE loan guarantee. Therefore, if DOE provides a guarantee it would be committing resources to this project unnecessarily and taking resources away from projects that really need such support.

BACKGROUND

AIM has been involved with the Cape Wind proposal for several years, beginning in May 2010, when National Grid (NGRID), the largest utility in Massachusetts, filed a power purchase agreement with the Massachusetts Department of Public Utilities (D.P.U.) for 50% of the full output of Cape Wind.[1] This was the first time Cape Wind had ever disclosed the expected price for the power from the project. After a series of hearings and briefings the power purchase agreement was approved by the Massachusetts Department of Public Utilities on November 22, 2010.

Similarly, on March 30, 2012, NSTAR Electric Company (NSTAR), the second largest utility in Massachusetts, filed their power purchase agreement with the Department for an additional 27.5% of the full output of Cape Wind.[2] This power purchase agreement was approved essentially as submitted on November 26, 2012, bringing the total amount of the Cape Wind project output committed to guaranteed long-term contracts to 77.5% of the total output at full build.

In both cases, the prices and terms were for all practical purposes identical – a 15-year contract beginning at a price of nearly 20 cents per kWh (including utility remuneration or commission), with higher prices guaranteed in the event the federal production tax credit (PTC) and/or investment tax credit (ITC) is not available, and with further higher prices guaranteed if a smaller project is built than originally planned. Finally, on top of all these guaranteed prices is an additional guaranteed 3.5% increase in the price every year regardless of inflation or the price of non-Cape Wind power.[3]

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[1] See DPU-10-54 - Power Purchase Agreement between National Grid and Cape Wind Associates, LLC, May 10, 2010

[2] See DPU-12-30 - Petition of NSTAR Electric Company for Approval of a Proposed Long-Term Contract for Renewable Energy with Cape Wind Associates, LLC Pursuant to St. 2008, c. 169, § 83

[3] It should be pointed out that of all the other power purchase agreements signed by other utilities under the same section of the law which governed the Cape Wind agreements, Cape Wind is the only project to have pricing

COMMENTS

Throughout the adjudicatory processes at the Department of Public Utilities, AIM opposed the power purchase agreements. It did so not because of any bias against renewable power (in fact, AIM supported several other long-term contracts during the same period of time - See DPU 11-5, 11-6 and 11-7 (2011)), but rather because of reasons unique to the Cape Wind project. It should be noted that AIM has *never* opposed Cape Wind because of its location and has never commented in any other proceeding related to a federal or state environmental permit.

We believe it would be helpful to reiterate the reasons for AIM's opposition, which stem from the ratepayer's perspective and impacts, for purposes of assisting in your review of the Cape Wind loan guarantee application.

1. The Loan Guarantee is Not Necessary to Finance Cape Wind.

The two power purchase agreements negotiated between Cape Wind by NSTAR and NGRID represent the most expensive above-market contracts ever negotiated for renewable power in Massachusetts, including other wind energy. As stated above, there is not only the high initial cost, but multiple increases based on contingencies, assuring that Cape Wind will be made whole no matter what happens as long as it produces power. While proponents often cite the initial cost of power as acceptable, they overlooked the fact that it is guaranteed the price of Cape Wind will increase exponentially and very quickly, with the price doubling from the initial price near the end of the contract. No other long-term renewable contract negotiated by the utilities has these favorable terms.

Clearly, Cape Wind does not need this guarantee. In fact, all the price negotiations occurred without the loan guarantee as a possibility, indicating that the risk premium to investors was already built into power purchase price negotiated. Dennis Duffy, Cape Wind's Vice President of Regulatory Affairs admitted as much in pre-filed testimony pertaining to the NSTAR-Cape Wind power purchase agreement:

> Based on our conversations with the financing community, Cape Wind is confident that the PPAs with National Grid and NSTAR will be sufficient to finance the Project, while Cape Wind continues to pursue sales of the remaining output. Prefiled Direct Testimony of Dennis J. Duffy D.P.U. 12-30, Exhibit CW-DJD-1, Page 16, lines 12-15, March 30, 2012

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contingencies related to yearly guaranteed escalation clauses, PTC or ITC availability or project size. All other projects are fixed flat priced over the term of the contract period. See DPU 11-5, 11-6 and 11-7 (2011)

This was repeated during sworn cross examination as part of the hearing process:

> Q. In the National Grid PPA [referring to the earlier Cape Wind/NGRID PPA], was it stated that 77.5 percent of an agreement to purchase Cape Wind would be enough to get financing?
>
> [Duffy] I don't believe it's stated in the PPA, and I don't believe Mr. Daly [of NSTAR] said that, *although in my testimony we've made it very clear in this case that that would be sufficient to finance the project.*
>
> Cross examination of Dennis Duffy, D.P.U. – 12-30, Page 146, lines 11-18. August 6, 2012. Emphasis Added

Given these statements, what has changed since August of 2012 when Cape Wind promised they would not need a loan guarantee to secure financing? Perhaps a realization that the project is riskier than the proponents have declared or simply no one wants to invest in it.

In addition, if Cape Wind is experiencing financial difficulties there is no obligation for them under any PPA to build the full project. It is in fact more advantageous for the developers not to build the entire project. With the NSTAR and NGRID contracts, Cape Wind now has committed power purchase agreements for 77.5% of the total output. However, the contracts are for a stated amount of power, not a stated percentage. For instance, if only 77.5% of the original project is built (say 100 windmills), under the terms of both power purchase agreements, the utilities will be obligated to purchase ALL of the output, essentially giving Cape Wind a sellout. Again, this was confirmed by Mr. Duffy in sworn cross examination.

> Q. If a smaller Cape Wind project was built, say 77.5 percent of the original size, essentially you would have sold 100 percent of the output through bilateral contracts; is that correct?
>
> [Duffy] Yes, if the 77 percent number you're referencing is the originally proposed 130, and the two PPAs that have come before the Department in combination come up to 77 percent, I agree, yes.
>
> Cross examination of Dennis Duffy, D.P.U. – 12-30, Page 148, lines 3-10, August 6, 2012.

In addition, if a smaller project is built, the cost per kilowatt-hour is increased to account for the higher costs.

> Q. And under the NGRID contract and also the NSTAR contract, it is stated that if you build less [turbines], the price will be adjusted accordingly?
>
> [Duffy] Within parameters; that's correct.

Cross examination of Dennis Duffy, D.P.U. – 12-30, Page 145, lines 19-22, August 6, 2012.

In the final analysis, Cape Wind is looking for a loan guarantee they do not need for a larger project than they need to build. Cape Wind could easily reduce the price of the project by the equivalent amount of the loan guarantee and just build a smaller, more efficient project.

2. A DOE Loan Guarantee will not Reduce Prices for Ratepayers Already Burdened by the High Price of Cape Wind Power.

The cost to ratepayers for this power purchase agreements are enormous, averaging almost 200 million dollars per year in above market cost. With Massachusetts having near the highest electricity prices in the country, any additional costs would be borne by a region of the country that can ill afford any increases. Additionally it should be pointed out that the cost of Cape Wind is far higher than other renewable power, nearly three times higher than other wind energy assets. In essence, multiple times more renewable energy could be purchased for the same money.

There is no discernible benefit to the ratepayer if taxpayer dollars are committed to the project – "*the PPA does not call for any adjustment whatsoever if Cape Wind is not able to secure a federal loan guarantee from the United States Department of Energy ("USDOE").*" Prefiled Direct Testimony of Dennis J. Duffy, D.P.U. 12-30, Exhibit CW-DJD-1, Page 12, lines 9-11, March 30, 2012. Emphasis Added

3. The DOE Loan Guarantee Will Not Result in Additional Investments in Massachusetts, New England, or the United States.

Surprisingly, despite the billions in ratepayer money that will be committed to this project, there is absolutely no guarantee that any of the money will be used to purchase products from suppliers in Massachusetts, New England, or even the United States. Cape Wind has already cancelled an agreement with a Massachusetts business (See January 28, 2013 letter from Mass Tank Sales Corp, Middleboro, MA, Carl C. Horstmann, President, to Mr. Todd Stribley, U.S. Department of Energy). While there may be some construction jobs related to the project (although there is no guarantee that Massachusetts businesses will be awarded the contracts), dollar for dollar these jobs will come at a high price in reduced employment in other areas of the state - primarily from companies adjusting to the most significant rate increase in recent memory, perhaps ever.[4]

Again, in sworn cross examination of Mr. Duffy, he relieves us of any doubt as to Cape Wind's real intentions:

[4] While the amount of power attributed to the Cape Wind PPA is comparatively small - (3.5% of total load in NGRID territory and 1.9% in NSTAR territory), the huge prices will result in energy price increases of 10% or more in an average customers distribution charge, absent other increases.

Q. When Cape Wind sources out their parts for their project, is there any requirement anywhere in the PPA that you would need to purchase a certain amount of these parts in Massachusetts?

[Duffy] I don't recall. Not that I recall.

Q. Is there a certain amount that is specified that you would have to buy in the United States?

[Duffy] I don't recall any such provision.

Q. So essentially you could source the building of the parts for Cape Wind anywhere in the world?

[Duffy] Well, without conceding whether that hypothetical is practical or realistic, I'm not aware of a provision whereby such an approach would be a violation of the terms of these particular contracts.

Cross examination of Dennis Duffy, DPU 12-30 - NSTAR Electric Company - Vol. 2, page 163, lines 6-21, August 6, 2012

4. The DOE Loan Guarantee Will Not Reduce the Use of Foreign Oil or Coal and Will Not Result in Significant Reductions of Pollutants, Including Carbon Dioxide.

Throughout the negotiations and adjudicatory hearings for Cape Wind the developers have promised that Cape Wind will bring significant reductions in pollutant levels in New England, particularly in greenhouse gases. However, while this may have been true when the project was first proposed, it is no longer the case and the proponent has not updated its analysis, something that AIM has been calling for repeatedly.

The New England Electric Grid is served by several sources of energy – natural gas, nuclear, renewable power, hydro[5], and coal. On any given average day in New England, the fuel mix for electric generation is nearly 50% non-carbon emitting (nuclear, renewable and hydro), with the vast majority of the rest (often over 50%) being natural gas, the cleanest of fossil fuels. Only a tiny portion of electricity is generated by coal, generally under 4% and almost none is produced using oil. Therefore the claim that foreign oil or coal use will be reduced if Cape Wind is helped by the DOE loan guarantee is simply incorrect. While some of the natural gas does come from foreign sources though the use of liquefied product, even that amount will be reduced over the next several years as additional pipeline capacity is built to take advantage of US natural gas deposits in Pennsylvania and elsewhere.

[5] Large scale hydro, such as that from Hydro Quebec and other renewables built prior to implementation of recent laws are not considered "renewable" under Massachusetts law and therefore will be listed separately for consistency. AIM prefers to use the term "non-carbon emitting" but for consistency the Massachusetts legal definitions will be used.

In fact, one of the coal plants in Massachusetts – Salem Harbor - will be shutting down next year and Brayton Point, the largest plant in New England that uses coal, has just been sold and faces an uncertain future. Otherwise only small capacity coal plants remain in New England and none will be built anytime in the future. Therefore, any "emission reductions" that Cape Wind claims should be taken with a grain of salt when almost 50% of the electric grid is served by non-carbon emitting sources already, with the remaining served by the lowest carbon emitters available. New England's generation profile is already one of the cleanest in the country.

In addition to the project not reducing the amount of pollutants previously claimed, it is even unclear if Cape Wind will reduce any pollutants at all worldwide. While a wind turbine does not produce pollution during it normal use, this is a very limited and outdated analysis – many sustainability experts are now using life cycle analysis to make sure that emission reductions here in the US do not result in higher emissions is undeveloped countries as a result of mining and processing materials used to construct renewable power generation equipment. In fact, Massachusetts recently instituted stringent regulations concerning the burning of biomass for energy because of a life-cycle analysis which showed the overall environmental impact of such a project to be negative – surprising everyone.

Oddly, for such a large project like Cape Wind, there has never been a life cycle analysis performed. This is especially crucial as Cape Wind will use an enormous amount of steel and other materials, including rare earth elements largely mined unregulated in China and as pointed out earlier in these comments there are no restrictions for where Cape Wind can source materials. As a result, Cape Wind could easily source materials from environmentally unsustainable sources which could have a demonstrably worse impact on the environment than the small amount of emissions it will displace. We would urge the DOE in considering the Cape Wind application for a loan guarantee to insist on such a life-cycle analysis. We all may be very surprised with the answer.

The DOE should not be party to such sleight of hand. If Cape Wind is good for the environment, they should prove it, given the amount of promises made and money spent, or the DOE should demand that Cape Wind purchase from only the most sustainable sources. It would be a tragedy for a project claiming to be green to leverage a taxpayer guarantee to harm the environment outside the US.

5. Cape Wind Will Not Foster Innovation, Lower Costs, or Result in More Offshore Wind Projects

The proponents of the project often point out that the real goal of building Cape Wind is to establish an off-shore wind industry in the United States. If that is the case, then Cape Wind is simply not the project to support.

Even if Cape Wind gets built and performs as promised, the added cost to ratepayers will be so high – on the order of 150-200 million dollars per year on average - that that cost alone will be upsetting to ratepayers. It represents nearly 10% or even more increase in distribution charges,

depending on service territory.[6] This will cost tens of thousands of dollars in electricity increases per year for a number of companies already struggling under the high cost of power here. It is inconceivable that another power purchase contract will be made with Massachusetts utilities that have the same or similar cost structures to Cape Wind. In fact, recent legislation would make non-competitively bid deals like the one Cape Wind did with NGRID and NSTAR much more difficult to accomplish.

Further, the notion that future prices will drop to acceptable levels because of this project is fantasy. Prices would have to drop almost 75% to make offshore wind of this magnitude acceptable. There is no known technological change that depends on this project being built that would change the cost equation for off shore wind. If there are off the shelf or new technologies available that would lower Cape Wind's costs even marginally (such as new designs for more efficient turbines), then perhaps a project containing those advances should be financed, but not this outdated project.

CONCLUSION

One of the hallmarks of DOE's review should be whether or not to commit taxpayer money for commensurate societal benefits. We do not believe there are societal benefits for committing taxpayer resources to the Cape Wind project.

DOE should not be swayed by promises or with incomplete or outdated data. Cape Wind has enjoyed every conceivable advantage and that should have resulted in financing without committing and risking taxpayers' money. The fact that they keep promising construction - *if only* they had another guarantee, or another contract, or another tax credit - simply means that Cape Wind is not a good deal. In any other business that had pre-sold 75% + of its output at a high price and with guaranteed escalators, financing would be easily available. Here it is not because the economics of the project are not sustainable. The absence of sustainability is a dire warning that DOE should not commit and risk taxpayer funding to Cape Wind.

Dollar for dollar, Cape Wind is a terrible investment for taxpayers and for ratepayers. It does not deliver on its promises for the environment. We believe a loan guarantee to Cape Wind would threaten the integrity of DOE's loan program. This is an outdated project at a time when new advances could mean lower prices and more meaningful pollution reductions.

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[6] While Cape Wind is clearly producing *energy* and should rightly be part of a ratepayer's *energy* charge, under Massachusetts law, the charge for Cape Wind will be added to a ratepayer's non-bypassable *distribution* charge. Also note that the increase will be double in NGRID's territory versus NSTAR territory since NGRID purchased double the amount that NSTAR did and their total system loads are similar.

We urge the DOE to reject this risky loan application and invest in more worthwhile projects that need such loan assistance.

Respectfully submitted,

Associated Industries of Massachusetts

By:

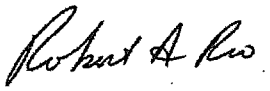

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EXHIBIT 9A: LETTER TO MATTHEW MCMILLEN, DOE LOAN PROGRAMS OFFICE, FROM AUDRA PARKER, PRESIDENT AND CEO, ALLIANCE TO PROTECT NANTUCKET SOUND, JANUARY 29, 2013

Exhibit 9a

SAVE OUR SOUND
alliance to protect nantucket sound

January 29, 2013

Matthew McMillen
Director, Environmental Compliance
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B150
1000 Independence Avenue, SW
Washington D.C. 20585

Dear Mr. McMillen:

The Alliance to Protect Nantucket Sound (the "Alliance") submits these comments in response to the Federal Register notice issued on December 31, 2012, in which the Department of Energy ("DOE") states that is has adopted the U.S. Department of Interior's ("DOI") Final Environmental Impact Statement ("FEIS") for the Cape Wind Project issued on January 1, 2009. "EIS No. 20120401, *Final EIS, DOE, MA, RI ADOPTION*— Cape Wind Energy Project, Construction, Operation and Maintenance, and Decommissioning of an Electric Generation Facility, Barnstable, Nantucket and Duke Counties, MA and Washington County, RI," 77 Fed. Reg. 77076 (Dec. 31, 2012).[1]

Under the National Environmental Policy Act ("NEPA"), an agency is permitted to adopt an EIS only if it meets the standards for an *adequate* statement. 40 C.F.R. § 1506.3(a) (emphasis added). DOE cannot adopt the former Minerals Management Service's ("MMS")[2] Environmental Impact Statement ("EIS") or subsequent Environmental Assessments ("EA") because as illustrated by the below noted deficiencies and current record on those documents, NEPA compliance for the Cape Wind project is seriously flawed.

The Alliance has informed DOE on many prior occasions of the problems associated with the flawed and poorly-sited Cape Wind Project, and why the project is not a viable candidate for a federal loan guarantee or any other federal funding assistance.[3] Enclosed with these comments is an updated record of all documents pertinent to the DOE adoption action that support the arguments set forth below. *See* Exhibit 1 and supporting CD.

[1] As discussed in the Alliance letter of January 23, 2013, DOE's procedure for adopting the FEIS is in violation of NEPA regulations and must be republished for a new 30-day review period with an opportunity for public comment.

[2] MMS is the predecessor to the current federal agency, the Bureau of Ocean Energy Management.

[3] The Alliance hereby incorporates by reference all prior correspondence with DOE regarding the Cape Wind project.

Furthermore, DOE has yet to fully respond to the Alliance's pending, and long overdue, Freedom of Information Act ("FOIA") request of October 25, 2012. The Alliance, therefore, reserves the right to submit supplemental comments when DOE complies with its legal obligations under FOIA.

Granting the project a loan guarantee or other form of financial assistance would not only violate numerous federal laws, but would also place taxpayer-generated federal funds at risk due to the almost certain invalidity of other federal actions supporting the project. Some of the outstanding deficiencies and concerns of the project include:

- The FEIS and EAs for the project were inadequate when issued and used in the initial Record of Decision ("ROD"). The subsequent EA for the Construction and Operation Plan ("COP") was also deficient when adopted. The Alliance has previously submitted comments to each of these documents, noting the grounds for their deficiency, and hereby incorporates by reference these comments from DOI's NEPA record;

- Prior compliance for section 106 of the National Historic Preservation Act ("NHPA") is invalidated by: failing to review all of the historic properties that would be affected by the Cape Wind project; terminating the section 106 consultation process; not responding adequately to the recommendation of the Advisory Council on Historic Preservation; and failing to reinitiate consultation under section 106 to consider the effects of moving the staging area to New Bedford, changing the size of the project, new alternatives and other newly discovered facts;

- Violation of section 106 as a result of DOE's failure to independently consult and comply with the NHPA on this action, including the failure to consult with the Alliance which is a consulting party under section 106.;

- Violation of the Endangered Species Act ("ESA") by relying on biological opinions that fail to use the best available scientific information, failing to independently determine reasonable and prudent measures necessary or appropriate to minimize incidental take of federally listed species, and failing to reinitiate consultation under the ESA based on new information and changed circumstances;

- Violation of the Migratory Bird Treaty Act ("MBTA") for approving a project certain to kill migratory birds without obtaining a permit or other authorization;

- Failing to adequately evaluate aviation and marine navigation risks related to the Cape Wind project that create the high potential for accidents and public safety threats, and failing to adequately mitigate these risks;

- Clear evidence of political pressure:

- Information released under FOIA from several sources confirms high level federal government efforts to assist Cape Wind in achieving agency approvals, confirming the lack of objectivity and validity of those procedures;

- A Congressional investigation for undue political influence launched July 2012, now underway by both the House Oversight and Government Reform Committee and the Transportation and Infrastructure Committee, regarding the Federal Aviation Administration's ("FAA") decision to issue a "Determination of No Hazard" to Cape Wind, which confirms political interference;

- Financial assistance to Cape Wind through a loan guarantee program due to the personal relationship between President Obama and Massachusetts Governor Patrick, an ardent supporter of Cape Wind. A June 24, 2011 email describes a request by the White House to include Cape Wind in an economic briefing for the President on the loan guarantee program. "The WH was very direct about what should be included in the slides so we don't have much flexibility." The email specifically stated that the White House wanted "1 slide on status of Cape Wind (because he [the President] has heard from Gov. Patrick a few times – they are close friends)." In the month prior and after Cape Wind was notified that its application for section 1705 assistance was put on hold, there were numerous meetings and calls between Massachusetts state officials including Governor Patrick with senior officials at DOE and the Loan Guarantee Program, including Jonathan Silver and Secretary Chu, leading directly to the post-2012 Presidential election announcement that DOE would grant this loan request;

- Deciding to grant a loan guarantee *before* the completion of the NEPA process.

• Multiple legal challenges by numerous parties:

- In October 2011, the U.S. Court of Appeals revoked the 2010 "No Hazard" determination by the FAA. The FAA again issued a determination of no hazard for Cape Wind, ignoring the guidance of the court. The Barnstable Airport and the Alliance are appealing the latest determination. Another victory could not only again vacate the FAA's ruling but also preclude Cape Wind's ability to begin construction because of FAA conditions included in Cape Wind's lease from DOI, in turn negating the loan guarantee. In addition, invalidation of the FAA findings will expose project owners, operators and financing parties to extreme financial liability for any accident.

- Four lawsuits are pending by a host of parties including Public Employees for Environmental Responsibility, the Wampanoag Tribe of Gayhead/Aquinnah, the Town of Barnstable, the Alliance, and others challenging determinations by DOI, the U.S. Fish and Wildlife Service, and the U.S. Coast Guard, among other agencies, for violations of NEPA, ESA, NHPA, and the Outer Continental Shelf Lands Act.

• Outstanding permit and pre-construction requirements:

- Cape Wind cannot begin any construction prior to receiving a Letter of Authorization ("LOA") from the National Marine Fisheries Service ("NMFS"), and the review for this authorization has not begun, nor has any application been filed for an LOA. Before an LOA can be issued, new regulations are required.

- Cape Wind is required to conduct numerous pre-construction protocols specified in the Final Cape Wind Avian and Bat Monitoring Plan ("ABMP") approved by the Bureau of Ocean Energy Management ("BOEM")just recently on November 20, 2012. These include months of bat surveys, acoustic monitoring, anti-perching monitoring and other protocols beginning in April 2013 and continuing through the calendar year. As discussed in the comments of Dr. Nisbet included on the attached disk, the ABMP itself is seriously flawed, in violation of the ESA and MBTA and has not been considered under NEPA.

- Cape Wind's meteorological tower is no longer legally authorized because its permit expired in October 31, 2012. The Cape Wind lease site is partially occupied by a meteorological tower that the Army Corps of Engineers ("Corps") permitted in 2002 under Section 10 of the Rivers and Harbors Act. 33 U.S.C. § 403. The meteorological tower was used to assess the potential lease site for wind energy purposes and other technical factors that would affect project design. With the expiration of the section 10 permit, there is no current authorization for the meteorological tower. In fact, the previous section 10 permit requires the tower to have been removed by October 31, 2012. The Corps' jurisdiction over offshore obstructions of navigation remains intact under section 10 of the Rivers and Harbors Act and was not displaced by section 388 of the Energy Policy Act of 2005, which transferred the Cape Wind lease application from the Corps to DOI. *See* 43 U.S.C. § 1337. Section 388 of the Energy Policy Act of 2005 does not alter the existing jurisdiction of any federal agency: "Nothing in this subsection displaces, supersedes, limits, or modifies the jurisdiction, responsibility, or authority of any Federal or State agency under any other Federal law." 43 U.S.C. 1337 (p)(9). This savings provision confirms that the authority of the Corps to issue permits for obstructions to navigation under section 10 of the Rivers and Harbors Act is not displaced. Accordingly, with the expiration of its Corps' permit, the meteorological tower is no longer authorized under federal law.

In addition to the deficiencies and overall concerns of the project noted above, the NEPA documents DOE seeks to adopt are outdated. Since their issuance, there has been considerable new information and changed circumstances that now require a supplemental EIS. These are as follows:

- The alternatives analysis is grossly deficient, as confirmed by recent actions of BOEM and Cape Wind itself. BOEM has conceded the availability of numerous alternative sites that fall within the scope of the FEIS, and the Cape Wind developer (Energy Management, Inc.) has even expressed interest in these sites for other prospective projects. Additional offshore wind projects confirm that the technology needed for alternative locations is now economic and technically feasible.

- The NOAA 2007 Essential Fish Habitat ("EFH") designations for Atlantic cod (Gadus morhus) in Nantucket Sound, as cited in the FEIS, are outdated and inaccurate. NOAA 2007 finds Nantucket Sound to be EFH for adult Atlantic cod but not for the other life stages: eggs, larvae, and juveniles. (*See* Table 1, Appendix H, Summary of Specific Life Stage Designations for Species in ... Nantucket Sound, 2007, and Appendix B, Table B-1 Early Benthic and Pelagic Life Stages of Species with Designated EFH Potentially Present in the Proposed Action Area). Contradicting these designations, Omnibus Essential Fish Habitat Amendment 2, New England Fishery Management Council (June 2012) depicts Nantucket Sound as EFH for eggs, larvae, and juveniles (Maps 1-3). DOE and NMFS need to undertake a new consultation to make the cod EFH designations current. The other action agencies must also reinitiate consultation.

- Records released under a FOIA request to BOEM show that peer reviewers raised significant concerns about the Avian and Bat Monitoring Plan ("ABMP") for the project. In fact, Cape Wind's draft plan was so inadequate it prompted the Assistant Director of the state agency entrusted with protection of wildlife and endangered species to comment: "With this plan, we just will not know if bats, and probably even birds, are being killed by striking towers." Further, the ABMP has many additional deficiencies, including the failure to: include a component of thermal imagining or infrared detection; specifically investigate actual collisions of birds with project turbines; consider state-listed species; conduct an adequate peer review; conduct adequate consultation with species experts; failure to properly plan for aerial surveys, boat surveys, and marine radar surveys to conduct adequate statistical comparisons of affected birds; and effectively coordinate the data produced from the plan to estimate collision frequency.

- A change in Cape Wind's project plans since DOI's review, including:

  - As indicated by the Project's loan guarantee application released under FOIA, the Cape Wind project is expected to be built in phases or "Seasons." Season A consists of 91 turbines and Season B of 39 turbines as described on page 3 of DOE's "Application Intake Review" dated October 2010 (updated January 2011). This phased approach was explicitly rejected as an alternative during DOI's NEPA review. In addition, the FEIS and COP EA fail to consider any proposal for the newly adopted approach and its alternatives;

  - Cape Wind only has guaranteed sales through Power Purchase Agreements ("PPA") for 101 turbines out of the project's proposed 130 turbines. *See* Order Approving Petition of Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, for approval by the Department of Public Utilities of two long-term contracts to purchase wind power and renewable energy certificates, pursuant to St. 2008, c. 169, § 83 and 220 C.M.R. § 17.00 *et seq.*, Massachusetts Department of Public Utilities, Docket DPU 10-54 (Nov. 22, 2010) and Order Approving Petition of NSTAR Electric Company for approval by the Department of Public Utilities of a long-term contract to purchase wind power and renewable energy certificates,

pursuant to St. 2008, c. 169, § 83 and 220 C.M.R. § 17.00 *et seq*., Massachusetts Department of Public Utilities, Docket DPU 12-30 (Nov. 26, 2012). In addition, there is no guarantee that Cape Wind will succeed in selling the balance of its power and thus may be contemplating a final smaller footprint of 101 versus 130 turbines as reviewed by DOI. Finally, those PPAs are legally invalid and will be subject to further legal challenge;

- Cape Wind's proposed schedule for physical construction at the primary site is neither realistic, nor achievable. As indicated in a filing made by ISO New England on January 3, 2012 at the Federal Energy Regulatory Commission, "the overlapping impact analysis determined that one transmission line would be overloaded after the addition of the Cape Wind Associates LLC project. The ISO has determined that the upgrades associated with the transmission project [needed to support the Cape Wind project] are unlikely to be completed by the start of the 2015-2016 Capacity Commitment Period. In addition, the ISO and its consultants evaluated the information contained in the critical path schedule submitted by the Project Sponsor and have determined that it is unlikely that the project will achieve Commercial Operation by the start of the 2015-2016 Capacity Commitment Period." The NEPA documents DOE seeks to adopt also fail to consider the required system upgrades.

- The location of the construction staging location remains undetermined. Documents obtained by the Alliance through a FOIA request to the City of New Bedford show that Cape Wind intends to move its staging location across state lines from Quonset, RI, to New Bedford, MA. A move to a new staging location would not only require additional EPA review and public comment, but would also require additional review by DOI under NEPA, NHPA, and the ESA. Cape Wind has made it clear it is seeking to "hide" this change from NEPA review. Even if Quonset is used for part of the initial consultation, the project will ultimately make use of New Bedford, a project component not considered to date.

- New information on environmental impacts:

  - Endangered right whales were sighted in or near Nantucket Sound in the vicinity of the project area in 2010, 2011 and 2012. The 2011 sighting occurred after the April 2011 publication of the EA. The NOAA Fisheries Service announced a voluntary vessel speed restriction zone (Dynamic Management Area - DMA) in the vicinity of Nantucket Sound to protect an aggregation of right whales sighted in this area on April 25, 2011. The DMA was in effect through May 10, 2011;

  - Cape Wind conducted pre-construction geophysical and geotechnical survey activities in 2012 that provide additional benthic information as well as information on impacts to tribal cultural and archaeological resources, but that information has not been made available.

- Post-FEIS developments evidence that much of the work related to Cape Wind will be completed in Europe, resulting in flawed analysis in the FEIS regarding job creation in the U.S. For example, the ROD currently estimates that Cape Wind will generate approximately 391 construction jobs (391 temporary full-time jobs) and approximately $50 million will be spent on construction wages. ROD (Apr. 28, 2010) at p.22. However, with many of these jobs moving to Europe, this estimate is flawed.

Furthermore, as a result of the many changes Cape Wind has made to its project plans, the information in Cape Wind's loan guarantee application to DOE is not accurate. DOE's "application intake review" identifies Cape Wind as "project number 1211," which is eligible for both 1703 and 1705 programs. The application is described *as received by DOE on 12/23/09*,; over three years later, the project has greatly changed. The following is a summary of some of the inaccuracies now present in Cape Wind's loan guarantee application:

- Cape Wind is not developing a 468 MW project as described on page 4 of Cape Wind's loan guarantee application. Cape Wind has publicly stated that it is now developing 101 turbines rather than the previously planned 130 turbines, which will reduce the project's anticipated output to 364 MW;

- Cape Wind is no longer the only project that has obtained a lease from DOI. In October 2012, DOI issued a lease to NRG Bluewater Wind to build a 450 MW offshore wind project. *See* page 4, Cape Wind Project Loan Guarantee Submission. Furthermore, Cape Wind is not the only viable option for commercial scale renewable generation close to load centers as described on page 6 of the Submission. Deepwater Wind is planning a project off the coast of Rhode Island near Block Island, and additional sites are being auctioned off this year also off the coast of Rhode Island and Massachusetts;

- The Massachusetts Department of Public Utilities did not approve a second PPA with National Grid, PPA-2 which was for 234 MW or 50% of the project's output, as described on page 5 of Cape Wind's Submission to DOE. Instead of PPA-2, Cape Wind only secured another contract with NSTAR for 27.5% of the project's output. Thus, Cape Wind only has a buyer for 77.5% of the project's output. Furthermore, if Cape Wind does not commence physical construction by December 31, 2015, the PPA with NSTAR will be terminated. *See* page 17 of NSTAR PPA (stating "Buyer shall terminate this Agreement as of December 31, 2015");

- To date, Cape Wind has lost the only federal court case (to proceed to a merits decision) on the project in the D.C. Circuit FAA litigation. Cape Wind's effort to pursue a section 10 permit for the entire project was also rejected when the First Circuit confirmed in 2005 that section 10 could only be used for a de minimis structure. That loss has already added eight years to the Cape Wind review. The pending legal challenges in federal court, which have been in effect for three years due to the defendant's numerous failed motions, further reveal legal deficiencies that are yet to be litigated on the merits and establish compelling grounds for the defeat of this ill-conceived project. DOE should not waste any additional taxpayer resources on this proposal;

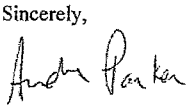
- Pages 25 to 28 of the Loan Guarantee Submission provide a list of permits and approvals needed by Cape Wind. However, since the date of the loan guarantee application's submission, the COP added additional requirements, including the need for a Federal Bird Banding permit, Federal Migratory Bird Scientific Collection permit, Scientific Research and Collecting permit, Massachusetts State Scientific Collection permit, Massachusetts Bird Banding permit, and the issuance of the Regional Cape Cod Commission Development of Regional Impact.

- Furthermore, as noted above, Cape Wind has yet to receive an LOA that is required for construction activities.

The Alliance restates for the record that DOE has failed to take the necessary steps to approve a loan guarantee or other action committing federal funds. DOE has a responsibility to administer the Federal Loan Guarantee Program in an objective and responsible manner and to protect the interests of the nation's taxpayers when utilizing taxpayer monies to fund projects under this program. In fulfilling that duty, DOE is obligated to ensure that its decision is based on an adequate and accurate record.

Thank you for considering these comments. Please contact the undersigned at (508) 775-9767 should you have any questions.

Sincerely,



Audra Parker
President and CEO

cc: The Honorable Ken Salazar, Secretary of the Interior
The Honorable Steven Chu, Secretary of Energy
David G. Frantz, Acting Executive Director, Loan Programs Office, DOE
Tommy Beaudreau, Director, Bureau of Ocean Energy Management
Laura Davis, Chief of Staff for Secretary of the Interior
The Honorable David J. Hayes, Deputy Secretary of the Interior
The Honorable Hilary Tompkins, Solicitor-Department of the Interior
Senator John F. Kerry
Senator Elizabeth Warren
Representative Darrell Issa, Chairman of House Oversight and Government Reform
Representative Fred Upton, Chairman of the House Committee on Energy and Commerce
Dr. Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere, and NOAA Administrator
Admiral Robert J. Papp, Jr., Commandant, U. S. Coast Guard
Col. Philip Feir, U. S. Army Corps of Engineers
Mary L. Kendall, Acting Inspector General, Department of the Interior

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www.saveoursound.org
a 501 (c)(3) tax-exempt organization

Michael Huerta, Acting Administrator of the Federal Aviation Administration
Lisa Jackson, Administrator of the Environmental Protection Agency
Nancy Sutley, Chair, Council of Environmental Quality

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EXHIBIT 9B: LETTER TO MATTHEW MCMILLEN AND TODD STRIBLEY, DOE LOAN PROGRAMS OFFICE, FROM AUDRA PARKER, PRESIDENT AND CEO, ALLIANCE TO PROTECT NANTUCKET SOUND, MARCH 11, 2013

Exhibit 9b

SAVE OUR SOUND
alliance to protect nantucket sound

March 11, 2013

Sent via FedEx, Messenger and E-mail

Matthew McMillen
Director, Environmental Compliance
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington D.C. 20585

Mr. Todd Stribley
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. McMillen and Mr. Stribley:

The Alliance to Protect Nantucket Sound (the "Alliance") submits these comments[1] in response to the Federal Register notice issued on February 8, 2013, which reopened the review period for the Department of Energy's ("DOE") adoption of the Final Environmental Impact Statement ("FEIS") for the Cape Wind Project ("Project") issued on January 1, 2009 by the Minerals Management Service ("MMS")[2] of the U.S. Department of the Interior, "*EIS No. 20120401, Final EIS, DOE, MA,* Adoption" 78 Fed. Reg. 9388 (Feb. 8, 2013) (hereinafter "February 8, 2013 Notice").[3]

For the reasons stated in our previous correspondence with DOE, incorporated herein by reference, the Alliance objects to any loan guarantee or other form of financial assistance for the proposed Cape Wind Project. In spite of the lack of resolution of a number of outstanding issues

[1] All exhibits referenced in these comments can be found on the CD being filed simultaneously with these comments, entitled: "Exhibits to March 13, 2013 DOE Comments Filed by the Alliance to Protect Nantucket Sound."

[2] MMS is the predecessor to the current federal agency, the Bureau of Ocean Energy Management.

[3] *See also* "Public Comment Opportunities" on DOE's website, *available at* http://energy.gov/nepa/eis-0470-us-department-energy-loan-guarantee-cape-wind-energy-Project-outer-continental-shelf.

with the proposed Project that are critical to the viability of the Project and of its suitability for a loan guarantee, DOE appears to continue to push forward with consideration of a Section 1703 loan guarantee for the Cape Wind Project. These comments highlight the reasons why the Cape Wind Project does not meet the substantive standards required under DOE's regulations for a section 1703 loan guarantee and presents a serious financial risk to the government, and ultimately the taxpayers. Additionally, these comments raise new information that DOE is required to take into consideration in order to comply with the National Environmental Policy Act ("NEPA"), and also further illustrate why DOE cannot rely on the outdated and flawed FEIS issued by MMS in 2009.

Finally, recent information released during the open review period suggests that the decision to issue Cape Wind a loan guarantee is a pre-determined decision, and that DOE intends on rubber stamping MMS's 2009 FEIS and not conducting the necessary due diligence as required under both the DOE Loan Guarantee Program and the underlying NEPA process. In fact, on March 11, 2013, David Frantz, Acting Director of the DOE Loan Guarantee Program Office, made a presentation regarding the status of the loan guarantee program, in which his presentation explicitly stated that as part of DOE's 2013 Work Plan, DOE intends to issue at least one loan guarantee for an innovative renewables project, and cited to the Cape Wind Project.[4] This presentation evidences clear bias on the part of COE as a cooperating agency in the NEPA process to issue a loan guarantee.

I. The Cape Wind Project Fails to Meet the Standards for Consideration Under DOE's Loan Guarantee Program.

The Section 1703 Loan Guarantee Program authorizes the Secretary of Energy to make loan guarantees for Projects that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases" and "employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued." 42 U.S.C. § 16513. When considering a loan guarantee application and prior to approval of a loan guarantee, DOE is required consider a number of factors to ensure that issuance of a loan guarantee, in fact, would be a prudent investment of taxpayer monies. As discussed below, the Cape Wind Project fails to meet a number of these standards as required under DOE's regulations for the Loan Guarantee Program, and any loan guarantee for it would place taxpayer monies at unreasonable risk.

A. Compliance with Environmental Laws and Regulations.

One of the primary considerations DOE must make when reviewing a Project's eligibility for a loan guarantee is "[t]he ability of the applicant to ensure that the Project will comply with all applicable laws and regulations, including all applicable environmental statutes and regulations." 10 C.F.R. § 609.7(b)(13). The Alliance has previously raised numerous concerns regarding the

[4] *See* U.S. Department of Energy, "Loan Programs Office: Status Report" presentation, at slide 19 (Mar. 11, 2013).

Cape Wind Project's ability to comply with all applicable laws, including NEPA, the Endangered Species Act ("ESA"), the Migratory Bird Treaty Act ("MBTA"), the National Historic Preservation Act, the Coast Guard Maritime Transportation Act of 2006, the Outer Continental Shelf Lands Act, the Rivers and Harbors Act, Clean Water Act, and Clean Air Act, among others. The record of these violations of federal law is well-developed and has been presented to DOE.

B. Legal Risks of the Project.

DOE is also required to consider "[t]he levels of market, regulatory, legal, financial, technological, and other risks associated with the Project and their appropriateness for a loan guarantee provided by DOE." 10 C.F.R. § 609.7(b)(14). DOE continues to ignore ongoing litigation that challenges the validity of the existing FEIS, and has made no effort to explain how this litigation will affect its adoption of the existing FEIS and supporting NEPA documentation with regard to consideration of the Cape Wind loan guarantee application. Specifically, there remain many legal challenges against the Cape Wind Project, including:

- A pending lawsuit by the Alliance and the Barnstable Airport, filed on August 22, 2012, appealing the Federal Aviation Administration's ("FAA") most recent "No Hazard" determination.[5] In October 2011, the U.S. Court of Appeals vacated Cape Wind's 2010 determination of "No Hazard" by the FAA. After remanding the review back to the FAA, the FAA again issued a determination of "No Hazard" for Cape Wind, based on the same flawed reasoning. If the court vacates the FAA's determination again, Cape Wind will be precluded from beginning construction because of FAA conditions included in Cape Wind's lease from DOI. In addition, invalidation of the FAA findings will expose Project owners, operators and financing parties to extreme financial liability for any accident. Further, clear evidence of political influence on the FAA, revealed through Freedom of Information Act requests, has lead to a Congressional investigation of the FAA review of Cape Wind by both the U.S. House of Representatives Oversight Committee and the House Transportation Committee. This investigation remains ongoing.

- Four lawsuits are pending by a host of parties including Public Employees for Environmental Responsibility, the Wampanoag Tribe of Gayhead/Aquinnah, the Town of Barnstable, the Alliance, and others challenging determinations by DOI, the U.S. Fish and Wildlife Service, and the U.S. Coast Guard, among other agencies, for violations of NEPA, ESA, the National Historic Preservation Act, and the Outer Continental Shelf

[5] *See Alliance to Protect Nantucket Sound. v. Federal Aviation Admin.*, No. 12-1363 (D.C. Cir. filed Aug. 22, 2012) and *Town of Barnstable v. Federal Aviation Admin.*, No. 12-1362 (D.C. Cir. filed Aug. 22, 2012). This case remains pending before the D.C. Court of Appeals.

Lands Act.[6] These pending legal challenges have been in effect for many years now due to the defendant's numerous failed motions. These lawsuits further reveal legal deficiencies that are yet to be litigated on the merits and establish compelling grounds for the defeat of this ill-conceived Project. The National Trust for Historic Preservation has participated as an amicus curiae, confirming the existence of violations under NHPA and serious public interest consequences for historic resources.

These legal challenges present a serious risk to the viability of the Project. Thus, DOE should not waste any additional taxpayer resources on this proposal and reject Cape Wind's application for a loan guarantee. The pending lawsuits against this project are a clear indication of the legal risks presented by the Project; however, DOE continues to refuse to meet with the principal Plaintiffs of these lawsuits, in turn failing to exercise the required due diligence for this Project. In fact, while this litigation has been pending, the Alliance has requested to meet with DOE on three prior occasions and has been denied; it is reiterating its request again in this letter. Significantly, several members of Congress have expressed concern regarding DOE's adoption of the FEIS for the Cape Wind Project, citing issues relating to the development of the EIS, the numerous lawsuits associated with the project, and considerable controversy regarding the program as a whole.[7]

C. Feasibility of the Project and Likelihood of Revenues.

Third, DOE is required to consider "[t]he feasibility of the Project and likelihood that the Project will produce sufficient revenues to service the Project's debt obligations over the life of the loan guarantee and assure timely repayment of Guaranteed Obligations." 10 C.F.R. § 609.7(b)(10). Currently, Cape Wind only has a buyer for 77.5 percent of its capacity, and guaranteed sales through Power Purchase Agreements ("PPA") for only15 years. It is not clear that this will provide sufficient revenue certainty to assure repayment of project loans, placing taxpayer monies at risk.

In fact, the Massachusetts Department of Public Utilities did not approve a second PPA with National Grid, PPA-2 which was for 234 MW or 50% of the Project's output, as described on page 5 of Cape Wind's Submission to DOE. Instead of PPA-2, Cape Wind only secured another contract with NSTAR for 27.5% of the Project's output. Thus, Cape Wind only has a buyer for 77.5% of the Project's output. *See* Order Approving Petition of Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid, for approval by the Department of Public Utilities of two long-term contracts to purchase wind power and renewable energy certificates, pursuant to St. 2008, c. 169, § 83 and 220 C.M.R. § 17.00 *et seq.*, Massachusetts

[6] These lawsuits include: *Public Employees for Environmental Responsibility, et al. v. Salazar, et al.*, No. 1:10-cv-01067 (D.D.C. filed June 25, 2010); *Alliance to Protect Nantucket Sound, et al. v. Salazar, et al.*, No. 1:10-cv-01079 (D.D.C. filed June 25, 2010); *Town of Barnstable, et al. v. Salazar, et al.*, No. 1:10-cv-01073 (D.D.C. filed June 25, 2010); and *Wampanoag Tribe of Gay Head (Aquinnah) v. Bromwich, et al.*, No. 1:11-cv-01238 (D.D.C. filed July 6, 2011) (consolidated as 1:10-cv-01067).

[7] *See* Rep. Broun and Rep. Lankford, Congressional Letter to Secretary Chu, p.1 (Feb. 28, 2013); and Rep. Broun and Rep. Lankford, Congressional Letter to Secretary Chu (Jan. 25, 2013).

Department of Public Utilities, Docket DPU 10-54 (Nov. 22, 2010) and Order Approving Petition of NSTAR Electric Company for approval by the Department of Public Utilities of a long-term contract to purchase wind power and renewable energy certificates, pursuant to St. 2008, c. 169, § 83 and 220 C.M.R. § 17.00 *et seq.*, Massachusetts Department of Public Utilities, Docket DPU 12-30 (Nov. 26, 2012).

As a result, there is no guarantee Cape Wind will have a buyer for the remaining 22.5 percent of its output. Furthermore, if Cape Wind does not commence physical construction by December 31, 2015, the PPA with NSTAR and National Grid will be terminated. *See* page 17 of NSTAR PPA (stating "Buyer shall terminate this Agreement as of December 31, 2015") and February 13, 2013 filing of National Grid in DPU 10-54 (exercising the Most Favored Nations Clause at Section 4.1(e) of the National Grid PPA, which adopts the requirement of construction by December 31, 2015 from the NSTAR PPA). The Project is almost certain to fail to meet this deadline. For nearly 22 years, Cape Wind has struggled to get this project underway. Despite the extraordinary, and impermissible, efforts by Governor Patrick and Secretary Salazar to make this project a reality, it has failed to move forward. Even now, the Project lacks the necessary permits to proceed with construction. Many of the authorizations that have been issued are legally deficient.

DOE, therefore, lacks the factual basis to conclude that the project will go forward, or to determine even if it goes forward that its revenue will be sufficient to repay project financing. A loan guarantee under these circumstances, unlike those for which PPAs provide assured revenue for the period of time needed to repay capital costs, is imprudent.

II. Issuance of a Loan Guarantee to Cape Wind Is Financially Risky.

Issuing a loan guarantee, no matter how small, for the Cape Wind Project presents grave financial risks to the U.S. government, and ultimately the taxpayers, due to the almost certain invalidity of other federal actions supporting the Project and strong likelihood that the Project will either be suspended or fail altogether. As noted above, granting the Project a loan guarantee or other form of financial assistance would not only violate numerous federal laws, but would also place taxpayer-generated federal funds at risk. As a requirement to issuing a loan guarantee, DOE "must ensure that ... [t]here is a reasonable prospect of repayment by [the] Borrower of the principal of and interest on the Guaranteed Obligations and other Project debt." 10 C.F.R. §609.10(d)(9).

Based on the Cape Wind Project's deficient NEPA process, pending lawsuits and failure to acquire a buyer for the remaining 22.5 percent of the Project's power, the likelihood that the Cape Wind Project will succeed is questionable at best. Due to the uncertainty of many pending matters, there are a variety of scenarios that could occur after issuing a loan guarantee to Cape Wind that could result in Cape Wind defaulting on its loan guarantee. In addition to the factors discussed above, which could result in a lack of a buyer for Cape Wind's power at a cost that would enable sufficient loan repayment, environmental and weather factors that have not

adequately been assessed could significantly hamper the facility's operations and interrupt its revenue stream.

The presence of a previously unknown species could temporarily or even permanently suspend construction or operation of the Project. For example, the endangered North American Right Whale has been spotted in Project waters, but DOI has failed to reinitiate consultation under the ESA to account for the presence of this previously unknown and listed species. In the event, a Right Whale were to appear in the Project area once the construction or operation of the Project has began, there is the likelihood that Cape Wind would have to suspend Project activities for an undesignated amount of time. Similarly, there is certainty that the Project will result in the take of migratory birds; yet, Cape Wind has failed to apply for a special permit under the MBTA to allow for the incidental take of these birds. As a result, the take of any migratory bird, even if incidental and unintentional, could cause the Cape Wind Project to shut down temporarily or even indefinitely. Periodic shutdown of the Project is likely to be necessary to avoid the illegal take of protected species.

Furthermore, in the event DOE issues a loan guarantee for the Cape Wind Project, and the plaintiffs to the federal litigation prevail, it is likely Cape Wind will be required to immediately cease all operations of its Project until the environmental deficiencies are resolved. This process could take years depending on the severity of the violation and could even result in a determination that the entire Project is invalid based on deficient environmental analyses and studies.

Each of these circumstances presents a scenario that could potentially interrupt the construction and/or operation of the Cape Wind Project. Any stoppage of the Project concurrently means a stoppage of a consistent revenue stream from the Project for the sale of the Project's electricity. This would directly affect Cape Wind's ability to repay the Government for its loan guarantee and any assurance that the Government's will recoup its investment on the Project. In light of the many financial risks and uncertainties of the Project, the Alliance strongly urges DOE to deny Cape Wind's loan guarantee application. To fund this Project would be an abdication of DOE's responsibility to uphold the public trust and ensure the prudent expenditure of taxpayer dollars.

III. DOE Has Failed to Consider New Information About the Cape Wind Project.

As a federal agency, DOE has a responsibility to ensure that it complies with NEPA and all other federal environmental laws. NEPA requires all federal agencies to consider the potential impacts of their proposed actions. In particular, an agency is required to complete a supplemental environmental impact statement ("supplemental EIS") when new information is discovered that was not previously considered by the agency during the NEPA process. CEQ regulations require a supplemental EIS to be prepared and circulated in the same manner as the original draft and FEIS if the agency makes substantial changes in the action that are relevant to environmental concerns, or if there are significant new circumstances or information relevant to environmental

concerns and bearing on the proposed action of its impacts.[8] Since the issuance of MMS's FEIS in 2009 and the subsequent EAs, an overwhelming amount of new information has become available. A supplemental EIS is needed to ensure that the requirements of NEPA are fulfilled and all potential impacts of the Cape Wind Project have been adequately considered. In particular, DOE must conduct a supplemental EIS to consider the following new information:

A. Right whales.

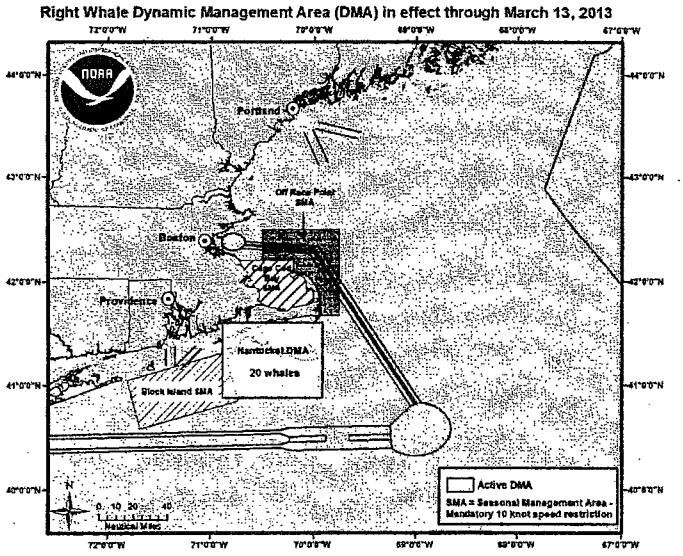
The North Atlantic right whale is a gravely imperilled marine species that is protected by both the Marine Mammal Protection Act and the Endangered Species Act. Right whale sightings have been documented along the planned vessel routes from both Quonset, Rhode Island to Nantucket Sound and from New Bedford, MA to Nantucket Sound, as well as within Nantucket Sound itself through 2011. In fact, the photo below shows the existence of right whales directly in the proposed Project area on Horseshoe Shoal (*see* Image 1).

Previous sightings of right whales in the area include a report on April 6, 2010, of a group of six right whales in Nantucket Sound. An additional two right whales were reported April 18 and 19, 2010. On April 25 and 27, 2011, there were occurrences of a group of 3 right whales and a single whale in Nantucket Sound itself.

This pattern has continued more recently. For example, in 2011 and 2012, NMFS recorded right whales in Nantucket Sound, in the nearby waters of Rhode Island Sound (southwest of Nantucket Sound), and in Vineyard Sound (the narrow water body between Martha's Vineyard and Cape Cod that leads from Rhode Island Sound to Nantucket Sound). Even more recently, on February 27, 2013, NOAA Fisheries Service announced a voluntary vessel speed restriction zone in the vicinity of Nantucket Island to protect an aggregation of 20 right whales sighted in the area on February 26, 2013. This announcement supplanted a previous voluntary speed zone that was triggered by a sighting of 8 whales. The following chart shows the dynamic management area currently in effect which covers the proposed Project area in Nantucket Sound.

[8] *See* 40 C.F.R. § 1502.9(c)(2012); *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F. 3d 683, 707 (10th Cir. 2009) (finding that a new alternative proposing new locations of activities required a supplemental EIS because it affected "environmental concerns in a different manner than previous analyses," even though the general nature of the alternative's impacts resembled those already analyzed).

IMAGE 1



Right whales have now visited the same areas every year for the past four years, indicating that sightings in and around Nantucket Sound can no longer reasonably be dismissed as anomalous, but rather reflect a new pattern of behavior that must be analyzed by new consultation under the ESA and a new Biological Opinion by the National Marine Fisheries Service.

B. Termination of National Grid PPA.

On February 13, 2013, National Grid sent a letter to the Secretary of the MA Department of Public Utilities regarding a second amendment to the Power Purchase Agreement (PPA) between Cape Wind and National Grid. This amendment adopted a requirement already contained in Cape Wind's contract with NStar stating that physical construction of Cape Wind must commence by December 31, 2015 or the contract would be terminated.

Physical construction is defined an "any physical installation of equipment or materials into the seabed of the Facility construction site that is integral to the assembly of the wind turbine generation units included it the Facility". If physical construction does not commence prior to December 31, 2013, National Grid "shall terminate this Agreement as of December 31, 2015."

Cape Wind has stated each year for numerous years that it will start construction the following year, yet it has been unable to meet these timeframes. In fact, even its required preconstruction geotechnical and geophysical surveys, which were to be completed in the spring/summer of 2012, are now being scheduled for continuation during the spring/summer of 2013. There is no reason to believe that construction by December 31, 2015, is a likely result. There are several scenarios DOE should consider in which Cape Wind would not be able to meet the December 31, 2015 deadline, thus voiding both contracts and subjecting taxpayer money to great risk. For example, if the US Court of Appeals once again sides with the Alliance and the Town of Barnstable in the appeal of the FAA's determination of no hazard, it could easily miss the deadline. The last review by the FAA after the Court remand took almost one year with over two years between the two previous determinations. The FAA issued its 2012 determination which is the subject of the current appeal in August of 2012. The previous determination was well over two years prior in May of 2010.

C. Alternatives.

As documented in our previous comments to DOE on January 29, 2013, and as discussed further below, there are many feasible alternatives which were not considered in the evaluation of Cape Wind and which should now be considered as a requirement of NEPA. Contrary to the premise of the FEIS, Cape Wind is not the only viable option for commercial scale renewable generation close to load centers. Deepwater Wind is planning a Project off the coast of Rhode Island near Block Island, and additional sites are being auctioned off this year also off the coast of Rhode Island and Massachusetts. In addition, Fishermen's Energy is developing a Project off the coast of New Jersey and BOEM has granted a lease to NRG for a Project off the coast of Delaware.

Deepwater Wind

Deepwater Wind has announced a signed agreement with Siemens to buy the company's latest offshore wind turbines for deployment in Block Island. Under the agreement, Siemens will supply five of its new 6.0-megawatt direct drive offshore wind turbines for a 30 megawatt Project. This will be the first Project in the United States, and one of the first anywhere in the world, to use the new turbine, which will be commercially available for the Project.

The Project will be located in Rhode Island state waters 4.5 km southeast of Block Island covering an area of 5 km^2 and includes a transmission cable connecting the island to the mainland grid for the first time. According to nautical charts, the area depth ranges from 18 m to 30 m; the developer stated depth range is 23 m.

Pursuant to a heavily litigated but now approved 20-year power purchase agreement, National Grid has agreed to buy all of the output from the Project. In August of 2010, the RI Public Utilities Commission agreed to a 20 year PPA with National Grid to buy from Deepwater at 24.4 cents per kWh for the first year with 3.5% annual increases. On Oct 2, 2012 Deepwater Wind submitted final state and federal permit applications. The Project is scheduled to be in the construction phase in 2014. Depending on the permitting process and final turbine specifications, Deepwater Wind could be the first offshore wind farm.

NRG Bluewater Wind

NRG Bluewater Wind was granted the second federal lease, and the first under the "Smart from the Start" initiative, to build a 450 MW offshore wind Project in October 2012. BOEM granted the company the right to lease 96,430 acres in federal waters 11 nautical miles off the coast of Delaware. The lease grants NRG Bluewater Wind Delaware LLC the exclusive right to submit wind development plans for the area.

In addition, to these other projects, BOEM's own notices now confirm that there may be new sites available for the Project that must be considered in a supplemental EIS. There are land based alternatives. For example, at the Mass Military Reservation on Cape Cod, a 1.5 MW Fuhrlaender turbine was installed in 2009 and a 1.5 MW GE turbine was installed in 2011.

Fishermen's Energy

Fishermen's Energy is developing a 25-megawatt Project. In contrast to Cape Wind and other Projects, the New Jersey-based consortium is starting with a demonstration project near shore. It is siting its five-turbines each at 5 MW within the three miles of state-controlled waters off Atlantic City. The state Board of Public Utilities (BPU) is reviewing Fishermen Energy's proposed pilot Project. By summer of 2013, the BPU will determine whether Fishermen's Atlantic City wind farm qualifies for OREC incentives. The location is 2.8 miles off Atlantic City in state waters covering an area of 2 km^2 at a distance from shore of 5 km. The depth according to nautical charts is 10 m to 13 m; the depth range as stated by the developer is 10 to 12 m.

The Project cost is $200 million. On December 12, 2012, DOE awarded $4 million of funding for completion of engineering, design and permitting phase. Additionally, Fishermen's Energy remains under consideration for the selection of awards of up to $47 million over the next four years. According to the Fishermen's website, the proposed project is fully permitted with the New Jersey Department of Environmental Protection, NU Green Acres Approval, New Jersey Tidelands license, and Atlantic City easement approvals. The Army Corps of Engineers has also issued a construction permit. The construction target for this project is 2013 with operations in 2014.

It is noteworthy that in the FEIS, DOI ruled out alternatives from further environmental analysis "because of physical limitations and/or constraints due to (1) water depth (should be 100 feet [30 meters] in depth to be considered economically feasible)... and (5) the availability of technology to develop the site (development of floating platform technology for use in water depths >150 feet [45 meters] is beyond the milestones scheduled for project development)." FEIS at E-6. However, as evidenced by developments in offshore wind energy, neither of these bases is valid. Deepwater Wind is moving forward with an offshore wind energy project in Block Island Sound that would exist in waters up to 150 feet deep. Similarly, NRG Energy has also proposed another offshore wind project, Bluewater Wind, off the coast of Delaware, which will be in waters ranging from 100-160 feet deep. Bluewater Wind is the second project to receive a

federal lease, which was issued by DOI in October 2012. Further, StatOil North America Inc. is also moving forward with a floating turbine offshore wind energy project off the coast of Maine, HyWind Maine, that would be in water depths of 460 to 520 feet. Thus, the abundance of projects in locations previously eliminated from consideration in the FEIS due to a lack of technology clearly shows that the technology necessary to build projects on these alternative sites does, in fact, exist.

D. Weather conditions.

There has recently been new information (fall 2012) released on weather impacts on offshore wind turbines further adding to the risk of the proposed Cape Wind Project. A report by Kimberly Diamond called 'Extreme Weather Impacts on Offshore Wind Turbines: Lessons Learned' describes some of the risks:

- "Due to more intense weather conditions than originally anticipated, hundreds of offshore wind turbines in Europe are undergoing extensive repair."
- "Extreme weather conditions have also caused about four fifths of all North Sea offshore turbines to sustain failing grouted connections."
- "Hundreds of millions of dollars in repairs are associated with rectifying this grouting issue."
- "Sea floor dynamics, including wave conditions, tides, currents, water flow velocity, marine growth, terrain, and ice formation, can create chronic scour, or the depletion of seabed sediment. Scour can cause erosion around offshore turbine bases located in sandy soils, making such turbines' foundation anchoring less sturdy and reducing the turbines' stability."
- "Similar to scour, sand wave migration can cause cable exposure. Sand wave migration rate can have adverse consequences for turbine cable installations. This is because if a cable was originally buried under a sand crest on the ocean floor, it can become exposed if the crest migrates and leaves a trough in its place."
- "Cable exposure is an expensive and difficult problem to fix. Few installation vessels available globally can lay subsea cables or conduct cable repairs."
- "Anticipated global temperature increases and elevated sea levels associated with climate change may impact offshore wind turbines scheduled to be located in U.S. waters."
- "Carnegie Mellon University researchers found that turbines placed in U.S. waters may be vulnerable to hurricane-force extreme winds because offshore turbines currently on the market are only designed to withstand Category 1 hurricane wind speeds.

- "Replacing a severely damaged turbine also may not be cost effective … .Consider what may happen if numerous turbines in an offshore wind farm simultaneously experience severe damage."[9]

E. Navigation risk.

The public safety risks and marine navigation threats posed by this project are extreme. A massive administrative record confirms that not only do these risks exist, but that the U.S. Coast Guard, BOEM, and now DOE are ignoring these risks in the interest of promoting the Cape Wind Project as designed. The failure to protect public safety, marine navigation, and fishing in Nantucket Sound are especially arbitrary and capricious considering the actions the federal government is taking for other offshore wind projects. The FEIS is clearly deficient in failing to consider this new information and issuance of a loan guarantee to a project the very risks that federal agencies are seeking to avoid elsewhere confirms that the standards of the section 1703 program cannot be met. Documentation of these risks is included in the attached timeline with exhibits.

Additionally, a new study issued by the McGowan Group, entitled "Report of: A Comparative Analysis of The Development and Application of Marine Navigation Safety and Marine Environmental Protection Criteria for Offshore Renewable Energy Installations"[10] concluded that the Cape Wind Project is fatally flawed as currently designed and sited, and is incompatible with the needs of marine transportation in Nantucket Sound. The study included with these comments also found that the Project is an unnecessary and unacceptable threat to the current-day and future users of Nantucket Sound's waterways.

F. Aviation risk.

The Turbines also present significant safety risks to aviation. The Turbines are approximately 440 feet tall, and are located in the middle of a heavily-trafficked flight corridor, and in close proximity to three airports – the Barnstable Municipal Airport, the Nantucket Memorial Airport, and the Martha's Vineyard Airport. Because of their height and location, the turbines are subject to FAA review under 49 U.S.C. § 44718, FAA's implementing regulations at 14 C.F.R. Part 77 ("Part 77 regulations"), and FAA's Order 7400.2J ("*Procedures for Handling Airspace Matters* (Feb. 9, 2012), pursuant to which, FAA is required to review new structures to determine

[9] Diamond, Kimberly E., "Extreme Weather Impacts on Offshore Wind Turbines: Lessons Learned," Natural Resources & Environment, 27:2 (Fall 2012), available at http://www.lowenstein.com/files/Publication/23b0d113-b158-4a06-a140-9c2e76fa6b25/Presentation/PublicationAttachment/a677f0c5-52bc-4af4-b09c-9d183737da5a/Extreme%20Weather%20Impacts%20on%20Offshore%20Wind%20Turbines.pdf.

[10] The McGown Group, "Report of: A Comparative Analysis of The Development and Application of Marine Navigation Safety and Marine Environmental Protection Criteria for Offshore Renewable Energy Installations" (Mar. 11, 2013).

whether they would result in an obstruction of the navigable airspace or an interference with air navigation facilities and equipment or the navigable airspace.

FAA initially issued Determinations of No Hazard for all 130 Turbines on May 17, 2010 (2010 Determinations). On October 28, 2011, the Circuit Court of Appeals for the District of Columbia Circuit vacated and remanded the 2010 Determinations because FAA had misapplied its own Order and regulations by finding that the Turbines would not have an adverse aeronautical effect on flight operations, despite admitted interference with flights, solely because the Turbines did not meet FAA's technical definition of an "obstruction."[11] The Court found that FAA had misinterpreted its own binding Order thereby "cutting the process short" and failing to "assess the risks" posed by the Turbines. On remand, the Court directed FAA to "address the issues and explain its conclusion."

On August 15, 2012, following remand, FAA issued new Determinations of No Hazard (2012 Determinations) for all 130 Turbines. Rather than follow the Court's instructions, however, FAA again *repeated* the very same misinterpretation of its Order that the Court had rejected; it once again failed to consider evidence demonstrating that a substantial number of regularly-occurring flights would be affected; it failed to address radar impacts identified by its own experts; and it imposed radar mitigation that its own experts concluded may not be sufficient.

As summarized below, the evidence before FAA has consistently demonstrated that the Turbines ***will*** interfere with air navigation facilities and the navigable airspace; thus DOE cannot reasonably rely on FAA flawed review process to conclude that there will be no safety impacts to aviation.

1. **FAA Has Never Examined Evidence of the Impacts To Visual Flight Rule (VFR) Operations.**

The Turbines would impose a wide range of adverse effects on the use of the navigable airspace. These effects include:

- Impacts to VFR flights far in excess of FAA's own threshold for significance. FAA Exhibit 1 at 15-16 (2009 MITRE Report); FAA Exhibit 2 (2012 MITRE Report).
- VFR pilots being forced to fly at or below 500' in the project area during the frequent periods of marginal VFR weather. FAA Exhibit 3 (June 2010 Comments) at 9-10; FAA Exhibit 4 (NOAA Climatological Table).
- VFR flights being compressed to a lower altitude because of weather conditions, thereby coming within 500' of the Turbines, in violation of 14 CFR §91.119, FAA Exhibit 5 (FAA's VFR Compressibility Effects Report).

[11] *Town of Barnstable v. FAA*, 659 F.3d. 28, 35-36 (D.C. Cir. 2011).

- Impacts to VFR arrivals to and departures from Barnstable Airport. FAA Exhibit 6 (LaForge Affidavit).

- Adverse impacts to existing VFR collision avoidance practices in the area. FAA Exhibit 6.

- Additional significant and adverse effects, including the "clear risk of collision" with the Turbines. FAA Exhibit 7; *see also* FAA Exhibit 8.

As the D.C. Circuit Court noted, "the record contains numerous contentions indicating that the wind farm might pose just such a safety risk."[12] Nevertheless, FAA continues to cut the process short and avoid examining this evidence. FAA Exhibit 9 at 3 (2012 Determinations) ("there is no need to analyze whether the proposed wind turbines would have an adverse effect [on VFR operations]").

2. The turbines will adversely impact radar facilities.

FAA has acknowledged that the Turbines would impair the operation of area radars. *Barnstable,* 659 F.3d at 35. However, despite its own evidence to the contrary, it consistently concludes that there will be no physical or electromagnetic effects to air navigation facilities. For example:

- FAA dismissed evidence of shadowing[13] effects to secondary (beacon)[14] radar. FAA's own experts predicted *severe* impacts to aircraft operations below 500 feet and *moderate* impacts to beacon radar for 1.5 [nautical miles (nmi)] behind the wind turbines. FAA Exhibit 10 (2009 Radar Report) at 15, 34; FAA Exhibit 11 (2012 FAA Technical Operations Staff Report). FAA dismissed this evidence on the grounds that pilots do not fly in this area. However, FAA's own evidence shows that there *are* a significant number of low-level operations – sometimes up to 9 flights a day – directly over the proposed Project site below 949'. FAA Exhibit 2 at 7 & A-9; FAA Exhibit 12 (2009 Alliance Letter) at 6 (J.A. 362).

- FAA unreasonably dismissed evidence of shadowing effects to primary (search) radar. FAA has admitted that there *will* be shadowing impacts to primary radar. FAA Exhibit 10 at 34; FAA Exhibit 9 at 5. Further, FAA's own report demonstrates that there could be impacts when either the Nantucket or the Otis radar is out of service. FAA Exhibit 10 34.

[12] *Barnstable,* 659 F.3d at 32.

[13] Wind turbines, due to their height and width, can obstruct a radar's coverage. The loss of coverage occurring behind the turbine is referred to as a radar shadow.

[14] Beacon radar (also referred to as transponder or secondary radar) is a communications system between a ground station interrogator at the radar and a transponder in an aircraft. The system therefore only works when aircraft are equipped with transponders.

Thus, when the Nantucket ASR-9 is out of service, all operations below 1,500 feet, *including all approaches to Nantucket*, would be directly compromised. FAA did not analyze these issues or provide any substantial reason why these issues were not a concern. Moreover, even if beacon radar were functioning when the search radar failed, *only aircraft with transponders would be protected.* This is critical because a significant portion of air traffic in Nantucket Sound is *not* equipped with transponders, and therefore would be affected by loss of search radar functionality. FAA Exhibit 13 at ¶16 (Breault Affidavit).

- FAA failed to address evidence of decreased probability of detection for primary radars. FAA experts concluded that the probability of detection for the ASR-9 "may decrease" as a result of clutter. FAA Exhibit 9 at 5; FAA Exhibit 11. In some instances, FAA concluded that this probability of detection would drop far below acceptable levels. FAA Exhibit 10 at 12 ("If the blades are moving with a large radial component with respect to the radar, *detection over each wind turbine will approach zero.")* FAA, however, summarily dismissed this evidence. FAA Exhibit 9 at 5.

- FAA failed to fully analyze impacts to the Truro ARSR-4. FAA's Report concluded that the probability of detection for the ARSR-4 over the wind farm will be *below* acceptable levels *(i.e.*, below 80 % probability of detection) at altitudes of *up to 3,500'*. FAA Exhibit 10 at 13, Fig. 9a. A significant amount of traffic occurs below 3,500' that would be affected. FAA Exhibit 1 at 11-15.

- FAA did not take into account the unique weather conditions in Nantucket Sound. FAA never addressed evidence regarding the effects of local temperature inversions that can "duct" the radiated energy closer to the earth surface. FAA Exhibit 14 (2010 ARTS Report) at 4; FAA Exhibit 15 (2010 Brookner Comments) at 2. The effect of such weather events is to intensify reflected energy, and to cause more returns, at higher intensity, which, in turn, increases the clutter on the controllers' display, further complicating air traffic controllers' ability to manage traffic in the area. *Id.* This weather condition is very likely to occur in the summer months in Nantucket Sound – at precisely the same time when the area experiences higher levels of traffic.

- The 2012 Determinations failed to impose radar mitigation measures that FAA itself identified as necessary. The 2009 FAA Radar Report made several recommendations, including the need to modify and update digital displays, to ensure that there were no radar performance problems before the Turbines were installed, and to take winter and summer baseline recordings before the Turbines were installed. FAA Exhibit 10 at iv FAA's 2010 Radar Report also included various recommendations, including revising the Cape TRACON airspace and procedures to restrict air traffic in the Project area to only aircraft with beacon responders. FAA Exhibit 16 at 17. FAA failed to include these as required mitigation measures in the 2012 Determinations and failed to provide any reasonable explanation for why they were omitted. See FAA Exhibit 9.

3. FAA has identified no reasonable mitigation for acknowledged impacts to the ASR-8.

FAA has admitted that the Turbines would create adverse impacts to the Otis ASR-8 radar, (FAA Exhibit 17 at 5 (2010 Determinations)). To address these known impacts, FAA relied on a tiered-mitigation plan. First, it requires the installation of a TDX-2000 post-processor to the affected radar. Second, in the event that the TDX-2000 upgrade proves unsuccessful, FAA required Cape Wind to place $15 million in escrow to pay for installation of a new ASR-11 radar system to replace the existing ASR-8. Third, FAA acknowledges that even the ASR-11 may not work, in which case, it is prepared to close the airspace to aircraft without transponders. See FAA Exhibit 9; FAA Exhibit 16 at 17. As outlined below, this mitigation plan is insufficient.

- The TDX-2000 will not resolve acknowledged impacts. FAA Exhibit 18 (2010 Brookner/Picard Report).
- FAA itself does not think that the TDX-2000 is sufficient. FAA Exhibit 19 (2012 Alliance letter with FAA FOIA Responses).
- FAA documents indicate that the decision to rely on the TDX-2000 (in lieu of requiring the "best option") was based in large part on the cost of upgrading to an ASR-11, rather than on objective assessment of how best to mitigate the acknowledged interference issues. FAA Exhibit 19
- There is substantial evidence that the ASR-11 will *not* solve radar interference caused by the Turbines. FAA Exhibit 19. (FAA Talking Points state that "not even the ASR-11 will mitigate the clutter completely or in such a way that there will not be occasional loss of detection of ... aircraft without transponders").
- Replacing the existing radar equipment may not be feasible. FAA Exhibit 20 (Kalinowski Testimony).
- Closing the airspace altogether would, itself, be a hazard. FAA has concluded that "as a last resort" FAA would simply revise the Cape area airspace and air traffic control procedures to restrict air traffic in the Project area to only aircraft with transponders. This essentially defers the hazard analysis until *after* the Turbines are constructed, thereby expressly inviting the possibility that the Turbines may prove to be hazards after construction. Indeed, this is contrary to FAA's own experts that conclude that: "[FAA's] Tech Ops should ensure that there are no performance problems with the ASR-8 or the ASR-9 *prior to installation of any wind turbines*." FAA Exhibit 10 at iv (emphasis added).
- The ASR-11 upgrade has not worked under real world conditions. The very same technical upgrades proposed to mitigate the acknowledged radar impacts from the Cape Wind Project did not work at Travis Air Force Base in California (Travis). As a result,

there are severe impacts to the airspace near Travis, namely that uncontrolled traffic *cannot be detected*. Exhibit 21 (Travis AFB, MidAir Collision Avoidance Pamphlet).

G. The National Historic Preservation Act.

DOE also cannot rely on the National Historic Preservation Act procedures by BOEM. As noted in previous correspondence, Secretary Salazar improperly terminated consultation and failed to provide a valid basis for over-ruling the unprecedented recommendation by the ACHP to deny the project due to the availability of alternatives. The record is now clear, based on BOEM's own actions, that the very alternative relied on by the ACHP and rejected by Salazar are in fact reasonable. Thus, the Salazar ACHP letter can no longer be invoked. In addition, DOE has not properly terminated consultation on its own accord, as required by the section 106 regulations. No additional consultation has been conducted with the Alliance and other consultation parties, although it appears that DOE did contact the Tribe for this purpose. As noted by the recently released CEQ guidelines for NHPA and NEPA compliance, it was essential to start the section 106 process early during the review of the proposed project -- at the scoping stage. To the contrary, MMS left this action to late in the game, when it was too late to conduct a valid review. DOE has compounded this error by failing to undertake its own section 106 process. Finally, DOE has not updated the list of affected historic properties to account for changes over the last three years. For all of these reasons, DOE must withhold further action on the CW application until it conducts a valid section 106 process.

IV. The 2009 FEIS Cannot be Relied Upon Because It Is Flawed and Outdated.

The Alliance has previously summarized the many deficiencies of the 2009 FEIS, and will, therefore, not restate them again in these comments but hereby incorporates by reference all prior comments. The Alliance, however, notes that as evidenced by the number of pending lawsuits, it is evident that the 2009 FEIS was inadequate at the time it was issued. New information (as noted above) confirms that other alternatives existed at the time the FEIS was released and establishes the need for a supplement EIS. CEQ regulations require a supplemental EIS to be prepared and circulated in the same manner as the original draft and FEIS if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action of its impacts.[15] This further confirms that the heart of the 2009 FEIS—the alternatives analysis— was deeply flawed and deficient in adequately analyzing all viable alternatives to the Cape Wind Project. Further, the administrative record that has emerged through the pending litigation demonstrates a lack of objectivity and clear bias on behalf of the action and cooperating agencies. Finally, the mere passage of time of over four years since the

[15] *See* 40 C.F.R. § 1502.9(c)(2012); *New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F. 3d 683, 707 (10th Cir. 2009) (finding that a new alternative proposing new locations of activities required a supplemental EIS because it affected "environmental concerns in a different manner than previous analyses," even though the general nature of the alternative's impacts resembled those already analyzed).

issuance of the 2009 FEIS creates a basic duty on the part of the action agency to complete a supplemental EIS.

In addition, the FEIS relies on the mistaken assumption that Cape Wind will generate local jobs. As discussed in the Associated Press story, "Mass. co says no deal with Cape Wind," (Mar. 11, 2013), Cape Wind's promise of jobs is illusory and appears to have been manufactured to bolster the record for a favorable decision. DOE should ignore all such representations in the record, and must undertake a new analysis of the local jobs issue.

The Alliance further reiterates its request to meet with DOE in response to the December 31, 2012 notice adopting DOI's EIS for the Cape Wind Project and providing a public comment period, and the February 8, 2013 notice extending the public comment period for this proceeding. This request by the Alliance to meet with DOE constitutes its fourth request to meet with the agency.[16] As the Alliance has highlighted before, in order to comply with NEPA, federal agencies are required to include the public in the NEPA decision-making process. Specifically, section 1506.6(a) of NEPA requires that agencies must "make diligent efforts to involve the public in preparing and implementing their NEPA procedures," as well as "solicit appropriate information from the public." 40 C.F.R. 1506.6(d).

Additionally, pursuant to 40 C.F.R. 1506.3(b), because DOE was not a cooperating agency for the Cape Wind FEIS, the FEIS is required to be recirculated under NEPA, which initiates a review period. As specified in the amended February 8, 2013 Notice, a deadline of March 11, 2013 has been set for this review period. The Alliance is seeking to meet with DOE pursuant to this notice to ensure DOE has sufficient information to fulfill its due diligence obligation under NEPA and the DOE Loan Guarantee Program before expending taxpayer dollar to fund the Cape Wind Project. The Alliance does not seek to meet with DOE regarding Cape Wind's pending loan guarantee application itself or any information that would be considered proprietary. Thus, the sensitive nature of the loan guarantee application process should not serve as a reason to deny the Alliance's request to meet.

There are numerous other renewable Projects in queue for consideration of a loan guarantee or other federal funding that do not present the risks or negative effects of Cape Wind. DOE should not sacrifice the opportunity to fund other viable and sound Projects in the name of this highly conflicted Project. DOE is under an obligation to the American taxpayers to administer the Federal Loan Guarantee Program in a conscientious and objective manner that utilizes taxpayer monies responsibly and upholds the public trust. In order to fulfill this duty, DOE must conduct a thorough due diligence review of the proposed Cape Wind Project that takes into account new information on the Project. Further, DOE must act sensibly when determining whether to issue a loan guarantee for this Project and ensure it does not place taxpayers dollars at risk. DOE should, therefore, set aside the extensive political pressure it is under to approve this specific project at this flawed location and act in the public interest to deny the loan guarantee application.

[16] The Alliance has previously submitted requests to meet with DOE on November 6, 2012, December 19, 2012 and January 17, 2013. To date, DOE has either denied or ignored the Alliance's requests to meet.

Thank you for considering these comments. Please contact the undersigned at (508) 775-9767 should you have any questions.

Sincerely,

Audra Parker
President and CEO

cc: The Honorable Ken Salazar, Secretary of the Interior
The Honorable Steven Chu, Secretary of Energy
David G. Frantz, Acting Executive Director, Loan Programs Office, DOE
Tommy Beaudreau, Director, Bureau of Ocean Energy Management
Laura Davis, Chief of Staff for Secretary of the Interior
The Honorable David J. Hayes, Deputy Secretary of the Interior
The Honorable Hilary Tompkins, Solicitor, Department of the Interior
Senator William Cowan
Senator Elizabeth Warren
Representative Darrell Issa, Chairman of House Oversight and Government Reform
Representative Fred Upton, Chairman of the House Committee on Energy and Commerce
Dr. Kathryn Sullivan, Acting NOAA Administrator
Admiral Robert J. Papp, Jr., Commandant, U. S. Coast Guard
Col. Philip Feir, U. S. Army Corps of Engineers
Mary L. Kendall, Acting Inspector General, Department of the Interior
Michael Huerta, Acting Administrator of the Federal Aviation Administration
Bob Perciasepe, Acting Administrator of the Environmental Protection Agency
Nancy Sutley, Chair, Council of Environmental Quality

EXHIBIT 9C: LETTER TO MATTHEW MCMILLEN AND TODD STRIBLEY, DOE LOAN PROGRAMS OFFICE, FROM AUDRA PARKER, PRESIDENT AND CEO, ALLIANCE TO PROTECT NANTUCKET SOUND, APRIL 22, 2013

Exhibit 9c

SAVE OUR SOUND
alliance to protect nantucket sound

April 22, 2013

Sent via Messenger and E-mail

Matthew McMillen
Director, Environmental Compliance
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington D.C. 20585

Mr. Todd Stribley
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. McMillen and Mr. Stribley:

The Alliance to Protect Nantucket Sound (the "Alliance") submits these follow-up comments in response to the Federal Register notice issued on February 8, 2013, which confirmed the ongoing review period for the Department of Energy's ("DOE") adoption of the Final Environmental Impact Statement ("FEIS") for the Cape Wind Project ("Project") issued on January 1, 2009 by the Minerals Management Service ("MMS")[1] of the U.S. Department of the Interior, "*EIS No. 20120401, Final EIS, DOE, MA,* Adoption" 78 Fed. Reg. 9388 (Feb. 8, 2013) (hereinafter "February 8, 2013 Notice").[2] As you know, under the National Environmental Policy Act ("NEPA"), the review period for the FEIS does not close until a Record of Decision is formally issued for the proposed action, 40 C.F.R. §1505.2, thus the following comments and the attached timeline of relevant events[3] must be considered by DOE when evaluating the adequacy of the Project's FEIS.

[1] MMS is the predecessor to the current federal agency, the Bureau of Ocean Energy Management.

[2] *See also* "Public Comment Opportunities" on DOE's website, *available at* http://energy.gov/nepa/eis-0470-us-department-energy-loan-guarantee-cape-wind-energy-Project-outer-continental-shelf.

[3] The Alliance has previously filed a timeline of relevant events related to Cape Wind's Loan Guarantee application with its prior comments letters submitted on January 29, 2013 and March 11, 2013. The timeline attached to these comments represents an updated version incorporating events since the March 11, 2013 version of the timeline was submitted to DOE.

Since the Alliance submitted comments on March 11, 2013, new information not previously evaluated during the Project's NEPA process has come to light that must be considered by DOE during its evaluation of the Project's FEIS for a Section 1703 loan guarantee. For the reasons stated in our previous correspondence with DOE, which is incorporated herein by reference, the Alliance objects to any loan guarantee or other form of financial assistance for the proposed Cape Wind Project. To date, there remain a number of unresolved issues regarding the Project's viability and safety that DOE must addressed under NEPA and require a supplemental Draft EIS.

I. The Lacking Geophysical and Geotechnical Data for the Cape Wind Project Creates Additional Financial Risk.

The administrative record produced by BOEM during the pending litigation reveals that Cape Wind's critical geophysical and geotechnical studies are lacking and to date BOEM has still not completed the necessary studies. The failure to conduct these studies greatly increases the risk of substantial delays in construction, major cost overruns and potentially the viability of the entire Project. The Loan Guarantee Program requires that DOE consider "[t]he levels of market, regulatory, legal, financial, technological, and other risks associated with the Project and their appropriateness" before issuing a loan guarantee to a developer. *See* 10 C.F.R. § 609.7(b)(14). Thus, DOE is under an obligation to consider this new information in the review process.

BOEM's regulations require applicants to conduct extensive geophysical and geotechnical studies *before* it approves a project's construction and operations plan ("COP"). Specifically, the regulations require COPs to include, in relevant part, the survey results of shallow hazards, geological, geotechnical and archeological surveys. *See* 30 C.F.R. §285.626(a). However, in this case, BOEM issued the COP in spite of inadequate geophysical and geotechnical information on the Project with the requisite surveys not having been conducted.

Email communications that have surfaced in the administrative record for the pending litigation show MMS admitting that the Cape Wind project's geophysical and geotechnical studies are lacking. In an October 17, 2006 email from Richard Clingan of BOEM, Clingan states: "Unfortunately, CWA has not acquired sufficient geophysical data and information to adequately delineate in detail geologic hazards and conditions in the vicinity (1000m radius) of even one proposed turbine location based on MMS requirements for shallow hazards surveys." Attachment A. Brian Jordan, an archeologist at the Department of Interior ("DOI") Headquarters, stated that he agreed with Mr. Clingan's assessment and "[i]t might be that, when all is said and done, they [Cape Wind] are going to need to resurvey the area." Attachment B.

In another email from BOEM, Wright J. Frank states that "Cape Wind has done survey work on the area where they wish to install 130 offshore wind turbines. The contractor they hired to do this work, ESS, has sent us the report describing the work done and the results. Our analysis of these submissions appears to reveal large gaps. We have informed Cape Wind of these gaps repeatedly and often. ... Cape Wind has indicated that they may not be able to conduct further

surveys before receiving their project financing. We are giving Cape Wind an opportunity (on short notice) to demonstrate to us that the surveys already completed meet our requirements, if they can do so." Attachment C.

The ground for allowing the Cape Wind project to proceed, despite missing information that is critical to assessing the safety and economic stability of the project, was not science; but, rather Cape Wind's refusal to commit its own funds to conduct the research federal law requires. As set forth in an email from Dennis Daugherty to the Solicitor of DOI: "...because it [Cape Wind] does not have approximately $30 million to expend on geological/cultural survey work, it has asked BOEM not to put into the lease a term requiring that the survey be conducted before it submits a COP for approval. Rather they ask that it require the surveys be conducted before actual construction." Attachment D. BOEM was well aware that the COP was deficient and approval was inconsistent with federal regulations: "CWA is correct that the ROD and letter to the Advisory Council on Historic Preservation did not specify that the surveys had to be completed before submittal of a COP. Those documents said that it was needed before construction... As the briefing paper acknowledges, this conflicts with a BOEM regulation which requires core drilling results be submitted with the COP." *Id.*

These emails clearly depict a failure on the part of Cape Wind to conduct all necessary geological and geophysical surveys for the Project. They also confirm that MMS did not conduct a legally sufficient analysis of this important issue, and that the NEPA compliance for the COP was not legally sufficient. Simply put, MMS cut corners and violated NEPA and its regulations to help Cape Wind meet its schedule for project approval. These surveys are especially critical to determining whether Project monopiles can be properly installed and grounded in the sea bed, as well as the cost and effort required to do so. Without this information, there is no guarantee that the Project can be properly constructed or is even viable. As a result, DOE should not issue a loan guarantee for the Project until this information can be adequately reviewed. Issuing a loan guarantee for Cape Wind without this information puts taxpayer dollars at risk in the event the Project is delayed or ultimately fails. According to a study issued by the Society for Underwater Technology Offshore Site Investigation and Geotechics ("OSIG") Committee issued in 2005, geophysical and geotechnical surveys for offshore wind projects are central to the development of this technology due to the challenging locations in which many of these projects are cited. *See* "Guidance Notes on Site Investigations for Offshore Renewable Energy Projects" (2005) (Attachment E). According to OSIG,

> The important of site investigation for any offshore project cannot be overstated. A site investigation is a critical step in any seabed risk management process and is vital to ensure the success of any offshore project. Fit-for-purpose design is critical in the offshore environment where design conservatism is not a logical mitigation for seabed risk and installation problems can cause significant schedule and cost over-runs. A recent survey of European offshore windfarm projects

> concluded that ***approximately 25% of total project capital*** could be directly attributed to the chosen foundation system. ...A properly designed, managed and executed site investigation is critical to the success of any offshore renewables project.

Id. at 7. Based on this estimate, $650 million in project capital costs for Cape Wind are attributed to the Project's foundation system. Thus, a failure to properly examine the Project's geophysical and geotechnical issues renders the economic assertions for the whole project unsubstantiated. Further, potential cost overruns due to inadequate geotechnical and geophysical surveys would increase overall project costs and the Project's viability in the event Cape Wind could not finance the overruns.

In summary, emails from the administrative record – on which DOE purports to rely – demonstrate that BOEM did not have the information its regulations require because for years Cape Wind refused to conduct the very studies that are needed to properly characterize the site so that the Project foundation can be safely designed in a cost effective manner. Cape Wind refused to invest the $30 million required to develop a safe facility, but now asks DOE to issue a loan guarantee for millions more. The lack of information regarding the geophysical and geotechnical surveys has the potential to cause delays, cost overruns for the Project and may even cause the Project to ultimately fail. DOE should not issue a loan guarantee for the Project until it has the information it is statutorily required to assess, including the "market, regulatory, legal, financial, technological, and other risks associated with the Project."

DOE must "ensure that ... [t]here is a reasonable prospect of repayment by [the] Borrower of the principal of and interest on the Guaranteed Obligations and other Project debt." 10 C.F.R. §609.10(d)(9). Without the required geophysical and geotechnical data, DOE cannot legally issue a loan guarantee. Further, this new information raises significant questions regarding the Project's viability and prospect that Cape Wind could repay a loan guarantee if issued. Thus, issuing a loan guarantee for Cape Wind without this information puts taxpayer dollars at risk in the event the Project is delayed or ultimately fails and would violate DOE's legal obligations.

II. FOIA Documents Reveal Cape Wind Intends to Move Its Staging Location to New Bedford, Massachusetts.

Documents recently obtained by the Alliance through a FOIA request to the City of New Bedford show that Cape Wind intends to move its staging location across state lines from Quonset, RI to New Bedford, MA. Moving the Project's staging location would not only require additional review by the Environmental Protection Agency ("EPA") and public comment under the Clean Air Act, but would also require additional review by the DOI under NEPA, the National Historic Preservation Act, and the Endangered Species Act ("ESA"). Cape Wind has made it clear it is seeking to "hide" this change from NEPA review. Even if the Quonset site is

used for part of the initial construction, the Project will ultimately make use of the New Bedford site, a project location not considered to date.

The FOIA documents received show that Cape Wind has signed a Letter of Intent recently to move forward with the location of its staging area at New Bedford. A suggested agenda for a November 20, 2012 meeting of the City of New Bedford with the Massachusetts Clean Energy Center included an item, "Letter of intent/Cape Wind lease terms." Attachment F. A November 9, 2012 email from Matthew Morrissey at the New Bedford Economic Development Center to the Massachusetts Clean Energy Center states "We have confirmed with Cape Wind that they are willing to allow the City's Leadership Team to review any documents associated with their LOI [Letter of Intent] and their Lease." Attachment G.

It is apparent that Cape Wind has been speaking regularly with the City of New Bedford about making New Bedford the staging area and proposed terminal for the Project. A June 8, 2012, email confirms a proposed meeting on June 10, 2012 with Cape Wind contractors, Jim Gordon, the President of Cape Wind, and other Cape Wind team members with the New Bedford mayor's office. Further, on July 2, 2012, Jim Gordon sent Matthew Morrissey an e-mail inquiring if "we could move our meeting to this Friday at 10am. ...to bring you and Mayor Mitchell up to date on some Cape Wind developments." Attachment H.

On August 22, 2012, Mr. Morrissey wrote an e-mail to Edward Anthes-Washburn, Executive Director of the New Bedford Harbor Development Commission, stating that Mark Rodgers, the Communications Director for Cape Wind, had called him yesterday. "This is the gist of what he has said and will continue to say. Cape Wind is committed to the Comm of MA [Commonwealth of Massachusetts] and the port of NB [New Bedford] to deploy from, so long as it is ready when we are ready. Both projects seem to be tracking along the same time frame." Attachment I.

Furthermore, additional e-mails confirm Cape Wind's intent to move the Project's staging area to New Bedford from Quonset. On June 25, 2012, Pierre Bernier of Maritime International sent an email to Edward Anthes-Washburn and Eric Bethany, of a transportation company named Bellville Rodair, stating "Thank you for sending us your cargo details, the equipment is obviously for the Cape Wind ocean windmill farm project. For your guidance the project would be handled in New Bedford at South Terminal, a new berth location in the planning process that should be opened for business winter 2014." Attachment J. Additionally, on September 24, 2012, Mr. Anthes-Washburn emailed Mr. Morrissey stating "Finally, I've reached out to Pierre and we're going to meet tomorrow so I can get a better idea of how he envisions other cargo operations happening during the staging of Cape Wind and other offshore wind projects." New Bedford officials have also been meeting with Siemens, Cape Wind's wind turbine supplier, as evidenced by a November 15, 2012, email from Neil Mello, Mayor Mitchell's Chief Aide, to the General Counsel at Cashman Equipment Corporation, another Cape Wind contractor, stating "We have meetings on the 19th (discussing the O&M Program for CW) ... ." Attachment K.

Based on the above-noted correspondence, it is clear Cape Wind intends to relocate its staging area from Quonset to New Bedford, which would prompt the need for additional environmental reviews. These reviews would further delay construction and operation of the Project, and add additional risk to the overall viability of the Project.

III. Flaws in Cape Wind's Proposed Design.

Numerous concerns have been raised regarding the proposed grout connection technology Cape Wind intends on using to connect the monopiles for the Project to the remainder of the wind tower. This technology would employ a grouted connection to connect the transition piece of the turbine to the pile that is driven in the seabed. Although, grout connection technology has been utilized by the oil and gas industry on drilling and production platform jackets for many years, studies are now showing that this technology may not be safe for offshore wind projects due to the potential for bending of the wind turbine grout connection.

An article published in March 2012 by industry expert Dr. Chris Golightly explains that "the grout in offshore oil and gas pile to jacket connections is usually always in compression, primarily because of the heavy axial dead weight of platforms. In wind turbine monopole connections though, the situation is different. Since severe lateral cyclic bending occurs during extreme wind and wave loading conditions, the dead weight is proportionally much lower and bending predominates. As a result, this leads to periodic tensile stressing of the competitively strong but extremely brittle grouts, which eventually crack and crumble. This can result in failure, settlement, tower tilting and the structure frequently ending up resting on internal support brackets which are not designed for that purpose." Golightly, Chris, "Gambling with grout: worth the risk?," A Word About Wind (Mar. 12, 2013) at 2 (Attachment L). Dr. Golightly has raised concerns that Cape Wind may still be planning to construct using the grout connection technology is method, when several European wind developers are clearly abandoning it for other technologies.

Other experts in the industry have raised similar concerns. Also in March 2012, experts in Europe published another article that concluded grouted connections on offshore wind towers may fail due to the stresses of wind load on the connection. Specifically, the article stated that "for large circular cylinders subjected to bending moments the concrete confinement can never be assure under all loading conditions. It was proved that even under the probability of annual wind load, that the grout could be subjected to high tensile stresses beyond the strength of the grout." Prakhya, Ganga, Chen Zhang, Neil Harding, "Grouted connections for monopiles – limits for large wind turbines," The Structural Engineer at p. 40 (March 2012) (Attachment M). The experts also recommended that additional testing be conducted to predict the behaviors of grouted connections and further confirm the shortfalls of this technology in the context of offshore wind.

Cape Wind has yet to fully disclose the technology it will employ with regard to the wind towers; however, this remains a critical issue that affects the structural soundness of the Project and must be addressed.

IV. Presence of the North Atlantic Right Whales In the Project Area.

The North Atlantic right whale is a gravely imperilled marine species that is protected by both the Marine Mammal Protection Act and the ESA. Right whale sightings have been documented along the planned vessel routes from both Quonset, Rhode Island to Nantucket Sound and from New Bedford, MA to Nantucket Sound, as well as within Nantucket Sound itself through 2011. For the past four years, right whales have now visited the same areas annually, indicating that sightings in and around Nantucket Sound can no longer reasonably be dismissed as anomalous, and in fact illustrate a the regular presence of the species in the Project area.

Numerous photos of the right whales document their presence in Nantucket Sound. However, photos taken as far back as 2004 (*see* below Images 1-3) show a North Atlantic right whale mother and calf nursing in Nantucket Sound between Martha's Vineyard and Nantucket. The report issued to the National Oceanic Atmospheric Administration regarding this spotting is attached as Attachment C. Additionally, IMAGE 4 below illustrates the proximity of this right whale spotting to the proposed Project area. The NEPA process for the Project did not contemplate the presence of the North Atlantic right whale in the proposed Project area. The abundance of new information confirming the presence of this species in the area cannot be ignored and must be analyzed by engaging in new consultation under the ESA and a new Biological Opinion by the National Marine Fisheries Service.

IMAGE 1:

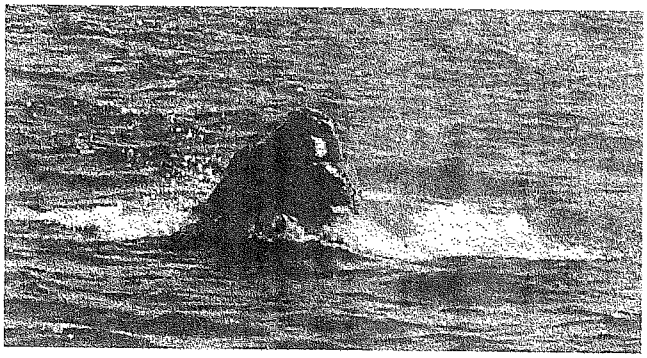


IMAGE 2:

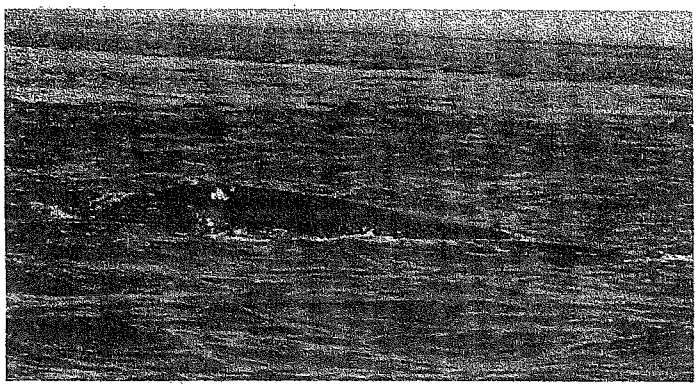
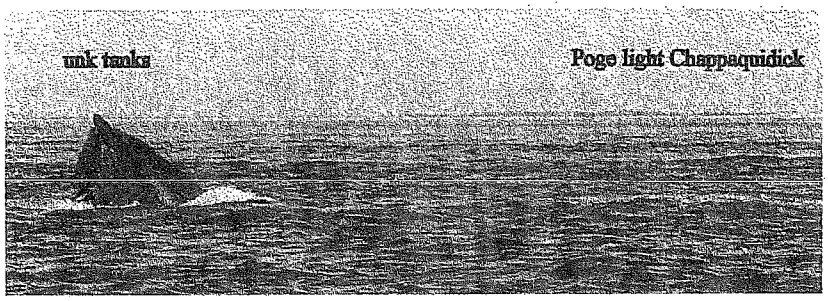


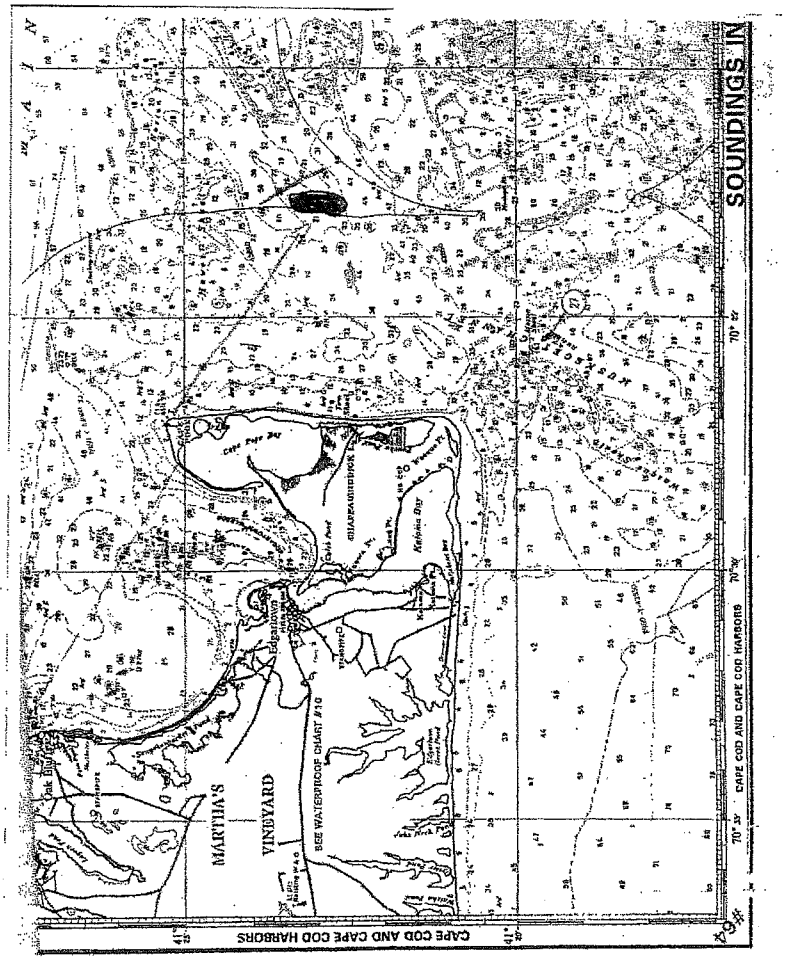
IMAGE 3:



4 Barnstable Road, Hyannis, Massachusetts 02601
▫ 508-775-9767 ▫ Fax: 508-775-9725

www.saveoursound.org
a 501 (c)(3) tax-exempt organization

IMAGE 4:


SOUNDINGS IN
MARTHA'S
VINEYARD
SEE WATERPROOF CHART #10
CAPE COD AND CAPE COD HARBORS
CAPE COD AND CAPE COD HARBORS

V. **Study Shows Adverse Effects of Pile Driving on Harbor Porpoises.**

In addition to right whales, there are a number of other marine mammals present in the Project area that will be adversely affected. In its Notice for Incidental Harassment Authorization ("IHA") issued on February 1, 2013, 78 Fed. Reg. 7402, in response to Cape Wind's application for an IHA authorization, the National Oceanic Atmospheric Administration identified the marine mammals with known occurrences in Nantucket Sound that could be harassed by high resolution geophysical survey activity in the Sound. Harbor porpoises were identified as one of the marine mammals present in the proposed Project's footprint.

A recent study funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, coordinated by the Federal Maritime and Hydrographic Agency (BSH), studied the effects of pile driving of monopiles on harbor porpoises at the first offshore wind farm "Alpha Ventus" in the German North Sea and concluded that the pile driving had adverse effects on the porpoises. *See* Attachment N. The Alpha Ventus wind farm was constructed in 2008 and 2009 approximately 45 km north off the German coast and used percussive piling for the foundations of 12 wind turbines at the project. Each turbine had a rating of 5 megawatts ("MW") for a total project capacity rating of 60 MW. The study conducted visual monitoring of harbor porpoises prior to, during construction, and after operation of the wind farm. Specifically, 15 aerial line transect distance sampling surveys were conducted from 2008 to 2010. Additionally, from 2008 to 2011, static acoustic monitoring with echolocation click loggers was performed at 12 positions. In total, 1,392 harbor porpoise sightings were recorded. *Id.* at p. 1.

The harbor porpoise is particularly vulnerable to disturbances, injury, or death from anthropogenic activities, including by-catch in fisheries, prey depletion, vessel traffic, habitat degradation and noise from activities, such as the installation and operation of marine facilities. *Id.* at p.2. "The most significant threat to marine mammals from offshore wind energy is most probably pile-driving impact noise." *Id.* The visual surveys of the harbor porpoises during and after pile driving illustrated a strong avoidance response within 20 km of the noise source. *Id.* at p. 1. Also, generalized additive modeling of static acoustic monitoring data showed a negative impact of pile-driving on porpoises. Specifically, the surveys showed that porpoises were displaced from their original locations due to noise created from pile-driving. *Id.*

In the case of the Alpha Ventus wind farm, the project was only a total of 12 turbines, yet the pile driving of the project's monopiles had a significant adverse effect on the harbor porpoise. In the case of Cape Wind, the number of monopolies installed will be 11 times the amount at the German project, which raises concerns that local species be suffer even greater harms from the project's construction.

VI. The Avian Bat and Monitoring Plan Fails to Include Thermal Imaging for Birds, Despite the Fact That Both the Framework in the FEIS and the Draft Protocols for the COP Indicated It Would.

The framework for the Avian Bat and Monitoring Plan ("ABMP") incorporated into the FEIS clearly envisioned the use of multiple thermal imaging devices mounted on turbines to record bird collisions – including devices on the turbines "nearest to Monomoy, the perimeter close [ ] to the mainland, the remainder of the perimeter, and the interior turbines." *See* FEIS, Appx. N; *see also* FEIS at 9-22 (stating that "CWA ***will*** install a Thermal Animal Detection System (TADS) or similar" (emphasis added)). According to the framework, thermal imaging "is the only remote method for detection of bird-turbine collisions that is developed for offshore use," and unlike radar monitoring, such imaging allows for species-identification, so that its use would provide data on which species of birds were colliding with the turbines. *Id.*

The COP incorporated a draft protocol for the ABMP, which called for the continuous monitoring of bird collisions through year-round use of two thermal imaging devices "capable of recording collisions at night and during foggy conditions, which is not possible with conventional cameras." The documents that the Alliance received through FOIA requests reveal that "FWS and BOEM continue[d] to question the utility of deploying just two [thermal imaging devices] as a monitoring device on a 130 turbine project." *See* Attachment O. FWS strenuously called for a requirement for more thermal imaging devices in the ABMP. *See* Attachment P. However, the final AMBP – which was never subjected to NEPA compliance, nor issued for public notice and comment – abandoned the use of thermal imaging devices altogether. As Dr. Ian Nisbet explained in his previous report to DOE (included as part of the Alliance's January 29, 2013 submission to DOE), this is a major deficiency:

> [Arguments that] using TADS would be cost-prohibitive in addition to being unlikely to provide sufficient data to assess incidental take . . . are both specious and outdated. The purpose of most of the ABMP is to determine whether collisions are or are not rare, as claimed in the FEIS. To assume that they are rare and consequently to refrain from looking for them is a dereliction of responsibility. Thermal imaging is the ***only*** way to detect actual collisions at offshore facilities and hence to assess incidental take.

See Attachment Q (Nisbet letter at 1 (internal citation omitted)). Thus, the final ABMP remains ill-equipped to assess bird mortality that will result from collisions with the Cape Wind project. In short, we will never know how many birds Cape Wind kills, and of what species, because the only accurate way of gathering that data has been inexplicably excised from the ABMP.

DOE must consider this information under NEPA and conduct a thorough due diligence review of the proposed Cape Wind Project that takes into account new information on the Project. DOE is under an obligation to the American taxpayers to administer the Federal Loan Guarantee Program in a conscientious and objective manner that utilizes taxpayer monies responsibly and

upholds the public trust. DOE must act sensibly when determining whether to issue a loan guarantee for this Project and ensure it does not place taxpayers dollars at risk. Therefore, DOE should act in the public interest to deny the loan guarantee application and ignore political pressure to issue a loan guarantee for the Cape Wind project.

Thank you for considering these comments. Please contact the undersigned at (508) 775-9767 should you have any questions.

Sincerely,

Audra Parker
President and CEO

cc: The Honorable Sally Jewell, Secretary of the Interior
The Honorable Steven Chu, Secretary of Energy
David G. Frantz, Acting Executive Director, Loan Programs Office, DOE
Tommy Beaudreau, Director, Bureau of Ocean Energy Management
Laura Davis, Chief of Staff for Secretary of the Interior
The Honorable David J. Hayes, Deputy Secretary of the Interior
The Honorable Hilary Tompkins, Solicitor, Department of the Interior
Senator William Cowan
Senator Elizabeth Warren
Representative Darrell Issa, Chairman of House Oversight and Government Reform
Representative Fred Upton, Chairman of the House Committee on Energy and Commerce
Dr. Kathryn Sullivan, Acting NOAA Administrator
Admiral Robert J. Papp, Jr., Commandant, U. S. Coast Guard
Col. Philip Feir, U. S. Army Corps of Engineers
Mary L. Kendall, Acting Inspector General, Department of the Interior
Michael Huerta, Acting Administrator of the Federal Aviation Administration
Bob Perciasepe, Acting Administrator of the Environmental Protection Agency
Nancy Sutley, Chair, Council of Environmental Quality

EXHIBIT 9D: LETTER TO MATTHEW MCMILLEN AND TODD STRIBLEY, DOE LOAN PROGRAMS OFFICE, FROM AUDRA PARKER, PRESIDENT AND CEO, ALLIANCE TO PROTECT NANTUCKET SOUND, MAY 1, 2013

Exhibit 9d

SAVE OUR SOUND
alliance to protect nantucket sound

May 1, 2013

Sent via Messenger and E-mail

Matthew McMillen
Director, Environmental Compliance
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington D.C. 20585

Mr. Todd Stribley
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. McMillen and Mr. Stribley:

The Alliance to Protect Nantucket Sound (the "Alliance") submits this supplemental letter in response to the Federal Register notice issued on February 8, 2013, which confirmed the ongoing review period for the Department of Energy's ("DOE") adoption of the Final Environmental Impact Statement ("FEIS") for the Cape Wind Project ("Project") issued on January 1, 2009 by the Minerals Management Service ("MMS")[1] of the U.S. Department of the Interior, "*EIS No. 20120401, Final EIS, DOE, MA,* Adoption" 78 Fed. Reg. 9388 (Feb. 8, 2013) (hereinafter "February 8, 2013 Notice").[2]

The Alliance is submitting this supplemental letter to provide DOE with new information not previously evaluated during the Project's NEPA process, which must be considered by the agency as it evaluates the Project's FEIS for a loan guarantee. In addition to the below new information, the Alliance is including a copy of the timeline filed with the House Committee on Science, Space and Technology today as a supplement to my prior testimony before the Committee during its April 16, 2013 joint hearing held by the Subcommittees on Oversight and Energy, on the topic of "Assessing the Efficiency and Effectiveness of Wind Energy Incentives."

[1] MMS is the predecessor to the current federal agency, the Bureau of Ocean Energy Management.

[2] *See also* "Public Comment Opportunities" on DOE's website, *available at* http://energy.gov/nepa/eis-0470-us-department-energy-loan-guarantee-cape-wind-energy-Project-outer-continental-shelf.

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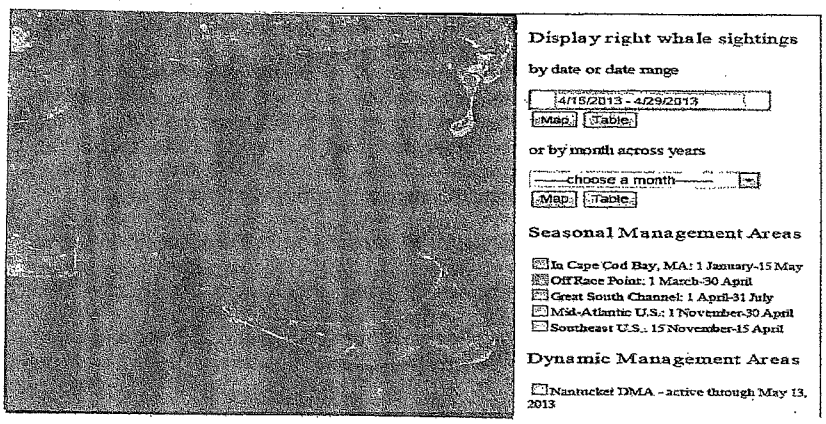
(Attachment A). At the hearing, Congressman Posey requested that I submit a timeline of events in the federal and state review process for the Cape Wind Project. This timeline in fact supports my answers given to questions asked by Members at the hearing. The Alliance is also submitting comments by the Associated Industries of Massachusetts ("AIM"), who oppose the ongoing efforts of DOE to issue a loan guarantee to Cape Wind because "such loan guarantee is not in the best interests of the taxpayers, ratepayers, or the environment, and is not consistent with the goals of the DOE Loan Program." (*See* Attachment B at 2).

Presence of the North Atlantic Right Whales In the Project Area.

As highlighted in the Alliance's prior comments to DOE, occurrences of the North Atlantic right whale have been documented in and around Nantucket Sound, as well as along the planned vessel routes from both Quonset, Rhode Island to Nantucket Sound and from New Bedford, MA to Nantucket Sound. Right whales have been visiting the same areas annually now for over four years. The regularity of their presence in close proximity to the proposed Project area means there is little question that this species exists in and around the proposed Project.

In our summary judgment brief challenging the Federal agencies' compliance with the Endangered Species Act ("ESA") in authorizing the Cape Wind project, the Alliance, together with Public Employees for Environmental Responsibility and other plaintiffs, predicted that because right whales have responded to food sources in and around Nantucket Sound since 2010, "they will likely return year after year." This has indeed proven to be the case, as again this spring, on April 28, 2013, right whales were sighted in close proximity to the proposed Project, *see* Attachment C. This sighting (depicted in the image below) consisted of four right whales present in the area, including a mother and her calf.



The NEPA process for the Project has not adequately contemplated the presence of the North Atlantic right whale in the Project area. To date, the Alliance has brought to the attention of DOE and other federal agencies the repeated presence of this species in the Project area. DOE must take heed to this information and engage in new consultation under the ESA and the National Marine Fisheries Service must issue a new Biological Opinion.

The U.S. Army Corps of Engineers Improperly Modified Cape Wind's Section 10 Permit

Through a Freedom of Information Act ("FOIA") request, it has come to the attention of the Alliance that the U.S. Army Corps of Engineers (the "Corps") modified the Section 10 Rivers and Harbors Act permit issued to Cape Wind Associates for the Scientific Measurement Device Station ("SMDS") now in place in Nantucket Sound without following the necessary procedures. As explained in detail in the attached letter sent by the Alliance to the Corps (*see* Attachment D), the modification extended the termination date of the permit from October 31, 2012 to October 31, 2017. However, the modification was accomplished without any public notice as required under 33 C.F.R. §325.6(d).

The Alliance's FOIA response from the Corps indicates that the District Engineer for the Corps failed to consider the public interest when modifying the permit as required by 3 C.F.R. §325.6(d). Further, the Corps is required to issue a public notice before issuing an extension, except when "the district engineer determines that there have been no significant changes in the attendant circumstances since the authorization was issued." 33 C.F.R. § 325.2. However, this exception requires a positive determination by the district engineer to avoid the issuance of a public notice. The FOIA documents released in response to the Alliance's FOIA request contain no analysis of the circumstances either at the time of the original authorization or the modification that justify a finding of no significant changes since the permit's initial issuance.

The decision to extend the permit without adequate public notice also violates the Administration's commitment to transparency and openness. In both the President's January 21, 2009 Memorandum for the Heads of Executive Departments and Agencies entitled "Transparency and Open Government" (Memorandum)[3] and the December 8, 2009, Office of Management and Budget's Open Government Directive (M-10-06),[4] the Administration has touted the necessity for increasing opportunities for public participation and transparency.

In sum, because the Corps extended the Section 10 permit for the SMDS without following the required procedures, the SMDS as it is currently sited is illegal. This new fact was not considered in the FEIS and underlying record DOE is attempting to adopt and rely upon. Thus,

[3] President Barack Obama, Memorandum on Transparency and Open Government (Jan. 21, 2009), *available at* http://www.gpoaccess.gov/presdocs/2009/DCPD200900010.pdf

[4] OMB Memorandum M-10-06, *Open Government Directive* (Dec. 8, 2009), *available at* http://www.whitehouse.gov/omb/assets/memoranda_2010/m10-06.pdf

DOE cannot solely rely upon the 2009 FEIS and must take this new information into consideration.

For the reasons stated in our previous correspondence with DOE, which is incorporated herein by reference, the Alliance objects to any loan guarantee or other form of financial assistance for the proposed Cape Wind Project. DOE must address the many outstanding issues regarding the Project through a supplemental Draft EIS and cannot blindly adopt the Project's outdated FEIS. DOE is under an obligation to the taxpayers of the U.S. to engage in a thorough due diligence review of the proposed Cape Wind Project that takes into account all new information on the Project, which has not been considered to date.

Thank you for considering these comments. Please contact the undersigned at (508) 775-9767 should you have any questions.

Sincerely,

Audra Parker
President and CEO

cc: The Honorable Sally Jewell, Secretary of the Interior
Daniel B. Poneman, Acting Secretary of Energy
David G. Frantz, Acting Executive Director, Loan Programs Office, DOE
Tommy Beaudreau, Director, Bureau of Ocean Energy Management
Laura Davis, Chief of Staff for Secretary of the Interior
The Honorable David J. Hayes, Deputy Secretary of the Interior
The Honorable Hilary Tompkins, Solicitor, Department of the Interior
Senator William Cowan
Senator Elizabeth Warren
Representative Darrell Issa, Chairman of House Oversight and Government Reform
Representative Fred Upton, Chairman of the House Committee on Energy and Commerce
Dr. Kathryn Sullivan, Acting NOAA Administrator
Admiral Robert J. Papp, Jr., Commandant, U. S. Coast Guard
Col. Philip Feir, U. S. Army Corps of Engineers
Mary L. Kendall, Acting Inspector General, Department of the Interior
Michael Huerta, Acting Administrator of the Federal Aviation Administration
Bob Perciasepe, Acting Administrator of the Environmental Protection Agency
Nancy Sutley, Chair, Council of Environmental Quality

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ATTACHMENT A: LETTER TO CHAIRMAN PAUL BROUN AND CHAIRWOMAN CYNTHIA LUMMIS, HOUSE SUBCOMMITTEES ON OVERSIGHT AND ENERGY, FROM AUDRA PARKER, PRESIDENT AND CEO, ALLIANCE TO PROTECT NANTUCKET SOUND

ATTACHMENT A

SAVE OUR SOUND
alliance to protect nantucket sound

April 29, 2013

Chairman Broun
Subcommittee on Oversight
House Committee on Science, Space, and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Chairwoman Lummis
Subcommittee on Energy
House Committee on Science, Space, and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Broun and Chairwoman Lummis:

I am writing to supplement my prior written and oral testimony, which was submitted at the April 16, 2013 joint hearing by the Subcommittees on Oversight and Energy, of the Committee on Science, Space, and Technology, on the topic of "Assessing the Efficiency and Effectiveness of Wind Energy Incentives." As requested by Congressman Posey at the hearing, I am submitting a timeline of events in the federal and state review of the Cape Wind Project, many of which support my answers given to questions asked by you and other Members of your Subcommittees or by Chairman Smith of the full committee, himself. While my previously submitted written testimony covers many of the areas related to public safety and cost, the enclosed timeline adds supplemental information to the questions posed to me regarding shortcuts in the National Environmental Policy Act (NEPA) process, atypical events and unusual deference toward the developer's business interests.

Cape Wind received unusual support and relief from agencies in the permitting process. The history of the Cape Wind Project review reveals an extraordinary relationship between the timing of government decisions and political or media events or deadlines for future government actions necessary to approve the project or help it obtain a loan guarantee. The inescapable conclusion is that the approval of the project was pre-determined and the decision-making procedures were manipulated to support the fervent political goal to get this project approved regardless of its merits. As illustrated by the enclosed timeline, there are numerous examples of agencies deferring to the economic interests of Cape Wind.

Simply as an example, I note the following:

- The U.S. Coast Guard abandoned buffer zones because it would reduce the footprint of the Project and make the Project uneconomical. The Coast Guard has since recommended these buffer zones for other offshore wind projects and areas.

- The U.S. Fish and Wildlife Service found that Cape Wind should shut down wind turbines on a temporary basis to reduce bird kills, but later abandoned this requirement because it was too costly for Cape Wind.

- The Federal Aviation Administration (FAA) has abandoned previous plans to require Project shutdowns to protect public safety if mitigation for the Project ends up being ineffective. The head of the Obstruction Evaluation Service at FAA appeared to be more concerned about Cape Wind's bottom line stating that shutting Cape Wind down midstream would create an undue burden and could possibly bankrupt the company.

- The U.S. Department of Interior (DOI) granted Cape Wind an exemption from geological and geophysical survey work required under the Outer Continental Shelf Lands Act to approve its Construction and Operating Plan so that Cape Wind could avoid spending an additional $30 million it could not fund at the time.

- On October 10, 2013, Interior engaged in a "sudden rush" to get financial security in place so former Secretary Salazar could stage a media event signing the Cape Wind lease as part of his keynote address at wind industry conference.

- Former DOI Secretary Salazar unilaterally declared section 106 consultation would end in March 2010 after the designation of the Sound as a traditional cultural property in January 2010. Normally, consultation lasts for many months or even years; however, Salazar terminated consultation on March 1. This action was taken by Salazar to make possible a federal decision on the Cape Wind lease before May, when the power purchase agreement proceedings before the Massachusetts Public Utilities Commission had to begin to ensure a decision by the fall, in time for the gubernatorial election.

- The Advisory Council on Historic Preservation (ACHP) recommended the project's denial on April 2, 2010. Emails received through Freedom of Information Act requests show the Governor Patrick's office consulting with Secretary Salazar to produce a letter from a group of Governors to Secretary Salazar urging him to reject the ACHP's position. The emails show extensive coordination with the New York Times, leading to an April 20, 2010 editorial to approve the project, which Salazar did on April 28, 2010 (the same day he rejected the ACHP recommendation).

- Salazar's April 28, 2010, decision was announced at a major media event in Boston, Massachusetts, which included a pre-arranged celebration with stakeholders supporting the project. Environmental Protection Agency (EPA) official Gina McCarthy, with a duty to review the Cape Wind Clean Air Act

permitting process stated to Ian Bowles, former head of the Massachusetts Department of Energy and Environmental Affairs, "Yippee" and praised the decision as a "grateful resident."

- Within an eight-day period between December 30, 2010 and January 7, 2011, the following federal actions occurred: the National Marine Fisheries Service revised the project's biological opinion under the Endangered Species Act; the Army Corps of Engineers' issued decisions on the project's section 10 and 404 permits; and the EPA approved the project's Clean Air permit. Such coordinated decisions on applications that were pending for years are unusual. This timing coincides with the Department of Energy's (DOE) "kickoff meetings" on the Cape Wind loan guarantee.

- In 2011, Cape Wind worked diligently to obtain a loan guarantee from DOE. Its ability to do so would fail if DOI required an environmental assessment (EA) on the project's construction and operation plan (COP) with public comment because of timing. As a result, Cape Wind wrote an email to Director Bromwich of the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE), who sent an email to Deputy Secretary David Hayes and Chief of Staff Laura Davis, asking to avoid the EA process. BOEMRE issued the COP for a two-week comment period with no EA on February 22, 2011.

- The FAA typically issues guidance on obstructions every January. The FAA had to reconsider Cape Wind in 2012 because it lost a lawsuit in court regarding its "no hazard" determination. The FAA put out a comment notice on Cape Wind. After the comment period closed, the FAA then issued its clarification on obstructions in June. It approved Cape Wind under the new guidance shortly thereafter.

- These games continue to be played during the ongoing litigation. For example, DOI waited until the opening brief was filed by the wildlife plaintiffs to approve the avian and bat monitoring plan on November 20, 2012. Then the government used the plan to reply to the plaintiffs' brief.

Numerous other examples of shortcuts in the NEPA process, avoidance of public comment opportunities, refusal to meet with proponents of alternative sites, and other biased actions all designed to facilitate the Cape Wind project's goals and timing exist. Many of these examples have been highlighted in the enclosed timeline. The attached timeline documents events and agency communications that show that federal agencies have taken shortcuts in the process and given unusual deference toward the developer's business interests. The timeline also includes DOE communications and events regarding the loan guarantee for Cape Wind. In addition, we would like to emphasize the highly inappropriate collusion among federal agencies, the Commonwealth of Massachusetts, and Cape Wind to achieve critical timing stages to promote this project.

As the Alliance expressed previously, we respectfully request that the Committee instruct the Government Accountability Office (GAO) to conduct an independent assessment of the Cape Wind Project to evaluate the many deficiencies in the Project's NEPA process, clear political bias in the Project's permitting and what would be double-dipping on the part of Cape Wind should it qualify for a number of federal financing incentives, including the production tax credit or the investment tax credit and a loan guarantee. The GAO should conduct a cost-benefit analysis taking into account economic, historic, tribal, environmental, safety, and other public interest factors, and evaluate if the federal decision making agencies involved predetermined the outcome of their reviews. The question must be asked as to whether overly lenient standards were applied based on a policy favoring expedited development of renewable energy, regardless of cost. We also ask that the Committee require any action on the loan guarantee and energy investment credits to be suspended until this independent report is complete and the five pending lawsuits against the Project are resolved. Thank you.

Sincerely,

Audra Parker
President and Chief Executive Officer
Alliance to Protect Nantucket Sound

Documents Pertaining to the Cape Wind Loan Guarantee and DOE's Adoption of DOI's 2009 Final Environmental Impact Statement

Abbreviations:

APNS	Alliance to Protect Nantucket Sound
AWEA	American Wind Energy Association
BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement
CEQ	Council on Environmental Quality
COP	Construction and Operations Plan
CW	Cape Wind
DEIS	Draft Environmental Impact Statement
DOE	U.S. Department of Energy
DOI	U.S. Department of Interior
DPU	Massachusetts Department of Public Utilities
EA	Environmental Assessment
EEA	Massachusetts Department of Energy and Environmental Affairs
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FOIA	Freedom of Information Act
FWS	U.S. Fish and Wildlife Service
GCA	Green Communities Act
MHC	Massachusetts Historical Commission
MMS	Minerals Management Service
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPS	National Park Service
PPA	Power Purchase Agreement
SHPO	State Historic Preservation Officer
TCP	Traditional Cultural Property
TRC	Cape Wind contractor
USCG	U.S. Coast Guard

01/04/07	Deval Patrick assumes office as the Governor of Massachusetts.
04/21/08	APNS comments on MMS Draft Environmental Impact Statement for the Project.
05/20/08	Email from MMS employee (Cluck) to FWS: "Formal consultation has 'been a long time coming. It is very important that FWS stick to the 135 days. The 135 days ends October 1, 2008…The schedule is very tight. Any assistance upper management can provide to keep the Cape Wind process on track would be greatly appreciated.'"

05/27/08	Note from TRC: "MMS is going to start writing a draft of the lease" prior to completion of the NEPA process, showing the decision to issue a lease to the Project is predetermined.
05/27/08	Notes from TRC: "Seasonal restrictions - MMS needs to go back to Cape Wind about vessel scheduling and local boating concerns and resolve as MMS is not likely to budge - this is bare bones - they focused on winter flounder in Lewis bay and ? Not hit up the project for any other Essential Fish Habitat (EFH) species - if they did - there would be many more restrictions."
06/19/08	Email from Jim Woehr (Avian Biologist at MMS) to Rodney Cluck (MMS) there is no denying paucity of data, then says "If MMS is going to approve the project by the end of the year, can tradeoffs be made with FWS in exchange for a favorable ruling?"
06/23/08	Notes from TRC: "Vern - why this tight schedule? Since it essentially shuts out the potential for more studies...most key issue is timeline for getting Final Environmental Impact Statement (FEIS) - and so other studies cannot get done in this timeframe."
07/02/08	Governor Deval Patrick signs into law the Green Communities Act (GCA). Section 83 of the Act provides that Massachusetts electric distribution companies must solicit proposals for contracts for renewable energy two times in a five-year period. Electric distribution companies may either enter contracts voluntarily or through a competitive bidding process. The renewable energy must come from producers located in Massachusetts, State waters or adjacent federal waters (i.e. Cape Wind).
08/01/08	Email from FWS to Sally Valdes (FWS): "'The Service raised significant concerns about the Cape Wind Project in our 21 April 2008 letter to Dr. Rodney Cluck. These issues remain unresolved.' 'We believe the Cape Wind review needs to be undertaken in a much more methodical and detailed way...The short turn-around time for review of your monitoring plan will not make this possible, given that no effective techniques for post-construction monitoring exist.'"
08/21/08	Notes from TRC: "mitigation with FWS is a mess."
09/04/08	Email from FWS to MMS: "One thing that concerns me is that the time provided for our review and comment on the avian monitoring plan is very short."
10/28/08	Note from TRC – USCG radar report - talking with director tomorrow to resolve-turf war between regional office vs. headquarters office.
11/02/08	Email from MMS to FWS: "Please advise as to the next steps regarding draft

	RPM No.2 (i.e., is further discussion between FWS, MMS and CWA needed; will you remove RPM No. 2 or provide an updated version for review, etc.)."
11/10/08	Email from TRC to Cape Wind: "A delay of a day or so could cause us to miss the schedule, and then the Record of Decision (ROD) will not come out under this administration. Rodney has explained in the past that missing this administration will likely result in months of delay before the new players that will come in under the new administration will act on this project."
11/10/08	Email from TRC to Cape Wind and MMS: "...if we have to stop work for even a day, the FEIS schedule is blown and you can forget a ROD before January."
11/12/08	In an email exchange between Randall Luthi (former MMS Director) and Rodney Cluck (MMS), Luthi states, "If someone in the White house complex were to call USCG about Cape Wind, who is the best person and phone number?" Cluck's response back to Luthi, "Our USCG contact suggest RADM (Admiral) Salerno, 202-372-1001; Assistant Commandant for Safety, Security, and Stewardship. Although he is not at the White House, I am told he is a very good contact."
11/13/08	Email from TRC to Cape Wind: "Craig (with Cape Wind), some last minute issues are threatening the FEIS schedule that could result in months of delay in the ROD. Suggest you contact Rodney and ask him how things are going with finalizing the FEIS and if there are things that might delay the schedule. It has been chaotic down here at MMS office the last two days! I would delete this email."
11/17/08	Email from TRC to Cape Wind: "Also, I assume Rodney has informed you of the Migratory Bird Treaty Act (MBTA) hurdle that FWS has thrown up at the last minute. If not, give me a call or Rodney to get the low down."
11/17/08	Notes for TRC: "CW using Barclay's for financing says RPM#2 will kill the project because cannot get financing. Barclays writing a support letter for this position."
11/19/08	Email from MMS to Solicitor: "FWS, and by extension the project, is vulnerable if we don't offer adequate (sic) support for any change in the RPM."
12/01/08	Notes from TRC: "Rodney called to cancel the printing, Coast Guard study looks like nav risk could be a major not minor— affects other things if they do restrictions like fishing, recreation, etc."
12/09/08	Notes from TRC: "admirals being pushed to hold a public comment period on USCG report - Delahunt, Oberstar, Kennedy."

12/09/08	APNS sends Rear Admiral Salerno of the USCG a letter requesting that the USCG: 1) take immediate action to adhere to its previous commitments regarding public participation in the development of terms and conditions to protect navigational safety in Nantucket Sound in connection with the Cape Wind project; and 2) establish such requirements in a manner that will satisfy the requirements of section 414 of the Coast Guard and Maritime Act of 2006.
12/09/08	Representative Oberstar sends a letter to Commandant Allen of the USCG regarding the project's radar study and process for commenting on a report that is not available to review for the public.
12/10/08	The Passenger Vessel Association writes to USCG Captain Raymond Perry stating, "...believes that the Coast Guard is failing to fulfill its mandate to protect navigational safety for ferries and other existing marine operations in Nantucket Sound. Specifically, it is not complying with its mandate under Section 414 of the Coast Guard and Maritime Transportation Act of 2006 (Public Law 109-241)."
01/02/09	APNS sends a letter to the USCG expressing its grave concerns with the USCG commissioned radar study conducted by Technology Service Corporation (TSC) intended to simulate the radar interference that would result from the proposed Cape Wind project in Nantucket Sound.
01/12/09	In a letter to Senator Daniel Inouye, Edward Barrett the President of the Massachusetts Fishermen's Partnership (MFP), an organization of commercial fishermen's associations from all geographic sectors of the Massachusetts fishing industry, expresses MFP's concerns on the USCG's radar study.
01/12/09	APNS expresses concerns about the mitigation measures that have been recommended to date by the USCG and CW. Some of the measures proposed by USCG are found in the MMS draft environmental impact statement (DEIS); the others were recently presented in the October 7, 2008 Stakeholder Workshop and December 5, 2008 teleconference held by the USCG Southeastern New England Sector Command.
01/13/09	The USCG delivers the Terms and Conditions to MMS for insertion into the Cape Wind final environmental impact statement (FEIS).
01/13/09	In an email TRC states "Sounds like we have the arguments to stand behind the Major determination for operations impacts on marine birds." Elizabeth Annand (consultant) argues in favor of saying that the impact on terns is "Major" as well. She states: "There is evidence that the terns listed have unstable populations . . . there is also great uncertainty surrounding the information about tern movements in relationship to the site of the proposed turbines... ."
01/15/09	Governor Patrick emails EEA Secretary, Ian Bowles, in response to update

	from Bowles that FEIS is coming out: "Wow. Fingers crossed. Supposing it is approved, what happens next?"
01/16/09	MMS issues the CW FEIS on last day of Bush Administration.
01/20/09	President Obama is inaugurated.
01/31/09	APNS requests a meeting with Interior Deputy Secretary Hayes.
02/12/09	Senators Delahunt and Kennedy send a letter to Secretary Salazar stating that Cape Wind should not be exempt from regulations still under development.
02/19/09	Deputy Secretary Hayes denies APNS's meeting request.
02/21/09	Governor Patrick sends an email to Ian Bowles: "Secretary Salazar told me it would be helpful to have a letter to him in support of the project. Will you take care of that ASAP?"
03/03/09	Governor Patrick sends a letter to Secretary Salazar on Cape Wind.
03/06/09	Cape Wind sends a letter to DOI complaining that the FEIS incorrectly concludes that there will be a "major" impact on birds, including roseate terns.
03/21/09	APNS submits four volumes of comments on the Cape Wind FEIS.
04/22/09	President Obama and Secretary Salazar announce a framework for renewable energy development on the Outer Continental Shelf (OCS). Salazar is on an aggressive policy/media campaign to approve 10,000 MW of renewable energy before the 2012 election.
05/02/09	Salazar announces an offshore renewable initiative, calling for rapid development.
05/05/09	Senators Delahunt and Kennedy send a letter to Secretary Salazar expressing their additional concerns on the Cape Wind project.
06/09-09/09	The Obama Administration conducts public scoping on ocean policy; statements are made that Cape Wind will be exempt from marine spatial planning (MSP). Numerous parties testify on need to subject Cape Wind and offshore energy to MSP; Cape Wind argues it should be exempt.
06/01/09	President Obama issues an ocean policy directive, calls for MSP to avoid conflicts in uses. MSP policy seeks to avoid conflicting uses of ocean areas, acknowledges the important role of tribes and local governments, the need to protect historic sites, and to plan ahead for ocean uses.

07/06/09	CEQ emails DOI: "Wanted to let you know I just found out Senator Kennedy is circulating a letter to both Senate and House offices - the letter indicates that moving forward with Cape Wind would be in direct contradiction to the President's ocean memorandum. This is just a heads up."
07/08/09	Senators Kennedy and Delahunt write to Obama to ask for no action on Cape Wind until MSP in place and to ensure that Nantucket Sound is included.
08/09	Secretary Salazar makes statement in press conference that Cape Wind looks like a good project to him.
08/26/09	Senator Kennedy dies.
09/11/09	EEA staff emails EEA Secretary Bowles, stating: "Expect you will be able to move the task force and Memorandum of Understanding (MOU) proposals forward on Thursday at MMS. As far as Department of Energy (DOE) agenda items… discuss the ITC as it relates to the Cape Wind project."
11/09-12/09	The Massachusetts Historical Commission issues finding of Traditional Cultural Property (TCP) throughout Nantucket Sound, which entitles the Sound to be eligible for listing on the National Register under section 106 of National Historic Preservation Act (NHPA).
11/09/09	Governor Patrick decries TCP determination as "ridiculous."
11/12/09	Senator Kirk writes letter to President Obama regarding concerns over Cape Wind.
11/18/09	MMS sends a letter to the National Park Service (NPS) stating that in its submission to the Massachusetts Historical Commission they concluded that Nantucket Sound is not eligible for listing as a TCP or a historic property on the National Register of Historic Places because it does not meet any of the required Criteria of Eligibility (36 C.F.R. Part 60).
11/28/09	Bowles advises to announce memorandum of understanding (MOU) between Cape Wind and National Grid for power purchase agreement (PPA) on 12/02/09 at American Wind Energy Association conference. Bowles emails Governor Patrick that Cape Wind and National Grid are swapping MOU initial drafts. "I discussed with Dave Friedman Wed. evening, I expected to convene Cape Wind, NGrid and AG staff Monday in hopes of agreeing on MOU – would basically be an agreement in principle…This could fall apart at any point and it's still pretty tentative right now, but my goal is to have able to announce agreement in principle Wed. morning at your American Wind Energy Association remarks (including with no AG as a party if they balk at MOU - would make it easier if we had them, but not essential). It would be worldwide news if/when it comes together."

12/01/09	A $44 million rate hike for National Grid is approved by Massachusetts Department of Public Utility (DPU) Commissioners. That same day, National Grid and Cape Wind sign an MOU setting forth a proposed timetable for a long-term PPA under the Green Communities Act. Cape Wind and National Grid file the MOU with the DPU on December 3, 2009.
12/02/09	Governors' office emails EEA: "We got a request to keep DC informed of CW devts . . . Regarding Ngrid press release."
12/21/09	Bowles sends letter to NPS opposing TCP for Tribe.
12/21/09	Internal EEA email discusses Governor sending letter to DOE Secretary Chu to support Cape Wind loan guarantee application. Cape Wind previously submitted a loan guarantee application, but withdrew it. FOIA documents to U.S. Treasury also reveal a meeting with Cape Wind representatives about tax credit.
12/22/09	Cape Wind submits application for Section 1705 loan guarantee.
12/29/09	DPU issues an order approving a competitive solicitation for renewable energy contracts and the proposed MOU between Cape Wind, National Grid, and the Massachusetts Department of Energy Resources. Later in the DPU proceeding, it is revealed that the DPU had a huge response to the RFP from qualified, less expensive sources of renewable energy. DPU seeks to apply the "Massachusetts only provision" of GCA to preclude those competitive bids.
01/04/10	NPS determines that all of Nantucket Sound is eligible as a TCP; Salazar announces he will control process under the NHPA and push for a final decision.
01/04/10	Internal CEQ email states: "Possible announcement today or tomorrow on Cape Wind. The keeper will make announcement today that states that the Nantucket Sound should be historically preserved."
01/04/10	Internal CEQ email states: "Can you call me as soon as you know? There are some issues here."
01/13/10	Salazar convenes section 106 historic consultation meeting in D.C. He declares three goals: tribes, historic preservation, and renewable energy and declares that a decision will be made in March under NHPA. Declaring a mandatory end-point ensures limited consultation with the Tribes and sets up a decision schedule for April that is needed for the Massachusetts DPU proceeding to reach a decision in time for a final ruling on the PPA to qualify Cape Wind for the end of 2011 deadline for a Treasury 1603 tax credit.
01/28/10	Hayes sends a letter to Cape Wind President Jim Gordon inviting Gordon to

	meet the morning of Feb 3, 2010 while he is in Massachusetts (the same letter is sent to tribes and the State Historic Preservation Office).
01/31/10	APNS requests a meeting with Deputy Secretary Hayes to seek a consensus outcome.
02/01/10	DOE sends email to contractor: "cw wants to have an __ done first on their litigation situation (to see if its __ before proceeding further into due diligence and __. But I feel this one will proceed."
02/02/10	Top DOI officials visit Nantucket Sound with media on board; however, tribes are not invited as part of the historic preservation consultation process under section 106.
02/02/10	EEA staff emails Secretary Bowles with talking points for his meeting the next day with MMS/DOI. "Your MMS staff has been terrific and very responsive to our input." Please act and approve the Cape Wind project . . .", "reduction in turbines from 170 to 130." Reduction in the number of turbines had occurred years earlier. Salazar also makes this point when he approves the project, suggesting it was the result of DOI review.
02/04/10	Internal EEA email states Governor Patrick and Ian Bowles to meet with DOI officials.
02/12/10	Bowles sends a letter to Salazar/MMS stating "forthwith approve Cape Wind."
02/19/10	APNS meeting with David Hayes is denied.
02/28/10	Secretary Bowles sends Governor Patrick an email that states: "Procedural step only on pathway to final decision in April. No surprises likely. In active touch with DOI."
03/01/10	Salazar terminates section 106 process, says agreement is not possible; tribes object; matter referred to independent Advisory Council on Historic Preservation (ACHP).
03/04/10	MMS issues Environmental Assessment (EA) to supplement EIS. Timing of EA and 30-day comment period appears planned to accommodate the need for a decision in April to make the Massachusetts DPU process go forward in time to get a decision for Cape Wind to qualify for a federal 1603 tax credit. The timing of the Salazar termination of consultation on TCP is also geared to same schedule based on the time available to ACHP to complete its review.
03/22/10	ACHP holds public hearing in MA; testimony strongly opposes Cape Wind.
03/26/10	EEA sends email to Cape Wind with a letter from Bowles to Salazar to

	approve Cape Wind.
04/02/10	ACHP issues a recommendation to Salazar, which calls for project to be rejected, notes the great importance and precedence of decision, and finds that alternatives are available. This is a precedent-setting recommendation that condemned failure of entire Salazar approach to offshore wind and importance of cultural resources and the unique nature of the Sound as a TCP.
04/15/10	EEA emails Governor to propose a multi-state letter on ACHP recommendation. "Salazar is making decision soon so we need to circulate and get this signed by other governors asap."
04/15/10	The Massachusetts Federal-State Relations Office sends an email regarding the effort to generate a letter from other Governors to urge Salazar to overturn the ACHP – "Interior is making decision this month and for the letter of influence the decision making we need to get it in ASAP."
04/16/10	EEA emails Bowles that Governor sent personal letter to Salazar expressing "total support" for Cape Wind.
04/16/10	TransCanada Power Marketing Ltd. files a lawsuit in the U.S. District Court for the District of Massachusetts Central Division alleging violations of the Commerce Clause of the U.S. Constitution. Specifically, TransCanada alleges that the geographic limitation under the Green Communities Act, which only allows Massachusetts electric distribution companies to consider in-state resources for renewable energy contracts violates the Commerce Clause.
04/18-04/22/10	Massachusetts engages in a lobbying campaign for a letter from Governors of New England and Mid-Atlantic states urging the rejection of ACHP recommendation. FOIA documents reveal heavy lobbying by Massachusetts.
04/20/10	The Massachusetts Federal-State Relations Office emails the NY Times: "We're doing our best to balance the need to weigh in as soon as possible to influence the Secretary's decision with having as much support as we can; based on this balance, our EEA Secretary wants to have the letter in by mid-day tomorrow."
04/23/10	Six governors write to urge rejection of ACHP recommendation; FOIAs to states show White House involvement and a coordinated effort by Governor Patrick.
04/27/10	An email from the White House and Executive Office of the President to New Jersey shows a list of Office of Intergovernmental Affairs (IGA) contacts. "If you ever have any need for assistance in contacting the agencies of the White House, please let me know."

4/28/10	Salazar sends letter to ACHP thanking them for the comments on Cape Wind, but "I find that the balance of considerations weighs in favor of approving Cape Wind Project."
04/28/10	Salazar announces the decision to approve Cape Wind at Boston press conference with Governor Patrick. The same day, the Governor overrules the ACHP and issues another EA to bolster EIS deficiencies.
04/29/10	Email sent from Gina McCarthy, Assistant Administrator for Air Regulation at EPA, to EEA Secretary Bowles about their great leadership on the Cape Wind issue. She calls herself a grateful resident with a subject title "Yippee."
05/02/10	EEA sends an email to Maryland Attorney General regarding the multi-state governors letter stating: "Salazar shared at the press conference that the letter was one of the overriding factors he considered in his decision."
05/10/10	Massachusetts DPU begins proceeding on contracts on expedited track. Schedule would seek decision in time for Treasury 1603 tax credit.
05/10	FAA reverses its previous hazard finding and concludes that it is ok to build the Cape Wind project and then see if there is an aviation problem.
06/01/10	DOE issues a technical evaluation stating Cape Wind is eligible for a loan guarantee under both the 1703 and 1705 programs.
06/09/10	DPU issues an order enacting emergency regulations to suspend the geographic limitation on out-of-state resources for renewable energy contracts signed pursuant the Green Communities Act. This action is apparently taken because of commerce clause violation highlighted by the TransCanada lawsuit.
06/25/10	Four federal lawsuits filed against DOI for approval of the Cape Wind project.
06/29/10	Mike Barre in the office of the Director for BOEMRE (MMS's successor agency) states "It looks like we may have to go with 5 tomorrow for this - Laura Davis needs to attend this briefing and is out all day at the WH conference Thursday. David Hayes wants the lease to go out this week and this meeting needs to precede that."
07/21/10	BOEMRE employee writes an email asking, "Is there any news on CWA acceptance of the lease terms? I know folks are anxiously awaiting the signing of the first lease so . . ."
07/22/10	BOEMRE employee writes an email stating, "Next to the spill this seems to be at the top of everyone's list of interest."
08/13/10	The DPU rejects without prejudice three PPAs filed by NSTAR with other

	renewable energy projects because NSTAR failed to consider out-of-state resources as required under the DPU's emergency regulations. However, the DPU does not apply the same standard to National Grid, even though it did not consider out-of-state resources.
09/03/10	Federal lawsuit filed by the Town of Barnstable against FAA.
09/07/10	In an email, Chief of Staff, Laura Davis, states to David Hayes, the Director of BOEMRE, and the Solicitor of DOI, among others that the "Secretary is eager to hear from us as to whether the remaining issue, related to the archaeological surveys and COP timing, can be expeditiously resolved."
09/23/10	Tim Baker, an attorney in the Branch of Petroleum and Offshore Resources at DOI, states in an internal email that the COP from CW is incomplete. Specifically, he writes, "What we have from CWA is an incomplete COP. CWA will need to provide BOEMRE a number of additional items for the COP to be deemed complete. We have estimated the environmental review and COP approval might not be finished until early next year."
09/29/10	Department of Justice files a motion to dismiss the four federal lawsuits, claiming that there is no "final action" for purposes of the litigation because Salazar has complete discretion to deny the project at the lease *and* Construction and Operating Plan (COP) stage.
10/01/10	BOEMRE circulates an internal document entitled "Summary of Identified COP Deficiencies," which documents 11 pages of project deficiencies.
10/06/10	Salazar signs lease with Cape Wind President, Jim Gordon, at a wind energy conference in Atlantic City.
10/18/10	Northeast Utilities and NSTAR announce proposed merger.
10/20/10	Governor Patrick announces move of project staging area from Quonset, RI, to New Bedford, MA to claim local job creation days before gubernatorial election.
10/29/10	Cape Wind submits COP application with BOEMRE.
11/2010	Salazar launches "Smart from the Start" wind energy initiative for the Atlantic OCS. It is designed to facilitate siting and leasing for commercial wind projects on the OCS and to encourage their responsible development.
11/01/10	Northeast Utilities and NSTAR sign merger agreement.
11/02/10	Governor Patrick is reelected.

11/04/10	APNS files suit against the FAA for its "no hazard" determination.
11/19/10	Cape Wind announces it cannot construct for about one year and will miss Treasury 1603 tax credit cash payment set to expire under federal law. Timing appears to be based on lame duck session and push to extend the expiration of the 1603 tax credit.
11/23/10	Internal DOE email states "We've settled on a minimum SNI (sponsor net investment) of __. That's a minimum not a target. Most projects have a higher SNI, especially riskier projects . . . Its relevant that GE is also the equipment supplier . . . We got comfortable with __ because of the extremely strong guarantees that GE was providing under its very long ___ contract __wind turbine availability for __ years."
11/23/10	DPU approves PPA-1 (National Grid) and rejects PPA-2 (no buyer).
11/23/10	Salazar makes major announcement on offshore wind program, uses Cape Wind as a prime example.
11/24/10	Northeast Utilities and NSTAR file for Massachusetts DPU approval of merger.
12/01/10	DOE sends an email to CW: "My Senior Investment Officer is awaiting a response from a senior credit group member, after which he will make his determination on the status of your part II application. I am pushing from the sidelines for expediency, and expect a response in the next few days."
12/01/10	BOEMRE circulates an internal document entitled "COP Review for Cape Wind Associates (CWA) OAEP Marine Biologist Review, December 2010," which documents numerous deficiencies of the project in complying with federal laws.
12/02/10	Internal DOE email states: "in spite of his relatively small ___ would Jim Gordon step up in a material way if the project ___? If so, why do we think so? Would he be able to spend __ dollars if need be?"
12/10/10	NSTAR resists pressure to purchase power from Cape Wind due to high cost.
12/17/10	Tax break bill passes House and Senate with extension for the 1603 Treasury grant program.
12/17/10	DOE emails CW: "Any potential issues or concerns would be raised by these groups at the meeting. So that together we can craft a package that has the best chance of making it through our credit process, and makes economical sense for Cape Wind."

12/21/10	Media reports of Governor's office pressure on NSTAR to buy PPA-2 as a condition for approval of merger with Northeast Utilities.
12/23/10	NSTAR executes long-term PPAs with onshore wind projects pursuant to the new RFP under the Green Communities Act, the first such solicitation which permitted bids from out-of-state resources.
12/30/10	NMFS issues its revised biological opinion under Endangered Species Act – dismisses impact on whales; uses Quonset, RI, as staging area despite Governor Patrick and Cape Wind announcement of New Bedford during campaign season. First of three closely related federal decisions to push Cape Wind forward.
01/01/11	DOE Loan Guarantee application for CW states: "Under a 100% loan guarantee provided by the DOE…The guaranteed obligation will be $197 million. Assuming that CW can enter into another PPA, __% of the guaranteed obligation will be available at financial close to fund construction of __ turbines season A. The remaining guaranteed obligation will be made available to fund construction of the remaining turbines - season b- subject to additional PPA agreements, DOE review... ." The application makes mention of state and federal lawsuits against CW.
01/05/11	Massachusetts DPU holds public hearing on the NSTAR merger. Concerns are raised that the DPU will make the merger contingent on NSTAR agreeing to buy the CW PPA-2.
01/05/11	Army Corps of Engineers issues its permit to Cape Wind under Section 10 and Section 404.
01/07/11	EPA issues last permit for Cape Wind under Clean Air Act (CAA). Similar to the project's biological opinion issued by NMFS and the Corps permit, the CAA permit notes that Quonset, not New Bedford is the staging area for project.
01/07/11	EPA Region 1 CAA staff informs Assistant Administrator McCarthy of the approval of the Cape Wind permit with the statement "Good News!!!" This message confirms the involvement of Ms. McCarthy in the decision-making on the application, even though she had demonstrated her personal bias for the project in an email to Bowles on April 29, 2010. This email also indicates the bias of EPA Region 1.
01/11/11	Meeting notes from DOE on what to discuss with former Executive Director of the Loan Guarantee Program, Jonathan Silver, states: "Issues needing quick answers to enable the project to move into due diligence - NEPA___ DOE is not currently a coop agency for EIS (sponsors appeared surprised by this) and would have to open doc to public review thus creating an opp for new

	Sponsors to decide if they want to take this risk. Potential project issues identified by meeting (Note the sponsors attitude regarding the following was ____). Sponsors want DOE to ___. Deal structure - sponsors insist that they will be __."
01/11/11	DOE sends letter to Cape Wind: "It was a pleasure meeting with you, Jim and Gary to discuss the status of the project. Implementation of Cape Wind would certainly be a milestone in the wind industry and your commitment to the project is impressive."
01/19/11	CW lawyer writes to BOEMRE Director Bromwich to follow up on Friday conversation... "Gordon has learned from BOEMRE Project Manager Poojan Tripathi that if the agency is required to do an EA, a COP decision is not likely before May or June. Such a delayed COP decision effectively means that the project will not be built.... As we have discussed, very strong legal paths lie open to avoid this result. We again urge you to choose one of them. ... critical deadlines for DOE loan guarantee and other financing vehicles cannot be met f such a schedule is followed. This is the reason Cape Wind planned around a COP decision very early this year. Moreover, Cape Wind would be unable to move the pending litigation past the preliminary injunction phase, which is critical before construction can begin." Bromwich forwards the email to Deputy Secretary David Hayes and Chief of Staff Laura Davis.
01/21/11	Internal DOE email states: "We are trying to move forward with Cape Wind as expeditiously as possible . . ."
01/27/11	Email from DOE to Cape Wind states, "I want to assure you that the LGP remains very excited at the prospect of working with you to implement the Cape Wind Project and continue to hope that we can structure a deal that is satisfactory for both parties."
01/31/11	Internal DOE email states: "Attached is the project description for the Cape Wind project. If possible, please handle on a priority basis..."
02/11/11	Cape Wind files a revised COP backtracking on New Bedford issue. The revised schedule would make it possible for CW to be under construction in time to obtain the extended 1603 grant and to DOE loan guarantee under section 1705 before "sunset" of the program on September 30, 2011.
02/17/11	Senator Kerry and the Massachusetts legislative delegation send letters to Secretary Chu of DOE and Director Lew of OMB urging that they expeditiously approve Cape Wind's Loan Guarantee application with the DOE so the project can begin construction. To do so would require moving CW ahead of many other loan guarantee requests previously on file.
02/22/11	BOEMRE publishes the COP on its website and sets a two-week comment

	period for 1,000-page document. Says it will publish an EA, but does not commit to public review of the EA.
02/24/11	New Bedford Port Director sends an email to other New Bedford officials relating to a telephone conversation with CW in which CW stated although the COP would refer to Quonset, the plan was still to use New Bedford. The email explains that the reason for doing so is to avoid more NEPA review.
03/02/11	Parties to Cape Wind DPU proceeding file motion to reopen record to submit the information from the NSTAR PPA proceeding which confirm the abundance of lower-cost renewable energy.
03/14/11	APNS and others file notice of intent to sue DOE on loan guarantee.
03/18/11	Wright Frank, a BOEMRE employee, states in an internal email that with respect to the COP, "A policy decision has been made not to require Cape wind to add a section dedicated to Mitigation and Monitoring. However, we are well within our rights to ask Cape Wind to elaborate on how they will implement various requirements. My understanding is that they just parroted back the stipulations in some cases... ."
03/22/11	In an internal email to DOI Solicitor, Hilary Tomkins, it is stated that "... the Secretary was hoping to have BOEMRE approve Cape Wind's Construction and Operations Plan by April 6 (to coincide with the President's visit to Boston), but BOEMR has told the Deputy Secretary that it cannot be done by then."
04/18/11	The COP for Cape Wind is approved. However, no public comment allowed on the EA.
04/19/11	Salazar appears at another Boston press conference with Patrick to proclaim approval of COP.
05/09/11	The Massachusetts DPU issues an order denying a motion filed by APNS to reopen the CW PPA proceeding to admit information from the NSTAR PPA proceeding, which confirms the availability of other renewable energy resources that are lower-cost than CW.
05/11/11	The COP for Cape Wind is released on 02/22/1, with public comments due by 03/09/11. Of 156 comments received, only five comments (2 filed by individuals and three filed by organizations) agreed with the COP and the remaining comments (filed by 19 organizations and 132 individuals) found fault with the COP.
05/11/11	DOE puts Cape Wind's Section 1705 loan guarantee application for nearly $2 million on hold.

05/13/11	Cape Wind writes letter to Salazar, "My greatest hope now is that your leadership along with Secretary Chu, will find a way for the DOE to be able to make the requested loan guarantee to Cape Wind."
05/13/11	Internal email to Jonathan Silver of DOE states: "Are you ok with __ getting these Cape Wind specific talking points for his Markey call, in addition to the standard talking points?"
05/13/11	Internal DOE email is sent regarding Markey request for Call with ___: "Also looping Missy as the Governor's Office is calling her to talk about this, and Brandon who is coordinating the response to Salazar."
05/16/11	Email between EEA and DOE states: "It was great seeing you a couple of weeks ago… We've got a major stumbling point that perhaps you can advise on: On Friday, DOE announced that they were placing the Loan Guarantee for the Cape Wind project on hold, thereby putting in jeopardy the viability of the nation's first offshore wind project, and the only offshore wind project that can be built during the President's first term _____". . . any chance you could offer some guidance on how we can fix this problem?" Response from DOE to EEA suggests contacting Jonathan Silver and further states: "Jonathan and I have traded messages on your email."
05/19/11	Governor Patrick speaks with Jonathan Silver and others on a conference call about Cape Wind.
05/26/11	Email from DOE to Jonathan Silver states "Gov Patrick just called to talk to __ about Cape Wind… I said ___was busy currently, but that we would get back to him as soon as possible. He said he was available all day today or next Tuesday."
05/26/11	String of internal DOE emails state: "Patrick left his cell phone number.;" "I don't think Silver should be calling. Silver already spoke to Gov Patrick a week or so ago after ___ called. Gov. Patrick called back personally for __.;" "We're happy to schedule this call unless ____.;" "Ah ha. I didn't realize the Gov call happened last week. In that case __ should return the call. Thanks and sorry for the confusion."
05/27/11	Governor Patrick speaks directly with Secretary Chu.
05/27/11	Internal DOE email sent entitled "Cape Wind teleconference held May 19, 2011." "This memorandum summarizes the discussion during the teleconference held on May 19, 2011 between the Loan Programs Office of the Dept. of Energy and the MA Governor Deval Patrick, certain members of the Governor staff and certain other MA state officials. The call related to the hold letter received by Cape Wind from DOE on May 20, 2011."

06/07/11	BOEMRE publishes results of Massachusetts request for interest (RFI) in Wind Energy Zones. It shows strong interest from 10 developers in sites within the RFI zone, well outside of Nantucket Sound. CW's parent company, EMI, applies for large tracts, even though it has maintained throughout the CW permitting process that no alternative sites to Nantucket Sound are available.
06/13/11	DOE internal email states: "Matt- This is the most recent information I could find in our files. It's my understanding that Amelia <DOE congressional affairs> may also have a letter or some form of information related to the call that ___ will be having with Gov Patrick tomorrow?"
06/13/11	Internal DOE email states: "Phone call between __ and Governor Patrick tomorrow on Cape Wind."
6/17/11	Massachusetts Governor Deval Patrick writes letter to President Obama looking for support of the Cape Wind project in light of the DOE loan program.
06/21/11	Siemens suggests in a media call that it is willing to finance Cape Wind as DOE postpones backing, implying that DOE loan is not needed.
06/27/11	Internal DOE email sent: "Subject: White House mtg. Any feedback on Cape Wind discussion? Very little discussion of it as I understand."
06/27/11	Email sent from Heather Zichal to DOE: "Attached is the draft response letter to Gov Patrick on Cape Wind. I will sort out who this will come from -- likely going to be delay or __. Please send any edits to Roque by 9am tomorrow."
07/06/11	Internal DOE email states: "Regarding the Siemen statement - can you just clarify would it be appropriate/wise to discuss their financial support of the project given the hold status of the project under 1705?" DOE response email states that it is "My opinion is that if Siemens wants to volunteer info that is fine but there is no need to inquire about what Siemens intentions are."
10/18/11	DOE sends a letter to Governor Patrick discussing Cape Wind's loan guarantee.
10/28/11	The U. S. Court of Appeals revokes a previous "no hazard" determination by the FAA and finds that the FAA failed to consider the very real dangers and risks to the operations and safety of the 400,000 flights that transit Nantucket Sound each year.
12/29/11	USCG undertakes a large scale study of boat traffic up and down the Atlantic coast in response to DOI's announcement of "wind energy areas."

01/02/12	ISO New England makes a filing at the Federal Energy Regulatory Commission requesting qualification in the Forward Capacity Market for the 2015-2016 Capacity Commitment Period. In this filing, ISO New England states that neither the required transmission upgrades for Cape Wind, nor the project itself will be completed in time for the 2015-2016 period.
02/09/12	The FAA puts out a Public Notice concerning Cape Wind's Aeronautical Study No. 2011-WTE-322-OE. The previous study resulted in a "no hazard" determination" on 5/17/10, which was later remanded by D.C. Circuit Court on 10/28/11.
02/15/12	NStar agrees to purchase 27.5% of Cape Wind as part of the merger with Northeast Utilities. The Massachusetts DPU agrees to review the merger with a final decision by 04/06/12.
04/05/12	The merger between Northeast Utilities and NStar is finalized by the DPU.
05/22/12	APNS sends a letter to the FAA expressing concerns based on information obtained from the FAA in response to FOIA requests. In its letter, APNS states that "The FAA has consistently ignored the warnings of the local aviation community, including airplane pilots, regional airports, and airline owners that the proposed Cape Wind project would pose unacceptable risks to the safety of local pilots and passengers. The documents obtained make clear that the FAA has made decisions based on political factors."
06/15/12	An article by the Associated Press reveals that FAA employees felt political pressure to approve Cape Wind and did so amid internal disagreement over the best way to stop the turbines from interfering with radar and compromising airplane safety.
06/21/12	Boston Herald reports that "The congressman who led the Capitol Hill probe into the collapse of taxpayer-backed Solyndra is calling for an investigation of Cape Wind amid accusations federal air-safety officials caved under political pressure- saying both project bear a mark of an overbearing White House pushing green power at all costs."
07/17/12	Articles from the AP report that two powerful Congressmen question FAA over Cape Wind. The articles state: "In a letter to FAA's Acting Director, U.S. Reps. Darrell Issa, R-CA and John Mica, R-FL, referred to internal FAA documents, obtained by an opponent of the Cape Wind project, in which the FAA employees repeatedly refer to the high profile politics of [Cape Wind]....The Congressmen asked the FAA to provide various documents by July 31, including any communication about Cape Wind over the last 3 ½ years between the agency, Cape Wind, federal officials and the White House."

08/8/12	The House Committee on Oversight and Government Reform writes a letter to President Obama regarding DOE's 1705 Loan Guarantee Program and questions risks that were taken in how the funds were distributed. In the letter, the Committee states: "Documents show that Secretary Chu made you aware of objections to 1705 Loan Guarantee Program loans from senior economic advisors and career staff."
08/09/12	The Boston Herald publishes an article entitled, *Probe: Obama pushed $2B loan for Cape Wind.* The article states: "President Obama was personally briefed on Cape Wind's request to secure a nearly $2billion federal loan, with one official urging the DOE to 'get it done', because it was 'important' to Obama, the newly released e-mails show." "The White House has denied exerting any influence on the controversial loan program."
08/15/12	FAA releases "no hazard" determination again after many months of review.
08/23/12	APNS files a second appeal of the politically driven FAA "no hazard" ruling on Cape Wind.
10/10/12	Public Employees for Environmental Responsibility (PEER) and other parties file their brief in the federal litigation in U.S. District Court, D.C. against CW for violations of the Endangered Species Act and Migratory Bird Treaty Act.
11/06/12	APNS writes to Secretary of Energy "... to express our concerns that Cape Wind may be under consideration for Section 1703 funds under the Loan Guarantee Program in spite of the Project's many serious deficiencies and its high risk to the public. We also are concerned about reports that Cape Wind is seeking White House intervention in the DOE loan program and that additional funds may be appropriated specifically for Cape Wind. These reports appear to be supported by documents from DOE as well as an email regarding a DOE presentation to the President. A June 24, 2011, email describes an economic briefing with the President on the loan guarantee program. 'The WH was very direct about what should be included in the slides so we don't have much flexibility.'"
11/16/2012	DOE issues a notice adopting DOI's FEIS for CW. The notice states: "DOE to Adopt MMS FEIS for the Cape Wind Project in Nantucket Sound, offshore of Massachusetts. Pursuant to Section 1703 of the Energy Policy Act of 2005, the US Department of Energy (DOE) is considering a loan Guarantee ...As part of NEPA compliance process DOE intends to adopt the FEIS for Cape Wind...DOE will re-circulate the FEIS for 30 days following publication of the notice in the Federal Register."

12/31/2012	A notice in the Federal Register is published to notify the public of DOE's adoption of DOI's FEIS for CW's loan guarantee application. A public review period is initiated, which is scheduled to close in 30 days, or on January 29, 2013.
01/16/13	APNS submits letter to reiterate its request for a meeting with DOE, making this the Alliance's third request to meet with DOE. "As indicated in the Alliance's previous letters, dated November 6, 2012 and December 19, 2012, the Alliance is seeking to meet with the LPO to ensure it has sufficient information to fulfill its due diligence responsibility under the Loan Guarantee Program before risking taxpayer dollars to assist the Cape Wind project. As evidenced by your office's rejection of the Alliance's prior two meeting requests, DOE has indicated that it is not committed to pursuing the necessary due diligence for Cape Wind's loan guarantee application. As iterated in the Alliance's prior requests, the Alliance does not seek to meet with DOE regarding the application itself or any proprietary information disclosed within the application."
01/22/13	APNS submits a FOIA request to BOEM regarding Cape Wind's Avian and Bat Monitoring Plan. Records are partially released showing that peer reviewers raised significant concerns about this Plan for the project.
01/23/13	APNS sends a letter to DOE regarding regulatory violations in how it has adopted the CW FEIS and noticed this action. APNS asks that DOE correct these deficiencies and extend the public review period for adoption of the CW FEIS.
01/29/13	APNS sends DOE a letter in response to the public review period for adoption of DOI's FEIS. APNS highlights a large amount of new information that has surfaced since the issuance of the FEIS. APNS further notes in its letter that DOE is under an obligation under NEPA to consider this new information and cannot merely adopt the old FEIS, which does not consider any of the new information.
01/29/13	United South and Eastern Tribes (USET) submits comments to DOE regarding the flawed NEPA process of DOE adopting the Cape Wind FEIS and specifically the consultation process with the Tribes.
01/29/13	National Trust for Historic Preservation submits comments on the DOE adoption of the Cape Wind FEIS. The Trust's comments state: "...it is exceedingly unfortunate that, as currently sited, the Cape Wind project will have severe negative impacts on significant cultural and historic resources. These negative impacts will be the direct result of DOI's failure to meet its legal obligations under the NHPA and NEPA. The DOE cannot rely on DOI's inadequate reviews to satisfy its legal obligations under NHPA and NEPA."

02/14/13	According to an AP story in the Cape Cod Times, Cape Wind expresses interest in a wind-development area 27 miles off the Virginia coast.
02/20/13	Cape Wind announces that they have selected the Bank of Tokyo-Mitsubishi for securing debt for the project in a Cape Cod Times article "Cape Wind financing moves forward." The bank, which is based in Japan, is expected to coordinate $1.8B to $2B in debt financing for the project, according to *Power Intelligence*, a financial publication specializing in the energy industry.
02/28/13	The Committee on Science, Space, and Technology follows-up on a letter sent to DOE on January 25, 2013 in which is demanded information from DOE regarding CW's pending loan guarantee. The letter states that DOE missed the initial deadline to respond to the Committee, stating "Today's letter notes that DOE missed it initial deadline and demands the agency provide the requested documents by March 8, 2013."
03/11/13	Acting Director for the DOE Loan Guarantee Program Office, Mr. David Frantz, makes a presentation on the status of the loan guarantee program. His presentation explicitly states that part of DOE's 2013 loan guarantee program Work Plan is to issue at least one loan guarantee to an innovative renewables project and cites to the Cape Wind Project.
03/11/13	The AP reports that the deal with Cape Wind and Mass Tank is terminated, thus significantly reducing the number of local jobs Cape Wind claims to create.
03/11/13	APNS submits a letter to DOE objecting to the issuance of a loan guarantee for the CW project. In this letter, APNS highlights why the CW project fails to meet the standards for a loan guarantee under current law, why the CW project is a financially risky investment for DOE, why the project is likely to fail and additional new information that has come to light since issuance of DOI's FEIS that must be considered by DOE.
04/05/13	The Massachusetts delegation sends a letter to Secretary Chu of DOE to approve a massive loan guarantee for Cape Wind.
04/16/13	The Science, Space and Technology Committee's Subcommittees on Oversight and Energy hold a joint hearing on the Government Accountability Office's report on overlapping federal subsidies for the wind industry.
04/22/13	APNS submits a letter to DOE with new information that has been revealed about the CW project that must be considered by DOE. The letter specifically includes new information on critical geophysical and geotechnical surveys ffor the project that were never conducted and significantly increase the chance of cost overruns or ultimate project failure. In this letter, APNS further reminds DOE of its responsibility under NEPA to consider all new information

	submitted during the review period because the review period for the FEIS does not officially close until a ROD is issued on the proposed action.

ATTACHMENT B: MEMO TO MATTHEW MCMILLEN AND TODD STRIBLEY, DOE LOAN PROGRAMS OFFICE, FROM ASSOCIATED INDUSTRIES OF MASSACHUSETTS, APRIL 24, 2013

ATTACHMENT B

Associated Industries of Massachusetts
One Beacon Street, 16th Floor
Boston, MA 02108
617.262.1180 | www.aimnet.org

ORIGINAL BY EMAIL

April 24, 2013

Mr. Matthew McMillen
Director, Environmental Compliance
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington D.C. 20585
matthew.mcmillen@hq.doe.gov

Mr. Todd Stribley
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington, DC 20585
todd.stribley@hq.doe.gov

Re: Request for Comments - Department of Energy's adoption of the Final Environmental Impact Statement for the Cape Wind Project issued on January 1, 2009 by the Minerals Management Service of the U.S. Department of the Interior, "*EIS No. 20120401, Final EIS, DOE, MA,* Adoption" 78 Fed. Reg. 9388 (Feb. 8, 2013)

Dear Messrs. McMillen and Stribley:

Associated Industries of Massachusetts (AIM) is pleased to submit these comments for the DOE Loan Application referenced above.

AIM is the state's largest nonprofit, nonpartisan association of Massachusetts employers. AIM's mission is to promote the well-being of its thousands of members and their employees and

the prosperity of the Commonwealth of Massachusetts by improving the economic climate, proactively advocating fair and equitable public policy, and providing relevant, reliable information and excellent services.

AIM would like to go on record opposing a Department of Energy (DOE) loan guarantee for Cape Wind because such a loan guarantee is not in the best interests of taxpayers, ratepayers, or the environment, and is not consistent with the goals of the DOE Loan Program.

There is no evidence submitted on the record in any of the proceedings related to this project which indicate that construction of Cape Wind will be jeopardized if it does not receive the DOE loan guarantee. Therefore, if DOE provides a guarantee it would be committing resources to this project unnecessarily and taking resources away from projects that really need such support.

BACKGROUND

AIM has been involved with the Cape Wind proposal for several years, beginning in May 2010, when National Grid (NGRID), the largest utility in Massachusetts, filed a power purchase agreement with the Massachusetts Department of Public Utilities (D.P.U.) for 50% of the full output of Cape Wind.[1] This was the first time Cape Wind had ever disclosed the expected price for the power from the project. After a series of hearings and briefings the power purchase agreement was approved by the Massachusetts Department of Public Utilities on November 22, 2010.

Similarly, on March 30, 2012, NSTAR Electric Company (NSTAR), the second largest utility in Massachusetts, filed their power purchase agreement with the Department for an additional 27.5% of the full output of Cape Wind.[2] This power purchase agreement was approved essentially as submitted on November 26, 2012, bringing the total amount of the Cape Wind project output committed to guaranteed long-term contracts to 77.5% of the total output at full build.

In both cases, the prices and terms were for all practical purposes identical – a 15-year contract beginning at a price of nearly 20 cents per kWh (including utility remuneration or commission), with higher prices guaranteed in the event the federal production tax credit (PTC) and/or investment tax credit (ITC) is not available, and with further higher prices guaranteed if a smaller project is built than originally planned. Finally, on top of all these guaranteed prices is an additional guaranteed 3.5% increase in the price every year regardless of inflation or the price of non-Cape Wind power.[3]

---

[1] See DPU-10-54 - Power Purchase Agreement between National Grid and Cape Wind Associates, LLC, May 10, 2010

[2] See DPU-12-30 - Petition of NSTAR Electric Company for Approval of a Proposed Long-Term Contract for Renewable Energy with Cape Wind Associates, LLC Pursuant to St. 2008, c. 169, § 83

[3] It should be pointed out that of all the other power purchase agreements signed by other utilities under the same section of the law which governed the Cape Wind agreements, Cape Wind is the only project to have pricing

COMMENTS

Throughout the adjudicatory processes at the Department of Public Utilities, AIM opposed the power purchase agreements. It did so not because of any bias against renewable power (in fact, AIM supported several other long-term contracts during the same period of time - See DPU 11-5, 11-6 and 11-7 (2011)), but rather because of reasons unique to the Cape Wind project. It should be noted that AIM has *never* opposed Cape Wind because of its location and has never commented in any other proceeding related to a federal or state environmental permit.

We believe it would be helpful to reiterate the reasons for AIM's opposition, which stem from the ratepayer's perspective and impacts, for purposes of assisting in your review of the Cape Wind loan guarantee application.

1. The Loan Guarantee is Not Necessary to Finance Cape Wind.

The two power purchase agreements negotiated between Cape Wind by NSTAR and NGRID represent the most expensive above-market contracts ever negotiated for renewable power in Massachusetts, including other wind energy. As stated above, there is not only the high initial cost, but multiple increases based on contingencies, assuring that Cape Wind will be made whole no matter what happens as long as it produces power. While proponents often cite the initial cost of power as acceptable, they overlooked the fact that it is guaranteed the price of Cape Wind will increase exponentially and very quickly, with the price doubling from the initial price near the end of the contract. No other long-term renewable contract negotiated by the utilities has these favorable terms.

Clearly, Cape Wind does not need this guarantee. In fact, all the price negotiations occurred without the loan guarantee as a possibility, indicating that the risk premium to investors was already built into power purchase price negotiated. Dennis Duffy, Cape Wind's Vice President of Regulatory Affairs admitted as much in pre-filed testimony pertaining to the NSTAR-Cape Wind power purchase agreement:

> Based on our conversations with the financing community, Cape Wind is confident that the PPAs with National Grid and NSTAR will be sufficient to finance the Project, while Cape Wind continues to pursue sales of the remaining output. Prefiled Direct Testimony of Dennis J. Duffy D.P.U. 12-30, Exhibit CW-DJD-1, Page 16, lines 12-15, March 30, 2012

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contingencies related to yearly guaranteed escalation clauses, PTC or ITC availability or project size. All other projects are fixed flat priced over the term of the contract period. See DPU 11-5, 11-6 and 11-7 (2011)

This was repeated during sworn cross examination as part of the hearing process:

> Q. In the National Grid PPA [referring to the earlier Cape Wind/NGRID PPA], was it stated that 77.5 percent of an agreement to purchase Cape Wind would be enough to get financing?
>
> [Duffy] I don't believe it's stated in the PPA, and I don't believe Mr. Daly [of NSTAR] said that, *although in my testimony we've made it very clear in this case that that would be sufficient to finance the project.*
>
> Cross examination of Dennis Duffy, D.P.U. – 12-30, Page 146, lines 11-18. August 6, 2012. Emphasis Added

Given these statements, what has changed since August of 2012 when Cape Wind promised they would not need a loan guarantee to secure financing? Perhaps a realization that the project is riskier than the proponents have declared or simply no one wants to invest in it.

In addition, if Cape Wind is experiencing financial difficulties there is no obligation for them under any PPA to build the full project. It is in fact more advantageous for the developers not to build the entire project. With the NSTAR and NGRID contracts, Cape Wind now has committed power purchase agreements for 77.5% of the total output. However, the contracts are for a stated amount of power, not a stated percentage. For instance, if only 77.5% of the original project is built (say 100 windmills), under the terms of both power purchase agreements, the utilities will be obligated to purchase ALL of the output, essentially giving Cape Wind a sellout. Again, this was confirmed by Mr. Duffy in sworn cross examination.

> Q. If a smaller Cape Wind project was built, say 77.5 percent of the original size, essentially you would have sold 100 percent of the output through bilateral contracts; is that correct?
>
> [Duffy] Yes, if the 77 percent number you're referencing is the originally proposed 130, and the two PPAs that have come before the Department in combination come up to 77 percent, I agree, yes.
>
> Cross examination of Dennis Duffy, D.P.U. – 12-30, Page 148, lines 3-10, August 6, 2012.

In addition, if a smaller project is built, the cost per kilowatt-hour is increased to account for the higher costs.

> Q. And under the NGRID contract and also the NSTAR contract, it is stated that if you build less [turbines], the price will be adjusted accordingly?
>
> [Duffy] Within parameters; that's correct.

Cross examination of Dennis Duffy, D.P.U. – 12-30, Page 145, lines 19-22, August 6, 2012.

In the final analysis, Cape Wind is looking for a loan guarantee they do not need for a larger project than they need to build. Cape Wind could easily reduce the price of the project by the equivalent amount of the loan guarantee and just build a smaller, more efficient project.

2. A DOE Loan Guarantee will not Reduce Prices for Ratepayers Already Burdened by the High Price of Cape Wind Power.

The cost to ratepayers for this power purchase agreements are enormous, averaging almost 200 million dollars per year in above market cost. With Massachusetts having near the highest electricity prices in the country, any additional costs would be borne by a region of the country that can ill afford any increases. Additionally it should be pointed out that the cost of Cape Wind is far higher than other renewable power, nearly three times higher than other wind energy assets. In essence, multiple times more renewable energy could be purchased for the same money.

There is no discernible benefit to the ratepayer if taxpayer dollars are committed to the project – *"the PPA does not call for any adjustment whatsoever if Cape Wind is not able to secure a federal loan guarantee from the United States Department of Energy ("USDOE")."* Prefiled Direct Testimony of Dennis J. Duffy, D.P.U. 12-30, Exhibit CW-DJD-1, Page 12, lines 9-11, March 30, 2012. Emphasis Added

3. The DOE Loan Guarantee Will Not Result in Additional Investments in Massachusetts, New England, or the United States.

Surprisingly, despite the billions in ratepayer money that will be committed to this project, there is absolutely no guarantee that any of the money will be used to purchase products from suppliers in Massachusetts, New England, or even the United States. Cape Wind has already cancelled an agreement with a Massachusetts business (See January 28, 2013 letter from Mass Tank Sales Corp, Middleboro, MA, Carl C. Horstmann, President, to Mr. Todd Stribley, U.S. Department of Energy). While there may be some construction jobs related to the project (although there is no guarantee that Massachusetts businesses will be awarded the contracts), dollar for dollar these jobs will come at a high price in reduced employment in other areas of the state - primarily from companies adjusting to the most significant rate increase in recent memory, perhaps ever.[4]

Again, in sworn cross examination of Mr. Duffy, he relieves us of any doubt as to Cape Wind's real intentions:

[4] While the amount of power attributed to the Cape Wind PPA is comparatively small - (3.5% of total load in NGRID territory and 1.9% in NSTAR territory), the huge prices will result in energy price increases of 10% or more in an average customers distribution charge, absent other increases.

Q. When Cape Wind sources out their parts for their project, is there any requirement anywhere in the PPA that you would need to purchase a certain amount of these parts in Massachusetts?

[Duffy] I don't recall. Not that I recall.

Q. Is there a certain amount that is specified that you would have to buy in the United States?

[Duffy] I don't recall any such provision.

Q. So essentially you could source the building of the parts for Cape Wind anywhere in the world?

[Duffy] Well, without conceding whether that hypothetical is practical or realistic, I'm not aware of a provision whereby such an approach would be a violation of the terms of these particular contracts.

Cross examination of Dennis Duffy, DPU 12-30 - NSTAR Electric Company - Vol. 2, page 163, lines 6-21, August 6, 2012

4. The DOE Loan Guarantee Will Not Reduce the Use of Foreign Oil or Coal and Will Not Result in Significant Reductions of Pollutants, Including Carbon Dioxide.

Throughout the negotiations and adjudicatory hearings for Cape Wind the developers have promised that Cape Wind will bring significant reductions in pollutant levels in New England, particularly in greenhouse gases. However, while this may have been true when the project was first proposed, it is no longer the case and the proponent has not updated its analysis, something that AIM has been calling for repeatedly.

The New England Electric Grid is served by several sources of energy – natural gas, nuclear, renewable power, hydro[5], and coal. On any given average day in New England, the fuel mix for electric generation is nearly 50% non-carbon emitting (nuclear, renewable and hydro), with the vast majority of the rest (often over 50%) being natural gas, the cleanest of fossil fuels. Only a tiny portion of electricity is generated by coal, generally under 4% and almost none is produced using oil. Therefore the claim that foreign oil or coal use will be reduced if Cape Wind is helped by the DOE loan guarantee is simply incorrect. While some of the natural gas does come from foreign sources though the use of liquefied product, even that amount will be reduced over the next several years as additional pipeline capacity is built to take advantage of US natural gas deposits in Pennsylvania and elsewhere.

[5] Large scale hydro, such as that from Hydro Quebec and other renewables built prior to implementation of recent laws are not considered "renewable" under Massachusetts law and therefore will be listed separately for consistency. AIM prefers to use the term "non-carbon emitting" but for consistency the Massachusetts legal definitions will be used.

In fact, one of the coal plants in Massachusetts – Salem Harbor - will be shutting down next year and Brayton Point, the largest plant in New England that uses coal, has just been sold and faces an uncertain future. Otherwise only small capacity coal plants remain in New England and none will be built anytime in the future. Therefore, any "emission reductions" that Cape Wind claims should be taken with a grain of salt when almost 50% of the electric grid is served by non-carbon emitting sources already, with the remaining served by the lowest carbon emitters available. New England's generation profile is already one of the cleanest in the country.

In addition to the project not reducing the amount of pollutants previously claimed, it is even unclear if Cape Wind will reduce any pollutants at all worldwide. While a wind turbine does not produce pollution during it normal use, this is a very limited and outdated analysis – many sustainability experts are now using life cycle analysis to make sure that emission reductions here in the US do not result in higher emissions is undeveloped countries as a result of mining and processing materials used to construct renewable power generation equipment. In fact, Massachusetts recently instituted stringent regulations concerning the burning of biomass for energy because of a life-cycle analysis which showed the overall environmental impact of such a project to be negative – surprising everyone.

Oddly, for such a large project like Cape Wind, there has never been a life cycle analysis performed. This is especially crucial as Cape Wind will use an enormous amount of steel and other materials, including rare earth elements largely mined unregulated in China and as pointed out earlier in these comments there are no restrictions for where Cape Wind can source materials. As a result, Cape Wind could easily source materials from environmentally unsustainable sources which could have a demonstrably worse impact on the environment than the small amount of emissions it will displace. We would urge the DOE in considering the Cape Wind application for a loan guarantee to insist on such a life-cycle analysis. We all may be very surprised with the answer.

The DOE should not be party to such sleight of hand. If Cape Wind is good for the environment, they should prove it, given the amount of promises made and money spent, or the DOE should demand that Cape Wind purchase from only the most sustainable sources. It would be a tragedy for a project claiming to be green to leverage a taxpayer guarantee to harm the environment outside the US.

5. Cape Wind Will Not Foster Innovation, Lower Costs, or Result in More Offshore Wind Projects

The proponents of the project often point out that the real goal of building Cape Wind is to establish an off-shore wind industry in the United States. If that is the case, then Cape Wind is simply not the project to support.

Even if Cape Wind gets built and performs as promised, the added cost to ratepayers will be so high – on the order of 150-200 million dollars per year on average - that that cost alone will be upsetting to ratepayers. It represents nearly 10% or even more increase in distribution charges,

depending on service territory.[6] This will cost tens of thousands of dollars in electricity increases per year for a number of companies already struggling under the high cost of power here. It is inconceivable that another power purchase contract will be made with Massachusetts utilities that have the same or similar cost structures to Cape Wind. In fact, recent legislation would make non-competitively bid deals like the one Cape Wind did with NGRID and NSTAR much more difficult to accomplish.

Further, the notion that future prices will drop to acceptable levels because of this project is fantasy. Prices would have to drop almost 75% to make offshore wind of this magnitude acceptable. There is no known technological change that depends on this project being built that would change the cost equation for off shore wind. If there are off the shelf or new technologies available that would lower Cape Wind's costs even marginally (such as new designs for more efficient turbines), then perhaps a project containing those advances should be financed, but not this outdated project.

CONCLUSION

One of the hallmarks of DOE's review should be whether or not to commit taxpayer money for commensurate societal benefits. We do not believe there are societal benefits for committing taxpayer resources to the Cape Wind project.

DOE should not be swayed by promises or with incomplete or outdated data. Cape Wind has enjoyed every conceivable advantage and that should have resulted in financing without committing and risking taxpayers' money. The fact that they keep promising construction - *if only* they had another guarantee, or another contract, or another tax credit - simply means that Cape Wind is not a good deal. In any other business that had pre-sold 75% + of its output at a high price and with guaranteed escalators, financing would be easily available. Here it is not because the economics of the project are not sustainable. The absence of sustainability is a dire warning that DOE should not commit and risk taxpayer funding to Cape Wind.

Dollar for dollar, Cape Wind is a terrible investment for taxpayers and for ratepayers. It does not deliver on its promises for the environment. We believe a loan guarantee to Cape Wind would threaten the integrity of DOE's loan program. This is an outdated project at a time when new advances could mean lower prices and more meaningful pollution reductions.

[6] While Cape Wind is clearly producing *energy* and should rightly be part of a ratepayer's *energy* charge, under Massachusetts law, the charge for Cape Wind will be added to a ratepayer's non-bypassable *distribution* charge. Also note that the increase will be double in NGRID's territory versus NSTAR territory since NGRID purchased double the amount that NSTAR did and their total system loads are similar.

We urge the DOE to reject this risky loan application and invest in more worthwhile projects that need such loan assistance.

Respectfully submitted,

Associated Industries of Massachusetts

By:

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ATTACHMENT C

Search NEFSC

NOAA FISHERIES SERVICE
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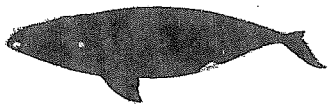
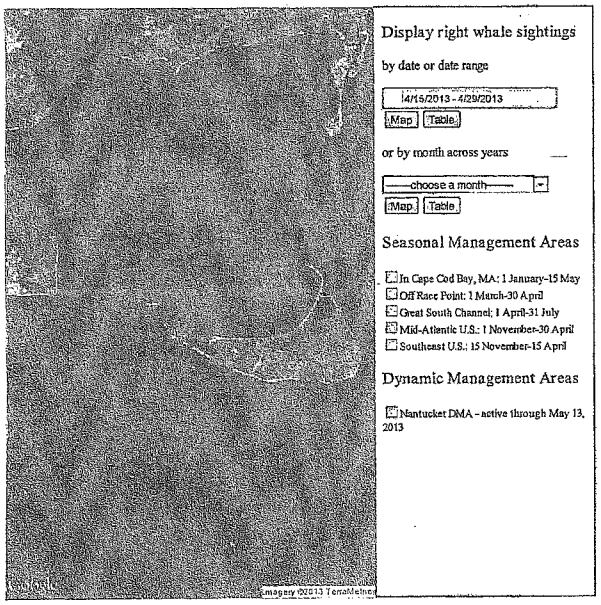
North Atlantic Right Whale Sightings



(right whale illustration courtesy of Pieter Folkens, ©2011)



Interactive map of North Atlantic right whale sightings contributed to NOAA between 2002 and present. Click on a symbol for more information on each sighting. Use the + and - to zoom in and out. Sightings of other species can be seen on the OBIS website. When using this map to view current sightings please keep in mind:

- Because whales swim continuously, exact locations are obsolete within minutes of a sighting.
- A specific date or date range may contain few or no sightings. This does not mean right whales were not present. Approximately 500 right whales live along the eastern seaboard of the US for much of the year, but effort to find them is typically limited to seasonal whale watches or researchers dedicated to locating seasonal habitats. The whereabouts of most of the individuals in the population is unknown for much of the year.
- Right whales are likely to be present within Seasonal and Dynamic Management Areas even if no sightings are present.

Mariners are urged to use caution and proceed at safe speeds in areas where right whales occur. U.S. Law (50CF 224.105) prohibits operating vessels 65 feet (19.8 meters) or greater in excess of 10 knots in Seasonal Management Areas (SMAs) along the U.S. east coast. Mariners are also requested to route around voluntary speed reduction zones (Dynamic Management Areas—DMAs) or transit through them at 10 knots or less. Approaching right whales closer than 500 yards is a violation of federal and state law. Please report all right whale sightings from Virginia to Maine to 866-755-6622, and from Florida to North Carolina to 877-WHALE-HELP. Right whale sightings in any location may also be reported to the U.S. Coast Guard via channel 16. For more information about ship strike reduction regulations, please visit:

ATTACHMENT D: LETTER TO LIEUTENANT GENERAL THOMAS BOSTICK, U.S. ARMY CORPS OF ENGINEERS, FROM AUDRA PARKER, PRESIDENT AND CEO, ALLIANCE TO PROTECT NANTUCKET SOUND, APRIL 30, 2013

ATTACHMENT D

SAVE OUR SOUND
alliance to protect nantucket sound

April 30, 2013

Lieutenant General Thomas Bostick
Chief of Engineers
US Army Corps of Engineers
441 G Street, NW
Washington, DC 20314-1000

Dear General Bostick:

On April 15, 2013, the Alliance to Protect Nantucket Sound (Alliance) received a response from the U.S. Army Corps of Engineers (the Corps) to the Alliance's Freedom of Information Act (FOIA) request regarding documents relating to the September 8, 2012 modification of the Section 10 Rivers and Harbors Act permit issued to Cape Wind Associates for the Scientific Measurement Device Station (SMDS) now in place in Nantucket Sound. The modification extended the termination date of the permit from October 31, 2012 to October 31, 2017. The modification was accomplished without any public notice as required by 33 C.F.R. § 325.6(d). The purpose of this letter is to put the Corps on notice of its legal violations in issuing the modification and to request immediate remedial action.

Included in the Corps FOIA response is a letter dated September 8, 2011, from the Corps to Rachel Pachter, Assistant Project Manager for Cape Wind Associates granting the modification. Also included is a "Memo for the record FILE NUMBER: NAE-2006-26-36." The memo for the record states:

1. No change in circumstance exist [sic] that would warrant issuance of a new public notice. ACOE standard operating procedures encourages use of time extensions to increase efficiency and states [sic] time extensions will normally be granted when the regulation and policy frame work are substantively the same as existed for the original decision. The request for this time extension was submitted September 2, 2011 prior to the current deadline for removal of October 31, 2012 [sic]

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www.saveoursound.org

a 501 (c)(3) tax-exempt organization

2. The original permit was issued prior to the Energy Policy Act of 2005 which created a new regulatory requirement for the proposed wind project. This SMDS was in place to provide data in advance of that project and it was anticipated that it could be removed 5 years after construction. However, it became evident that the new NEPA process started by BOEM (formerly BOEMRE and MMS) would not be completed within that 5 years and that additional data may be needed from it. The permit was modified in July 2007 to allow the SMDS to remain until October 2012. As that data [sic] approaches, and construction has not begun, it is evident that the project will not be completed by October 2012. The permit has also previously been modified to remove the financial assurances requirement once BOEM had this in place for their entire lease area.

As discussed below, this record does not support the modification action and is in violation of applicable law.

I. The Corps' Decision to Grant Modification of the Section 10 Permit without Following 33 C.F.R. § 325.6(d) was Arbitrary and Capricious

The foregoing explanation is not sufficient to support compliance with the Corps' regulations that allow modifications to section 10 permits, including extensions of time, only under limited circumstances. The pertinent regulation provides in part:

> Extensions of time may be granted by the district engineer. The permittee must request the extension and explain the basis of the request, which will be granted unless the district engineer determines that an extension would be contrary to the public interest. Requests for extensions will be processed in accordance with the regular procedures of § 325.2 of this part, including issuance of a public notice, except that such processing is not required where the district engineer determines that there have been no significant changes in the attendant circumstances since the authorization was issued.

33 C.F.R. § 325.6(d).

First, the regulation requires consideration by the district engineer of the public interest in deciding whether to grant the modification. The FOIA response did not include any document in which the public interest is considered in deciding to grant the modification, and no finding is set forth that such a determination was made.

Second, the regulation requires the processing of the request for extension under the regular procedures of 33 C.F.R. § 325.2, including issuance of a public notice "except that the processing is not required where the district engineer determines that there have been no significant changes in the attendant circumstances since the authorization was issued." This exception requires a positive determination by the district engineer to avoid the issuance of a public notice.

The memo for the record cited above contains in paragraph 1 the Corps' finding that "[n]o change in circumstance exist [sic] that would warrant issuance of a new public notice." This finding is conclusory and contains no analysis of the circumstances either at the time of the original authorization or the modification.

In fact, the many factual statements contained in paragraph 2 above demonstrate that changed circumstances have in fact occurred: 1) the original permit was issued before the Energy Policy Act of 2005 (EPAct) that created a new regulatory regime;[1] 2) originally it was anticipated that the SMDS could be removed within 5 years after its construction and this is no longer the case; 3) a new NEPA process had been conducted since the original permit; and 4) the permit was previously modified both to extend the termination date and to remove financial assurances. Despite this litany of changed circumstances referenced by the Corps, the Corps' provides no analysis of why these are not significant.

In fact, there are additional changes in circumstances that require public notice. Among the many such factors that require the Corps to have issued a notice:

- More than enough data have been gathered. The SMDS has been in place for over 10 years and the COP and lease have been issued, there nothing left for the DOI to approve. There is no need for more data.
- Cape Wind has modified the project size to reduce the proposal.
- A federal lease has been issued and a Construction and Operations Plan approved, eliminating the need for any additional data.
- Endangered right whales have been documented within the project area, including very close to the SMDS location. *See* Attachment 1.
- Cape Wind and other industry members have adopted voluntary restrictions associated with such towers for purposes of right whale protection, but those restrictions have not been applied to the SMDS. Attachment 2.
- Nantucket Sound, including the SMDS, has been designated a Traditional Cultural Property for purposes of section 106 of the National Historic Preservation Act (NHPA). The Corps has done nothing to comply for the SMDS.
- Cape Wind has conducted surveys in the area for archeological resources but none of this information has been made available.

[1] This statement is flatly inconsistent with the Corps' policy stated in paragraph 1 that "time extensions will normally be granted when the regulation and policy frame work are substantively the same as existed for the original decision." As the Corps itself stated, the EPAct "created a new regulatory requirement for the proposed wind project" associated with the SMDS. Moreover, the Corps' FOIA response demonstrates no consideration of the Administration's new policy on open government discussed below.

The Corps' lack of any consideration of these and other factors, combined with its failure to address and provide any stated factual support for its finding, was arbitrary and capricious.

II. The Corps' Decision to Grant Modification of the Section 10 Permit without a Public Process Violated Administration Policy

The Corps' decision to grant the modification of the Section 10 permit also violates Administration policy. On January 21, 2009, President Obama issued a Memorandum for the Heads of Executive Departments and Agencies entitled "Transparency and Open Government" (Memorandum).[2] The President declared that the Administration will "work together to ensure the public trust and establish a system of transparency, public participation, and collaboration." He stated further:

> Public engagement enhances the Government's effectiveness and improves the quality of its decisions. Knowledge is widely dispersed in society, and public officials benefit from having access to that dispersed knowledge. Executive departments and agencies should offer Americans increased opportunities to participate in policy-making and to provide their Government with the benefits of their collective expertise and information. Executive departments and agencies should also solicit public input on how we can increase and improve opportunities for public participation in Government.

Memorandum at. Under this mandate, even if an agency official could take any action without public involvement, the presumption in favor of participation and openness applies.

On December 8, 2009, the Office of Management and Budget issued the Open Government Directive (M-10-06) which described the principles of transparency, participation, and collaboration as "the cornerstone of an open government."[3] OMB's memorandum states:

> The three principles of transparency, participation, and collaboration form the cornerstone of an open government. Transparency promotes accountability by providing the public with information about what the Government is doing. Participation allows members of the public to contribute ideas and expertise so that their government can make policies with the benefit of information that is widely dispersed in society. Collaboration improves the effectiveness of Government by encouraging partnerships and cooperation within the Federal Government, across levels of government, and between the Government and private institutions.

[2] President Barack Obama, Memorandum on Transparency and Open Government (Jan. 21, 2009), *available at* http://www.gpoaccess.gov/presdocs/2009/DCPD200900010.pdf
[3] OMB Memorandum M-10-06, *Open Government Directive* (Dec. 8, 2009), *available at* http://www.whitehouse.gov/omb/assets/memoranda_2010/m10-06.pdf

Directive at page 1. These three principles apply directly to the modification of the Section 10 permit for the SMDS. Lastly, the OMB memorandum directs Executive Departments and Agencies to issue open government plans.

The Department of Defense (DOD) first released its Open Government Plan on April 7, 2010.[4] DOD's plan continues in the same vein as the Presidential and OMB directives, committing DOD to the open government policies adopted by the Administration.

The Corps' decision not to use the procedures set forth in 33 C.F.R. § 325.6(d), including the issuance of a public notice, falls short of the Administration's and DOD's own goals for transparency in government. Moreover, the Corps' failure to properly document its decision to avoid a public process exacerbates its violation of Administration policy.

III. Request for Rescission of Modification and Use of Regular Procedures of 33 C.F.R. § 325.2

In light of the many short comings in the both the Corps' decision making process and documentation of its decision to modify the Section 10 permit for the SMDS, the Alliance requests that the Corps 1) rescind its approval of the modification, 2) require Cape Wind to cease all operations of the SMDS, 3) follow the regular procedures of 33 C.F.R. § 325.2, including issuance of a public notice, before deciding whether or not to act on the modification, 4) due to the changes in circumstances noted above, reinitiate consultation under section 106 of the NHPA and section 7(a)(2) of the Endangered Species Act; and 5) prepare a supplemental EA to replace the EA on the original permit application that is now seriously out of date. Failure to take such action will put the Corps in serious violation of numerous federal environmental statutes and regulations. Cape Wind is exploiting a federal resource for its own benefit and is being allowed to maintain the SMDS for no legitimate reason other than its desire to avoid the costs of removal. The Corps should not acquiesce to such an inappropriate privatization of federal public trust lands and waters and should either direct removal now or suspend SMDS use pending a renewed permitting procedure.

Thank you for considering these requests for action to cure a serious legal deficiency. Please contact me if you have any questions.

Very truly yours,

Audra Parker
President & CEO
Alliance to Protect Nantucket Sound

cc: Tommy Beaudreau, Director of BOEM

[4] DOD's Open Government Plan is available at http://open.defense.gov/OpenGovernment@DoD.aspx. DOD's Open Government Plan was reissued on April 9, 2012.

Attachment 1

Submitted to NOAA 866-755-6622 2 April13 (answering machine; date, location only)

Submitted by: William Rossiter, Cetacean Society International, 65 Redding Road-0953, Georgetown, CT 06829-0953, t/c: 203.770.8615, <rossiter@csiwhalesalive.org>

For: Donald Benefit, P.O.Box 877, Edgartown, MA 02539, 508-627-6691, c 508-566-1537 e (wife) <jenniferbenefit@aol.com>

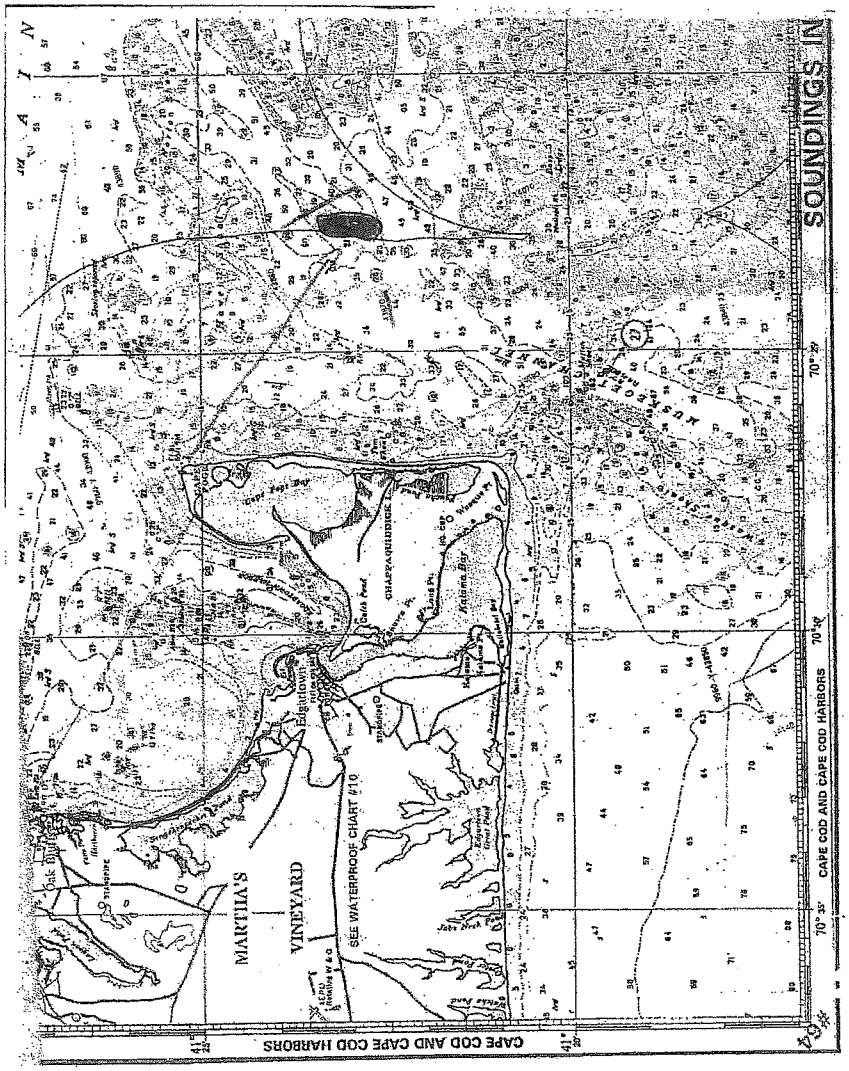
This reports an observation of a North Atlantic right whale mother and calf beginning about 1300, Sunday, July 11, 2004, in Nantucket Sound between Martha's Vineyard and Nantucket, at 70.23N 41.23W, "on 3 mile arc from land", 2nm E of the RN4 buoy. Donald Benefit's nautical chart datum for the observation is: 14 065.0 x 43 870.0.

The direct evidence of the observation are 4x6 prints taken by Jim Clingsmith or Robert Hathaway while guests on Donald Benefit's 36' conch boat. Mr. Benefit is a commercial fisherman who often makes his boat available to elderly fishermen on summer Sundays. The prints have store-processing imprinting on their backs <20040713> and frame numbers 1-9,12-14 (10, 11 are missing). Image 13 shows Point Poge light, Chappaquiddick Island, Martha's Vineyard. Frame 14 (breaching calf) shows two white water tanks (?) on shore.

Mr. Benefit said he approached what he thought was seaweed, until the whales moved. He would not have approached if he thought they were right whales, which he had never seen before but he was familiar with approach restrictions. He said the mother was still, and barely visible above the surface, braced against the "hump", a N-S area 6-8' deep and approximately 60 yards long known to local fishermen, colored red on the chart Mr. Benefit has provided.

The people on the boat realized the calf had been nursing when it pulled away just as the mother ejected milk, visible as a cloud in the water. Mr. Benefit stressed that the mother did not swim away, but appeared stabilized on purpose against the hump. The boat drifted away from the whales and no close approaches were made.

The photos were sent to William Rossiter, Cetacean Society International, 65 Redding Road-0953, Georgetown, CT 06829-0953, t/c: 203.770.8615, <rossiter@csiwhalesalive.org>, who scanned them at 4x6 2400dpi digital images on March 26, 2013. The full size digital images are available upon request, but several were also cropped to reduce the file sizes for downloading.


MARTHA'S
VINEYARD
SEE WATERPROOF CHART #10
CAPE COD AND CAPE COD HARBORS
SOUNDINGS IN
CAPE COD AND CAPE COD HARBORS
70° 35'
70° 30'
41° 30'

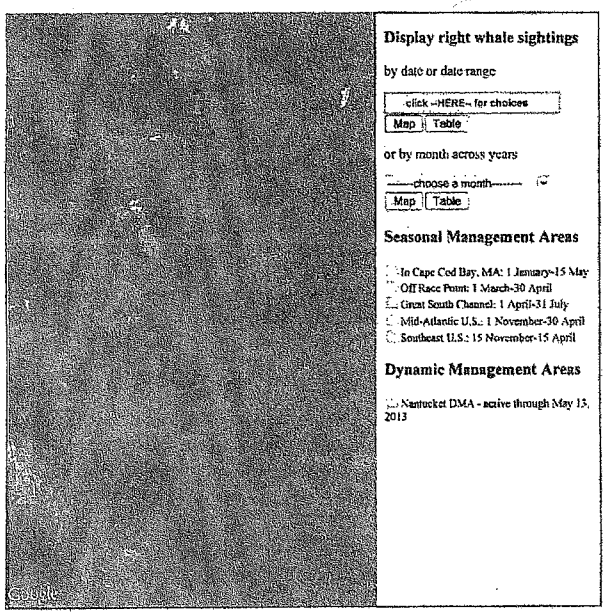
Search NEFSC

NOAA FISHERIES SERVICE
Northeast Fisheries Science Center

NEFSC

North Atlantic Right Whale Sightings

(right whale illustration courtesy of Peter Folkens, ©2011)



Interactive map of North Atlantic right whale sightings contributed to NOAA between 2002 and present. Click on a symbol for more information on each sighting. Use the + and - to zoom in and out. Sightings of other species can be seen on the DSIS website. When using this map to view current sightings please keep in mind:

- Because whales swim continuously, exact locations are obsolete within minutes of a sighting.
- A specific date or date range may contain few or no sightings. This does not mean right whales were not present. Approximately 500 right whales live along the eastern seaboard of the US for much of the year, but effort to find them is typically limited to seasonal whale watches or researchers dedicated to locating seasonal habitats. The whereabouts of most of the individuals in the population is unknown for much of the year.
- Right whales are likely to be present within Seasonal and Dynamic Management Areas even if no sightings are present.

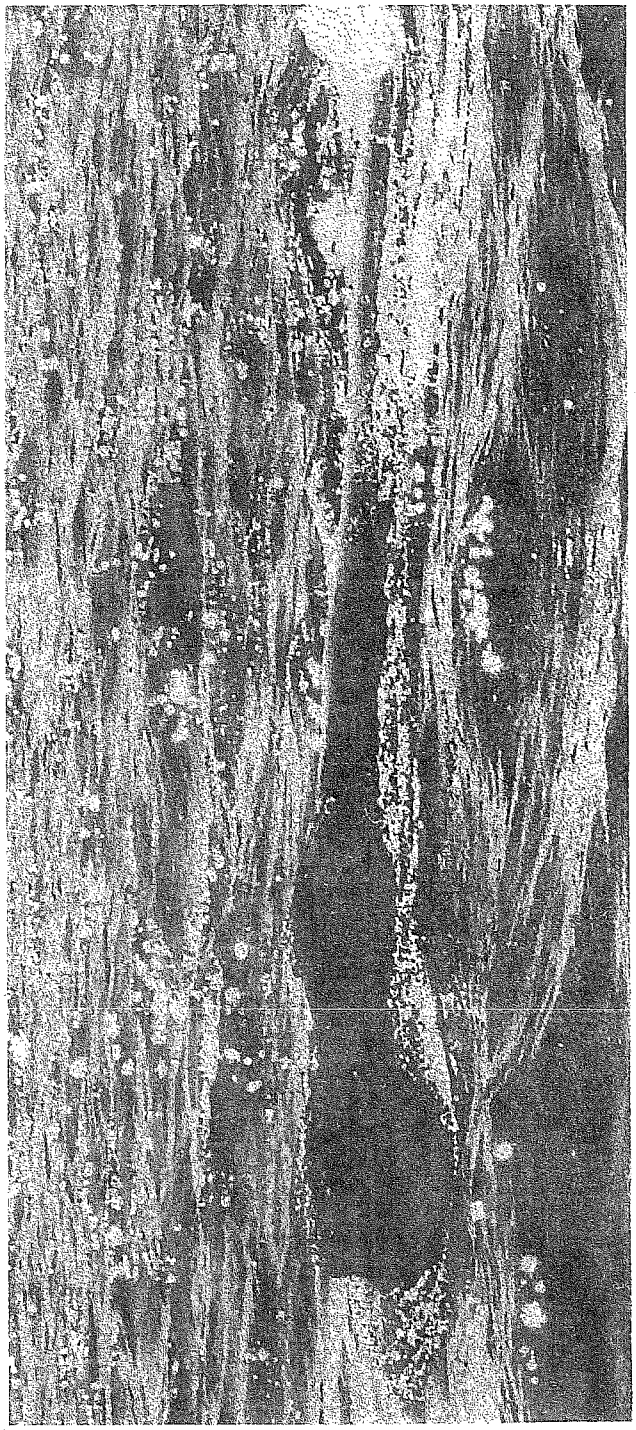
Mariners are urged to use caution and proceed at safe speeds in areas where right whales occur. U.S. Law (50CF 224.105) prohibits operating vessels 65 feet (19.8 meters) or greater in excess of 10 knots in Seasonal Management Areas (SMAs) along the U.S. east coast. Mariners are also requested to route around voluntary speed reduction zones (Dynamic Management Areas—DMAs) or transit through them at 10 knots or less. Approaching right whales closer than 500 yards is a violation of federal and state law. Please report all right whale sightings from Virginia to Maine to 866-755-6622, and from Florida to North Carolina to 877-WHALE-HELP. Right whale sightings in any location may also be reported to the U.S. Coast Guard via channel 16. For more information about ship strike reduction regulations, please visit: www.nmfs.noaa.gov/pr/shipstrike

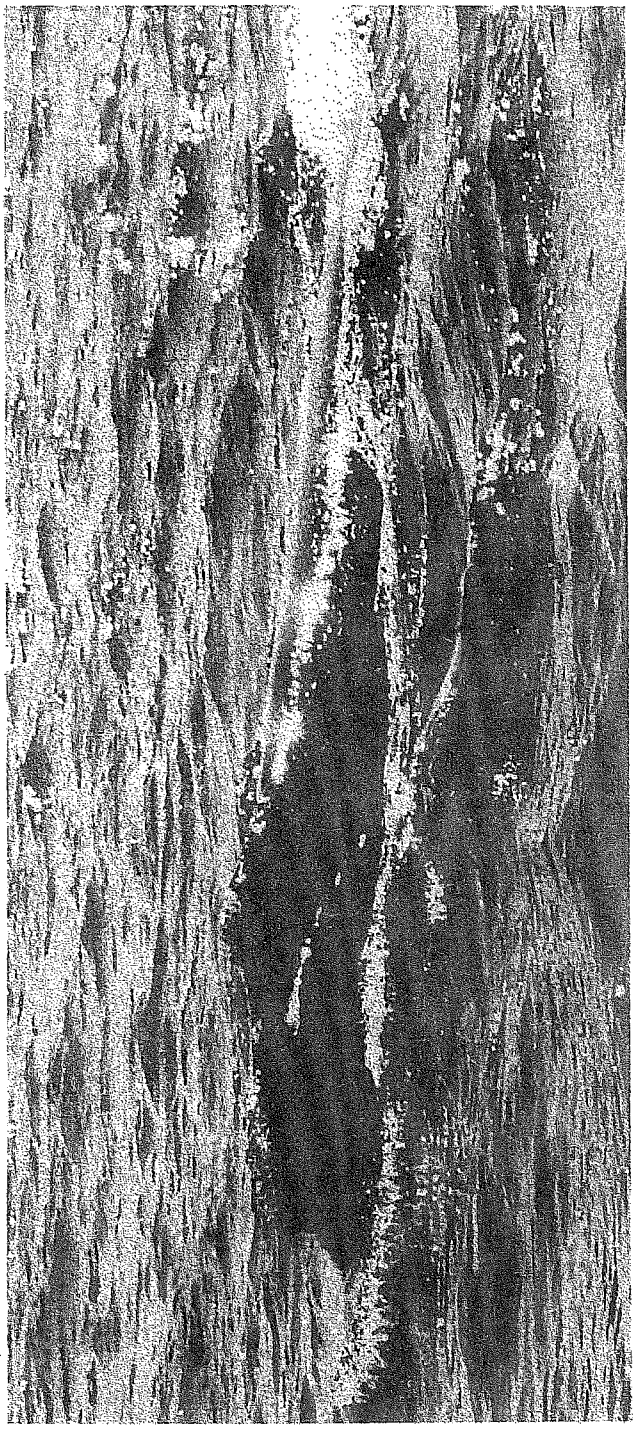
North Atlantic Right Whale Sightings

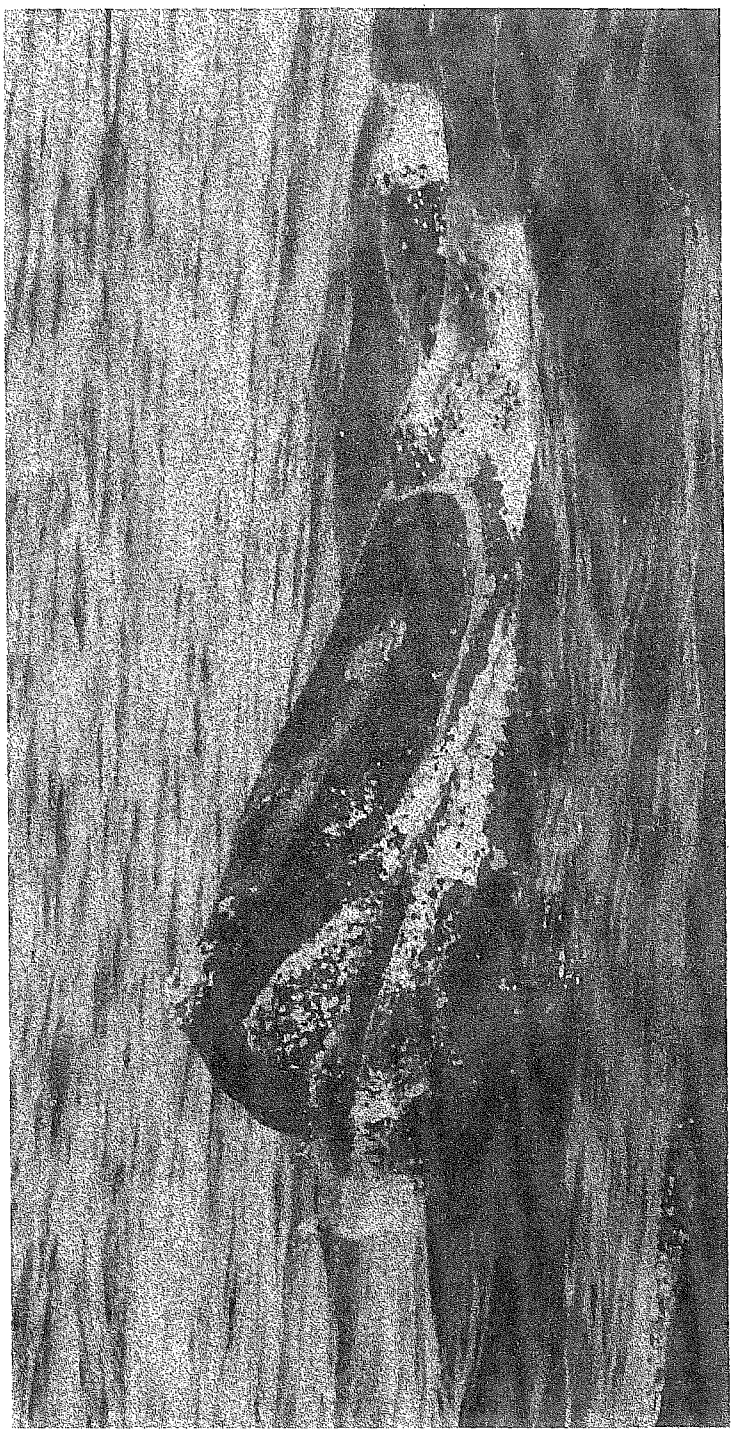
SIGHTINGDATE	GROUPSIZE	LAT	LON	REGION	SPECIESID	CATEGORY	MOM_CALF
26 JUL 2012	1	42.86	-69.06	Northeast	Definite	Dedicated Eg Aerial	
26 JUL 2012	6	42.86	-69.11	Northeast	Definite	Dedicated Eg Aerial	
26 JUL 2012	5	42.87	-69.10	Northeast	Definite	Dedicated Eg Aerial	
26 JUL 2012	3	42.81	-69.07	Northeast	Definite	Dedicated Eg Aerial	
26 JUL 2012	3	42.83	-69.08	Northeast	Definite	Dedicated Eg Aerial	
26 JUL 2012	1	42.89	-69.41	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	3	42.25	-66.33	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	2	42.18	-66.20	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	11	42.19	-66.16	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	2	42.18	-66.09	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	2	42.25	-66.31	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	1	42.25	-66.32	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	8	42.16	-66.41	Northeast	Definite	Dedicated Eg Aerial	
22 JUL 2012	1	42.20	-66.79	Northeast	Definite	Dedicated Eg Aerial	
20 JUL 2012	1	42.30	-69.02	Northeast	Definite	Dedicated Eg Aerial	
16 JUL 2012	2	42.67	-69.72	Northeast	Definite	Opportunistic	
14 JUL 2012	2	42.71	-70.17	Northeast	Definite	Whale watch	
12 JUL 2012	8	42.59	-68.88	Northeast	Definite	Dedicated Eg Aerial	
12 JUL 2012	1	42.98	-69.08	Northeast	Definite	Dedicated Eg Aerial	
12 JUL 2012	1	42.99	-69.13	Northeast	Definite	Dedicated Eg Aerial	
12 JUL 2012	4	40.80	-72.48	Northeast	Probable	Opportunistic	Yes
10 JUL 2012	1	42.28	-69.96	Northeast	Definite	Dedicated Eg Aerial	
10 JUL 2012	2	42.26	-69.97	Northeast	Definite	Dedicated Eg Aerial	Yes
10 JUL 2012	6	42.67	-70.07	Northeast	Probable	Fishing Vessel	
30 JUL 2011	2	43.06	-70.20	Northeast	Definite	Whale watch	
20 JUL 2011	1	42.16	-70.20	Northeast	Definite	Opportunistic	
20 JUL 2011	2	41.51	-70.62	Northeast	Definite	Opportunistic	
19 JUL 2011	1	42.04	-70.01	Northeast	Definite	Opportunistic	
17 JUL 2011	1	42.10	-70.12	Northeast	Definite	Whale watch	
17 JUL 2011	1	42.98	-70.23	Northeast	Definite	Whale watch	
11 JUL 2011	1	44.48	-66.63	Northeast	Definite	Whale watch	
30 JUL 2010	1	42.89	-70.13	Northeast	Definite	Opportunistic	
30 JUL 2010	1	42.61	-70.30	Northeast	Definite	Opportunistic	
29 JUL 2010	2	42.69	-70.20	Northeast	Definite	Whale watch	
25 JUL 2010	3	42.67	-70.37	Northeast	Definite	Whale watch	
17 JUL 2010	1	41.05	-71.83	Northeast	Definite	Fishing Vessel	
13 JUL 2010	1	42.64	-70.29	Northeast	Definite	Whale watch	
08 JUL 2010	2	42.20	-70.17	Northeast	Definite	Whale watch	
06 JUL 2010	2	42.55	-70.63	Northeast	Definite	Whale watch	
03 JUL 2010	2	42.81	-70.57	Northeast	Definite	Whale watch	
03 JUL 2010	2	42.68	-70.68	Northeast	Definite	Opportunistic	
21 JUL 2009	2	42.07	-70.25	Northeast	Definite	Whale watch	Yes
20 JUL 2009	1	42.68	-68.84	Northeast	Definite	Dedicated Eg Aerial	
20 JUL 2009	3	41.69	-68.88	Northeast	Definite	Opportunistic	
20 JUL 2009	7	41.79	-68.85	Northeast	Definite	Opportunistic	
18 JUL 2009	1	40.68	-69.90	Northeast	Definite	Opportunistic	
15 JUL 2009	5	44.67	-66.43	Northeast	Definite	Dedicated Eg Shipboard	
14 JUL 2009	17	41.91	-68.77	Northeast	Definite	Dedicated Eg Aerial	
14 JUL 2009	6	42.21	-68.95	Northeast	Definite	Dedicated Eg Aerial	
14 JUL 2009	3	42.12	-65.92	Northeast	Definite	Opportunistic	
13 JUL 2009	13	41.24	-69.51	Northeast	Definite	Dedicated Eg Aerial	
11 JUL 2009	3	42.32	-68.72	Northeast	Definite	Dedicated Eg Aerial	
11 JUL 2009	17	42.42	-68.55	Northeast	Definite	Dedicated Eg Aerial	

11 JUL 2009	10	42.25	-68.98	Northeast	Definite	Dedicated Eg Aerial	
11 JUL 2009	8	42.42	-68.98	Northeast	Definite	Dedicated Eg Aerial	Yes
11 JUL 2009	1	42.38	-68.35	Northeast	Definite	Dedicated Eg Aerial	
07 JUL 2009	1	42.50	-68.83	Northeast	Definite	Opportunistic	
07 JUL 2009	7	42.24	-69.14	Northeast	Definite	Dedicated Eg Aerial	Yes
06 JUL 2009	7	41.42	-68.90	Northeast	Definite	Opportunistic	
06 JUL 2009	3	43.00	-69.07	Northeast	Definite	Dedicated Eg Aerial	Yes
06 JUL 2009	2	42.97	-69.52	Northeast	Definite	Dedicated Eg Aerial	Yes
06 JUL 2009	5	41.63	-68.63	Northeast	Definite	Opportunistic	
05 JUL 2009	1	41.73	-68.48	Northeast	Definite	Opportunistic	
05 JUL 2009	1	41.60	-68.67	Northeast	Definite	Opportunistic	
05 JUL 2009	2	43.00	-69.43	Northeast	Definite	Opportunistic	
04 JUL 2009	5	42.22	-67.67	Northeast	Definite	Opportunistic	
30 JUL 2008	2	42.28	-66.88	Northeast	Definite	Dedicated Eg Aerial	
30 JUL 2008	1	42.22	-66.63	Northeast	Definite	Dedicated Eg Aerial	
30 JUL 2008	2	42.12	-66.87	Northeast	Definite	Dedicated Eg Aerial	
30 JUL 2008	5	42.35	-66.40	Northeast	Definite	Dedicated Eg Aerial	
29 JUL 2008	11	42.17	-67.07	Northeast	Definite	Dedicated Eg Aerial	
29 JUL 2008	2	42.17	-66.87	Northeast	Definite	Dedicated Eg Aerial	
29 JUL 2008	1	42.13	-67.23	Northeast	Definite	Dedicated Eg Aerial	
29 JUL 2008	1	42.31	-67.34	Northeast	Definite	Dedicated Eg Aerial	
28 JUL 2008	17	44.68	-66.42	Northeast	Definite	Dedicated Eg Aerial	
26 JUL 2008	10	42.15	-67.33	Northeast	Definite	Dedicated Eg Aerial	
26 JUL 2008	1	42.10	-67.63	Northeast	Definite	Dedicated Eg Aerial	
25 JUL 2008	1	40.55	-70.37	Northeast	Probable	Opportunistic	
18 JUL 2008	8	42.22	-68.16	Northeast	Probable	Commercial vessel	
16 JUL 2008	1	42.00	-68.70	Northeast	Definite	Dedicated Eg Aerial	
15 JUL 2008	2	42.30	-70.32	Northeast	Probable	Opportunistic	
13 JUL 2008	1	41.98	-67.99	Northeast	Definite	Opportunistic	
12 JUL 2008	1	41.65	-68.87	Northeast	Definite	Dedicated Eg Aerial	
11 JUL 2008	1	42.27	-66.10	Northeast	Definite	Dedicated Eg Aerial	
11 JUL 2008	1	42.35	-66.90	Northeast	Definite	Dedicated Eg Aerial	
11 JUL 2008	6	42.32	-66.42	Northeast	Definite	Dedicated Eg Aerial	
10 JUL 2008	1	42.02	-70.15	Northeast	Definite	Whale watch	
10 JUL 2008	25	41.92	-68.30	Northeast	Definite	Dedicated Eg Aerial	
10 JUL 2008	2	42.02	-68.18	Northeast	Definite	Dedicated Eg Aerial	
10 JUL 2008	13	41.93	-68.13	Northeast	Definite	Dedicated Eg Aerial	
31 JUL 2007	1	43.95	-68.09	Northeast	Definite	Whale watch	
27 JUL 2007	1	42.28	-65.91	Northeast	Definite	Dedicated Eg Shipboard	
24 JUL 2007	20	41.55	-68.68	Northeast	Definite	Dedicated Eg Aerial	
24 JUL 2007	6	41.38	-68.83	Northeast	Definite	Dedicated Eg Aerial	
24 JUL 2007	4	41.28	-68.95	Northeast	Definite	Dedicated Eg Aerial	
16 JUL 2007	2	42.28	-70.31	Northeast	Definite	Whale watch	
14 JUL 2007	1	42.30	-67.30	Northeast	Probable	US Coast Guard	
14 JUL 2007	2	42.42	-70.43	Northeast	Definite	Whale watch	
13 JUL 2007	1	42.53	-70.38	Northeast	Probable	US Coast Guard	
03 JUL 2007	2	42.25	-70.02	Northeast	Definite	Opportunistic	Yes
03 JUL 2007	1	44.60	-66.60	Northeast	Definite	Whale watch	
02 JUL 2007	2	44.38	-67.05	Northeast	Definite	Dedicated Eg Aerial	Yes
01 JUL 2007	2	41.97	-68.81	Northeast	Definite	Dedicated Eg Aerial	
28 JUL 2006	1	40.81	-67.13	Northeast	Definite	US Coast Guard	
22 JUL 2006	1	41.33	-71.52	Northeast	Probable	Whale watch	
17 JUL 2006	1	42.44	-70.49	Northeast	Definite	Whale watch	
14 JUL 2006	18	44.63	-66.49	Northeast	Definite	Dedicated Eg Shipboard	Yes
14 JUL 2006	2	41.50	-69.60	Northeast	Probable	Commercial vessel	
11 JUL 2006	1	41.51	-70.64	Northeast	Probable	Opportunistic	

10 JUL 2006	1	42.18	-70.33	Northeast	Definite	Whale watch	
07 JUL 2006	1	40.63	-73.28	Northeast	Probable	US Coast Guard	
06 JUL 2006	1	42.41	-70.47	Northeast	Probable	Opportunistic	
06 JUL 2006	27	44.70	-66.52	Northeast	Definite	Dedicated Eg Shipboard	
05 JUL 2006	3	44.68	-66.53	Northeast	Definite	Dedicated Eg Shipboard	
04 JUL 2006	24	44.63	-66.52	Northeast	Definite	Dedicated Eg Shipboard	Yes
03 JUL 2006	1	41.71	-68.98	Northeast	Definite	Dedicated Eg Aerial	
03 JUL 2006	71	44.69	-66.45	Northeast	Definite	Dedicated Eg Shipboard	Yes
03 JUL 2006	1	42.10	-68.76	Northeast	Definite	Dedicated Eg Aerial	
03 JUL 2006	1	42.20	-68.64	Northeast	Definite	Dedicated Eg Aerial	
03 JUL 2006	1	42.51	-70.57	Northeast	Probable	Whale watch	
20 JUL 2005	2	42.26	-70.27	Northeast	Definite	Whale watch	
20 JUL 2005	2	42.30	-70.32	Northeast	Definite	Whale watch	
11 JUL 2004	2	41.38	-70.38	Northeast	Definite	Commercial vessel	Yes







ATTACHMENT 2: PROPOSED MITIGATION MEASURES TO PROTECT NORTH ATLANTIC RIGHT WHALES IN THE MID-ATLANTIC WIND ENERGY AREAS

Attachment 2

December 12, 2012

Maureen Bornholdt
Renewable Energy Program Manager
Office of Renewable Energy
Bureau of Ocean Energy Management
381 Elden Street
Herndon, Virginia 20170

RE: Proposed Mitigation Measures to Protect North Atlantic Right Whales from Site Assessment and Characterization Activities of Offshore Wind Energy Development in the Mid-Atlantic Wind Energy Areas

Dear Ms. Bornholdt:

The undersigned parties write to inform you of a landmark agreement reached with respect to additional mitigation measures to protect the North Atlantic right whale while undertaking certain site assessment and characterization activities necessary for offshore wind energy development in the mid-Atlantic Wind Energy Areas. The agreement is the result of an extensive and collaborative effort between leading offshore wind developers and conservation Non-Governmental Organizations, who came together voluntarily to address these issues to forward their mutual interest in the sustainable deployment of offshore wind, with input from leading North Atlantic right whale scientific experts.

The North Atlantic right whale is the focus of this agreement because it is a critical endangered species. Our organizations are deeply committed to the development of clean renewable wind energy as expeditiously as possible and in an environmentally responsible manner.

In August and September of this year, the parties to this agreement briefed staff within the Renewable Energy Program at the Bureau of Ocean Energy Management and staff within the Office of Protected Resources at the National Oceanic Atmospheric Administration's (NOAA) National Marine Fisheries Service. We also briefed NOAA's Director of Policy and General Counsel. We have generally incorporated the feedback from these briefings into these measures, and we appreciate the engagement of your staff.

The agreed-upon measures are specific to activities in the mid-Atlantic Wind Energy Areas only. This agreement does not exempt any developer, party to the agreement, from any of the project design criteria that are detailed in Appendix B of the January 2012 Environmental Assessment of Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore New Jersey, Delaware, Maryland, and Virginia (mid-Atlantic EA). The measures set forth in this agreement do however reflect the commitment of any developer, or party to the agreement, to undertake these steps, beyond existing requirements, to provide additional protections for the North Atlantic right whale. The agreed upon measures are within the range of alternatives considered in the Mid-Atlantic EA. The agreement is not intended to indicate any insufficiency in the mid-Atlantic EA analysis. We have agreed to the following mitigation measures ***to protect the North Atlantic right***

whale, when it migrates though the Mid-Atlantic, during site assessment and characterization activities related to offshore wind energy development in the Mid-Atlantic Wind Energy Areas. The agreement is limited to these specific activities in these specific areas.

Seasonal Restrictions on Sub-bottom Profiling and on Pile Driving for Meteorological Tower Installation: Seasonal restrictions on sub-bottom profiling and pile driving for meteorological tower installation shall be as follows:

May 1 – October 31, The Green Period: during this period sub-bottom profiling and pile driving for meteorological tower installation can occur in accordance with the mitigation requirements specified in the mid-Atlantic EA and additional mitigation measures contained in this agreement, as applicable.

during this period sub-bottom profiling and pile driving for meteorological tower installation can occur in accordance with the mitigation requirements specified in the mid-Atlantic EA and additional mitigation measures contained this agreement, as applicable, provided that the Developer completes a site specific risk assessment that includes:

- an assessment of the potential for Right Whale activity during period of survey;
- an acoustic assessment of the specific equipment to be used; and
- a site specific Marine Mammal Harassment Avoidance Plan.

The risk assessment shall be made available to BOEM, NMFS, and to the NGO parties of this agreement prior to commencement of activities.

November 23 – March 21, The Red Period: this period shall be a seasonal exclusion for all pile driving and sub-bottom profiling activity.

1. **Vessel Speed Restriction:** A 10 knot speed limit restriction during the period November 1 – April 30 on all vessels of any length associated with site assessment surveys and site characterization activities, including survey vessels as well as support vessels, operating in and transiting to and from the Wind Energy Area.

2. **Use of Noise Attenuation and Source Level Reduction Technology to Reduce Sound during Meteorological Tower Construction:** The developer shall use the best commercially available technology, such as bubble curtains, cushion blocks, temporary noise attenuation pile design, vibratory pile drivers and/or press-in pile drivers, in order to reduce the pile driver source levels and horizontal propagation, unless such technology is prohibitively expensive for the project. The developer will employ engineering expertise to determine the best available technology for each pile driving site (or this may be done programmatically for a series of sites) and the engineering analysis and cost analysis shall be made available.

3. **Establishment of Exclusion Zone:** A minimum 500 m (1640 ft) radius exclusion zone for all marine mammals and sea turtles shall be established around the sub-bottom profiler with an exception for dolphins that, in the determination of the visual observers, are approaching the vessel at a speed and vector that indicates voluntary approach to bow-ride. The presumed 500 meter exclusion zone should be confirmed using sound source validation before sub-bottom profiling begins, and the exclusion zone should be enlarged for the duration of site characterization activity if the 160 dB isopleth extends beyond 500 meters from the source. For sound source validation, developers will conduct in-field empirical measurements of the distances in the broadside and endfire directions at which broadband received levels (for boomer sources) or received levels at each operating frequency (for chirp sources) below 22 kHz reach 180 and 160 dB re 1 µPa (RMS) for the sub-bottom profiling source that will be employed. Results will be reported to BOEM and NMFS and made available within five days.

4. **Real-time Monitoring Effort:**

   May 1 – October 31, The Green Period:

   Sub-bottom profiling: Provide 2 dedicated, qualified NMFS-approved observers (1 on/1 off) at each sub-bottom profiling site to effectively maintain a steady visual watch during the course of the sub-bottom profiling.

   Pile driving during meteorological tower installation: Provide a minimum of 4 dedicated, qualified NMFS-approved observers (2 on/2 off with each observer covering 180 degrees from bow to stern) at each pile driving site to effectively maintain a steady visual watch during the course of the pile driving activity and to provide for effective monitoring in all directions around the sound source.

   [illegible]

   Sub-bottom profiling: Provide a minimum of 2 dedicated, qualified NMFS-approved observers (1 on/1 off) at each sub-bottom profiling site to effectively maintain a steady visual watch during the course of the sub-bottom profiling. Four dedicated, qualified NMFS-approved observers (2 on/ 2 off) shall be provided if the source vessel is of sufficient size to accommodate the two additional personnel. Observers employed during [illegible] shall have at least 1 year of experience as professional marine mammal observers or equivalent academic experience.

   Pile driving during meteorological tower installation: Provide a minimum of 4 dedicated, qualified NMFS-approved observers (2 on/2 off, with each observer covering 180 degrees from bow to stern) at each pile driving site to effectively maintain a steady visual watch during the course of the pile driving activity and to provide for effective monitoring in all directions around the sound source. Observers employed during [illegible]

shall have at least 1 year of experience as professional marine mammal observers or equivalent academic experience.

Visibility: Sub-bottom profiling can take place at night if the site specific risk assessment shows acceptable results in night conditions. Pile-driving will not take place at night. Developer will not start driving a pile unless, under normal circumstances, completion of the pile can be achieved during daylight hours. In the event that the developer begins driving a pile with the plan to achieve full penetration during daylight hours, but a situation arises that jeopardizes pile penetration if the drive is not completed, the developer may continue driving the pile into nighttime hours to protect human health, the environment, or completion of the drive.

If the exclusion zone is obscured by fog, no sub-bottom profiling or pile-driving activity, including ramp-up, will be initiated until the exclusion zone is visible for 30 minutes.

Aerial surveys: During only the March 22-April 30 portion of
During pile driving, in order to focus effort on detecting right whales as they approach the source on their northward migration, aerial surveys will be conducted on the south side of the acoustic source. During aerial surveys, the developer will maintain a partially extended exclusion zone for North Atlantic right whales, shutting down if any right whale is observed within the smaller of the 120 dB isopleth or 30-kilometer radius around the south side of the source.

November 23 – March 21, The Red Period: N/A

We agree that these mitigation measures will remain in place for at least four years. At that time they may be revised to reflect new information and best practices that have become available.

To reiterate, this agreement is only applicable to site characterization and site assessment activities in the mid-Atlantic Wind Energy Areas. It does not apply to the construction and operations phases, nor does it imply or suggest what measures may be appropriate at the construction and operations phases. Construction and Operations Plans (COPs) will be subject to a separate environmental review, permitting and approval process by the federal government.

Next Steps

We expect to reach out to other stakeholders to join in this agreement as we move forward, and we will keep you posted on this process. Please feel free to contact us if you have any questions, and we look forward to continuing to work with you as we move forward with the deployment of sustainable offshore wind in the United States.

Sincerely,

Jeff Grybowski
CEO
Deepwater Wind

Jim Gordon
President
Energy Management, Inc.

William Lee Davis
President
Bluewater Wind Delaware LLC

Scott Kraus, PhD
Vice President for Research
New England Aquarium

Rick Middleton
Executive Director
Southern Environmental Law Center

Margie Alt
Executive Director
Environment America

c: Sally Yozell, Director of Policy, NOAA
Lois Shiffer, General Counsel, NOAA

Frances Beinecke
President
Natural Resources Defense Council

John Kassel
President
Conservation Law Foundation

Larry Schweiger
President and CEO
National Wildlife Federation

Andrew Sharpless
CEO
Oceana

Azzidine Downes
Executive Vice President
International Fund for Animal Welfare

Michael Brune
Executive Director
Sierra Club

PERKINS COIE LLP
PROOF OF DELIVERY

DATE: **May 1, 2013**

FROM: **SAVE OUR SOUND (Perkins Coie LLP)**

DELIVERED TO:

Matthew McMillen Director, Environmental Compliance DOE Loan Programs Office U.S. Department of Energy LP 10 Room 4B196 1000 Independence Avenue, SW Washington D.C. 20585 Phone: 202-586-8336	**Mr. Todd Stribley** DOE Loan Programs Office U.S. Department of Energy LP 10 Room 4B196 1000 Independence Avenue, SW Washington D.C. 20585 Phone: 202-586-8336

Received by:

X BARB GLAVICH-KWIATEK
Print Name

X Barb Glavich-Kwiatek
Signature

X 5-1-13
Date

EXHIBIT 9E: LETTER TO MATTHEW MCMILLEN AND TODD STRIBLEY, DOE LOAN PROGRAMS OFFICE, FROM AUDRA PARKER, PRESIDENT AND CEO, ALLIANCE TO PROTECT NANTUCKET SOUND, MAY 14, 2013

Exhibit 9e

SAVE OUR SOUND
alliance to protect nantucket sound

May 14, 2013

Sent via Messenger and E-mail

Matthew McMillen
Director, Environmental Compliance
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington D.C. 20585

Mr. Todd Stribley
DOE Loan Programs Office
U.S. Department of Energy LP 10
Room 4B196
1000 Independence Avenue, SW
Washington, DC 20585

Dear Mr. McMillen and Mr. Stribley:

The Alliance to Protect Nantucket Sound (the "Alliance") submits this supplemental letter in response to the Federal Register notice issued on February 8, 2013, which confirmed the ongoing review period for the Department of Energy's ("DOE") adoption of the Final Environmental Impact Statement ("FEIS") for the Cape Wind Project ("Project") issued on January 1, 2009 by the Minerals Management Service ("MMS")[1] of the U.S. Department of the Interior, "*EIS No. 20120401, Final EIS, DOE, MA,* Adoption" 78 Fed. Reg. 9388 (Feb. 8, 2013) (hereinafter "February 8, 2013 Notice").[2]

Under the National Environmental Policy Act ("NEPA"), the review period for the FEIS does not close until a Record of Decision is formally issued for the proposed action, 40 C.F.R. §1505.2, thus the following new information must be considered by DOE in its review of the Cape Wind FEIS.

[1] MMS is the predecessor to the current federal agency, the Bureau of Ocean Energy Management.

[2] *See also* "Public Comment Opportunities" on DOE's website, *available at* http://energy.gov/nepa/eis-0470-us-department-energy-loan-guarantee-cape-wind-energy-Project-outer-continental-shelf.

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EEA Secretary Convinced New Bedford Will Be Staging Area for Cape Wind

It has come to the attention of the Alliance that the Commonwealth of Massachusetts's top energy and environmental official, Secretary of Energy and Environmental Affairs Richard Sullivan, is certain that New Bedford will be the staging area for Cape Wind even though Cape Wind to date has denied a new location for the proposed Project's staging area. During a hearing before the House Committee on Bonding, Capital Expenditures and State Assets of the Commonwealth, Secretary Sullivan stated that he is "'*absolutely convinced*' that the South Terminal in New Bedford will be the primary staging area for Cape Wind, despite the offshore wind farm's developers exploring other options in Rhode Island [Quonset, Rhode Island]." Murphy, Matt, "Top official 'convinced' Cape Wind plans primary base in New Bedford," State House News Service, at 1 (May 8, 2013) (emphasis added) (Attachment 1); *see also* Testimony of Secretary Sullivan (Attachment 1). Secretary Sullivan was testifying before the Committee regarding Governor Patrick's bond bill for environmental and energy capital spending, which includes an allocation of approximately $24 million for the South Terminal project in New Bedford, Massachusetts. Sullivan is reported as also stating that the South Terminal construction project is on a tight 19-month construction cycle to meet the timetable for Cape Wind. *Id.*

Cape Wind has made it clear it is seeking to "hide" the use of New Bedford as the staging site for the Cape Wind Project because this change would require additional environmental reviews. A move to a new staging location would require additional review by the Environmental Protection Agency for Cape Wind's air permit and would also require additional review by the Department of Interior under NEPA, the National Historic Preservation Act, and the Endangered Species Act. Even if the Quonset site is used for part of the initial consultation, the Project may ultimately make use of New Bedford, a project component not considered to date. Thus, it is critical DOE take heed to this new information, which confirms Cape Wind intends to move its staging location.

Offshore Wind Projects Impose Significant Impacts to Fishing and Marine Safety

New information from Europe has confirmed significant impacts to fishing and marine navigation because of offshore wind projects. In an article published in May, 2013 regarding the fishing industry in the United Kingdom, it was reported that "fishing in and near wind farms is difficult for most kinds of fishermen," and that "impacts of wind farms on fish stocks and the marine environment are largely unknown." Stevens, Lorelei, "England's wind farm experience offers critical lessons for U.S. fishing industry," Commercial Fisheries News, at 3 (May 2013) (Attachment 2).

In addition, the article further confirms that radar interference from the spinning blades of wind turbines "makes it difficult – if not impossible – to track other vessels inside the array." *Id.* at 2. The Alliance has repeatedly stressed the potential marine navigation risks associated with the Cape Wind Project, which create the strong likelihood for accidents and threats to public safety.

The presence of navigation risks by the Project has been confirmed by the administrative record for the pending litigation over Cape Wind. Additionally, a new study issued by the McGowan Group, entitled "Report of: A Comparative Analysis of The Development and Application of Marine Navigation Safety and Marine Environmental Protection Criteria for Offshore Renewable Energy Installations" concluded that the Cape Wind Project is fatally flawed as currently designed and sited, and is incompatible with the needs of marine transportation in Nantucket Sound. The Alliance has previously submitted this study to DOE for its consideration. Nevertheless, to date the U.S. Coast Guard, BOEM and now DOE have continued to ignore these very real navigation safety risks. Cape Wind has also turned a blind eye to these risks, and as a result has failed to adequately mitigate the navigation and public safety risks created by the Cape Wind Project.

Cape Wind Must Be Located Further Offshore to Avoid Noise Impacts

Research conducted on the effects of low frequency noise pollution from offshore wind farms show the potential for health effects. Studies done in the United States and the United Kingdom show the potential of low frequency noise from wind farms affect public health. In fact, a recent study by ear, nose and throat specialists in the United Kingdom, found that "infrasound can have physiological effects. ...the outer hair cells of the cochlea respond to infrasound, which could affect the functioning of the ear. Another study looked at how the auditory cortex of the brain can also be activated by low-frequency noise, which could produce health effects." Arlsen, Audrey, "Could Wind Turbines Be Toxic to the Ear?," NPR, *available at* http://www.npr.org/blogs/health/2013/03/27/175468025/could-wind-turbines-be-toxic-to-the-ear?utm_medium=Email&utm_source=share (Apr. 2, 2013) (Attachment 3).

Additionally, studies show that offshore wind farms must be a certain distance from residential areas to avoid low frequency noise impacts to these areas. Based on studies in Denmark, the A-weighted sound pressure calculated at a distance corresponding to four times total height is 39.2 dB(A) for the small turbines representing an average nominal power of 950 kW and 38.0 dB(A) for the large turbines representing an average nominal power of 2500 kW. Based on this information, "it can be extrapolated that 128 turbines increase the noise power by 21 dB. [And] in order to reduce that power to be the equivalent of a single turbine, the distance from 128 turbines needs to be 12 miles." Baglino, Mike, "Low Frequency Noise Impacts of Offshore Wind" (Attachment 4). As a result, "the proposed Cape Wind project of 130 wind turbines must be a minimum of 12 miles offshore to avoid low frequency noise impacts to residents." *Id.* Currently, the Project is expected to be as close at 5.2 miles to Point Gammon. *See* Cape Wind, FAQs, available at http://www.capewind.org/FAQ-Category4-Cape+Wind+Basics-Parent0-myfaq-yes.htm.

DOE must take this new information into consideration as it moves forward with the due diligence review of Cape Wind's loan guarantee application, and more specifically the Project's FEIS. DOE is obligated to ensure that its decision is based on an adequate and accurate record.

The Alliance restates for the record that DOE has failed to take the necessary steps to approve a loan guarantee or other action committing federal funds. DOE has a responsibility to administer the Federal Loan Guarantee Program in an objective and responsible manner and to protect the interests of the nation's taxpayers when utilizing taxpayer monies to fund projects under this program.

Thank you for considering these comments. Please contact the undersigned at (508) 775-9767 should you have any questions.

Sincerely,

Audra Parker
President and CEO

cc: The Honorable Sally Jewell, Secretary of the Interior
Daniel B. Poneman, Acting Secretary of Energy
David G. Frantz, Acting Executive Director, Loan Programs Office, DOE
Tommy Beaudreau, Director, Bureau of Ocean Energy Management

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Maura Parker
p. 62-63

SAVE OUR SOUND
alliance to protect nantucket sound

April 29, 2013

Chairman Broun
Subcommittee on Oversight
House Committee on Science, Space, and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Chairwoman Lummis
Subcommittee on Energy
House Committee on Science, Space, and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Broun and Chairwoman Lummis:

I am writing to supplement my prior written and oral testimony, which was submitted at the April 16, 2013 joint hearing by the Subcommittees on Oversight and Energy, of the Committee on Science, Space, and Technology, on the topic of "Assessing the Efficiency and Effectiveness of Wind Energy Incentives." As requested by Congressman Posey at the hearing, I am submitting a timeline of events in the federal and state review of the Cape Wind Project, many of which support my answers given to questions asked by you and other Members of your Subcommittees or by Chairman Smith of the full committee, himself. While my previously submitted written testimony covers many of the areas related to public safety and cost, the enclosed timeline adds supplemental information to the questions posed to me regarding shortcuts in the National Environmental Policy Act (NEPA) process, atypical events and unusual deference toward the developer's business interests.

Cape Wind received unusual support and relief from agencies in the permitting process. The history of the Cape Wind Project review reveals an extraordinary relationship between the timing of government decisions and political or media events or deadlines for future government actions necessary to approve the project or help it obtain a loan guarantee. The inescapable conclusion is that the approval of the project was pre-determined and the decision-making procedures were manipulated to support the fervent political goal to get this project approved regardless of its merits. As illustrated by the enclosed timeline, there are numerous examples of agencies deferring to the economic interests of Cape Wind.

Simply as an example, I note the following:

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- The U.S. Coast Guard abandoned buffer zones because it would reduce the footprint of the Project and make the Project uneconomical. The Coast Guard has since recommended these buffer zones for other offshore wind projects and areas.

- The U.S. Fish and Wildlife Service found that Cape Wind should shut down wind turbines on a temporary basis to reduce bird kills, but later abandoned this requirement because it was too costly for Cape Wind.

- The Federal Aviation Administration (FAA) has abandoned previous plans to require Project shutdowns to protect public safety if mitigation for the Project ends up being ineffective. The head of the Obstruction Evaluation Service at FAA appeared to be more concerned about Cape Wind's bottom line stating that shutting Cape Wind down midstream would create an undue burden and could possibly bankrupt the company.

- The U.S. Department of Interior (DOI) granted Cape Wind an exemption from geological and geophysical survey work required under the Outer Continental Shelf Lands Act to approve its Construction and Operating Plan so that Cape Wind could avoid spending an additional $30 million it could not fund at the time.

- On October 10, 2013, Interior engaged in a "sudden rush" to get financial security in place so former Secretary Salazar could stage a media event signing the Cape Wind lease as part of his keynote address at wind industry conference.

- Former DOI Secretary Salazar unilaterally declared section 106 consultation would end in March 2010 after the designation of the Sound as a traditional cultural property in January 2010. Normally, consultation lasts for many months or even years; however, Salazar terminated consultation on March 1. This action was taken by Salazar to make possible a federal decision on the Cape Wind lease before May, when the power purchase agreement proceedings before the Massachusetts Public Utilities Commission had to begin to ensure a decision by the fall, in time for the gubernatorial election.

- The Advisory Council on Historic Preservation (ACHP) recommended the project's denial on April 2, 2010. Emails received through Freedom of Information Act requests show the Governor Patrick's office consulting with Secretary Salazar to produce a letter from a group of Governors to Secretary Salazar urging him to reject the ACHP's position. The emails show extensive coordination with the New York Times, leading to an April 20, 2010 editorial to approve the project, which Salazar did on April 28, 2010 (the same day he rejected the ACHP recommendation).

- Salazar's April 28, 2010, decision was announced at a major media event in Boston, Massachusetts, which included a pre-arranged celebration with stakeholders supporting the project. Environmental Protection Agency (EPA) official Gina McCarthy, with a duty to review the Cape Wind Clean Air Act

permitting process stated to Ian Bowles, former head of the Massachusetts Department of Energy and Environmental Affairs, "Yippee" and praised the decision as a "grateful resident."

- Within an eight-day period between December 30, 2010 and January 7, 2011, the following federal actions occurred: the National Marine Fisheries Service revised the project's biological opinion under the Endangered Species Act; the Army Corps of Engineers' issued decisions on the project's section 10 and 404 permits; and the EPA approved the project's Clean Air permit. Such coordinated decisions on applications that were pending for years are unusual. This timing coincides with the Department of Energy's (DOE) "kickoff meetings" on the Cape Wind loan guarantee.

- In 2011, Cape Wind worked diligently to obtain a loan guarantee from DOE. Its ability to do so would fail if DOI required an environmental assessment (EA) on the project's construction and operation plan (COP) with public comment because of timing. As a result, Cape Wind wrote an email to Director Bromwich of the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE), who sent an email to Deputy Secretary David Hayes and Chief of Staff Laura Davis, asking to avoid the EA process. BOEMRE issued the COP for a two-week comment period with no EA on February 22, 2011.

- The FAA typically issues guidance on obstructions every January. The FAA had to reconsider Cape Wind in 2012 because it lost a lawsuit in court regarding its "no hazard" determination. The FAA put out a comment notice on Cape Wind. After the comment period closed, the FAA then issued its clarification on obstructions in June. It approved Cape Wind under the new guidance shortly thereafter.

- These games continue to be played during the ongoing litigation. For example, DOI waited until the opening brief was filed by the wildlife plaintiffs to approve the avian and bat monitoring plan on November 20, 2012. Then the government used the plan to reply to the plaintiffs' brief.

Numerous other examples of shortcuts in the NEPA process, avoidance of public comment opportunities, refusal to meet with proponents of alternative sites, and other biased actions all designed to facilitate the Cape Wind project's goals and timing exist. Many of these examples have been highlighted in the enclosed timeline. The attached timeline documents events and agency communications that show that federal agencies have taken shortcuts in the process and given unusual deference toward the developer's business interests. The timeline also includes DOE communications and events regarding the loan guarantee for Cape Wind. In addition, we would like to emphasize the highly inappropriate collusion among federal agencies, the Commonwealth of Massachusetts, and Cape Wind to achieve critical timing stages to promote this project.

As the Alliance expressed previously, we respectfully request that the Committee instruct the Government Accountability Office (GAO) to conduct an independent assessment of the Cape Wind Project to evaluate the many deficiencies in the Project's NEPA process, clear political bias in the Project's permitting and what would be double-dipping on the part of Cape Wind should it qualify for a number of federal financing incentives, including the production tax credit or the investment tax credit and a loan guarantee. The GAO should conduct a cost-benefit analysis taking into account economic, historic, tribal, environmental, safety, and other public interest factors, and evaluate if the federal decision making agencies involved predetermined the outcome of their reviews. The question must be asked as to whether overly lenient standards were applied based on a policy favoring expedited development of renewable energy, regardless of cost. We also ask that the Committee require any action on the loan guarantee and energy investment credits to be suspended until this independent report is complete and the five pending lawsuits against the Project are resolved. Thank you.

Sincerely,

Audra Parker
President and Chief Executive Officer
Alliance to Protect Nantucket Sound

Documents Pertaining to the Cape Wind Loan Guarantee and DOE's Adoption of DOI's 2009 Final Environmental Impact Statement

Abbreviations:

APNS	Alliance to Protect Nantucket Sound
AWEA	American Wind Energy Association
BOEMRE	Bureau of Ocean Energy Management, Regulation and Enforcement
CEQ	Council on Environmental Quality
COP	Construction and Operations Plan
CW	Cape Wind
DEIS	Draft Environmental Impact Statement
DOE	U.S. Department of Energy
DOI	U.S. Department of Interior
DPU	Massachusetts Department of Public Utilities
EA	Environmental Assessment
EEA	Massachusetts Department of Energy and Environmental Affairs
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FOIA	Freedom of Information Act
FWS	U.S. Fish and Wildlife Service
GCA	Green Communities Act
MHC	Massachusetts Historical Commission
MMS	Minerals Management Service
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPS	National Park Service
PPA	Power Purchase Agreement
SHPO	State Historic Preservation Officer
TCP	Traditional Cultural Property
TRC	Cape Wind contractor
USCG	U.S. Coast Guard

01/04/07	Deval Patrick assumes office as the Governor of Massachusetts.
04/21/08	APNS comments on MMS Draft Environmental Impact Statement for the Project.
05/20/08	Email from MMS employee (Cluck) to FWS: "Formal consultation has 'been a long time coming. It is very important that FWS stick to the 135 days. The 135 days ends October 1, 2008…The schedule is very tight. Any assistance upper management can provide to keep the Cape Wind process on track would be greatly appreciated.'"

05/27/08	Note from TRC: "MMS is going to start writing a draft of the lease" prior to completion of the NEPA process, showing the decision to issue a lease to the Project is predetermined.
05/27/08	Notes from TRC: "Seasonal restrictions - MMS needs to go back to Cape Wind about vessel scheduling and local boating concerns and resolve as MMS is not likely to budge - this is bare bones - they focused on winter flounder in Lewis bay and ? Not hit up the project for any other Essential Fish Habitat (EFH) species - if they did - there would be many more restrictions."
06/19/08	Email from Jim Woehr (Avian Biologist at MMS) to Rodney Cluck (MMS) there is no denying paucity of data, then says "If MMS is going to approve the project by the end of the year, can tradeoffs be made with FWS in exchange for a favorable ruling?"
06/23/08	Notes from TRC: "Vern - why this tight schedule? Since it essentially shuts out the potential for more studies...most key issue is timeline for getting Final Environmental Impact Statement (FEIS) - and so other studies cannot get done in this timeframe."
07/02/08	Governor Deval Patrick signs into law the Green Communities Act (GCA). Section 83 of the Act provides that Massachusetts electric distribution companies must solicit proposals for contracts for renewable energy two times in a five-year period. Electric distribution companies may either enter contracts voluntarily or through a competitive bidding process. The renewable energy must come from producers located in Massachusetts, State waters or adjacent federal waters (i.e. Cape Wind).
08/01/08	Email from FWS to Sally Valdes (FWS): "'The Service raised significant concerns about the Cape Wind Project in our 21 April 2008 letter to Dr. Rodney Cluck. These issues remain unresolved.' 'We believe the Cape Wind review needs to be undertaken in a much more methodical and detailed way...The short turn-around time for review of your monitoring plan will not make this possible, given that no effective techniques for post-construction monitoring exist.'"
08/21/08	Notes from TRC: "mitigation with FWS is a mess."
09/04/08	Email from FWS to MMS: "One thing that concerns me is that the time provided for our review and comment on the avian monitoring plan is very short."
10/28/08	Note from TRC – USCG radar report - talking with director tomorrow to resolve-turf war between regional office vs. headquarters office.
11/02/08	Email from MMS to FWS: "Please advise as to the next steps regarding draft

	RPM No.2 (i.e., is further discussion between FWS, MMS and CWA needed; will you remove RPM No. 2 or provide an updated version for review, etc.)."
11/10/08	Email from TRC to Cape Wind: "A delay of a day or so could cause us to miss the schedule, and then the Record of Decision (ROD) will not come out under this administration. Rodney has explained in the past that missing this administration will likely result in months of delay before the new players that will come in under the new administration will act on this project."
11/10/08	Email from TRC to Cape Wind and MMS: "...if we have to stop work for even a day, the FEIS schedule is blown and you can forget a ROD before January."
11/12/08	In an email exchange between Randall Luthi (former MMS Director) and Rodney Cluck (MMS), Luthi states, "If someone in the White house complex were to call USCG about Cape Wind, who is the best person and phone number?" Cluck's response back to Luthi, "Our USCG contact suggest RADM (Admiral) Salerno, 202-372-1001; Assistant Commandant for Safety, Security, and Stewardship. Although he is not at the White House, I am told he is a very good contact."
11/13/08	Email from TRC to Cape Wind: "Craig (with Cape Wind), some last minute issues are threatening the FEIS schedule that could result in months of delay in the ROD. Suggest you contact Rodney and ask him how things are going with finalizing the FEIS and if there are things that might delay the schedule. It has been chaotic down here at MMS office the last two days! I would delete this email."
11/17/08	Email from TRC to Cape Wind: "Also, I assume Rodney has informed you of the Migratory Bird Treaty Act (MBTA) hurdle that FWS has thrown up at the last minute. If not, give me a call or Rodney to get the low down."
11/17/08	Notes for TRC: "CW using Barclay's for financing says RPM#2 will kill the project because cannot get financing. Barclays writing a support letter for this position."
11/19/08	Email from MMS to Solicitor: "FWS, and by extension the project, is vulnerable if we don't offer adequate (sic) support for any change in the RPM."
12/01/08	Notes from TRC: "Rodney called to cancel the printing, Coast Guard study looks like nav risk could be a major not minor— affects other things if they do restrictions like fishing, recreation, etc."
12/09/08	Notes from TRC: "admirals being pushed to hold a public comment period on USCG report - Delahunt, Oberstar, Kennedy."

12/09/08	APNS sends Rear Admiral Salerno of the USCG a letter requesting that the USCG: 1) take immediate action to adhere to its previous commitments regarding public participation in the development of terms and conditions to protect navigational safety in Nantucket Sound in connection with the Cape Wind project; and 2) establish such requirements in a manner that will satisfy the requirements of section 414 of the Coast Guard and Maritime Act of 2006.
12/09/08	Representative Oberstar sends a letter to Commandant Allen of the USCG regarding the project's radar study and process for commenting on a report that is not available to review for the public.
12/10/08	The Passenger Vessel Association writes to USCG Captain Raymond Perry stating, "...believes that the Coast Guard is failing to fulfill its mandate to protect navigational safety for ferries and other existing marine operations in Nantucket Sound. Specifically, it is not complying with its mandate under Section 414 of the Coast Guard and Maritime Transportation Act of 2006 (Public Law 109-241)."
01/02/09	APNS sends a letter to the USCG expressing its grave concerns with the USCG commissioned radar study conducted by Technology Service Corporation (TSC) intended to simulate the radar interference that would result from the proposed Cape Wind project in Nantucket Sound.
01/12/09	In a letter to Senator Daniel Inouye, Edward Barrett the President of the Massachusetts Fishermen's Partnership (MFP), an organization of commercial fishermen's associations from all geographic sectors of the Massachusetts fishing industry, expresses MFP's concerns on the USCG's radar study.
01/12/09	APNS expresses concerns about the mitigation measures that have been recommended to date by the USCG and CW. Some of the measures proposed by USCG are found in the MMS draft environmental impact statement (DEIS); the others were recently presented in the October 7, 2008 Stakeholder Workshop and December 5, 2008 teleconference held by the USCG Southeastern New England Sector Command.
01/13/09	The USCG delivers the Terms and Conditions to MMS for insertion into the Cape Wind final environmental impact statement (FEIS).
01/13/09	In an email TRC states "Sounds like we have the arguments to stand behind the Major determination for operations impacts on marine birds." Elizabeth Annand (consultant) argues in favor of saying that the impact on terns is "Major" as well. She states: "There is evidence that the terns listed have unstable populations . . . there is also great uncertainty surrounding the information about tern movements in relationship to the site of the proposed turbines... ."
01/15/09	Governor Patrick emails EEA Secretary, Ian Bowles, in response to update

	from Bowles that FEIS is coming out: "Wow. Fingers crossed. Supposing it is approved, what happens next?"
01/16/09	MMS issues the CW FEIS on last day of Bush Administration.
01/20/09	President Obama is inaugurated.
01/31/09	APNS requests a meeting with Interior Deputy Secretary Hayes.
02/12/09	Senators Delahunt and Kennedy send a letter to Secretary Salazar stating that Cape Wind should not be exempt from regulations still under development.
02/19/09	Deputy Secretary Hayes denies APNS's meeting request.
02/21/09	Governor Patrick sends an email to Ian Bowles: "Secretary Salazar told me it would be helpful to have a letter to him in support of the project. Will you take care of that ASAP?"
03/03/09	Governor Patrick sends a letter to Secretary Salazar on Cape Wind.
03/06/09	Cape Wind sends a letter to DOI complaining that the FEIS incorrectly concludes that there will be a "major" impact on birds, including roseate terns.
03/21/09	APNS submits four volumes of comments on the Cape Wind FEIS.
04/22/09	President Obama and Secretary Salazar announce a framework for renewable energy development on the Outer Continental Shelf (OCS). Salazar is on an aggressive policy/media campaign to approve 10,000 MW of renewable energy before the 2012 election.
05/02/09	Salazar announces an offshore renewable initiative, calling for rapid development.
05/05/09	Senators Delahunt and Kennedy send a letter to Secretary Salazar expressing their additional concerns on the Cape Wind project.
06/09-09/09	The Obama Administration conducts public scoping on ocean policy; statements are made that Cape Wind will be exempt from marine spatial planning (MSP). Numerous parties testify on need to subject Cape Wind and offshore energy to MSP; Cape Wind argues it should be exempt.
06/01/09	President Obama issues an ocean policy directive, calls for MSP to avoid conflicts in uses. MSP policy seeks to avoid conflicting uses of ocean areas, acknowledges the important role of tribes and local governments, the need to protect historic sites, and to plan ahead for ocean uses.

07/06/09	CEQ emails DOI: "Wanted to let you know I just found out Senator Kennedy is circulating a letter to both Senate and House offices - the letter indicates that moving forward with Cape Wind would be in direct contradiction to the President's ocean memorandum. This is just a heads up."
07/08/09	Senators Kennedy and Delahunt write to Obama to ask for no action on Cape Wind until MSP in place and to ensure that Nantucket Sound is included.
08/09	Secretary Salazar makes statement in press conference that Cape Wind looks like a good project to him.
08/26/09	Senator Kennedy dies.
09/11/09	EEA staff emails EEA Secretary Bowles, stating: "Expect you will be able to move the task force and Memorandum of Understanding (MOU) proposals forward on Thursday at MMS. As far as Department of Energy (DOE) agenda items... discuss the ITC as it relates to the Cape Wind project."
11/09-12/09	The Massachusetts Historical Commission issues finding of Traditional Cultural Property (TCP) throughout Nantucket Sound, which entitles the Sound to be eligible for listing on the National Register under section 106 of National Historic Preservation Act (NHPA).
11/09/09	Governor Patrick decries TCP determination as "ridiculous."
11/12/09	Senator Kirk writes letter to President Obama regarding concerns over Cape Wind.
11/18/09	MMS sends a letter to the National Park Service (NPS) stating that in its submission to the Massachusetts Historical Commission they concluded that Nantucket Sound is not eligible for listing as a TCP or a historic property on the National Register of Historic Places because it does not meet any of the required Criteria of Eligibility (36 C.F.R. Part 60).
11/28/09	Bowles advises to announce memorandum of understanding (MOU) between Cape Wind and National Grid for power purchase agreement (PPA) on 12/02/09 at American Wind Energy Association conference. Bowles emails Governor Patrick that Cape Wind and National Grid are swapping MOU initial drafts. "I discussed with Dave Friedman Wed. evening, I expected to convene Cape Wind, NGrid and AG staff Monday in hopes of agreeing on MOU – would basically be an agreement in principle...This could fall apart at any point and it's still pretty tentative right now, but my goal is to have able to announce agreement in principle Wed. morning at your American Wind Energy Association remarks (including with no AG as a party if they balk at MOU - would make it easier if we had them, but not essential). It would be worldwide news if/when it comes together."

12/01/09	A $44 million rate hike for National Grid is approved by Massachusetts Department of Public Utility (DPU) Commissioners. That same day, National Grid and Cape Wind sign an MOU setting forth a proposed timetable for a long-term PPA under the Green Communities Act. Cape Wind and National Grid file the MOU with the DPU on December 3, 2009.
12/02/09	Governors' office emails EEA: "We got a request to keep DC informed of CW devts . . . Regarding Ngrid press release."
12/21/09	Bowles sends letter to NPS opposing TCP for Tribe.
12/21/09	Internal EEA email discusses Governor sending letter to DOE Secretary Chu to support Cape Wind loan guarantee application. Cape Wind previously submitted a loan guarantee application, but withdrew it. FOIA documents to U.S. Treasury also reveal a meeting with Cape Wind representatives about tax credit.
12/22/09	Cape Wind submits application for Section 1705 loan guarantee.
12/29/09	DPU issues an order approving a competitive solicitation for renewable energy contracts and the proposed MOU between Cape Wind, National Grid, and the Massachusetts Department of Energy Resources. Later in the DPU proceeding, it is revealed that the DPU had a huge response to the RFP from qualified, less expensive sources of renewable energy. DPU seeks to apply the "Massachusetts only provision" of GCA to preclude those competitive bids.
01/04/10	NPS determines that all of Nantucket Sound is eligible as a TCP; Salazar announces he will control process under the NHPA and push for a final decision.
01/04/10	Internal CEQ email states: "Possible announcement today or tomorrow on Cape Wind. The keeper will make announcement today that states that the Nantucket Sound should be historically preserved."
01/04/10	Internal CEQ email states: "Can you call me as soon as you know? There are some issues here."
01/13/10	Salazar convenes section 106 historic consultation meeting in D.C. He declares three goals: tribes, historic preservation, and renewable energy and declares that a decision will be made in March under NHPA. Declaring a mandatory end-point ensures limited consultation with the Tribes and sets up a decision schedule for April that is needed for the Massachusetts DPU proceeding to reach a decision in time for a final ruling on the PPA to qualify Cape Wind for the end of 2011 deadline for a Treasury 1603 tax credit.
01/28/10	Hayes sends a letter to Cape Wind President Jim Gordon inviting Gordon to

	meet the morning of Feb 3, 2010 while he is in Massachusetts (the same letter is sent to tribes and the State Historic Preservation Office).
01/31/10	APNS requests a meeting with Deputy Secretary Hayes to seek a consensus outcome.
02/01/10	DOE sends email to contractor: "cw wants to have an __ done first on their litigation situation (to see if its __ before proceeding further into due diligence and __. But I feel this one will proceed."
02/02/10	Top DOI officials visit Nantucket Sound with media on board; however, tribes are not invited as part of the historic preservation consultation process under section 106.
02/02/10	EEA staff emails Secretary Bowles with talking points for his meeting the next day with MMS/DOI. "Your MMS staff has been terrific and very responsive to our input." Please act and approve the Cape Wind project . . .", "reduction in turbines from 170 to 130." Reduction in the number of turbines had occurred years earlier. Salazar also makes this point when he approves the project, suggesting it was the result of DOI review.
02/04/10	Internal EEA email states Governor Patrick and Ian Bowles to meet with DOI officials.
02/12/10	Bowles sends a letter to Salazar/MMS stating "forthwith approve Cape Wind."
02/19/10	APNS meeting with David Hayes is denied.
02/28/10	Secretary Bowles sends Governor Patrick an email that states: "Procedural step only on pathway to final decision in April. No surprises likely. In active touch with DOI."
03/01/10	Salazar terminates section 106 process, says agreement is not possible; tribes object; matter referred to independent Advisory Council on Historic Preservation (ACHP).
03/04/10	MMS issues Environmental Assessment (EA) to supplement EIS. Timing of EA and 30-day comment period appears planned to accommodate the need for a decision in April to make the Massachusetts DPU process go forward in time to get a decision for Cape Wind to qualify for a federal 1603 tax credit. The timing of the Salazar termination of consultation on TCP is also geared to same schedule based on the time available to ACHP to complete its review.
03/22/10	ACHP holds public hearing in MA; testimony strongly opposes Cape Wind.
03/26/10	EEA sends email to Cape Wind with a letter from Bowles to Salazar to

	approve Cape Wind.
04/02/10	ACHP issues a recommendation to Salazar, which calls for project to be rejected, notes the great importance and precedence of decision, and finds that alternatives are available. This is a precedent-setting recommendation that condemned failure of entire Salazar approach to offshore wind and importance of cultural resources and the unique nature of the Sound as a TCP.
04/15/10	EEA emails Governor to propose a multi-state letter on ACHP recommendation. "Salazar is making decision soon so we need to circulate and get this signed by other governors asap."
04/15/10	The Massachusetts Federal-State Relations Office sends an email regarding the effort to generate a letter from other Governors to urge Salazar to overturn the ACHP – "Interior is making decision this month and for the letter of influence the decision making we need to get it in ASAP."
04/16/10	EEA emails Bowles that Governor sent personal letter to Salazar expressing "total support" for Cape Wind.
04/16/10	TransCanada Power Marketing Ltd. files a lawsuit in the U.S. District Court for the District of Massachusetts Central Division alleging violations of the Commerce Clause of the U.S. Constitution. Specifically, TransCanada alleges that the geographic limitation under the Green Communities Act, which only allows Massachusetts electric distribution companies to consider in-state resources for renewable energy contracts violates the Commerce Clause.
04/18-04/22/10	Massachusetts engages in a lobbying campaign for a letter from Governors of New England and Mid-Atlantic states urging the rejection of ACHP recommendation. FOIA documents reveal heavy lobbying by Massachusetts.
04/20/10	The Massachusetts Federal-State Relations Office emails the NY Times: "We're doing our best to balance the need to weigh in as soon as possible to influence the Secretary's decision with having as much support as we can; based on this balance, our EEA Secretary wants to have the letter in by mid-day tomorrow."
04/23/10	Six governors write to urge rejection of ACHP recommendation; FOIAs to states show White House involvement and a coordinated effort by Governor Patrick.
04/27/10	An email from the White House and Executive Office of the President to New Jersey shows a list of Office of Intergovernmental Affairs (IGA) contacts. "If you ever have any need for assistance in contacting the agencies of the White House, please let me know."

4/28/10	Salazar sends letter to ACHP thanking them for the comments on Cape Wind, but "I find that the balance of considerations weighs in favor of approving Cape Wind Project."
04/28/10	Salazar announces the decision to approve Cape Wind at Boston press conference with Governor Patrick. The same day, the Governor overrules the ACHP and issues another EA to bolster EIS deficiencies.
04/29/10	Email sent from Gina McCarthy, Assistant Administrator for Air Regulation at EPA, to EEA Secretary Bowles about their great leadership on the Cape Wind issue. She calls herself a grateful resident with a subject title "Yippee."
05/02/10	EEA sends an email to Maryland Attorney General regarding the multi-state governors letter stating: "Salazar shared at the press conference that the letter was one of the overriding factors he considered in his decision."
05/10/10	Massachusetts DPU begins proceeding on contracts on expedited track. Schedule would seek decision in time for Treasury 1603 tax credit.
05/10	FAA reverses its previous hazard finding and concludes that it is ok to build the Cape Wind project and then see if there is an aviation problem.
06/01/10	DOE issues a technical evaluation stating Cape Wind is eligible for a loan guarantee under both the 1703 and 1705 programs.
06/09/10	DPU issues an order enacting emergency regulations to suspend the geographic limitation on out-of-state resources for renewable energy contracts signed pursuant the Green Communities Act. This action is apparently taken because of commerce clause violation highlighted by the TransCanada lawsuit.
06/25/10	Four federal lawsuits filed against DOI for approval of the Cape Wind project.
06/29/10	Mike Barre in the office of the Director for BOEMRE (MMS's successor agency) states "It looks like we may have to go with 5 tomorrow for this - Laura Davis needs to attend this briefing and is out all day at the WH conference Thursday. David Hayes wants the lease to go out this week and this meeting needs to precede that."
07/21/10	BOEMRE employee writes an email asking, "Is there any news on CWA acceptance of the lease terms? I know folks are anxiously awaiting the signing of the first lease so . . ."
07/22/10	BOEMRE employee writes an email stating, "Next to the spill this seems to be at the top of everyone's list of interest."
08/13/10	The DPU rejects without prejudice three PPAs filed by NSTAR with other

	renewable energy projects because NSTAR failed to consider out-of-state resources as required under the DPU's emergency regulations. However, the DPU does not apply the same standard to National Grid, even though it did not consider out-of-state resources.
09/03/10	Federal lawsuit filed by the Town of Barnstable against FAA.
09/07/10	In an email, Chief of Staff, Laura Davis, states to David Hayes, the Director of BOEMRE, and the Solicitor of DOI, among others that the "Secretary is eager to hear from us as to whether the remaining issue, related to the archaeological surveys and COP timing, can be expeditiously resolved."
09/23/10	Tim Baker, an attorney in the Branch of Petroleum and Offshore Resources at DOI, states in an internal email that the COP from CW is incomplete. Specifically, he writes, "What we have from CWA is an incomplete COP. CWA will need to provide BOEMRE a number of additional items for the COP to be deemed complete. We have estimated the environmental review and COP approval might not be finished until early next year."
09/29/10	Department of Justice files a motion to dismiss the four federal lawsuits, claiming that there is no "final action" for purposes of the litigation because Salazar has complete discretion to deny the project at the lease *and* Construction and Operating Plan (COP) stage.
10/01/10	BOEMRE circulates an internal document entitled "Summary of Identified COP Deficiencies," which documents 11 pages of project deficiencies.
10/06/10	Salazar signs lease with Cape Wind President, Jim Gordon, at a wind energy conference in Atlantic City.
10/18/10	Northeast Utilities and NSTAR announce proposed merger.
10/20/10	Governor Patrick announces move of project staging area from Quonset, RI, to New Bedford, MA to claim local job creation days before gubernatorial election.
10/29/10	Cape Wind submits COP application with BOEMRE.
11/2010	Salazar launches "Smart from the Start" wind energy initiative for the Atlantic OCS. It is designed to facilitate siting and leasing for commercial wind projects on the OCS and to encourage their responsible development.
11/01/10	Northeast Utilities and NSTAR sign merger agreement.
11/02/10	Governor Patrick is reelected.

11/04/10	APNS files suit against the FAA for its "no hazard" determination.
11/19/10	Cape Wind announces it cannot construct for about one year and will miss Treasury 1603 tax credit cash payment set to expire under federal law. Timing appears to be based on lame duck session and push to extend the expiration of the 1603 tax credit.
11/23/10	Internal DOE email states "We've settled on a minimum SNI (sponsor net investment) of __. That's a minimum not a target. Most projects have a higher SNI, especially riskier projects . . . Its relevant that GE is also the equipment supplier . . . We got comfortable with __ because of the extremely strong guarantees that GE was providing under its very long ___ contract __wind turbine availability for __ years."
11/23/10	DPU approves PPA-1 (National Grid) and rejects PPA-2 (no buyer).
11/23/10	Salazar makes major announcement on offshore wind program, uses Cape Wind as a prime example.
11/24/10	Northeast Utilities and NSTAR file for Massachusetts DPU approval of merger.
12/01/10	DOE sends an email to CW: "My Senior Investment Officer is awaiting a response from a senior credit group member, after which he will make his determination on the status of your part II application. I am pushing from the sidelines for expediency, and expect a response in the next few days."
12/01/10	BOEMRE circulates an internal document entitled "COP Review for Cape Wind Associates (CWA) OAEP Marine Biologist Review, December 2010," which documents numerous deficiencies of the project in complying with federal laws.
12/02/10	Internal DOE email states: "in spite of his relatively small ___ would Jim Gordon step up in a material way if the project ___? If so, why do we think so? Would he be able to spend __ dollars if need be?"
12/10/10	NSTAR resists pressure to purchase power from Cape Wind due to high cost.
12/17/10	Tax break bill passes House and Senate with extension for the 1603 Treasury grant program.
12/17/10	DOE emails CW: "Any potential issues or concerns would be raised by these groups at the meeting. So that together we can craft a package that has the best chance of making it through our credit process, and makes economical sense for Cape Wind."

12/21/10	Media reports of Governor's office pressure on NSTAR to buy PPA-2 as a condition for approval of merger with Northeast Utilities.
12/23/10	NSTAR executes long-term PPAs with onshore wind projects pursuant to the new RFP under the Green Communities Act, the first such solicitation which permitted bids from out-of-state resources.
12/30/10	NMFS issues its revised biological opinion under Endangered Species Act – dismisses impact on whales; uses Quonset, RI, as staging area despite Governor Patrick and Cape Wind announcement of New Bedford during campaign season. First of three closely related federal decisions to push Cape Wind forward.
01/01/11	DOE Loan Guarantee application for CW states: "Under a 100% loan guarantee provided by the DOE...The guaranteed obligation will be $197 million. Assuming that CW can enter into another PPA, __% of the guaranteed obligation will be available at financial close to fund construction of __ turbines season A. The remaining guaranteed obligation will be made available to fund construction of the remaining turbines - season b- subject to additional PPA agreements, DOE review... ." The application makes mention of state and federal lawsuits against CW.
01/05/11	Massachusetts DPU holds public hearing on the NSTAR merger. Concerns are raised that the DPU will make the merger contingent on NSTAR agreeing to buy the CW PPA-2.
01/05/11	Army Corps of Engineers issues its permit to Cape Wind under Section 10 and Section 404.
01/07/11	EPA issues last permit for Cape Wind under Clean Air Act (CAA). Similar to the project's biological opinion issued by NMFS and the Corps permit, the CAA permit notes that Quonset, not New Bedford is the staging area for project.
01/07/11	EPA Region 1 CAA staff informs Assistant Administrator McCarthy of the approval of the Cape Wind permit with the statement "Good News!!!" This message confirms the involvement of Ms. McCarthy in the decision-making on the application, even though she had demonstrated her personal bias for the project in an email to Bowles on April 29, 2010. This email also indicates the bias of EPA Region 1.
01/11/11	Meeting notes from DOE on what to discuss with former Executive Director of the Loan Guarantee Program, Jonathan Silver, states: "Issues needing quick answers to enable the project to move into due diligence - NEPA___ DOE is not currently a coop agency for EIS (sponsors appeared surprised by this) and would have to open doc to public review thus creating an opp for new

	Sponsors to decide if they want to take this risk. Potential project issues identified by meeting (Note the sponsors attitude regarding the following was ____). Sponsors want DOE to ___. Deal structure - sponsors insist that they will be __."
01/11/11	DOE sends letter to Cape Wind: "It was a pleasure meeting with you, Jim and Gary to discuss the status of the project. Implementation of Cape Wind would certainly be a milestone in the wind industry and your commitment to the project is impressive."
01/19/11	CW lawyer writes to BOEMRE Director Bromwich to follow up on Friday conversation... "Gordon has learned from BOEMRE Project Manager Poojan Tripathi that if the agency is required to do an EA, a COP decision is not likely before May or June. Such a delayed COP decision effectively means that the project will not be built.... As we have discussed, very strong legal paths lie open to avoid this result. We again urge you to choose one of them. ... critical deadlines for DOE loan guarantee and other financing vehicles cannot be met f such a schedule is followed. This is the reason Cape Wind planned around a COP decision very early this year. Moreover, Cape Wind would be unable to move the pending litigation past the preliminary injunction phase, which is critical before construction can begin." Bromwich forwards the email to Deputy Secretary David Hayes and Chief of Staff Laura Davis.
01/21/11	Internal DOE email states: "We are trying to move forward with Cape Wind as expeditiously as possible . . ."
01/27/11	Email from DOE to Cape Wind states, "I want to assure you that the LGP remains very excited at the prospect of working with you to implement the Cape Wind Project and continue to hope that we can structure a deal that is satisfactory for both parties."
01/31/11	Internal DOE email states: "Attached is the project description for the Cape Wind project. If possible, please handle on a priority basis..."
02/11/11	Cape Wind files a revised COP backtracking on New Bedford issue. The revised schedule would make it possible for CW to be under construction in time to obtain the extended 1603 grant and to DOE loan guarantee under section 1705 before "sunset" of the program on September 30, 2011.
02/17/11	Senator Kerry and the Massachusetts legislative delegation send letters to Secretary Chu of DOE and Director Lew of OMB urging that they expeditiously approve Cape Wind's Loan Guarantee application with the DOE so the project can begin construction. To do so would require moving CW ahead of many other loan guarantee requests previously on file.
02/22/11	BOEMRE publishes the COP on its website and sets a two-week comment

	period for 1,000-page document. Says it will publish an EA, but does not commit to public review of the EA.
02/24/11	New Bedford Port Director sends an email to other New Bedford officials relating to a telephone conversation with CW in which CW stated although the COP would refer to Quonset, the plan was still to use New Bedford. The email explains that the reason for doing so is to avoid more NEPA review.
03/02/11	Parties to Cape Wind DPU proceeding file motion to reopen record to submit the information from the NSTAR PPA proceeding which confirm the abundance of lower-cost renewable energy.
03/14/11	APNS and others file notice of intent to sue DOE on loan guarantee.
03/18/11	Wright Frank, a BOEMRE employee, states in an internal email that with respect to the COP, "A policy decision has been made not to require Cape wind to add a section dedicated to Mitigation and Monitoring. However, we are well within our rights to ask Cape Wind to elaborate on how they will implement various requirements. My understanding is that they just parroted back the stipulations in some cases... . "
03/22/11	In an internal email to DOI Solicitor, Hilary Tomkins, it is stated that "... the Secretary was hoping to have BOEMRE approve Cape Wind's Construction and Operations Plan by April 6 (to coincide with the President's visit to Boston), but BOEMR has told the Deputy Secretary that it cannot be done by then."
04/18/11	The COP for Cape Wind is approved. However, no public comment allowed on the EA.
04/19/11	Salazar appears at another Boston press conference with Patrick to proclaim approval of COP.
05/09/11	The Massachusetts DPU issues an order denying a motion filed by APNS to reopen the CW PPA proceeding to admit information from the NSTAR PPA proceeding, which confirms the availability of other renewable energy resources that are lower-cost than CW.
05/11/11	The COP for Cape Wind is released on 02/22/1, with public comments due by 03/09/11. Of 156 comments received, only five comments (2 filed by individuals and three filed by organizations) agreed with the COP and the remaining comments (filed by 19 organizations and 132 individuals) found fault with the COP.
05/11/11	DOE puts Cape Wind's Section 1705 loan guarantee application for nearly $2 million on hold.

05/13/11	Cape Wind writes letter to Salazar, "My greatest hope now is that your leadership along with Secretary Chu, will find a way for the DOE to be able to make the requested loan guarantee to Cape Wind."
05/13/11	Internal email to Jonathan Silver of DOE states: "Are you ok with __ getting these Cape Wind specific talking points for his Markey call, in addition to the standard talking points?"
05/13/11	Internal DOE email is sent regarding Markey request for Call with ___: "Also looping Missy as the Governor's Office is calling her to talk about this, and Brandon who is coordinating the response to Salazar."
05/16/11	Email between EEA and DOE states: "It was great seeing you a couple of weeks ago… We've got a major stumbling point that perhaps you can advise on: On Friday, DOE announced that they were placing the Loan Guarantee for the Cape Wind project on hold, thereby putting in jeopardy the viability of the nation's first offshore wind project, and the only offshore wind project that can be built during the President's first term _____". . . any chance you could offer some guidance on how we can fix this problem?" Response from DOE to EEA suggests contacting Jonathan Silver and further states: "Jonathan and I have traded messages on your email."
05/19/11	Governor Patrick speaks with Jonathan Silver and others on a conference call about Cape Wind.
05/26/11	Email from DOE to Jonathan Silver states "Gov Patrick just called to talk to __ about Cape Wind… I said ___was busy currently, but that we would get back to him as soon as possible. He said he was available all day today or next Tuesday."
05/26/11	String of internal DOE emails state: "Patrick left his cell phone number.;" "I don't think Silver should be calling. Silver already spoke to Gov Patrick a week or so ago after ___ called. Gov. Patrick called back personally for __.;" "We're happy to schedule this call unless _____.;" "Ah ha. I didn't realize the Gov call happened last week. In that case __ should return the call. Thanks and sorry for the confusion."
05/27/11	Governor Patrick speaks directly with Secretary Chu.
05/27/11	Internal DOE email sent entitled "Cape Wind teleconference held May 19, 2011." "This memorandum summarizes the discussion during the teleconference held on May 19, 2011 between the Loan Programs Office of the Dept. of Energy and the MA Governor Deval Patrick, certain members of the Governor staff and certain other MA state officials. The call related to the hold letter received by Cape Wind from DOE on May 20, 2011."

06/07/11	BOEMRE publishes results of Massachusetts request for interest (RFI) in Wind Energy Zones. It shows strong interest from 10 developers in sites within the RFI zone, well outside of Nantucket Sound. CW's parent company, EMI, applies for large tracts, even though it has maintained throughout the CW permitting process that no alternative sites to Nantucket Sound are available.
06/13/11	DOE internal email states: "Matt- This is the most recent information I could find in our files. It's my understanding that Amelia <DOE congressional affairs> may also have a letter or some form of information related to the call that ___ will be having with Gov Patrick tomorrow?"
06/13/11	Internal DOE email states: "Phone call between __ and Governor Patrick tomorrow on Cape Wind."
6/17/11	Massachusetts Governor Deval Patrick writes letter to President Obama looking for support of the Cape Wind project in light of the DOE loan program.
06/21/11	Siemens suggests in a media call that it is willing to finance Cape Wind as DOE postpones backing, implying that DOE loan is not needed.
06/27/11	Internal DOE email sent: "Subject: White House mtg. Any feedback on Cape Wind discussion? Very little discussion of it as I understand."
06/27/11	Email sent from Heather Zichal to DOE: "Attached is the draft response letter to Gov Patrick on Cape Wind. I will sort out who this will come from -- likely going to be delay or __. Please send any edits to Roque by 9am tomorrow."
07/06/11	Internal DOE email states: "Regarding the Siemen statement - can you just clarify would it be appropriate/wise to discuss their financial support of the project given the hold status of the project under 1705?" DOE response email states that it is "My opinion is that if Siemens wants to volunteer info that is fine but there is no need to inquire about what Siemens intentions are."
10/18/11	DOE sends a letter to Governor Patrick discussing Cape Wind's loan guarantee.
10/28/11	The U. S. Court of Appeals revokes a previous "no hazard" determination by the FAA and finds that the FAA failed to consider the very real dangers and risks to the operations and safety of the 400,000 flights that transit Nantucket Sound each year.
12/29/11	USCG undertakes a large scale study of boat traffic up and down the Atlantic coast in response to DOI's announcement of "wind energy areas."

01/02/12	ISO New England makes a filing at the Federal Energy Regulatory Commission requesting qualification in the Forward Capacity Market for the 2015-2016 Capacity Commitment Period. In this filing, ISO New England states that neither the required transmission upgrades for Cape Wind, nor the project itself will be completed in time for the 2015-2016 period.
02/09/12	The FAA puts out a Public Notice concerning Cape Wind's Aeronautical Study No. 2011-WTE-322-OE. The previous study resulted in a "no hazard" determination" on 5/17/10, which was later remanded by D.C. Circuit Court on 10/28/11.
02/15/12	NStar agrees to purchase 27.5% of Cape Wind as part of the merger with Northeast Utilities. The Massachusetts DPU agrees to review the merger with a final decision by 04/06/12.
04/05/12	The merger between Northeast Utilities and NStar is finalized by the DPU.
05/22/12	APNS sends a letter to the FAA expressing concerns based on information obtained from the FAA in response to FOIA requests. In its letter, APNS states that "The FAA has consistently ignored the warnings of the local aviation community, including airplane pilots, regional airports, and airline owners that the proposed Cape Wind project would pose unacceptable risks to the safety of local pilots and passengers. The documents obtained make clear that the FAA has made decisions based on political factors."
06/15/12	An article by the Associated Press reveals that FAA employees felt political pressure to approve Cape Wind and did so amid internal disagreement over the best way to stop the turbines from interfering with radar and compromising airplane safety.
06/21/12	Boston Herald reports that "The congressman who led the Capitol Hill probe into the collapse of taxpayer-backed Solyndra is calling for an investigation of Cape Wind amid accusations federal air-safety officials caved under political pressure- saying both project bear a mark of an overbearing White House pushing green power at all costs."
07/17/12	Articles from the AP report that two powerful Congressmen question FAA over Cape Wind. The articles state: "In a letter to FAA's Acting Director, U.S. Reps. Darrell Issa, R-CA and John Mica, R-FL, referred to internal FAA documents, obtained by an opponent of the Cape Wind project, in which the FAA employees repeatedly refer to the high profile politics of [Cape Wind]....The Congressmen asked the FAA to provide various documents by July 31, including any communication about Cape Wind over the last 3 ½ years between the agency, Cape Wind, federal officials and the White House."

08/8/12	The House Committee on Oversight and Government Reform writes a letter to President Obama regarding DOE's 1705 Loan Guarantee Program and questions risks that were taken in how the funds were distributed. In the letter, the Committee states: "Documents show that Secretary Chu made you aware of objections to 1705 Loan Guarantee Program loans from senior economic advisors and career staff."
08/09/12	The Boston Herald publishes an article entitled, *Probe: Obama pushed $2B loan for Cape Wind.* The article states: "President Obama was personally briefed on Cape Wind's request to secure a nearly $2billion federal loan, with one official urging the DOE to 'get it done', because it was 'important' to Obama, the newly released e-mails show." "The White House has denied exerting any influence on the controversial loan program."
08/15/12	FAA releases "no hazard" determination again after many months of review.
08/23/12	APNS files a second appeal of the politically driven FAA "no hazard" ruling on Cape Wind.
10/10/12	Public Employees for Environmental Responsibility (PEER) and other parties file their brief in the federal litigation in U.S. District Court, D.C. against CW for violations of the Endangered Species Act and Migratory Bird Treaty Act.
11/06/12	APNS writes to Secretary of Energy "... to express our concerns that Cape Wind may be under consideration for Section 1703 funds under the Loan Guarantee Program in spite of the Project's many serious deficiencies and its high risk to the public. We also are concerned about reports that Cape Wind is seeking White House intervention in the DOE loan program and that additional funds may be appropriated specifically for Cape Wind. These reports appear to be supported by documents from DOE as well as an email regarding a DOE presentation to the President. A June 24, 2011, email describes an economic briefing with the President on the loan guarantee program. 'The WH was very direct about what should be included in the slides so we don't have much flexibility.'"
11/16/2012	DOE issues a notice adopting DOI's FEIS for CW. The notice states: "DOE to Adopt MMS FEIS for the Cape Wind Project in Nantucket Sound, offshore of Massachusetts. Pursuant to Section 1703 of the Energy Policy Act of 2005, the US Department of Energy (DOE) is considering a loan Guarantee ...As part of NEPA compliance process DOE intends to adopt the FEIS for Cape Wind...DOE will re-circulate the FEIS for 30 days following publication of the notice in the Federal Register."

12/31/2012	A notice in the Federal Register is published to notify the public of DOE's adoption of DOI's FEIS for CW's loan guarantee application. A public review period is initiated, which is scheduled to close in 30 days, or on January 29, 2013.
01/16/13	APNS submits letter to reiterate its request for a meeting with DOE, making this the Alliance's third request to meet with DOE. "As indicated in the Alliance's previous letters, dated November 6, 2012 and December 19, 2012, the Alliance is seeking to meet with the LPO to ensure it has sufficient information to fulfill its due diligence responsibility under the Loan Guarantee Program before risking taxpayer dollars to assist the Cape Wind project. As evidenced by your office's rejection of the Alliance's prior two meeting requests, DOE has indicated that it is not committed to pursuing the necessary due diligence for Cape Wind's loan guarantee application. As iterated in the Alliance's prior requests, the Alliance does not seek to meet with DOE regarding the application itself or any proprietary information disclosed within the application."
01/22/13	APNS submits a FOIA request to BOEM regarding Cape Wind's Avian and Bat Monitoring Plan. Records are partially released showing that peer reviewers raised significant concerns about this Plan for the project.
01/23/13	APNS sends a letter to DOE regarding regulatory violations in how it has adopted the CW FEIS and noticed this action. APNS asks that DOE correct these deficiencies and extend the public review period for adoption of the CW FEIS.
01/29/13	APNS sends DOE a letter in response to the public review period for adoption of DOI's FEIS. APNS highlights a large amount of new information that has surfaced since the issuance of the FEIS. APNS further notes in its letter that DOE is under an obligation under NEPA to consider this new information and cannot merely adopt the old FEIS, which does not consider any of the new information.
01/29/13	United South and Eastern Tribes (USET) submits comments to DOE regarding the flawed NEPA process of DOE adopting the Cape Wind FEIS and specifically the consultation process with the Tribes.
01/29/13	National Trust for Historic Preservation submits comments on the DOE adoption of the Cape Wind FEIS. The Trust's comments state: "...it is exceedingly unfortunate that, as currently sited, the Cape Wind project will have severe negative impacts on significant cultural and historic resources. These negative impacts will be the direct result of DOI's failure to meet its legal obligations under the NHPA and NEPA. The DOE cannot rely on DOI's inadequate reviews to satisfy its legal obligations under NHPA and NEPA."

02/14/13	According to an AP story in the Cape Cod Times, Cape Wind expresses interest in a wind-development area 27 miles off the Virginia coast.
02/20/13	Cape Wind announces that they have selected the Bank of Tokyo-Mitsubishi for securing debt for the project in a Cape Cod Times article "Cape Wind financing moves forward." The bank, which is based in Japan, is expected to coordinate $1.8B to $2B in debt financing for the project, according to *Power Intelligence*, a financial publication specializing in the energy industry.
02/28/13	The Committee on Science, Space, and Technology follows-up on a letter sent to DOE on January 25, 2013 in which is demanded information from DOE regarding CW's pending loan guarantee. The letter states that DOE missed the initial deadline to respond to the Committee, stating "Today's letter notes that DOE missed it initial deadline and demands the agency provide the requested documents by March 8, 2013."
03/11/13	Acting Director for the DOE Loan Guarantee Program Office, Mr. David Frantz, makes a presentation on the status of the loan guarantee program. His presentation explicitly states that part of DOE's 2013 loan guarantee program Work Plan is to issue at least one loan guarantee to an innovative renewables project and cites to the Cape Wind Project.
03/11/13	The AP reports that the deal with Cape Wind and Mass Tank is terminated, thus significantly reducing the number of local jobs Cape Wind claims to create.
03/11/13	APNS submits a letter to DOE objecting to the issuance of a loan guarantee for the CW project. In this letter, APNS highlights why the CW project fails to meet the standards for a loan guarantee under current law, why the CW project is a financially risky investment for DOE, why the project is likely to fail and additional new information that has come to light since issuance of DOI's FEIS that must be considered by DOE.
04/05/13	The Massachusetts delegation sends a letter to Secretary Chu of DOE to approve a massive loan guarantee for Cape Wind.
04/16/13	The Science, Space and Technology Committee's Subcommittees on Oversight and Energy hold a joint hearing on the Government Accountability Office's report on overlapping federal subsidies for the wind industry.
04/22/13	APNS submits a letter to DOE with new information that has been revealed about the CW project that must be considered by DOE. The letter specifically includes new information on critical geophysical and geotechnical surveys ffor the project that were never conducted and significantly increase the chance of cost overruns or ultimate project failure. In this letter, APNS further reminds DOE of its responsibility under NEPA to consider all new information

	submitted during the review period because the review period for the FEIS does not officially close until a ROD is issued on the proposed action.

EXHIBIT 1: A LETTER TO JIM GORDON, PRESIDENT OF CAPE WIND ASSOCIATES

Exhibit 1

Massachusetts Fishermen's Partnership

A Letter to Jim Gordon, President of Cape Wind Associates:

Dear Jim:

Throughout the review of the Cape Wind project, you have consistently asserted that the impact of these 130 steel turbines across 24 square miles of Horseshoe Shoals will either be neutral or even beneficial to the fishing industry. Your company has even made a public statement to the effect that there is little commercial fishing activity on the Shoals where this project would be located.

Yet, local fishing organizations unequivocally disagree with this statement. We have produced a study done jointly by M.I.T. and the Massachusetts Fishermen's Partnership, a group of 18 commercial fishing organizations, which shows that fishermen who traditionally fish in the Sound earn 50 to 60% of their annual income from the Horseshoe Shoals area.

Where is your data that backs up your claims that there is little commercial fishing in these waters? Where is your data showing that fishermen will not be adversely affected by this project?

The fishermen interviewed in the study believe placement of the wind towers would make navigation of mobile fishing gear between the towers hazardous or impossible. Mobile gear fishing vessels would be displaced from Woods Hole, Cotuit, Hyannis, and Provincetown. According to the Massachusetts Division of Marine Fisheries, 1,162,529 pounds of squid and fish were harvested in 2000 by mobile gear fishing vessels working in Nantucket Sound. According to the fishermen who fish in the Sound, a major portion of their catch is from Horseshoe Shoals. Loss of access to Horseshoe Shoals will displace fishing to other areas in and near Nantucket Sound. This raises the potential for crowding, gear conflicts and habitat impacts elsewhere in the Sound, thereby affecting additional fishermen and a broader range of fishing communities.

The representative fishermen who were interviewed identified vessels from Woods Hole, Cotuit, Hyannis, Marshfield, Sandwich, Chatham and Provincetown that regularly fish in the Sound. Many of the fishermen who work in the Sound are carrying on a multi-generational family tradition.

To our knowledge, the MIT/MFP study is the first of its kind that attempts to document the level of fishing activity on the Shoals and how that activity translates economically. MFP Board member Ron Borjenson said of that report that "The comments reported in the study show that commercial fishermen will be negatively impacted and not just "inconvenienced" by the construction of this facility. I should know; I am one of those fishermen."

Without any data, your claims are just another "fish story". These are waters that we fish and where we have historically gotten a large percentage of our catch. We are hereby requesting that you stop making false claims to the public that there is little commercial fishing in these waters and that the turbine grid will not negatively affect fishermen.

We are united on this issue – large-scale offshore development in areas like those selected by Cape Wind will only hurt the fisheries and fishing, now and in the future. Cape Wind puts fishermen at risk.

Sincerely,

Dave Bergeron

Dave Bergeron
Executive Director

Ed Barrett

Ed Barrett
President

Member Organizations

Boston Harbor Lobstermen's Cooperative
Cape Cod Commercial Hook Fishermen's Association
Commercial Anglers Association
General Category Tuna Association
Gloucester Fishermen's Association
Gloucester Fishermen's Wives Association
MarshfieldCommercial Fishermen's Association
Massachusetts Commercial Fishermen's Association
Mass Bay Inshore Commercial Fishermen's Association
Massachusetts Lobstermen's Association
New Bedford Seafood Coalition
New England Fish Exchange
Northeast Seafood Coalition
North Shore Community Tuna Association
Pigeon Cove Fishermen's Co-Operative
Plymouth Lobstermen's Association
Provincetown Fishermen's Association
South Shore Lobstermen's Association

2 Blackburn Center Gloucester, MA 01930

EXHIBIT 2: *Cape Cod Times*: "Nantucket Sound Is a National Treasure," by Edward M. Kennedy, August 6, 2007

Exhibit 2

CAPE COD TIMES

Nantucket Sound is a national treasure

By EDWARD M. KENNEDY
August 05, 2007 7:30 AM

Cape Wind advocates like to caricature their opponents as a few select landowners who care only about preserving the views of Nantucket Sound.

It's a clever and convenient argument, and it's dead wrong.

But I have to hand it to them. By focusing on a few seaside landowners, Cape Wind developers have managed to distract the public from the real issues raised by their proposal: Do the public waters belong to all the people, or can they be seized and exploited by private companies for financial gain?

Cape Wind has been able to avoid a discussion of why not a single town on the Cape and Islands has stepped forward to support the project, or why the local business community has consistently opposed the project through its local chambers of commerce.

It's long past time to take a step back and take a clear-eyed look at the real issues underlying the opposition to the proposal.

First, Nantucket Sound belongs to all of us. Before we hand more than $1 billion in subsidies and tax breaks to Cape Wind, we're entitled to be sure that we receive the best possible deal for our land and waters. We need to discuss whether it's in the best interest of the public to allow a private developer to select and essentially seize, for personal profit on a no-bid basis, a 25-square-mile area of Nantucket Sound.

Second, Cape residents deserve to have their concerns addressed. For more than 350 years, Nantucket Sound has been fertile ground for the region's fishing industry. Cape Wind proponents argue that there will be negligible impact, but our fishermen know better.

A joint study by the Massachusetts Fishermen's Partnership and MIT concluded that more than half of the fish that mobile gear fishermen haul out of Nantucket Sound come from the proposed site at Horseshoe Shoals. It will be virtually impossible for them to move their gear safely through the maze of cables and towers.

Third, Cape Wind also raises serious safety issues for local airplane pilots and passengers. As we saw in recent days, dense fog can envelop Nantucket Sound in an instant. The wind towers would be just 60 feet below the minimum altitude prescribed for the more than 400,000 flights that cross the Sound each year. That leaves no margin for error, and all three regional airports have expressed concerns about passenger safety.

Fourth, ferry operators and passengers will also be at risk. The Hy-Line and Steamship Authority, which ferry more than 3 million passengers a year through Nantucket Sound, oppose the project because of safety concerns. Hy-Line representatives call it an "accident waiting to happen." The British require 1.5-mile buffer zones between shipping lanes and wind turbines. Why shouldn't a similar rule apply to Cape Wind?

We must address and resolve these serious and, in some cases, life-and-death issues before any construction begins. We must have a full and open discussion about the appropriate siting of this project to ensure that the public's interest and safety are protected and that all dangers are eliminated or at least minimized. This discussion is particularly important now that new deepwater technologies are making it possible to locate such facilities further out at sea, where they can generate power without intruding on coastal communities and public safety.

The nation agrees that clear rules are needed for siting offshore wind farms. Until now, we have never sited such a facility. The Department of Interior is now working to create specific regulations for the siting and construction of wind energy facilities. Cape Wind should be subject to those rules, just as all future developers will be. Unfortunately, as a result of special-interest legislation, Cape Wind was handed an exemption, allowing it to move forward without competitive bidding and before the rules for offshore wind development are established.

Nantucket Sound deserves the same protections that my family and I have fought for — and won — for the Cape Cod National Seashore, the Blackstone River Valley, the Essex National Heritage Area, the Boston Harbor Islands, Stellwagen Bank and many other historic and scenic areas that belong to all the residents of our beautiful commonwealth.

The Sound is a national treasure, and we all have a responsibility to protect it from reckless exploitation.

Edward M. Kennedy of Hyannisport represents Massachusetts in the U.S. Senate.

Exhibit 3

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

IN REPLY REFER TO:

DETERMINATION OF ELIGIBILITY NOTIFICATION

National Register of Historic Places
National Park Service

Name of Property: Nantucket Sound

Location: Nantucket Sound **State:** Massachusetts

Request submitted by: Christopher E. Horrell, MMS Federal Preservation Officer, 1201 Elmwood Park Blvd., New Orleans, LA 70123

Date received: 11/18/09 **Additional information received**

Opinion of the State Historic Preservation Officer:

_X_ **Eligible** __ **Not Eligible** __ **No Response** __ **Need More Information**

Comments:

The Keeper of the National Register of Historic Places has determined that this property is:

_X_ **Eligible** ___ **Not Eligible**

Applicable criteria: A, B, C, D

Comment: See attached

Carol D. Shull

Keeper of the National Register **Date:** 1/04/2010

WASO-28

The United States Department of the Interior
National Park Service

National Register of Historic Places
Determination of Eligibility Comment Sheet

Property Name:	Nantucket Sound, Massachusetts
Project:	Cape Wind Energy Project
Keeper of the National Register's Determination:	Eligible under Criteria A, B, C, and D

Introduction

On November 18, 2009, the Minerals Management Service (MMS), United States Department of the Interior, submitted a request for a determination of National Register eligibility (DOE) for Nantucket Sound to the Keeper of the National Register of Historic Places (Keeper), pursuant to Federal regulations 36 CFR Part 800.4 and 36 CFR Part 63. The MMS request for a DOE is limited to Nantucket Sound itself and does not include any identified sites on Cape Cod, Martha's Vineyard, or Nantucket Island. The request for a DOE stems from MMS's review of a proposed project to construct an offshore wind power facility in Nantucket Sound (the Sound). The proposed project calls for 130 wind turbine generators to be arranged in a grid pattern in 25 square miles of Nantucket Sound (Federal waters), just offshore Cape Cod and Martha's Vineyard and Nantucket Island (the Islands).

This request was in response to the lack of agreement between MMS and the Massachusetts State Historic Preservation Officer of the Massachusetts Historical Commission (SHPO), the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) over whether the Sound is eligible for listing in the National Register of Historic Places (National Register). The SHPO, the Mashpee Wampanoag Tribe, and the Wampanoag Tribe of Gay Head (Aquinnah) have provided written opinions that Nantucket Sound is eligible for the National Register. The SHPO, Ms. Brona Simon, submitted a well-documented opinion, including citations and a bibliography of sources that provides evidence in support of her opinion and the opinion of the tribes. MMS provided a written opinion that the Sound is not eligible for listing in the National Register and additional documentation. In addition to reviewing and carefully considering all the documentation submitted by MMS and others, the National Park Service (NPS) National Register staff conducted a thorough review of sources. Two members of the National Register staff and an NPS regional-office ethnographer also made an onsite visit and consulted extensively with representatives of both Wampanoag tribes.

The Keeper makes determinations of eligibility based on the National Register regulations and criteria as defined in 36 CFR Part 60 and pursuant to 36 CFR Part 63. More detailed guidance on

applying the National Register criteria, which the Keeper uses, is contained in bulletins and other technical guidance available in print and online (www.nps.gov/nr). Guidance on evaluating properties is contained in a number of bulletins including *National Register Bulletin: How to Apply the National Register Criteria for Evaluation.* Guidance on evaluating traditional cultural properties for their eligibility for listing in the National Register is contained in *National Register Bulletin: Guidelines for Evaluating and Documenting Traditional Cultural Properties* (*TCP Bulletin*). Related guidance applicable to Nantucket Sound is contained in *National Register Bulletin: Guidelines for Evaluating and Registering Archeological Properties* and *National Register Bulletin: Guidelines for Evaluating and Documenting Rural Historic Landscapes.*

A determination that a property is eligible for the National Register assures that the values that make it significant are considered in the planning of projects in which the Federal Government is involved. In this instance, the Keeper is responsible for making this determination of eligibility, however, final decisions with respect to project implementation rest solely with the Federal agency funding, licensing, or assisting the project, which in this case is MMS.

Summary of Keeper's Determination of Eligibility

Nantucket Sound is eligible for listing in the National Register as a traditional cultural property and as an historic and archeological property associated with and that has yielded and has the potential to yield important information about the Native American exploration and settlement of Cape Cod and the Islands. Although the exact boundary is not precisely defined, this determination answers the question for the area that prompted the request for this determination, the Sound itself. The Sound is eligible as an integral, contributing feature of a larger district, whose boundaries have not been precisely defined, under:

- Criterion A for its associations with the ancient and historic period Native American exploration and settlement of Cape Cod and the Islands, and with the central events of the Wampanoags' stories of Maushop and Squant/Squannit;

- Criterion B for its association with Maushop and Squant/Squannit;

- Criterion C as a significant and distinguishable entity integral to Wampanoags' folklife traditions, practices, cosmology, religion, material culture, foodways, mentoring, and narratives; and,

- Criterion D for the important cultural, historical, and scientific information it has yielded and/or may be likely to yield through archeology, history, and ethnography about access to resources, patterns of settlement, mobility, and land use prior to and after 6,000 years ago as a result of the inundation of the Sound. It is also important for the significant information it provides and can provide about the cultural practices and traditions of the Native Americans of Cape Cod and the Islands in relationship with other peoples since ancient times.

In reaching this determination, the Keeper considered whether Nantucket Sound is a property for the purposes of the National Register, the integrity of the property, and whether the property meets the National Register criteria for evaluation. Starting with the property, as the SHPO stated in her opinion letter, the geographical boundaries of Nantucket Sound have been established by the US Department of Commerce, Coast and Geodetic Survey as follows:

> Nantucket Sound is defined as the roughly triangular area of continental shelf that lies between the southern shore of Cape Cod (between Monomoy and Mashpee), and the islands of Martha's Vineyard and Nantucket....Nantucket Sound constitutes a small, shallow marine basin whose edges are formed by the islands of Nantucket, Martha's Vineyard and Monomoy, the submerged shoals associated with these islands, and by the Cape....At its western end, Nantucket Sound merges with Vineyard Sound.

Neither the size of the Sound nor the fact that it is a body of water disqualify it from being found eligible for listing in the National Register. The National Register includes a number of properties that are larger than Nantucket Sound, and although the National Register generally discourages the nomination of natural bodies of water, a number of properties listed in the National Register or determined eligible do include them. Furthermore, the Sound is not merely a body of water. Scientific investigations that verify the oral history and traditions of the Wampanoag tribes have demonstrated that this basin was once exposed land. As evidence recovered from archeological sites to date demonstrates, people were present in the environs of the Sound before water covered the area of the Sound, at a time when it was possible to walk between what is now Cape Cod and the nearby Islands. The land beneath the water has yielded and has the potential to yield further important information regarding Native American exploration and settlement of Cape Cod and the Islands during the historic and precontact periods.

Next, based on multiple sources of evidence, the Sound is part of a larger, culturally significant landscape treasured by the Wampanoag tribes and inseparably associated with their history and traditional cultural practices and beliefs, as well as with the Native American exploration and settlement of Cape Cod and the Islands. Additional documentation is necessary to define the precise boundaries of the district of which the Sound is a contributing part, but the district should include other eligible archeological, historic, and traditional cultural sites and properties in the proximity of the Sound. A number of these sites have been known and documented for some time, and MMS has recently identified others through consultation with the tribes.

The National Historic Preservation Act states that properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion in the National Register. The Act further directs that Federal agencies consult any Indian tribe that attaches religious and cultural significance to such properties. Moreover, 36 CFR Part 800.4(c)(1) directs that Federal agencies "shall acknowledge" the "special expertise" of Native Americans in "assessing the eligibility of historic properties that may possess religious and cultural significance to them."

According to the *TCP Bulletin*, a traditional cultural property is generally one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a

living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. Both Wampanoag tribes emphasize that they believe their people traversed, lived on and buried their dead, and otherwise used the land that is now beneath the waters of the Sound in areas such as Horseshoe Shoal, before the land was submerged. Further, each tribe has maintained a continuous association with and use of the Sound for economic and other purposes such as shell fishing, fishing, making practical and ceremonial objects from species taken from Nantucket Sound, recreation and tourism, and as a central focus of traditional cultural practices and beliefs such as those relating to the Maushop and Squant/Squannit stories, greeting the new day, and for celestial observations.

In making determinations for traditional cultural properties, the *TCP Bulletin* provides two key inquiries: first, whether the property, in this case, the Sound, has an integral relationship to the traditional cultural practices or beliefs, and second, whether the condition of the property is such that the relevant relationships survive. The answer to both of these inquiries is yes. The Sound is integrally related to the traditional cultural practices and beliefs of the Wampanoag tribes. This association is not with any body of water, it is with this one, the Sound. The stories involving the relationship between the Sound and both Wampanoag tribes' defining culture hero, Maushop, and his wife Squant/Squannit, and their family, are well documented beginning hundreds of year ago. The first written account of the Maushop stories dates to the 1600s, when the colonists encountered the Wampanoag tribes in this area and began recording these accounts. Both tribes believe that Maushop created much of the traditional cultural landscape that comprises and encompasses the Sound and its surrounding area. Both tribes have lived on, valued, and used the area in and around the Sound for traditional cultural purposes from what they believe to be time immemorial. The Sound is a key definer of the Wampanoag tribes' place on and relationship with the earth.

As to the second factor, unlike more recently developed areas in the vicinity, the Sound itself maintains a high degree of overall integrity as an integral part of a district whose boundaries have not been precisely defined. Although there are some modern navigational devices such as buoys and some changes to the seabed over time, the Sound remains much as it has for hundreds of years.

Eligibility – NR Criterion A

The Sound is eligible under Criterion A, as part of a district with boundaries that have not been precisely defined. The district is associated with the ancient and historical period Native American exploration and settlement of Cape Cod and the Islands and particularly with two surviving branches of the Wampanoag tribes that existed historically and passed down traditional cultural ways and practices up to the present. Both tribes identify the Sound as a direct link to their ancestral origins and long-standing cultural, religious, and ceremonial practices. The Sound is central to the stories that revolve around Maushop and Squant/Squannit and their family. The Wampanoag tribes believe that Maushop created and shaped much of the traditional cultural landscape that comprises the Sound and its surrounding areas. Both tribes continue to share cultural practices, customs, and beliefs rooted in their common history, which are important in

maintaining their continuing cultural identity. The tribes note that they have traversed, hunted, fished, cultivated, interred their ancestors, and occupied the Sound and its environs. Both tribes transmit and pass down shared cultural practices, customs, and beliefs that are associated with the Sound and the larger district of which it is a part. Each tribe derives its cultural identity from its relationship with the natural environment of the Sound, Cape Cod, and the Islands, including the submerged land under the water of the Sound that they believe was once their home and remains a burial place of their ancestors.

The meaning of "Wampanoag" rendered in English as the phrase "People of the Light or Dawn" has a direct relationship to the juncture of the water and sun rising over the Sound. The tribes emphasize that the Sound plays a central role in their cultural, religious, and ceremonial practices. As the Wampanoag Tribal Historic Preservation Officer says in her September 17, 2009 opinion letter,

> We are the Wampanoag People, 'The People of the First Light or Dawn', this is how we identify ourselves and how other tribes recognize us. The unobstructed view of this expanse of water, bordered by the south shore of Cape Cod on its north side, by Nantucket on the southern side and Martha's Vineyard on its western side is of utmost importance to the Wampanoag People. The WTHPO asserts that the eastern vista viewshed is essential to the Wampanoag People for our cultural beliefs, identity and spirituality. The viewshed is one of the places where our People historically had, and continue, to have a connection in practicing our cultural ceremony and traditions.

Resolution 2009-RES-022 of the Mashpee Wampanoag Tribe concurs, "These ceremonial, spiritual and religious practices require an unobstructed view of the sunrise over Nantucket Sound." These and other supporting statements by the tribes in which they emphasize that Nantucket Sound is a traditional cultural property reflect a high degree of integrity of relationship (as described in the *TCP Bulletin*) between Nantucket Sound and their beliefs and practices.

Eligibility – NR Criterion B

The Sound is eligible under Criterion B for its association with the Wampanoag tribes' cultural hero, teacher, and giant, Maushop, and his wife Squant/Squannit. Their stories figure prominently in the tribes' understanding of their ancestral origins and journey. Maushop and his wife Squant/Squannit are traditionally important figures whose roles are equivalent to gods or demigods as specified on page 13 in the *TCP Bulletin.* The narratives involving them and their family have been the subject of a native oral tradition spanning many generations. They are currently, and have been for some time, the focus of an annual pageant by the Wampanoag Tribe of Gay Head (Aquinnah). They also are documented in books and websites related to both tribes. The Maushop narratives have been instrumental in tribal interpretations of the history of the Wampanoag people as a whole and the origins of the landforms that have shaped and are associated with the Sound and the Islands. For example, Maushop is credited with creating Nantucket Island, thereby enclosing the waters and shaping the Sound. These stories are a principal way that the tribes have transmitted their cultural identity and the understanding of their

relationship with the natural environment and forces that shaped the p
inherited from their ancestors.

A number of Euro-American sources have recognized the importance
tribes and recorded them since the period of contact and colonization.
scholarship has cited these narratives as a part of one of the most coh
folklore in North America. As noted by ethnohistorian William S. Sim
numerous written accounts of the Maushop and Squant/Squannit stori
New England Tribes, Wampanoag legends involving the giant Maush
continually recorded bodies of Indian folklore known in North Ameri
emphasizes the importance of the fact that the Wampanoags continue
throughout the 18th, 19th, and 20th centuries (as they still do today).

Eligibility - NR Criterion C

Nantucket Sound is eligible under Criterion C as a contributing featur
archeological district for which the boundaries have not been precisel
the *TCP Bulletin*, the Sound is a distinguishable entity that forms an in
district of traditional cultural, historic, and archeological importance.
element in the Wampanoag tribes' folklife traditions, practices, cosmo
culture, foodways, mentoring, and narratives. The traditional cultural s
an historical, symbolic, and sacred central place to both Wampanoag t
opinions of the tribes, by contemporary Wampanoag historical consci
persons, places, and events in recorded oral and written narratives; and
ethnohistory.

Eligibility – NR Criterion D

The Sound is eligible under Criterion D for the ability to provide signi
exploration and settlement of Cape Cod and the Islands. Archeological
Sound show that the property has yielded and has the potential to yield
through archeological, ethnographic, and historical studies.

The area that now forms the Sound was once a broad, coastal plain. Ar
documents Native American occupation from the Paleo-Indian (begin
years ago) and later periods on Cape Cod and the Islands. Sea level be
year ago, so that eventually the entire Sound filled with water. Howev
the Sound, such as Horseshoe Shoal, were higher ground that remained
periods. This would have allowed Native Americans to use the dry are
leave a physical record of their presence in these locations for longer p

Archeologists believe that they have found only a small number of Pal
Archaic sites on Cape Cod and the Islands because the once-exposed la
now submerged. They believe these inundated landforms are likely to

additional early sites. Prior to the archeological survey work conducted as part of the Cape Wind project, it was unclear whether these early landforms survived, due to inundation and erosion.

Recent sampling projects in the Sound have uncovered new and highly significant additional evidence of intact, ancient, terrestrial soils including preserved wood, charcoal, plants, and seeds. The samples date to the Early to Middle Archaic periods. This verifies that evidence exists of these now inundated precontact landscapes and that this evidence can be studied. Based on the finds to date, and the information in the reports submitted by Public Archaeology Laboratory Inc. (PAL), under contract to Cape Wind Associates, LLC, and the opinion of the SHPO, there is a high likelihood of submerged cultural resources and additional archeobotanical materials in the Sound. Despite any disturbance to the seabed and limited sampling, Horseshoe Shoal yielded highly significant finds, and other areas also have the potential to do so.

The collection of environmental data, such as the wood, charcoal, plants, and seeds recovered from the Sound, is a regular practice in archeological investigation and data recovery. The data is important because it provides a means for defining and understanding the development and use of precontact landscapes through time. For instance, it can provide significant information about the availability of resources and patterns of settlement and mobility in the area of the Sound and its environs and, more broadly, the peopling of North America. It can also provide significant and often rare information about preservation of archeological and archeobotanical resources along drowned coastlines and the adaptation of people to receding coastlines.

Finally, while eligibility as a traditional cultural property can be established without archeological evidence, this information serves to corroborate oral traditions and ethnographic information that the land area under the Sound was exposed thousands of years ago and extended out to Noepe (today, Martha's Vineyard) and that the Wampanoag tribes' ancestors would have been able to utilize the area of the Sound and walk to Noepe. This evidence demonstrates the resilience of a people and their oral traditions over thousands of years.

Exhibit 4

UNITED SOUTH AND EASTERN TRIBES, INC.

Established 1969

UNITED SOUTH AND EASTERN TRIBES, INC.

USET Resolution No. 2008:030

OPPOSITION TO THE CAPE WINDS WIND FARM PROPOSAL
HORSESHOE SHOAL, NANTUCKET SOUND MASSACHUSETTS

WHEREAS, United South and Eastern Tribes, Incorporated (USET) is an intertribal organization comprised of twenty-five (25) federally recognized Tribes; and

WHEREAS, the actions taken by the USET Board of Directors officially represent the intentions of each member Tribe, as the Board of Directors comprises delegates from the member Tribes' leadership; and

WHEREAS, the Wampanoag Tribe of Gay Head (Aquinnah) is a member Tribe of the Great Nation of Wampanoag People. They are known as *"The People of The First Light"*. Their name defines who they are and differentiates them from all other Tribal Nations. Their name and it's definition are their Cultural and Spiritual identity, and the essence of who they are. Since time immemorial, the Wampanoag People have inhabited the area of the eastern most lands and waters, and have maintained their Traditional, Spiritual and Cultural connection to them; and

WHEREAS, as the People of the First Light; one of the most important aspects and fundamental components of their religious and cultural beliefs and practice is their ability to experience, embrace and give ceremony and prayers of thanksgiving to the first light. These ceremonies, spiritual and religious practices are dependant upon maintaining the ability to view the first light; the eastern horizon vista and view-shed without obstructions. Additionally, there are other impacts such as the celestial and solstice ceremonies, which will also be adversely impacted; and

WHEREAS, the right to practice their religious ceremony in the traditional manner will be forever denied by a proposed experimental wind farm consisting of 130+/- windmill turbines, with propeller blades reaching approximately 440' above the surface of the water, on about 22 acres of area (about the size of Manhattan); slated to be located in the shallow waters of Horseshoe Shoal in Nantucket Sound, in the middle of the shores of Cape Cod, Martha's Vineyard and Nantucket, MA; and,

WHEREAS, the Wampanoag Tribe of Gay Head (Aquinnah), a Federally Recognized Tribal Nation and a USET member Tribe, most strenuously objects to this proposal and opposes the placement of this wind farm in their Traditional Wampanoag Waters of their Religious and Ceremonial Sanctuary; therefore, be it

RESOLVED the USET Board of Directors supports the Wampanoag Tribe of Gay Head (Aquinnah) and their position; to oppose the Cape Winds wind farm to be located in Horseshoe Shoal in Nantucket Sound, due to its devastating and destructive impact to the Traditional Spiritual, Religious and Cultural practices and freedoms of all Wampanoag People as well as the adverse effects this experimental project will have on the surrounding environment in its entirety and totality; and, be it further

USET Resolution No.2008:030

RESOLVED the USET Board of Directors calls upon the Department of the Interior/ Minerals Management Service to respect the Traditional, Cultural, Spiritual and Religious beliefs of the Wampanoag People and preserve the spiritual integrity and sanctity of the Eastern Horizon, Vista and Horizon View-Shed; and to deny the permitting of such a devastatingly and destructive experiment which will adversely effect and destroy the essence of the tranquility, sanctity and spirituality of this Sacred Place for all time; and, be it further

RESOLVED that in order for other Tribes, and other Federal, State and Local Agencies as well as the General Public to fully evaluate and comment on the 2000 page Draft Environmental Impact Statement, the USET Board of Directors is also calling upon the Department of the Interior and the Minerals Management Service to extend the comment period an additional ninety (90) days in order to provide a more adequate and reasonable timeframe in which the Draft Environmental Impact Statement can be read, researched and knowledgeably commented upon.

CERTIFICATION

This resolution was duly passed at the USET Impact Week Meeting, at which a quorum was present, in Arlington, VA, on Thursday, February 14, 2008.

Brian Patterson, President
United South and Eastern Tribes, Inc.

Cheryl Downing, Secretary
United South and Eastern Tribes, Inc.

United South and Eastern Tribes, Inc.
711 Stewarts Ferry Pike • Suite 100 • Nashville, TN 37214
(P): 615-872-7900 • (F): 615-872-7417

USET Resolution No. 2010:014

CALLING UPON THE SECRETARY OF THE INTERIOR TO DENY THE PERMITTING OF THE CAPE WIND PROJECT SLATED FOR HORSESHOE SHOAL, NANTUCKET SOUND, MASSACHUSETTS

WHEREAS, United South and Eastern Tribes, Incorporated (USET) is an intertribal organization comprised of twenty-five (25) federally recognized Tribes; and

WHEREAS, the actions taken by the USET Board of Directors officially represent the intentions of each member Tribe, as the Board of Directors comprises delegates from the member Tribes' leadership, and

WHEREAS, the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag are member Tribes of the Great Nation of Wampanoag People, known as "*The People of the First Light*". Their name defines who they are and differentiates them from all other Tribal Nations. Their name and its definition are their Cultural and Spiritual identity, and the essence of who they are. Since time immemorial, the Wampanoag People have inhabited the area of the eastern most lands and water, and have maintained their Traditional, Spiritual and Cultural connection to them; and

WHEREAS, as the People of the First Light; one of the most important aspects and fundamental components of their religious and cultural beliefs and practice is their ability to experience, embrace and give ceremony and prayers of thanksgiving to the first light. These ceremonies, spiritual and religious practices are dependent upon maintaining the ability to view the first light; the eastern horizon vista and view-shed without obstructions. Additionally there are other impacts such as the celestial and solstice ceremonies, which will also be adversely impacted; and

WHEREAS, the right to practice their religious ceremony in the traditional manner will be forever denied by a proposed experimental wind farm consisting of 130+/- windmill turbines, with propeller blades reaching approximately 440' above the surface of the water, on about 25 acres of area (about the size of Manhattan); slated to be located in the shallow waters of Horseshoe Shoal in Nantucket Sound, in the middle of the shores of Cape Cod, Martha's Vineyard and Nantucket, MA; and

WHEREAS, the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag, Federally Recognized Tribal Nations and USET member Tribes, most strenuously object to this proposal and opposes the placement of this wind farm in the Traditional Wampanoag Waters of the Religious and Ceremonial Sanctuary; and

WHEREAS, the National Park Service's Keeper of the National Register has concurred with the Tribes and deemed this site eligible for listing on the National Register of Historic Places as a Traditional Cultural Property under all four criteria; and

WHEREAS, the permitting of this project would be in direct violation of the spirit and intent of the American Indian Religious Freedom Act, Executive Order 13007- Indian Sacred Sites, the laws of Native American Graves Protection and Repatriation Act (NAGPRA), National Historic Preservation Act of 1966 (NHPA), the Archeological Resources Protection Act (ARPA) and the Archeological and Historic Preservation Act of 1974 (AHPA); therefore, be it

RESOLVED the USET Board of Directors supports the Wampanoag Tribe of Gay Head (Aquinnah) and Mashpee Wampanoag and their opposition of the location of the Cape Winds project on Horseshoe Shoal in Nantucket Sound, due to its devastating and destructive impact to the Traditional, Spiritual, Religious and Cultural practices and freedoms of all Wampanoag People as well as the adverse effects this experimental project will have on the surrounding environment in its entirety and totality; and be it further

RESOLVED the USET Board of Directors calls upon the Secretary of the Interior, Ken Salazar, to respect the Traditional, Cultural, Spiritual and Religious beliefs of the Wampanoag People and preserve the spiritual integrity and sanctity of the Eastern Horizon, Vista and Horizon View-shed; and to deny the permitting of such a devastating and destructive experiment which will adversely affect and destroy the essence of the tranquility, sanctity and spirituality of this Sacred Place for all time.

CERTIFICATION

This resolution was duly passed at the USET Impact Week Meeting, at which a quorum was present, in Arlington, VA, on Thursday, February 11, 2010.

Brian Patterson, President
United South and Eastern Tribe, Inc.

Robert McGhee, Secretary
United South and Eastern Tribes, Inc.

EXHIBIT 5: U.S. DEPARTMENT OF ENERGY LOAN GUARANTEE PROGRAM APPLICATION INTAKE REVIEW

Exhibit 5

Mitchell H. Jacobs, Treasurer and General Counsel
Mr. Jacobs joined EMI in 1990 as Treasurer and General Counsel of EMI and has acted as General Counsel to EMI since 1981. Prior to joining EMI, Mr. Jacobs was employed by Coopers & Lybrand and Hale and Dorr. Mr. Jacobs practiced law privately from 1980 to 1990, concentrating in taxation and real estate development. Mr. Jacobs graduated from Harvard College and Cornell University Law School and has a master's degree in taxation from Boston University Law School.

PLAN OF FINANCE:
Under a 100% loan guarantee provided by the DOE, the Company is expected to draw debt-financing proceeds from the Federal Finance Bank to fund the guaranteed obligation and is anticipated to start funding in [redacted]. The guaranteed obligation will be $1,970 million to fund construction of 130 wind turbine generators for a total nameplate capacity of 468 MW.

Assuming that CWA can enter into a PPA on similar terms and conditions to PPA1 for an additional [redacted] with a creditworthy counterparty, [redacted] of the guaranteed obligation will be available at financial close to fund construction of [redacted] turbines for a total nameplate capacity of [redacted] Season A). The remaining [redacted] of the guaranteed obligation will be made available to fund construction of remaining [redacted] wind turbine generators [redacted] (Season B) subject to the execution of an additional hedge or PPA agreements necessary to meet certain credit objectives, receipt of a ratings reaffirmation of the then existing rating and subsequent DOE review.

Sponsors and its investors will contribute [redacted] to cover Project costs. Debt and equity will be drawn on a pro-rata basis to fund Project costs.

At completion, the Borrower and the Sponsors expect to enter into a [redacted] to monetize the tax benefits associated with the Project.

The Sponsors expect that the Project [redacted] Any cash grant proceeds received by the Project are expected be allocated to prepay a portion of the loan facility and make a distribution to the Sponsors.

PRO FORMA CAPITALIZATION
$ in millions

	Construction	(%)	COD/Sale	Post COD/ITC	(%)
Developer Equity	[redacted]				
Equity Partner					
Total Equity					
FFB Financing					
Tax/Lease Equity					
Total					

EQUITY FUNDING:
The construction equity investor (the "Equity Partner") will provide 100% of the cash equity [redacted] to construct the Project and achieve commercial operations.

Barclays Capital, the financial advisor to the Project, has initiated a formal process to identify and enter into definitive agreement with a potential equity investor in the Project. Given the scale and strategic, technology, contractual, regulatory and tax attributes of the Project and based on preliminary discussions Barclays and CWA have had with some potential investors, the target investor universe will include:

- [redacted]
- [redacted]
- [redacted]

EXHIBIT 6: NSTAR ELECTRIC COMPANY FINANCIAL ANALYSIS OF LONG-TERM RENEWABLE CONTRACT FORECAST FOR CAPE WIND

Exhibit 6

NSTAR ELECTRIC COMPANY
FINANCIAL ANALYSIS OF LONG-TERM RENEWABLES CONTRACT
FORECAST FOR CAPE WIND
ABOVE-MARKET COST ($000)

	Reference	Total	NPV @6.62%	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	202
tracted Capacity (MW)	PPA					129	129	129	129	129	129	129	129	129	129	129	129	129	12
. Annual Capacity Factor	Cape wind					37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1%	37.1
ual MWh	Line 1 times Line 2 times 8,760	6,286,727		-	-	419,248	419,248	419,248	419,248	419,248	419,248	419,248	419,248	419,248	419,248	419,248	419,248	419,248	419,24
e Scenario (With ITC)																			
rgy Costs																			
e PPA Price ($/MWh)	PPA					193.55	200.32	207.33	214.59	222.10	229.87	237.92	246.24	254.86	263.78	273.01	282.57	292.46	302.7
Cost	Line 3 times Line 7	1,565,716	822,451	-	-	81,143	83,983	86,923	89,965	93,114	96,373	99,746	103,237	106,850	110,590	114,461	118,467	122,613	126,90
nuneration	Line 8 times 4 percent	62,629	32,898	-	-	3,246	3,359	3,477	3,599	3,725	3,855	3,990	4,129	4,274	4,424	4,578	4,739	4,905	5,07
tal Contract Cost	Line 8 plus Line 9	1,628,347	855,349	-	-	84,389	87,343	90,400	93,564	96,839	100,228	103,736	107,367	111,124	115,014	119,039	123,206	127,518	131,98
ket Revenues																			
ket Price Forecast w/Tax Credits ($/MWh)	Levitan, generation weighted avg.					88.70	95.22	99.62	103.49	102.70	104.25	105.95	107.07	108.91	112.07	115.88	118.77	122.60	126.5
tal Market Revenue	Line 3 times Line 13	887,858	368,403	-	-	37,199	40,340	41,951	43,386	43,058	43,707	44,041	44,899	45,661	46,987	48,583	49,795	51,399	53,06
l Above-Market Cost	Line 10 less Line 14	940,488	486,946	-	-	47,201	47,002	48,549	50,177	53,781	56,521	59,695	62,478	65,463	68,027	70,456	73,411	76,119	78,91
t Adjusted Price (No PTC or ITC)																			
rgy Costs																			
Credit Adjusted PPA Price ($/MWh)	PPA					219.72	227.41	235.37	243.61	252.14	260.96	270.10	279.55	289.33	299.46	309.94	320.79	332.02	343.6
Cost	Line 3 times Line 20	1,777,497	933,695	-	-	92,119	95,343	98,680	102,134	105,709	109,408	113,238	117,201	121,303	125,549	129,943	134,491	139,198	144,07
nuneration	Line 21 time 4 percent	71,100	37,348	-	-	3,685	3,814	3,947	4,085	4,228	4,376	4,530	4,688	4,852	5,022	5,198	5,380	5,568	5,76
tal Contract Cost	Line 21 plus Line 22	1,848,597	971,043	-	-	95,804	99,157	102,627	106,219	109,937	113,785	117,767	121,889	126,155	130,571	135,141	139,870	144,766	149,83
ket Revenues																			
rket Price Forecast w/o Tax Credits ($/MWh)	Levitan, generation weighted avg.					107.99	111.99	115.05	120.80	124.37	130.24	135.21	141.26	145.96	150.85	156.03	159.94	164.31	168.1
tal Market Revenue	Line 3 times Line 26	881,110	463,005	-	-	45,273	46,953	48,235	50,645	52,141	54,603	56,686	59,225	61,194	63,244	65,415	67,055	68,868	70,51
l Above-Market Cost	Line 23 less Line 27	967,487	508,038	-	-	50,531	52,204	54,392	55,574	57,796	59,182	61,079	62,664	64,961	67,327	69,725	72,816	75,878	79,32

Exhibit 7

ENERGY

Gresham's Law of Green Energy

High-cost subsidized renewable resources destroy jobs and hurt consumers.

BY JONATHAN A. LESSER | *Continental Economics Inc.*

While the U. S. economy continues to struggle, politicians, green energy advocates, and energy regulators have adopted a "green jobs" mantra. They espouse the view that policies mandating renewable resources will provide not only environmental benefits, but economic salvation as well.

The most recent example of this phenomenon is in California where, last September, the California Air Resources Board adopted a requirement that the state obtain one-third of its electricity supplies from renewable energy resources by the year 2020. California governor Arnold Schwarzenegger noted approvingly in a press release, "There is a multi-trillion dollar global market for clean energy, and I look forward to seeing even more investment and job creation happen throughout our state with today's commitment."

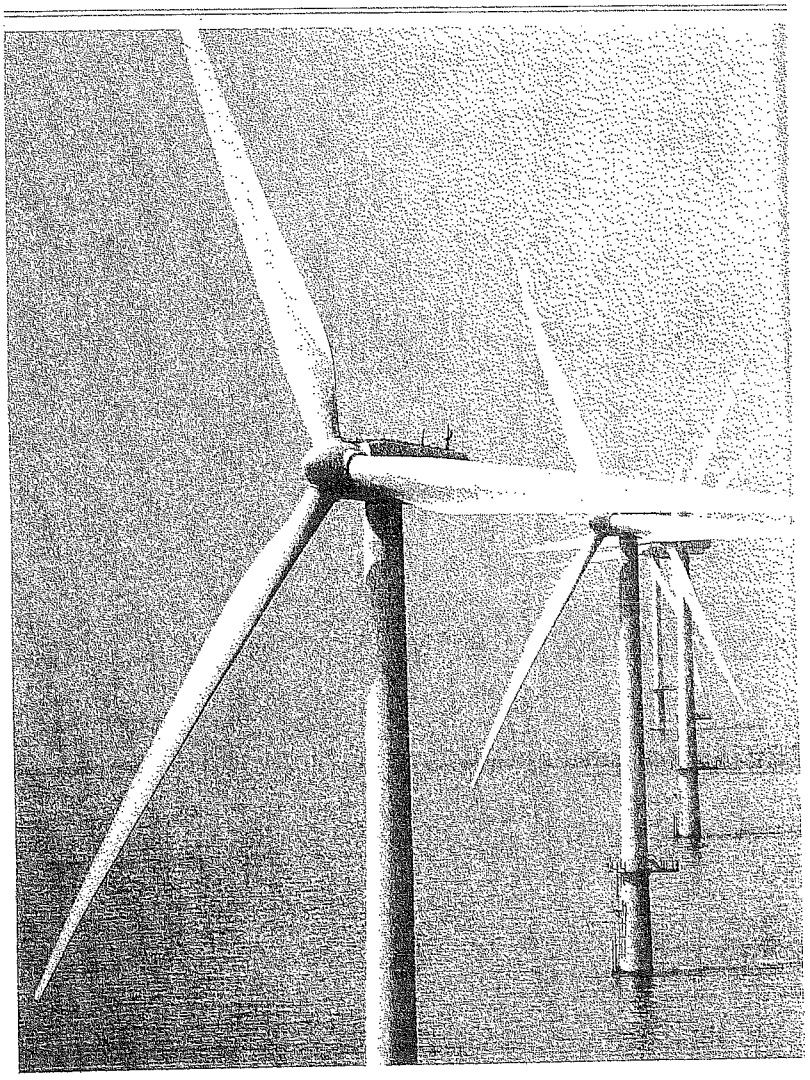
Schwarzenegger is the latest politician to fall under the spell of "green" jobs. Even New Jersey governor Chris Christie, who promised to reverse decades of growth in the burden that state's government has heaped upon its citizens, signed the Offshore Wind Development Act in August 2010. He praised the act, which calls for at least 1,100 megawatts of wind generation to be developed off the New Jersey coast, saying it will "provide New Jersey with an opportunity to leverage our vast resources and innovative technologies to allow businesses to engage in new and emerging sectors of the energy industry."

Economists point out that there is no such thing as a free lunch, green or otherwise. Politicians, perhaps because their lunch tabs are always paid by someone else, blithely ignore economists and continue to promote a mythical "green" economy that will soon emerge. They carry on much like the Spanish conquistadors who searched for the Seven Cities of Cibola, convinced the buildings really were made of gold. While ignoring economists may be considered a civic virtue, doing so does not invalidate basic economic principles. Forcing consumers to buy high-cost electricity from subsidized renewable energy producers will not and cannot improve overall economic well-being.

Renewable energy might reduce air pollution (although no actual evidence of this exists). It will certainly create a few construction jobs. And you can bet that government mandates and subsidies for renewable energy will benefit renewable energy developers. But when the entire economic ledger is tallied, the net impact of renewable energy subsidies will be reduced economic growth and fewer jobs overall. In effect, "green" energy mandates like those of California and New Jersey are a new version of "Gresham's Law," in which subsidized renewable resources will drive out competitive generators, lead to higher electric prices, and reduce economic growth.

One of the most egregious examples of the green energy fallacy is the proposed Cape Wind project, which is to be built off the coast of Nantucket Island. Cape Wind, which is ardently supported by Massachusetts governor Deval Patrick and state attorney general Martha Coakley, is expensive – more expensive, in fact, than onshore wind resources, which themselves require government subsidies. Even Cape Wind's proponents admit to

JONATHAN A. LESSER is founder and president of Continental Economics Inc.



TEUN VAN DEN DRIES/ISTOCKPHOTO

this. So, to sidestep the high-cost problem, Cape Wind's advocates have cobbled together all manner of arguments to justify its development, most notably how it will spur a new offshore wind industry in Massachusetts.

Several economic fallacies underlie green energy and green jobs policies. For example, some renewable energy proponents and green jobs advocates fundamentally misrepresent wealth *transfers* as wealth *benefits*. Stealing money from Peter and giving it to Paul may benefit Paul, but it hardly creates wealth. Moreover, a number of "green jobs" studies have touted renewables development as a source of unbridled economic growth. These studies all contain one striking omission: they ignore the adverse economic effects of the resulting higher electricity prices that high-cost renewable generation brings. They are cost-benefit analyses that ignore the "cost" part. No wonder the results are so encouraging.

In this article, I begin by explaining the welfare economics of subsidized green energy. For most economists, this is a standard, no-such-thing-as-a-free-lunch analysis. However, it also highlights the problems caused by one of the supposed benefits that renewable energy proponents flog: that renewable energy will help "suppress" electricity prices, thereby creating huge benefits for consumers. I then examine the Cape Wind project, which I consider to be the current poster child for green energy's excesses, and I discuss why the billions of additional dollars that Massachusetts ratepayers will be forced to pay for the electricity it generates will not provide economic salvation but will simply hasten the exodus of business, industry, and jobs from the state.

How Renewable Energy Subsidies Reduce Economic Well-being

Ignoring, for the moment, the issue of green jobs creation, renewable energy studies often talk about "price suppression" as being a benefit of renewable resource development. The concept is straightforward: by increasing the supply of electricity, market prices decrease and consumers benefit. This is fundamentally true, but while consumers obviously benefit from lower prices in a competitive market, the "benefits" of artificial price suppression are temporary and costly.

For those whose familiarity with electricity markets ends at the light switch, before there were competitive wholesale electric markets, utilities built enough generating capacity to ensure that when the demand for electricity peaked (such as on a hot and humid summer's day), there was sufficient generating capacity available. The construction costs of these resources were part of utilities' rate base, on which they earned a regulated rate of return.

With deregulation and electric industry restructuring, regional wholesale energy markets were created to replace the old vertically integrated utility industry. Not only were wholesale markets created for electric energy, but also markets for "installed capacity" — essentially payments to generating firms to recover the fixed construction costs that were previously included in the rate base and to provide sufficient revenues for firms to construct additional generating capacity for use during peak times, though that capacity would be uneconomical in a standard wholesale market. In overseeing wholesale energy markets, the Federal Energy Regulatory Commission sought to ensure that these markets would provide sufficient revenues to generators, especially peaking generators used only sparingly, to ensure they would be economically viable and thus available on those hot summer days.

Creating a market is always a challenge, and markets for "capacity" have proved no different. The rules governing these markets are mind-numbingly complex, whether by accident or design. But one thing these markets did was provide explicit payments to generators that had been paid only implicitly before.

Outraged at having to pay for something they mistakenly thought was free, politicians in several states sought to take advantage of these markets and lower prices. As a result, a number of states introduced "price suppression" as an explicit policy goal in reaction to the creation of installed capacity markets, especially in New England. In 2007, for example, Connecticut passed legislation that required the state's Energy Advisory Board to issue Requests for Proposals that would reduce capacity market prices in the state. Similarly, in Massachusetts, Section 105(c) of the Green Communities Act of July 2, 2008 was designed to force renewable resource generation into the New England capacity market.

Essentially, these states have required that their local utilities build new generation (paid for by ratepayers) and bid the output into the energy market at a zero price. (There is a price floor for bidding into the capacity market.) Adding additional "free" supply into a market obviously lowers, or suppresses, the market-clearing price.

In some ways, this is a good thing: if I can build a better, less-expensive mousetrap, mousetrap prices fall and consumers (although not mice) are better off. The problem with the price "suppression" practiced by these states is that the resources that were built have been subsidized by ratepayers. As such, this type of price suppression is really just another way to manipulate the market in a way that makes it less efficient. Moreover, the price suppressive effect is only temporary, because it drives out actual competitors and reduces the likelihood of new competitors entering the market. (Generators will not enter the market if they think regulators and politicians will simply drive them out at a later date. Also, investors, perceiving greater risk, will require larger expected returns.) Thus, rather than building a better mousetrap, these lawmakers are using subsidies to artificially and temporarily reduce the price of mousetraps. And, in fact, generators that compete in these markets have fought back and FERC has taken notice.

To understand the difference between artificial price suppression and true increases in competitive supplies, examine Figure 1, which shows the demand for electricity and the effect of a renewable generation subsidy. In the figure, the initial supply curve is given by the solid light red line S_0. The market-clearing price is P*, and the quantity of electricity sold is Q*. In this market, generators A and B sell all of their output, and C sells an amount Q* – QB. Generator D sells nothing.

Next, we introduce a subsidized renewable generator, R, such

as a wind energy plant. Without the subsidy, the wind energy plant cannot earn sufficient revenues to be competitive. With the subsidy, the plant now bids into the energy market at a zero price, reflecting its marginal cost, as shown as the solid dark red line in Figure 1. As such, it displaces the other generating resources and shifts the supply curve outward to S_1, shown as the dashed light red line. The market-clearing price falls to P_{SUB}, and the total quantity of electricity sold increases to Q'. As a result, generator C is knocked out of the market entirely and the economic profits earned by generators A and B decrease. This is what I call "Gresham's Law of Green Energy": subsidized renewable resources drive out otherwise-competitive generators.

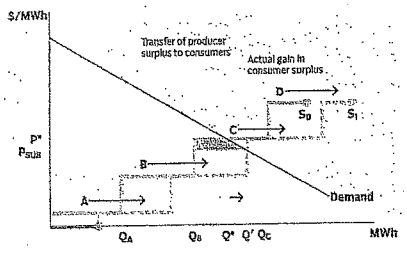
Renewable energy advocates applaud these results, arguing that consumers win: the price of electricity has gone down. Well, in the short run consumers can benefit because the subsidy they are forced to pay *may* be less than the savings on electricity rates that they realize — a net savings. But does society benefit from this scheme in the long run? The answer is a resounding "no."

First, the majority of the benefits received by consumers are simply forced wealth transfers from existing producers. Generator C, for example, having invested in what he thought was a competitive market, is now forced out. Second, because the profits earned by generators A and B have decreased, other potential suppliers will be less likely to enter the market as demand increases, thus driving up prices higher than they would otherwise be. After all, why invest scarce capital in a market that politicians are manipulating? Third, the consumers who do benefit in the short run from the suppressed prices may not be the same consumers who are paying the subsidies.

The short-run economic welfare implications are also shown in Figure 1. The large light red rectangle is the economic value transferred from producers to consumers. The small dark gray trapezoid is the actual gain in consumer surplus. When renewables and green jobs advocates talk about price "suppression," they are referring to these changes in consumer surplus. It is important to note, however, that the vast majority of the "benefits" of price suppression are not benefits in any economic sense. Rather, they represent an income transfer — and an economically inefficient one at that — from producers to consumers. Green jobs studies often conflate such economic transfers with "benefits."

FIGURE 1

Impact of Renewable Generation Subsidy



A key question, therefore, is whether the real gain in consumer surplus shown in Figure 1 can ever be greater than the cost of the subsidy. In other words, can a subsidy increase the overall economic value of a market? The answer is no. To convince yourself of this, consider the following: If the renewable generator R cannot compete in the market without a subsidy, then it requires a price greater than P* to be economically viable. Thus, to be economically viable with a subsidy and a market-clearing price of P_{SUB}, the subsidy must be greater than ($P^* - P_{SUB}$) per MWh produced by the generator. If the renewable generator produces R MWh, then the total cost of the subsidy is greater than $R \times (P^* - P_{SUB})$. That amount is always greater than the actual gain in consumer surplus shown in the figure. Thus, the subsidy reduces the overall economic value of the market.

Subsidies for thee and me | To support renewable portfolio standards such as California's 33 percent mandate by the year 2020, consumers must subsidize renewable resources. These subsidies come in several forms. First, consumers may be required to pay a specific renewable energy charge on their electric bill. Second, they may be required to pay for above-market price contracts with renewable generators. Third, as taxpayers, they must offset tax expenditures to alternative energy companies, such as investment tax credits or grants in lieu of tax credits, federal production tax credits, federal loan guarantees, and accelerated depreciation allowances that reduce tax payments.

To counter the need to provide renewable generation with all manner of subsidies, renewable advocates generally resort to three types of arguments. First, they argue that fossil fuel generation and nuclear generation are subsidized; therefore, it is only "fair" that renewable generation be subsidized, too. Second, renewable generation reduces air pollution, including greenhouse gas emissions, but markets fail to value those emissions reductions. Third, by reducing fossil fuel use, renewable energy reduces price volatility and increases energy "independence." Fourth, because of its high up-front capital costs, renewable generation faces "market barriers" that can only be overcome with subsidies.

None of those arguments are sound. The first argument, that subsidies for fossil fuels and nuclear energy should be countered with subsidies for green energy, is simply to argue that two wrongs make a right. One can certainly argue that fossil fuel extraction has benefited from favorable tax treatment. However, fossil fuel resources are not directly subsidized in electricity markets. Renewable energy advocates often point to the liability limits on nuclear power plants courtesy of the Price-Anderson Act (see "Determining the Price of Price-Anderson," Winter 2002–2003), as a subsidy, which they are. But the appropriate policy solution is to remove those subsidies, not lard energy markets with more of them.

The second argument, that green energy produces no air pollution negative externality, may be true, although the reduction

in emissions wrought by green energy sources is far smaller than advertised because of the need for back-up generation. Moreover, one would be hard-pressed to find a more expensive way to internalize the air pollution externality. A properly set emissions tax would achieve the same result at a far lower cost and would not distort the competitive market as renewable subsidies do.

The third argument, that green energy improves American "energy independence" and reduces supply volatility, has no basis in empirical evidence. Reducing the demand for a commodity does not imply that price volatility will be reduced, unless the demand is reduced to zero. However, even if the argument were true, the need for additional back-up electric generation to "firm" the changing output of wind and solar power is likely to lead to greater volatility of natural gas demand and, hence, to greater natural gas price volatility. A far more efficient way to reduce price volatility is to use standard hedging tools, which contribute far greater flexibility to the design of a customer's preferred hedging strategy. As for the energy independence canard, not only does renewable energy provide an insignificant percentage of total energy consumption in the United States, but its ability to displace crude oil consumption is *de minimus*.

The last argument, that subsidies are needed to overcome "market barriers," is perhaps the most disingenuous. High cost is not a market barrier. For example, not everyone can afford to purchase a Rolls-Royce, but that does not mean Rolls-Royce faces market barriers that necessitate policies specifying that a minimum percentage of Rolls-Royce cars must comprise the entire automobile stock. Although illustrative, one may object to this analogy because Rolls-Royce motorcars do not provide various external social benefits as public goods do. One may assume that renewable energy is a public good and it has attributes that society values, but that not all of those attributes are priced in the market. One economic solution, which already has been instituted, is to establish a market for the non-market attributes. This is the entire purpose of renewable energy certificates, which, like emissions allowances, can be bought and sold publicly.

Jobs: Green and Otherwise

With the U.S. economy struggling, politicians are promoting renewable energy as a (clean) engine of unlimited growth. A number of studies have been published touting the job creation potential of renewable generation. But like a one-eyed accountant, those studies consider only one side of the economic ledger.

For example, in November 2009, a report published by the College of Natural Resources at the University of California at Berkeley recommends a comprehensive policy of aggressive energy efficiency improvements and renewable generation. Those policies would, theoretically, create between 900,000 and 1.9 million new jobs and increase per-household income between about $500 and $1,200 per year. The report concludes that "the stronger the federal climate policy, the greater the economic reward." This is a stunning example of free-lunch economics. The study notes that from 1972 to 2006, energy efficiency programs in California "created 1.5 million additional jobs." However, the authors fail to provide the most important component of such an assertion: compared to what? The study never considers the effects on businesses and households from higher electricity prices and taxes to fund those energy efficiency programs.

Another study, released in February 2010 by Navigant Consulting, was prepared for the RES Alliance for Jobs, a group whose members primarily include renewable generation manufacturers. The study examines the economic effects of adopting a mandatory national renewable portfolio standard of 25 percent of total generation by the year 2025. The report concluded that such a standard would "lead to job growth in all states, especially those currently without state-level renewable electricity standards," and that it would create 274,000 new jobs in the renewables industry.

Most recently, a September 2010 report issued by the National Renewable Energy Laboratory concludes that building 54,000 MW of offshore wind generation under a "30 percent by 2030" renewables requirement would "revitalize our domestic manufacturing sector and create high-paying, stable jobs while increasing the nation's competitiveness in 21st century energy technologies, and "create approximately 20.7 direct jobs per annual megawatt in the United States. That is over one million jobs."

But left unanalyzed in all of those studies is the number of jobs that the scenarios would *eliminate* because of the resulting higher prices for electricity. The "25 percent by 2025" and "30 percent by 2030" goals might indeed create hundreds of thousands of new jobs in the renewables industry, but higher-cost electricity would necessarily reduce available income for other goods and services and for investment, and reduce overall economic growth. Ironically, the Navigant report noted that nearer-term renewable standards are required to "mitigate a flattening or decline in industry-supported jobs that will otherwise occur across industries with the expiration of tax incentives and stimulus-related policies." In other words, without continued subsidies and renewable portfolio mandates, the renewables energy industry would contract.

The U.S. economy is immensely complex, and accurately predicting how specific policies would change output and employment in every industry is probably impossible. Therefore, most economic impact studies rely on so-called static models that are based on a "snapshot" of the economy at one time. When the models are used to estimate the economic effect of renewable generation construction, they allocate the expenditures for that construction in different sectors of the economy (e.g., cement, turbine manufacturing, wire, wages, etc.) and determine how those expenditures would ripple through the economy. For example, increased demand for wind turbines would mean more purchases of cement for foundations and increases in demand for sand and gravel, and so forth. Similarly, wages paid to construction workers would be spent on goods and services; this would increase the demand for those goods and services and cause further increases in employment, and so forth.

Renewable resource advocacy studies always ignore the economic effects caused by higher electricity prices. Households

whose electric bills increase because of renewable energy mandates have less money to spend on everything else. At the same time, goods and services whose production requires electricity increase in cost. So, consumers have less money to spend on goods and services that cost more to produce. That is no different than imposing a tax on consumers and producers. Higher taxes reduce economic growth. This is why subsidizing industry — green, red, or tutti-frutti — reduces economic well-being. A study I performed to examine the economic effects of a proposed renewables requirement in Pennsylvania, for example, found that for each $100 million increase in electricity costs from renewables, 640 jobs would be lost. No wonder renewable energy advocates tout the job impacts of building renewable resources but fail to mention the long-term job-killing impacts of higher electricity prices.

It Is Easy to Be Green — When Someone Else Pays the Bill

Cape Wind is a proposed offshore wind energy development to be built in Nantucket Sound, off Cape Cod. Consisting of 130 individual wind turbines, each capable of producing 3.6 MW of power, the entire project will provide 468 MW of generating capacity. Although the project has been the subject of much environmental wrangling — specifically its potential impacts on the Cape Cod area — I focus here on the project's dubious economics.

On June 4, 2010, National Grid, an international electric and gas company, submitted to the Massachusetts Department of Public Utilities its application and proposed a 15-year contract that would require National Grid to purchase one-half of Cape Wind's total output. The contract was signed under the auspices of Section 83 of the state's Green Communities Act, which was signed into law by Governor Patrick in 2008. The act requires electric utilities in Massachusetts to purchase up to 3 percent of their total projected electric energy needs from renewable resources if — and this is an important "if" — those resources are "cost effective to Massachusetts electric ratepayers over the term of the contract," and "where feasible, create additional employment in the commonwealth."

The initial purchase price under the contract was set at $207 per megawatt-hour in 2013, increasing 3.5 percent each year. Thus, by the end of the contract, the price would be just under 35 cents per kilowatt-hour. However, National Grid's ratepayers would pay an even higher price because the Green Communities Act also includes a 4 percent "adder" that accrues to the utility signing the long-term contract, raising the price paid by ratepayers to $215 per MWh. The contract also included provisions to increase the price in the event that Cape Wind did not qualify for either the federal investment tax credit or the federal production tax credit. Without either of those, the initial price would increase to $235 per MWh and, adding in the 4 percent adder, ratepayers would pay $244 per MWh.

One of the key questions for the developer was the project's estimated cost — information that the developer fought to keep from being released. Although Attorney General Coakley was on record in November 2009 as supporting Cape Wind, her office entered into negotiations for the information to be made public. What came out of the negotiations, however, was not cost information, but a revised contract agreement signed on August 4, 2010 that, in theory, reduced the initial price by about 10 percent, to $187 per MWh, excluding the 4 percent adder to be received by National Grid. However, the price would not really be that low. Because Cape Wind stated it would apply for a grant in lieu of the investment tax credit, under the terms of the revised contract the price would increase by just over 10 percent. If one adds the 4 percent adder received by National Grid, the base price jumps from $187 per MWh to just over $214 per MWh, again escalating 3.5 percent per year.

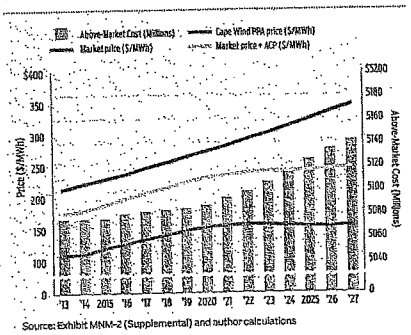
Figure 2 illustrates the additional amount that National Grid ratepayers would pay for their half of the project. The figure shows the annual contract price that would be paid by National Grid's ratepayers (the black line) under the revised contract and the estimated market price for electricity based on two independent market price forecasts prepared for National Grid.

The forecast market price (the red line) increases from around $110 per MWh in 2013 to just over $150 per MWh by the year 2020, then hovers around that value through the remainder of the contract term, ending in 2027. In contrast, by the last year of the contract, the price paid by National Grid ratepayers would be almost $350 per MWh. The estimated above-market cost for electricity (the gray vertical bars) that would be paid by ratepayers is just over $75 million in the first year of the contract, increasing to over $140 million in the last year of the contract.

From an economic standpoint, the key question is whether National Grid ratepayers benefit from paying those above-market costs, which over the 15-year contract would total almost $1.5 billion. Specifically, is this contract "cost-effective to Massachusetts

FIGURE 2

Cape Wind Revised Agreement and Cost-Effectiveness Threshold Price



Source: Exhibit MNM-2 (Supplemental) and author calculations

electric ratepayers over the term of the contract," and does it "create additional employment in the commonwealth"?

According to National Grid and Cape Wind, the answer to both is yes. They assert the project is cost-effective, at least when compared to other offshore wind projects; that it would reduce fossil fuel emissions; that it would help Massachusetts reduce its greenhouse gas emissions; and that it would create between 600 and 1,000 jobs while under construction and around 150 jobs during operations.

However, those claims do not address the cost side of the economic ledger. For example, as shown in Figure 2, by 2015 (the third year of the contract), the above-market cost would be around $80 million. Thus, a reasonable question is whether ratepayers would receive benefits equal to or greater than the above-market cost in that or any other year.

One answer, according to its proponents, is that Cape Wind is needed to meet a growing renewable resource "gap" in Massachusetts and New England. However, this "gap" – to the extent it will exist – is an entirely artificial legislative creation. State legislatures in New York and New England enacted requirements that growing percentages of electric generation be obtained from renewable resources. (That they do not all define "renewable resource" in the same way is another matter.) Concluding that a resource – any resource – is cost-effective because it is "needed" to fill an artificial "gap" is circular reasoning at its finest.

Moreover, this reasoning fails to consider protections enacted in Massachusetts to prevent the cost burden of achieving these artificial renewable energy goals from falling excessively upon Massachusetts ratepayers. Specifically, Massachusetts, like many states with renewable energy mandates, includes an "alternative clearing price" that establishes a ceiling price on renewable energy certificates that utilities must have in order to meet the legislatively set mandates. A utility that cannot obtain sufficient certificates at a reasonable price can instead pay the alternative clearance price to meet its obligation.

One test of cost-effectiveness, therefore, is whether the cost of a renewable resource is greater than the sum of the forecast market price of electricity plus the alternative clearing price, because the sum can be thought of as the maximum price ratepayers should be required to pay for renewable generation. This sum, for each year, is also shown in Figure 2.

As the figure shows, the forecast market price plus the alternative clearing price is still below the contract cost. That means that National Grid ratepayers will be forced to pay more for the Cape Wind power and its renewable energy certificates than they would otherwise be forced to pay for an equivalent amount of certificates. Under such a "bright-line" test, Cape Wind is not cost-effective.

National Grid and Cape Wind argue that the subsidy will create a new offshore wind industry and deliver other non-monetary benefits that cannot be quantified. For example, in a brief it filed on October 7, 2010, attorneys for Cape Wind argue that "Cape Wind represents the first offshore wind-energy facility proposed in the United States and its approval and ultimate construction will inspire a burgeoning new industry that will offer new jobs, innovation, research, and possibilities on how electricity is generated in this country."

Cape Wind likely will inspire a "burgeoning new industry" if the subsidies it has requested are granted. Whether that industry is located in Massachusetts and employs Massachusetts workers is unclear. However, even if such an industry is created in Massachusetts, those are not benefits per se. Moreover, the funds ratepayers will be required to pay to Cape Wind are funds that cannot be invested elsewhere. The higher price for electricity that ratepayers will pay for Cape Wind's output means fewer dollars available for investment and fewer dollars to spend on other goods and services that those ratepayers would otherwise choose to purchase. If one applies to Massachusetts the Pennsylvania job impact estimate of 640 jobs lost for every $100 million increase in electric costs, then Cape Wind, while creating construction jobs, would cause the net loss of hundreds of jobs in Massachusetts over the long term. That was one reason cited by the Rhode Island Public Utilities Commission when it rejected a similar contract between Deepwater Wind LLC and National Grid on April 2, 2010. According to the commission:

> It is basic economics to know that the more money a business spends on energy, whether it is renewable or fossil based, the less Rhode Island businesses can spend or invest, and the more likely existing jobs will be lost to pay for these higher costs.

Like the proverbial vampire who fears daylight, basic economics is the last thing Cape Wind's proponents wish to see applied to the project.

Conclusions

Industries that require never-ending subsidies simply cannot increase overall economic welfare. To conclude otherwise is to believe in "free-lunch" economics of the worst kind. Yet, free-lunch economics are driving the push for renewable energy. The subsidies paid by ratepayers transfer wealth from existing generators to a chosen few renewable resource owners. One may like to rail against the existing generators – as many politicians have – but the long-run implications of such subsidies will be to destroy competitive wholesale electric markets and drive out existing competitors. This course of action will cost jobs because businesses, forced to pay higher electricity prices, will either relocate, contract, or disappear altogether. It will reduce the disposable income of consumers, who will forever be forced to subsidize renewable resources (just as they must now subsidize corn ethanol producers) – all in the name of "green energy."

Cape Wind stands at the forefront of this new renewable energy push, one that is based on long-discredited – and, alas, long-believed – promises. Unfortunately, it is politicians who are selecting the winners and losers in the renewables game, and the select few are benefiting at the expense of the many, i.e., the ratepayers. This is hardly a recipe for economic growth.

EXHIBIT 8: PART OF SLIDE PRESENTATION SENT TO STEVEN CHU BY BRANDON HURLBUT, DEPARTMENT OF ENERGY, JUNE 24, 2011

Exhibit 8

7)

Steven Chu
Department of Energy

From: Hurlbut, Brandon
Sent: Friday, June 24, 2011 11:35 AM
To: SCHU
Cc: Adams, Ian; Poneman, Daniel; Winters, Matthew; Carlson, Jaime; Silver, Jonathan; Navin, Jeff
Subject: Draft LPO slides for POTUS meeting

Attached are the draft slides for the daily economic briefing with the President on Monday where you will discuss the status of LPO. The WH was very direct about what should be included in the slides so we don't have much flexibility. They want:

- 3 slides that describe the status of the program and explain why the President hears so much about it. The President actually hears about it because at official events and political events he interacts with business community and Congressional members - many of them have some affiliation or interest in the numerous applications we have received that involve substantial funds. As a result, the President has likely heard a wide range of feedback on the program and wants to know its status.
- 1 slide on status of Cape Wind (because he has heard from Gov. Patrick a few times - they are close friends)
- 1 slide on USEC (I think Gov. Kasich brought it up when he golfed with the President last weekend).

During the meeting, you will have an opportunity to verbally raise CEDA and any other thoughts on clean energy finance. You have a lengthy pre-brief scheduled on Monday morning to discuss that aspect of the meeting.

Please let us know what you think - the WH has asked that we send a draft early afternoon so they can review and make any necessary changes to get in the President's book for the weekend.

Brandon Hurlbut
Department of Energy
Office: 202.586.[redacted]
Cell: 202.281.[redacted]

Cape Wind

- The vast majority of funds available to DOE for renewable energy projects were provided under the Recovery Act and expire on September 30, 2011
  - DOE expects to use all funds that are subject to expiration by that date
- DOE recently put on hold more than **forty projects** that were otherwise eligible for these funds, but not far enough along to meet this deadline
  - If completed, these projects would create **over 20,000 direct, new jobs**
  - These projects include **Cape Wind**, which was not sufficiently developed from a financial perspective to reach financial close by Sept 30th
- While DOE does have $170 million that does not expire on Sept 30th, this amount is not sufficient to support a project of Cape Wind's proposed size
  - The FY12 budget requests $200 million in new funding, which would allow DOE to guarantee an additional $2.0 to $3.0 billion in loans
  - Cape Wind, alone, is seeking a $1.5 to $2.0 billion loan
- DOE is working with DPC and Cape Wind to explore other options
  - One option may be another type of DOE loan guarantee that would require the company to pay a substantial upfront fee

EXHIBIT 9: COMMENTS OF THE ADVISORY COUNCIL ON HISTORIC PRESERVATION PERTAINING TO CAPE WIND ENERGY PROJECT

Exhibit 9

Preserving America's Heritage

Comments of the Advisory Council on Historic Preservation on
The proposed authorization by the Minerals Management Service for Cape Wind Associates, LLC
To construct the Cape Wind Energy project on Horseshoe Shoal in Nantucket Sound,
Massachusetts
April 2, 2010

Background

Under the Energy Policy Act of 2005, the Minerals Management Service of the Department of the Interior (MMS) must determine whether to approve a permit application from Cape Wind Associates, LLC (CWA) to construct a wind energy project on Horseshoe Shoal in Nantucket Sound. The Cape Wind project (Project) would include the construction, operation, and decommissioning of 130 wind turbine generators (WTG) in a grid pattern within a 24-square-mile area on Horseshoe Shoal. The Project also includes a 66.5-mile buried submarine transmission cable system, a centrally located electric service platform (ESP), and two 115-kilovolt lines (totaling 25 miles) connecting to the mainland power grid.

MMS consulted with the Massachusetts Historical Commission/Massachusetts State Historic Preservation Officer (SHPO), the Wampanoag Tribe of Gay Head (Aquinnah), the Mashpee Wampanoag Tribe (Mashpee), the Advisory Council on Historic Preservation (ACHP), and interested organizations and individuals about the potential effects of the Project on historic properties. At issue are adverse effects to 28 historic districts and individual historic structures and six properties of religious and cultural significance to Indian tribes, including Nantucket Sound. Two of the historic districts are National Historic Landmarks (NHLs).

The ACHP entered Section 106 consultation in April 2005, when the Corps of Engineers (Corps) was the lead agency because of its review of a Section 404 Clean Water Act permit for the undertaking. MMS became the lead agency after assuming responsibility for alternative energy projects on the Outer Continental Shelf (OCS) as the Energy Policy Act of 2005 required. MMS formally started its Section 106 consultation process in June 2008.

On March 1, 2010, the Secretary of the Interior terminated consultation and requested the comments of the ACHP. In accordance with Section 800.7 of the ACHP regulations, the ACHP chairman appointed a panel of five ACHP members to consider the case. The panelists received documents compiled from the Section 106 review. On March 22, 2010, the panelists conducted a site visit and public meeting and received testimony from public officials, organizations, and individuals, including MMS, the Massachusetts SHPO, CWA, and representatives of the Aquinnah and Mashpee. Afterwards, the panel prepared these comments for consideration by the Secretary in reaching his final decision on the undertaking.

Findings

The historic properties affected by the Project are significant, extensive, and closely interrelated. The Project will adversely affect 34 historic properties including 16 historic districts and 12 individually

significant historic properties on Cape Cod, Martha's Vineyard, and Nantucket Island, and six properties of religious and cultural significance to tribes, including Nantucket Sound itself. These districts and standing structures reflect the broad array of properties that represent the rich and unique architectural, social, and cultural history of Cape Cod and the Islands.

Two of the historic districts within the area of potential effect (APE) are NHLs: the Nantucket Historic District and the Kennedy Compound. The Nantucket Historic District is nationally significant both for its association with the American whaling industry and for its remarkable concentration of well-preserved, whaling-industry related architecture. The island's principal historic village, Nantucket Town, remains one of the finest surviving architectural and environmental examples of an early 19th century seaport town in New England. The Nantucket Historic District includes the entire island of Nantucket (30,000 acres and some 75 miles of coastline). The Kennedy Compound, a six-acre family enclave in Hyannis Port, which fronts the northern side of Nantucket Sound, is nationally significant for its association with the Kennedy family and includes homes that Joseph P. Kennedy, John F. Kennedy, and Robert F. Kennedy once owned.

Five properties having traditional religious and cultural importance to the tribes are eligible for inclusion in the National Register and are located within the APE. Three of the properties are located on Cape Cod and are associated with the Mashpee. Two are located on Martha's Vineyard and are associated with the Aquinnah. At the request of the tribes, details about the specific nature or location of these sites have been withheld from the public record to preserve confidentiality.

The Keeper of the National Register determined that Nantucket Sound is eligible for inclusion in the National Register as a traditional cultural property (TCP), as a historic and archeological property that has yielded and has the potential to yield important information about the Native American exploration and settlement of Cape Cod and the Islands, and as an integral, contributing feature of a larger, culturally significant landscape treasured by the Wampanoag tribes and inseparably associated with their history and traditional cultural practices and beliefs. The Keeper acknowledged the importance of Nantucket Sound seabed as former aboriginal lands of the Wampanoags and the potential location for intact archaeological sites.

These historic districts and structures on the Cape and the Islands surrounding Nantucket Sound create a unique context, setting, and identity focused on the Sound and its subsistence, commercial fishing, shipping, and recreational uses. Similarly, according to the Keeper's determination, the TCPs, including and focusing on Nantucket Sound itself, form part of a larger, culturally significant landscape that should include other eligible archaeological, historic, and traditional cultural sites and properties in proximity of the Sound. Because of its setting and unique identity, the Nantucket Sound has long been the focus of cultural identity and practices of the tribes as well as heritage and recreational tourism for the general population. As evidenced by the Keeper's determination, the written record, and the public testimony, Nantucket Sound has been for thousands of years and remains still an area of prime national, regional, and local importance because of its substantial economic, recreational, social, cultural, and traditional cultural benefits and attributes.

Adverse effects on historic properties will be direct and indirect, cannot be avoided, and cannot be satisfactorily mitigated. The Project will adversely affect the viewsheds of all 28 above-ground historic properties (districts or individual properties) and six TCPs of the Aquinnah and the Mashpee. Construction of the Project will have an additional direct adverse effect on the Nantucket Sound seabed.

The Project will introduce visual elements that are out of character with the properties and will change the character of the historic properties' setting that inextricably contributes to their historic significance. These adverse effects would result from the visual intrusions of a high concentration of large-scale

modern WTGs within the historic viewsheds. In its comments on the effects of the Project on the two NHLs, the National Park Service (NPS) concluded that the adverse effect of the undertaking would be indirect, because the adverse effects are visual only, limited in overall scope, and do not diminish the core significance of either NHL. According to the NPS, in both cases the adverse effects stem from the partial obstruction of long-distance, open-to-the-horizon views historically associated with the resources.

The altered view of the eastern horizon across Nantucket Sound that would result from the Project will have a significant adverse effect to the Wampanoag tribes' traditional cultural practices as carried out in relation to six eligible TCPs. The Wampanoag tribes have stated that an uninterrupted view across Nantucket Sound of the rising eastern sun for religious purposes is a defining feature of Wampanoag tribal culture and history.

The Project would result in physical destruction, damage, and alteration of part of the seabed of Nantucket Sound. The direct physical effects of drilling and construction activities have the potential to disturb and destroy archaeological resources and would diminish the integrity of the elements of feeling and association. Additionally, the Wampanoag consider the entirety of Nantucket Sound to be ancestral lands, based on traditions that hold that the Wampanoag people have inhabited the land from the western shore of Narragansett Bay to the Neponset estuaries since time immemorial, including the submerged lands now called Horseshoe Shoal. In the view of the tribes, the construction of the Project would constitute a direct physical intrusion therefore adversely affecting the integrity of Nantucket Sound. Even though the Project would be decommissioned, some of these adverse effects would be permanent, unavoidable, and not subject to satisfactory mitigation.

Nantucket Sound has been found eligible for listing in the National Register not only as a TCP but as a historic and archaeological property. Nantucket Sound is associated with, has yielded, and has the potential to yield important information about the Native American exploration and settlement of Cape Cod and the Islands. There is the potential for undiscovered submerged archaeological sites and archaeobotanical materials. Construction of the Project and interconnective cabling presents a high potential for encountering and damaging or destroying potentially significant historic or archaeological resources. Given the limited intensity of the archaeological reconnaissance survey and the nature of construction in a marine setting, monitoring and mitigation proposals will not adequately address the potential for harm.

CWA has proposed steps to minimize and mitigate potential adverse effects, but they are insufficient given the number and importance of the resources at issue and the nature and scope of the Project's effects on them. During the consultation, CWA proposed a number of modifications to the Project to minimize the adverse visual effects, including a reduction of the number of WTGs, revision of the footprint of the WTG array, reduced lighting, and painting the turbines an off-white color to reduce the contrast with sea and sky. Nonetheless, the Project remains a large-scale industrial development that would introduce a significant and discordant element into the general setting of the affected historic properties, radically changing features of the setting that are vital to defining the character of the places. There is also a fundamental incompatibility between the use of Nantucket Sound for this industrial facility and the traditional use of the area for cultural practices and the marine-focused subsistence, commercial fishing, shipping, and recreational purposes that have contributed to the core identity of the unique setting in historic times.

In sum, Nantucket Sound and the surrounding land areas are a rich and unique tapestry of American prehistory, history, and culture. With Wampanoag ancestral habitation and the fabric of historic communities and landmarks surrounding Nantucket Sound, these properties mark the evolution of the area from Native American and then English settlement through the recent past, creating a collective historic resource that is greater than the sum of its parts. The continued vitality of the Wampanoags'

traditional religious and cultural practices and their integral relation to Nantucket Sound add a rare additional dimension of significance to this special place.

The Project's effects on this broad range of properties should not be viewed in isolation or labeled only as indirect or direct. Rather, because of their concentration and interrelation, they must also be considered together. In their totality, these effects are significant, adverse, and cannot be adequately mitigated.

MMS has stewardship responsibilities for historic properties on the OCS. As the federal management agency for the OCS, MMS has responsibilities to foster the long-term preservation and use of historic properties under its control, pursuant to the National Historic Preservation Act (NHPA) and Executive Order 13287. Section 2 of the NHPA declares it to be the policy of the federal government to "administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations." The Executive Order especially emphasizes cooperation with local communities to increase opportunities for public benefit from, and access to, federally owned historic properties, and promotion of preservation through heritage tourism. Section 5(a) of the Executive Order recommends that agencies assist states, tribes, and local communities in promoting the use of historic properties for heritage tourism and related economic development in a manner that contributes to the long-term preservation and productive use of those properties. The OCS portion of Nantucket Sound, which includes the area of the Project, is federal property. MMS, given its stewardship responsibilities for this property, must exercise great care when considering any development at Horseshoe Shoal. Approving the development of a large scale industrial facility as proposed is inconsistent with the policies and admonitions of the NHPA and Executive Order 13287.

Section 106 was initiated late in the planning process. A fundamental impediment to the effective exploration of solutions that could allow CWA's project goals to be met in harmony with the historic values of the area was the late engagement of the Section 106 review process. The Section 106 review was not initiated in earnest during the scoping process for National Environmental Policy Act (NEPA) compliance, prior to the investment of time, money, and extensive planning for the preferred location. Consequently, when the Section 106 process advanced, it was primarily to develop mitigation measures for the Project's effects rather than to consider alternatives to the Project site that might avoid adverse effects to historic properties.

In its initial investigation of historic properties potentially affected by the Project, the Corps limited its review only to "designated" historic properties—those already listed or determined eligible for listing in the National Register. As a result, the Corps gave no serious consideration to the possible existence of TCPs that might be affected. When it took over lead agency status for the purposes of Section 106, MMS, following the Corps' focus on designated historic properties, was slow to respond to the assertions of the tribes and other consulting parties that there were other historic properties within the APE that warranted consideration. MMS did not resolve the eligibility status of potential historic properties such as Nantucket Sound until late in the Section 106 process. Commencing in early 2009, the Secretary's unprecedented attention to the Project and the review process resulted in these important issues being properly resolved, but at a time when CWA's commitment to the preferred location frustrated serious consideration of avoidance alternatives.

Tribal consultation under Section 106 as conducted by the Corps and by MMS was tentative, inconsistent, and late. Earnest tribal consultation that made possible an open dialogue between the tribes and the federal agencies started late in the review process, after the applicant was committed to the preferred location. Early contacts with the tribes did not provide an adequate and confidential opportunity for the tribes to communicate concerns about historic properties. In spite of that, the record shows that the tribes clearly identified their concerns about the effects of the undertaking on TCPs and about the importance of Nantucket Sound as a TCP and the location of former aboriginal lands in 2004. In 2009,

MMS took steps to remedy deficiencies in the tribal consultation process by participating in site visits and consultation meetings on Cape Cod and the Islands.

The marine archaeological survey work to determine the potential for the presence of intact archaeological sites is limited and the feasibility of any post-review discovery protocols is uncertain. The Marine Archaeological Sensitivity Assessment reported in 2003 indicates that much of Nantucket Sound would have been exposed and available for human habitation from about 12,500 to 7,000 B.P. As sea levels rose, the Sound would have become inundated, but with smaller areas remaining above sea level until as late as about 1,000 B.P. During this period, portions of the area that is now Nantucket Sound would have continued to be dry land and available to aboriginal populations for habitation and subsistence activities.

Although the footprint of the WTG array has been altered to avoid areas where the potential for undisturbed deposits remains, the coverage and spacing of the sub-bottom profiler and coring data and the depth and adequacy of coring is insufficient for locating archaeological sites and shipwrecks for mitigation purposes. While the survey effort appears to have been sufficient to assess the potential for archaeological resources in the Section 106 process, it does not provide adequate data to enable modifications to the Project, were it to be approved, to avoid adverse effects or to inform appropriate mitigation.

PROJECT-SPECIFIC RECOMMENDATIONS

The ACHP recommends that the Secretary not approve the Project. The indirect and direct effects of the Project on the collection of historic properties would be pervasive, destructive, and, in the instance of seabed construction, permanent. By their nature and scope, the effects cannot be adequately mitigated at the proposed site.

The development of renewable energy projects is not inherently incompatible with protection of historic resources, so long as full consideration is given to historic properties early in the identification of potential locations. The ACHP believes that wind energy production on the OCS in the vicinity of the current project area could proceed in a manner that would be consistent with protecting Nantucket Sound and the surrounding historic properties. It appears that the selection of nearby alternatives might result in far fewer adverse effects to historic properties, and holds the possibility that those effects could be acceptably minimized or mitigated.

GENERAL RECOMMENDATIONS

The development of alternative energy resources is an important national policy goal that historic preservation concerns need not impede. The nature of the potential effects to historic properties, though, warrants further consideration by the Department of the Interior and other federal agencies involved in energy development to minimize circumstances for conflict.

The ACHP's review of this Project has highlighted the need for broader coordination among federal agencies, states, Indian tribes, industry, consulting parties, and the public to address these challenges.

1. **Tribal consultation:** The Department should review and update agency protocols for tribal consultation regarding energy projects and other undertakings.

    a. The Secretary should ensure that all Department agencies engage in effective tribal consultation early in the project planning and review process to enable full

understanding and appreciation of tribal views on energy development and its potential to affect properties of religious and cultural significance to them. In light of the President's memorandum of November 5, 2009, DOI agencies should ensure that adequate provisions are incorporated in their Tribal Consultation Plans to achieve this goal. It is critical that the tribal consultation requirements of the Section 106 process be properly integrated into those plans and in a manner that ensures tribal views on historic resource impacts are addressed in a timely fashion in broader environmental reviews.

b. These Tribal Consultation Plans should establish procedures that ensure consultation meetings with Indian tribes are conducted in settings and conditions that provide for the consideration of confidential information about properties of religious and cultural significance and associated beliefs and practices.

c. In accordance with Section 36 CFR 800.4(c)(1) of the Section 106 regulations, agencies of the Department should take further steps to acknowledge the "special expertise" of Indian tribes in "assessing the eligibility of historic properties that may possess religious and cultural significance to them." Due deference should be given to the views of an Indian tribe regarding the impact on historic properties that are integral to the cultural and religious identity of the tribe before deciding to approve an undertaking that will have an adverse effect on such sites.

II. **Site selection process and analysis of alternatives:** MMS should improve the planning process for the identification of preferred locations for energy development on the OCS. Consideration of the presence of historic properties and the likelihood and nature of impacts from potential projects should be factored into decisions regarding the availability of federal lands for energy development.

a. MMS should pursue strategies for the early identification of historic properties on the OCS to meet its responsibilities under Section 106 and to integrate Section 106 compliance effectively and in a timely manner with broader environmental reviews under NEPA.

b. MMS should work with and provide guidance to applicants to ensure that the Section 106 process is initiated early enough in the project planning and review process so it can realistically affect consideration of alternatives and selection of a preferred alternative project site.

c. In the review of alternative site locations, MMS should provide adequate weight to effects on historic properties in assessing the viability of an alternative. MMS should always maintain the option of withholding a permit or other authorization whenever the effects on historic properties of a specific alternative preferred by an applicant are found to be too great.

III. **Improving the coordination between energy development and historic preservation:** The ACHP and the Department, working in coordination with other agencies and stakeholders, should recommend policies and provide guidance on the key issues regarding historic preservation and energy development.

a. The ACHP should work with the Council on Environmental Quality to finalize guidance on the appropriate coordination of the Section 106 review process and the NEPA review process.

b. The ACHP and the NPS should develop guidance to assist federal agencies in determining and addressing the effects of energy projects, especially wind and solar projects, on historic properties that comprise large areas with indefinite boundaries. Particular attention should be given to properties of religious and cultural importance to tribes and cultural landscapes. This effort should draw on the experience of other nations in addressing this subject.

c. The ACHP and the NPS should assist agencies and applicants by sharing information on innovative and cost-effective strategies and techniques to identify all types of historic properties potentially affected by energy projects, not just standing structures and archaeological sites.

d. The ACHP should clarify the distinction between direct and indirect effects to historic properties and when visual effects may constitute direct effects.

e. The MMS should coordinate with the NPS, the ACHP, the National Conference of State Historic Preservation Officers, other agencies and stakeholders, and the professional marine archaeology community to develop guidelines specifying the methodologies and technologies that should be used in marine settings to assess the potential for the presence of archaeological sites and shipwreck sites. The guidelines should indicate the level of investigation that would represent a reasonable and good faith effort to identify historic properties for the projects on the OCS.

IV. **Creating a useful comprehensive database of historic properties.** The Department should revive the proposal of the 2006 Preserve America Summit that was endorsed by the ACHP to develop a comprehensive and accessible national inventory of historic properties to assist in the identification of historic properties during the federal project planning process. Priority should be given to those areas under federal jurisdiction or control that have high potential for both traditional and alternative energy development.

Exhibit 10

UNITED STATES COAST GUARD

Atlantic Coast Port Access Route Study Interim Report

Docket Number USCG-2011-0351

ACPARS Workgroup
13 July 2012

of shipping will be affected by numerous factors including but not limited to: vessel size, vessel type, density of traffic, prevailing conditions, cumulative impacts of multiple obstructions (wind farms), existence of multiple shipping routes (crossing or meeting situations), radar/ARPA interference, and existence of mitigating factors such as navigational aids, vessel traffic services, pilotage, etc.

There currently is no standard recommended separation distance between OREIs and shipping routes. As an interim measure, the Coast Guard intends to apply the UK Maritime Guidance Note MGN-371 and the expertise of waterways SME's to evaluate and/or identify individual BOEMRE RFIs/CFIs. Based on MGN-371, any areas <1 NM from existing shipping routes pose a high risk to navigational safety and are not considered acceptable for the placement OREIs. Areas >5NM from existing shipping routes are considered to pose minimal risk to navigational safety. Everything between 1NM and 5NM would require analysis to determine if mitigation factors could be applied to bring navigational safety risk to within acceptable levels. Please note that impacts to radar and ARPA still occur outside of 1 NM which will have to be evaluated along with other potential impacts. The above are only planning guidelines and a full navigational risk assessment will be required as part of the EIS prior to approving construction of any OREIs."

EXHIBIT 11: EMAIL AMONG TIM BAKER, HILARY C. TOMPKINS, AND DENNIS DAUGHERTY RE: CWA COP OPTIONS

Exhibit 11

From:	Baker, Tim
To:	Tompkins, Hilary C; Daugherty, Dennis
CC:	Hawbecker, Karen
Sent:	9/23/2010 9:07:24 AM
Subject:	RE: CWA COP Options 9-20-10

Hilary,

Dennis is going to be a bit late. What we have from CWA is an incomplete COP. CWA will need to provide BOEMRE a number of additional items for the COP to be deemed complete. We have estimated that the environmental review and COP approval might not be finished until early next year. NMFS has given us a November date for its completion of the consultations relating to whale populations. Tim

Timothy H. Baker
Attorney, Branch of Petroleum and Offshore Resources
Division of Mineral Resources
Office of the Solicitor
Department of the Interior
Tel: 202.513.0821
Fax: 202.208.1505

From: Tompkins, Hilary C
Sent: Thursday, September 23, 2010 9:00 AM
To: Daugherty, Dennis
Cc: Baker, Tim; Hawbecker, Karen
Subject: RE: CWA COP Options 9-20-10

Thanks Dennis—Also, before any approval of a COP we will need to ensure that NEPA and ESA review (whatever degree of review) is conducted. That will take some time – months I would presume to get the COP reviewed and approved. Do we have a COP from CWA yet? HT

From: Daugherty, Dennis
Sent: Wednesday, September 22, 2010 7:53 PM
To: Tompkins, Hilary C
Cc: Baker, Tim; Hawbecker, Karen
Subject: RE: CWA COP Options 9-20-10

I agree with the memo. What it misses is the litigation angle. Cape Wind Associates (CWA) is doubtful it will be able to attract financing until it has won a federal district court victory against its critics. Initially CWA pushed the Government not to raise ripeness defenses to the four pending lawsuits, but it now recognizes that the court might decide the case on those grounds whether or not we raise it. Therefore CWA has concluded that it needs to pursue fairly prompt approval of a construction and operations plan (COP) and draw a fully ripe challenge on the broad array of issues raised by its critics.

For that reason, and because it does not now have approximately $30 million to expend on geological/cultural survey work, it has asked BOEM not to put into the lease a term requiring that the surveys be conducted before it submits a COP for approval.

Rather they ask that it require the surveys be conducted before actual construction.

CWA is correct that the ROD and letter to the Advisory Council on Historic Preservation did not specify that the surveys had to be completed before submittal of the COP. Those documents said it was needed before construction. They say it is cast as "mitigation" in the ROD, not as a precondition. The lease and or COP approval needs to spell out the authority of BOEM to require modifications to the COP in light of survey results.

As the briefing paper acknowledges, this conflicts with a BOEM regulation which requires core drilling results be submitted with the COP. Therefore BOEM would have to grant a "departure" (that's their term for variance) to the regulations.

Under the terms of a loan guarantee CWA is seeking from DOE, it must initiate construction by September 2011. It seems to us that a district court decision by that date, after several months preparing appropriate documentation for COP approval, is by no means guaranteed. But it is apparently their best hope for financing the project.

John is on leave. Tim is in the office and very knowledgeable on these issues.

From: Tompkins, Hilary C
Sent: Wednesday, September 22, 2010 5:35 PM
To: Cossa, John; Daugherty, Dennis
Subject: CWA COP Options 9-20-10

I have a meeting with the Secretary on this tomorrow at 9 am. Can you please review this memo and let me know if you agree and if there are any other legal points I need to raise. Do we have a briefing paper on this from the legal side? I can't remember if I received one or not. HT

EXHIBIT 12: LETTER TO JAMES S. GORDON, MANAGER, EMI CAPE, LLC, FROM ROBERT P. LABELLE FOR ACTING ASSOCIATE DIRECTOR FOR OFFSHORE ENERGY AND MINERALS MANAGEMENT

Exhibit 12

Deliberative and Pre-Decisional

United States Department of the Interior

BUREAU OF OCEAN ENERGY
MANAGEMENT, REGULATION, AND ENFORCEMENT
Washington, DC 20240

OCT 4 2010

Mr. James S. Gordon
Manager, EMI Cape, LLC
Member and Manager of Cape Wind Associates, LLC
75 Arlington Street, Suite 704
Boston, Massachusetts 02116

Dear Mr. Gordon:

On April 28, 2010, Interior Secretary Salazar signed a Record of Decision approving the issuance of a lease for the wind energy project that Cape Wind Associates (CWA) proposed to build on Horseshoe Shoal in the Nantucket Sound. The Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) shared a lease draft with Cape Wind Associates, LLC, (CWA) on July 8. Following meetings on July 14, August 25, and September 2, BOEMRE refined the lease terms to meet needs of the government and CWA. Accordingly, we are pleased to offer to your company the Nation's first lease for commercial wind development on the Outer Continental Shelf (OCS).

The enclosed lease includes three addenda. Addendum A sets forth the lease area on the OCS, generally described as 25-square miles on the OCS in Nantucket Sound offshore Massachusetts, and permissible lease activities. Addendum B sets forth the duration of each term of the lease beginning with a 5-year site assessment term, and the financial schedule. During the site assessment term, the CWA is authorized to conduct site characterization activities subject to the terms and conditions of the lease. Following completion of site characterization activities and approval of a Construction and Operations Plan, CWA has a 28-year operations term to construct and operate a wind energy facility in accordance with the OCS Lands Act, regulations promulgated pursuant to the OCS Lands Act, terms and conditions contained in the commercial wind lease, and other relevant statutes and regulations. Addendum C sets forth the required site characterization activities to be conducted by the CWA, and contains stipulations and conditions that CWA is to comply with throughout the entire term of its lease.

The lease comports with the law, applicable regulations, the Record of Decision issued in April, and the Secretary's April 28, 2010, letter to the Advisory Council for Historic Preservation. Several aspects of the lease deserve a brief explanation.

- The regulations, in 30 CFR 285.506(c)(1), state that "[u]nless [BOEMRE] specifies otherwise, in the operating fee rate, (r) is 0.02 for each year the operating fee applies when you begin commercial generation of electricity." For the Cape Wind Energy Project, BOEMRE is requiring an operating fee rate of 0.02 for the first 15 years of commercial operation, after which the operating fee rate will increase to 0.07. This

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determination was made based on an analysis of the project's economics, the increased lease term (discussed below), and fees charged by similarly situated offshore leasing authorities. The fee is scheduled to increase in later years to give CWA an opportunity to retire debt at the lower rate in the early years of the project.

- The regulations, in § 285.235(a)(3), state that a "commercial lease will have an operations term of 25 years, unless a longer term is negotiated by applicable parties." An operations term of 28 years was negotiated by the parties. This is intended to give CWA several years to complete construction, and still operate the turbines for their full 25-year expected life.

- CWA has performed survey work on the project site under the guidance of the U.S. Army Corps of Engineers (ACOE), at the time that the project was under that its jurisdiction. BOEMRE's survey requirements differ from those of the ACOE. Accordingly, additional geophysical and geotechnical work is required before the project may be constructed. This survey work is described in sections 1 and 2 of Addendum C of the lease. By the terms of the lease, this work must be completed "prior to the commencement of construction or any bottom-disturbing activities related to construction." The regulations, in § 285.626, require this work to be completed and submitted as part of the construction and operations plan (COP). The BOEMRE has decided that it will not require surveys to be completed prior to COP submittal to afford CWA an opportunity to obtain the financing necessary to support the additional survey work. Provided that an otherwise satisfactory COP is submitted within the lease's 5-year site assessment term, BOEMRE, if requested, would approve a departure from its regulations under § 285.103 and approve a COP that describes outstanding survey work to be completed prior to construction.

In accordance with § 285.231(g), we have enclosed three (3) copies of the lease form with this notice. Within 10 business days of receiving this notice, CWA must sign and date the copies and return all three copies to the Office of the Associate Director at the address listed below. Additionally, within the 10 business day period, CWA must provide financial assurance in the amount of $488,278. This amount covers the following components: (1) a $100,000 initial bond, (2) $300,000 to cover decommissioning for an existing structure, and (3) $88,278 to cover one year of advance rent.

The decommissioning element of the financial assurance covers the meteorological tower already installed on the OCS. At this time, the decommissioning estimate is $300,000. Financial assurance in this amount is currently held by the ACOE. Under BOEMRE regulations, CWA must provide financial assurance in the amount required to cover decommissioning costs to BOEMRE. Once the financial assurance for decommissioning has been provided to BOEMRE, CWA may proceed with the process for extinguishing the financial assurance currently held by the ACOE. The BOEMRE's estimate of $300,000 to cover decommissioning costs will be subject to review in the near future following an analysis of the cost of removing and clearing the structure, to ensure that the appropriate amount of financial assurance is maintained.

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After CWA executes the three copies of the lease and returns the copies, BOEMRE will execute the lease on behalf of the United States and send CWA one fully executed copy. The lease will become effective on the first day of the month following the date the lease is signed by BOEMRE. Within 45 days after BOEMRE executes the lease, CWA (as Lessee), must pay the first year's rent, in the amount of $88,278, in accordance with the terms of the lease and BOEMRE regulations at 285.500(b).

Please send three copies of the signed and dated lease to: BOEMRE, Office of the Associate Director for Offshore Energy and Minerals Management, 381 Elden Street – Mail Stop 4001, Herndon, Virginia 20170-4817.

Please do not hesitate to contact me at (703) 787-1700, if you have any questions.

Sincerely,

Robert P. LaBelle
Acting Associate Director for Offshore
Energy and Minerals Management

Enclosures

EXHIBIT 13: EMAIL FROM CAPT. MARY LANDRY TO CAPT. ROY NASH RE: ALLIANCE TO PROTECT NANTUCKET SOUND

Exhibit 13

From:	Landry, Mary CAPT
To:	Nash, Roy CAPT
CC:	Campbell, Mark CAPT; LeBlanc, Edward; Sollosi, Mike; Sullivan, Timothy RADM
Sent:	9/13/2006 4:40:46 PM
Subject:	RE: Alliance to Protect Nantucket Sound, Jack McGowan visit

Roy, the questions the Admiral had after our briefing this afternoon is "does Alliance know that (1) CG has a technical review being done by outside contractor to look at UK studies? And (2) if yes, does Alliance know name of contractor? (APL)."

Mary E. Landry
Captain, U. S. Coast Guard
First Coast Guard District
408 Atlantic Ave
Boston, MA 02110
Phone (617) 223-8439, fax (617) 223-8094

-----Original Message-----
From: Nash, Roy CAPT
Sent: Wednesday, September 13, 2006 2:25 PM
To: Sullivan, Timothy RADM
Cc: Landry, Mary CAPT; Campbell, Mark CAPT; LeBlanc, Edward
Subject: Alliance to Protect Nantucket Sound, Jack McGowan visit

Admiral Sullivan Sir,
We were briefed by subj group leaders last week on radar interference caused by wind farm towers and turbine blades. They brought two retired Raytheon radar experts as (very smart) 'private citizens'. Also had Steamship and Hyline ferry boat leadership and marina owner/operator. Presentation seemed credible, they answered my Qs. They, and a UK study, suggest no tower within 1.5 NM of a ferry route or channel. HQ had science contractor review this study and I understand they agreed, by in large. We should obtain this review for our look/see. If 1.5 NM offset applied to Cape Wind proposal in Nantucket sound, this would drastically reduce the size of the Wind Farm footprint (might well scuttle it). HQ to have nav guidelines for wind farm siting drafted by 31 October. We plan to participate further in guideline developmt w/ Dlstaff and HQ staff at a workshop later this month.
VR, RAN

Sent from my GoodLink synchronized handheld (www.good.com)

EXHIBIT 14: SUMMARY OF CORRESPONDENCE FROM THE ALLIANCE TO PROTECT NANTUCKET SOUND

Exhibit 14

Summary of Correspondence from the Alliance to Protect Nantucket Sound

3 December to CCG

- Stated there was consensus that there would be negative effects to marine radar.
  - CG position is that there is radar interference induced by the presence of the Wind Turbine Generators (WTG). However, radar interference does preclude navigation. A trained radar observer can deal with interference. If reduced visibility and radar interference together are severe, there are options available such as reduced speed or rerouting traffic.
- Recommended a setback of 3 nm from Main and North Channels and ferry routes and 2 nm between turbines as the only mitigation measures that would allow for safe navigation.
  - CG position. This recommendation is based on an interpretation of a UK report that suggests wider spacing and setback distances to mitigate radar interference. If Cape Wind were to use these measures, the proposed wind farm would hold too few WTGs to be economical. Our evaluation of the body of research we have examined is that the current setback distance of 1100 yards from the channel centerline and 500 yards from the channel edge and the turbine separation of 680 yards and 1080 yards is sufficient to allow recreational and commercial navigation and Coast Guard missions to proceed.
- Accused the CG of truncating the process by not holding a second public meeting to discuss radar analysis and of ignoring Congressional requests to hold public meetings and allow a 60 day comment period, citing Oberstar's 9/12 letter to COMDT and 9/24 letter to Secretary Kempthorne.
  - A second public meeting was held. The sixty day comment period was requested by Mr. Oberstar. The Coast Guard is not in a position to honor this request, however, we passed this request on to MMS for their consideration.
- Asserted that CG Terms and Conditions should be promulgated as regulations and thereby follow the Administrative procedures Act (APA).
  - Coast Guard legal review says the APA is not applicable.
- Urged the CG to not support MMS attempts to accelerate the process.
  - As a cooperating agency, the Coast Guard is trying to accommodate MMS's scheduled as well as be responsive to the legitimate concerns of waterway users. We do not believe that MMS is "accelerating" the process.

9 December to CG-5

- Requested that the Coast Guard adhere to its commitments regarding public participation in developing the Terms and Conditions and establish these requirements in accordance with Section 414 of the Coast Guard and Maritime Security Act of 2006. The letter also addresses insufficient time to review the Coast Guard's independent radar analysis.
  - The Coast Guard disagrees with the assertion that there is a legislated public participation requirement. The assertions that we were providing insufficient time to review the analysis are moot in that the document was provide in full on 16 December and the public has had a reasonable time to consider its contents.

9 December to Chairman Oberstar

- Claimed the Coast Guard had violated public trust by improperly withholding information (i.e. the TSC report), limited public participation and ignored Congressional request for a 60 day comment period.
  - The Coast Guard publicly released the report as soon as it was received on 16 December. A subsequent public meeting was held to introduce the contents of the report. As before the Coast Guard is under no obligation to honor the request for a 60 day comment period. We asked MMS to allow time for a reasonable public comment period and they agreed.
- Accused the Coast Guard of ignoring or rejecting the UK practice of tower setback from shipping lanes and greater separation of turbines.

EXHIBIT 15: INVESTIGATIVE REPORT OF CAPE WIND ASSOCIATES, LLC, REDACTED

Exhibit 15

Investigative Report of Cape Wind Associates, LLC Redacted

potential incident prosecutorial discretion can be applied more readily because it may be easier to assess whether the agency has done all it could to avoid the incidental killing. Riley explained that MBTA enforcement actions by FWS try to focus on situations where an entity either intentionally "disregarded the MBTA" in its actions, or there were clear conservation measures available to avoid the killing, yet the entity intentionally chose to ignore such measures.

Agent's Note: Following Riley's interview, MMS and FWS finalized an MOU "Regarding Implementation of Executive Order 13186" on June 4, 2009.

IV. In their complaints, Senator Kennedy and Taylor alleged that MMS was prepared to move the project to approval prior to receiving final USCG terms and conditions for safe marine navigation:

In his joint interview with complainant Taylor and Wattley, Carroll stated that wind turbines, whether on land or offshore, cause significant radar interference. Over the past four years, Carroll has sent MMS substantial documentation from both Britain's Arm's Warfare Center (military agency) and Coastal Maritime (USCG equivalent) establishing that offshore wind farms have significantly "degraded their navigation systems."

Carroll said that at a September 2008 hearing in Falmouth, MA, the developer, CWA, presented a report on radar interference it had been asked to produce by USCG. According to Carroll, CWA's presenter and expert, Captain Dennis Barber, a consulting partner at Marico Marine in Southampton, U.K., told the audience that the report was not based on a "scientific report." Wattley stated that he asked Captain Barber for the data supporting the report and Barber admitted that the report was not based on any particular data set.

According to Carroll and Wattley, among those present at the hearing were the head of USCG for the Cape Cod area, the Woods Hole, Martha's Vineyard and Nantucket Steamship Authority (WMNSA), the Passenger Vessel Association, and Hy-Line Cruiselines (Hy-Line). Wattley and Carroll said that because the report was clearly inadequate, the USCG Captain stated he would commission an independent $100,000 study to analyze the potential impact on radar and navigational from the Cape Wind Project.

Carroll said that besides stating he planned to commission an independent report addressing radar interference, the USCG Captain also stated that USCG would hold another workshop/stakeholder meeting with Cape Cod citizens to discuss the report's findings as well as Search and Rescue (SAR) and other issues not discussed in the first workshop. Since that time, however, Wattley said that the USCG Captain has "pulled back" on this promise and stated in a November 4, 2008 letter that there would not be a second workshop.

Carroll also produced letters from U.S. Congressman James Oberstar, the Chairman of the House Committee on Transportation and Infrastructure, to Admiral Thad Allen, Commandant of USCG and then-DOI Secretary Dirk Kempthorne. In his September 12, 2008 letter to Allen, Oberstar stated, "I am deeply concerned that the Coast Guard and the Department of the Interior have not jointly developed clear and binding nationwide navigation safety standards for the Department's new offshore renewable energy development program."

Cluck stated that USCG's independent radar study was completed and MMS had received draft mitigation measures from USCG regarding the Cape Wind Project which are "broad and general." Cluck said the USCG Captain informed him that USCG was not prepared to issue "specific" mitigation measures at that time.

According to Cluck, the draft mitigation measures have identified that there will be "moderate impacts" to vessel traffic inside the array of turbines, whereas MMS initially believed the impact would only be "minor." Cluck explained that this finding of a greater impact does not necessarily put the mitigation measures "outside of the scope" of the final EIS, but rather USCG will need to recommend an appropriate level of mitigation to overcome the impact. According to Cluck, USCG is required to provide "terms and conditions" for the project under Section 414 of the Coast Guard Authorization Act so that the language of the terms and conditions may be included before issuing a lease, not necessarily before MMS issues the ROD.

The USCG Captain had been the USCG Sector Commander for Southeastern New England for approximately one year when interviewed and had been involved in reviewing the Cape Wind Project on behalf of USCG during that timeframe. According to him, MMS has been "very accommodating" with the timeline for producing the draft and final EIS for the Cape Wind Project. He stated that USCG was meeting the timeline requested by MMS until the developer of the project, CWA, presented their radar study, along with project opponents presenting a radar study; the two studies reached opposite conclusions.

The USCG Captain stated that before the release of the two opposing reports USCG was considering commissioning its own study, yet he concluded that an independent report was necessary following the concerns voiced by the local operators (ferries, fisherman, etc.). According to the USCG Captain, the decision to commission the third radar report was the circumstance that created the "time crunch" in meeting MMS's preferred timeline for issuing the final EIS.

The USCG Captain said that the contractor hired to perform the radar study was asked to answer only one question: "What will marine operators see on the radar when operating in/around the turbine array?" The contractor was not asked to make recommendations about risk, hazards, or impact. Accordingly, he said, the contractor looked at the projected design of the turbine array and plugged that information into a simulator to produce a report that would tell USCG what the radars would show when presented with different scenarios regarding number of vessels, direction, and other information.

Under section 414 of the Coast Guard Authorization Act of 2006, the USCG Captain stated, the general terms and conditions USCG provided to MMS that were included in the draft EIS are still valid and "meet the statutory requirements" of USCG. He explained that the terms and conditions are the "overall project framework," which can be modified through specific mitigation measures as the project moves forward and the measures become more readily definable. He purposely did not recommend the creation of "buffers of navigation" around the turbine array because he believes that would have caused a change in the "footprint of the project" that could unnecessarily "kill the project."

EXHIBIT 16: LETTER TO GREGORY J. GOULD, MINERALS MANAGEMENT SERVICE, FROM THE U.S. FISH AND WILDLIFE SERVICE

Exhibit 16

REF: Formal Consultation # 08-F-0323 October 31, 2008

Mr. Gregory J. Gould
Chief, Environmental Division
Minerals Management Service
Washington, D.C. 20240

Dear Mr. Gould:

This document is the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) pursuant to our formal section 7 consultation under the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 *et seq.*). This BO concerns the effects on federally-listed threatened and endangered species of a lease by the Minerals Management Service (MMS) to Cape Wind Associates, LLC, (CWA) for an easement to construct, operate and decommission a wind energy project on Horseshoe Shoal in the federal waters of Nantucket Sound, Massachusetts. MMS' May 19, 2008 request to initiate formal consultation was received by the Service on May 20, 2008. MMS, the lead federal agency, is consulting with the Service on behalf of the Army Corps of Engineers (ACOE) and the Environmental Protection Agency, the additional federal agencies with approval or permitting authorities for the Cape Wind Project. CWA proposes to generate electricity from wind energy on the outer continental shelf; some components of the facility are located in waters within 3 miles of the coast and on-shore. The proposal calls for construction of 130 wind generating turbines and associated infrastructure commencing in 2009 and operations beginning in 2010 (as described in the January 2008 Draft Environmental Impact Statement).

The ESA-listed species under the jurisdiction of the Service that are considered in this formal consultation are the threatened Atlantic Coast piping plover (*Charadrius melodus*) population and the endangered Northeastern population of the roseate tern (*Sterna dougallii dougallii*). There is no habitat designated as critical pursuant to section 4 of the ESA within the Horseshoe Shoal marine environment or elsewhere within the project area for either avian species. Similarly, there are no species currently proposed for ESA listing as threatened or endangered that may be present in the project area. We have also evaluated the potential effect of the project on the threatened northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*), which occurs on the periphery of the project area, and concur with your evaluation, dated October 9, 2008, that the project is not likely to adversely affect this species. We based our concurrence on information provided in your October 9, 2008 letter and an analysis of the probability for an oil spill attributable to the Cape Wind Project (Etkin 2006) to reach a finding of not likely to adversely affect the northeastern beach tiger beetle or its habitat in Nantucket Sound.

Amount and Extent of Take

Roseate Tern

The Service estimates that four to five roseate terns per year (80-100 terns over the 20-year life of the project) are likely to be taken (injured or killed) as a result of collisions with the WTGs on Horseshoe Shoal. If any of the four or five individuals are successful adult breeders with dependent young of the year, the survival rate of their young will be reduced, adding to the level of take. The Service bases this estimate on an independent review of the various collision modeling discussed previously and the modifications that reflect our full consideration of the best available scientific information and understanding of the species.

Piping Plover

The Service anticipates that a maximum of 10 piping plovers will be taken over the life of the Cape Wind Energy Project, based on our upper bound estimate of one piping plover collision every two years with the WTGs in the Horseshoe Shoal project area. As for roseate terns, the Service bases this estimate on an independent review of the various collision modeling discussed previously and includes our full consideration of the best available scientific information and understanding of the species. Because the formulation of mortality estimates is very complex, new empirical information demonstrating one or more of the following circumstances will constitute evidence that estimated take of piping plovers has been exceeded:

1. Annual flights across the project area exceed the total number of pairs breeding in and north of the action area. This is equivalent to approximately 18% of migration flights by adults and young of the year (pairs x 5.5).
2. More than 20% of flights occur at rotor height.
3. Avoidance rates <0.95.

Effect Of The Take

In this BO, the Service determined that this level of take is not likely to have jeopardized the continued existence of the piping plover and roseate tern. Furthermore, the Service estimates that implementation of the Bird Island restoration project will compensate for any potential roseate tern mortality that may occur from the Cape Wind Project.

REASONABLE AND PRUDENT MEASURES

Pursuant to Section 7(b)(4) of the Endangered Species Act, the Service finds the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of roseate terns and piping plovers. In order to be exempt from prohibitions of Section 9 of the Act, MMS and CWA must comply with the following terms and conditions which implement the reasonable and prudent measures and outline reporting/monitoring requirements. These terms and conditions are non-discretionary. The term "reasonable measures" as used below is defined as measures to minimize take that do not alter the basic project design, location, scope, duration, or timing of the project and involve only minor changes.

1. Pre- and post-construction monitoring to assess the effects and incidental take of the Cape Wind Project
The MMS and CWA Monitoring Framework is a preliminary framework of methodologies for pre- and post-construction monitoring of the potential impacts of the Cape Wind Project on roseate terns and piping plovers. MMS, CWA and the Service will coordinate in the development of more detailed protocols to determine the extent of roseate tern and piping plover presence in the project area, the effects of the WTGs on roseate tern foraging and staging activity in Horseshoe Shoal and/or the level of incidental take.

2. *Operational adjustments*
Operational adjustments including the feathering of WTGs to reduce the risk of collision by staging roseate terns and, to a limited extent, migrating piping plovers transiting the rotor swept zone, thus minimizing take. The implementation of operational adjustments will be based on seasonal, visibility and weather parameters. Limitations to the extent of WTG shutdown will ensure that they will only incur minor changes to the Cape Wind Project. Should it be determined that roseate terns and piping plovers either do not transit the rotor swept zone of the WTGs during migration, commuting or foraging flights or that operational adjustments of WTGs during critical roseate tern staging periods do not minimize take, this measure may be amended

3. Oil Spill Response Plan
Although MMS requires an oil spill response plan in the event of a spill related to the Cape Wind Project, specific response measures shall be identified for roseate tern and piping plover habitat in order to avoid or minimize take. Some adverse effects and possible take (primarily in the form of harm or harassment) may not be unavoidable during an emergency response. These effects will be addressed in a post-spill emergency consultation as described in the BO.

3. Review of Pre- and Post-Construction monitoring activities, Perching Deterrents and Operational Adjustments.
The Service, MMS and CWA will review the efficiency and efficacy of pre- and post-construction monitoring activities, the implementation of perching deterrents and operational adjustments (RPM 2) to determine their effectiveness and/or make adjustments as needed, in order to continue or enhance avoidance and minimization of take.

5. Reporting Requirements
Post-construction monitoring may not be able to sufficiently document take of roseate terns and piping plovers resulting from collisions with WTGs or the ESP. Nevertheless, MMA and CWA must report roseate tern and piping plover injury or mortality associated with the Cape Wind Project to the Service within 24 hours.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, MMS and CWA must comply with the following terms and conditions to implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

000001

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087
http://www.fws.gov/northeast/newenglandfieldoffice

Re: Final Biological Opinion, Cape Wind Associates, LLC, Wind Energy Project, Nantucket Sound, Massachusetts
Formal Consultation # 08-F-0323

November 21, 2008

Mr. James Kendall
Chief, Environmental Division
Minerals Management Service
Washington, D.C. 20240

Dear Mr. Kendall:

This document transmits the Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the Minerals Management Service (MMS) proposed issuance of a lease or easement to Cape Wind Associates, LLC (CWA), to construct, operate and decommission a wind energy project on Horseshoe Shoal in the federal waters of Nantucket Sound, Massachusetts, and the effect on the threatened piping plover (*Charadrius melodus*) and endangered roseate tern (*Sterna dougalli dougalli*). This document was prepared in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

This BO is based on information provided in the MMS May 2008 biological assessment (BA), subsequently provided supplemental project information, and other sources of information cited herein. A complete administrative record of this consultation is on file at the Service's New England Field Office.

If you have any questions regarding this opinion, please contact Mr. Michael Amaral or Susi von Oettingen of my staff at (603)223-2541, or at the letterhead address.

Sincerely,

Thomas R. Chapman
Supervisor
New England Field Office

Attachment

considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of an Incidental Take Statement.

Amount and Extent of Take

Roseate Tern

The Service estimates that on average, four to five roseate terns per year (80-100 terns over the 20-year life of the project) are likely to be taken (injured or killed) as a result of collisions with the WTGs on Horseshoe Shoal. If any of the four or five individuals are successful adult breeders with dependent young of the year, the survival rate of their young will be reduced, adding to the level of take. The Service bases this estimate on an independent review of the various collision modeling discussed previously and the modifications that reflect our full consideration of the best available scientific information and understanding of the species.

Piping Plover

The Service anticipates that a maximum of 10 piping plovers will be taken over the life of the Cape Wind Energy Project, based on our upper bound estimate of one piping plover collision every two years with the WTGs in the Horseshoe Shoal project area. As for roseate terns, the Service bases this estimate on an independent review of the various collision modeling discussed previously and includes our full consideration of the best available scientific information and understanding of the species. Because the formulation of mortality estimates is very complex, new empirical information demonstrating one or more of the following circumstances will constitute evidence that estimated take of piping plovers has been exceeded:

1. Annual flights across the project area exceed the total number of pairs breeding in and north of the action area. This is equivalent to approximately 18% of migration flights by adults and young of the year (pairs x 5.5).
2. More than 20% of flights occur at rotor height.
3. Avoidance rates <0.95.

Effect Of The Take

In this BO, the Service determined that the level of take is not likely to have jeopardized the continued existence of the piping plover and roseate tern. Furthermore, the Service estimates that implementation of the Bird Island restoration project will offset any potential roseate tern mortality that may occur from the Cape Wind Project.

REASONABLE AND PRUDENT MEASURES

Pursuant to Section 7(b)(4) of the Endangered Species Act, the Service finds the following reasonable and prudent measures are necessary and appropriate to minimize incidental take of roseate terns and piping plovers. In order to be exempt from prohibitions of Section 9 of the

ESA, MMS and CWA must comply with the following terms and conditions which implement the reasonable and prudent measures and outline reporting/monitoring requirements. These terms and conditions are non-discretionary. The term "reasonable and prudent measures" is defined by the Service's ESA implementing regulations (50 CFR §402.02) to mean "those actions that the [Service] believes are necessary to minimize the impacts of take, i.e., amount or extent, of incidental take". The Service's Section 7 Consultation Handbook (March 1998) further explains that measures are considered reasonable and prudent when they are consistent with the proposed action's basic design, location, scope, duration, or timing of the project" [Handbook at 4-50 (illustrations excluded)]. The Handbook also states that "the test of reasonableness is whether the proposed measure would cause more than a minor change to the project" and that RPMs can include only actions that occur within the action area.

1. Pre- and post-construction monitoring to assess the effects and incidental take of the Cape Wind Project

The MMS and CWA Monitoring Framework is a preliminary framework of methodologies for pre- and post-construction monitoring of the potential impacts of the Cape Wind Project on roseate terns and piping plovers. MMS, CWA and the Service will coordinate in the development of more detailed protocols to determine the extent of roseate tern and piping plover presence in the project area, the effects of the WTGs on roseate tern foraging and other use of Horseshoe Shoal and/or the level of incidental take as a result of the project.

2. Oil Spill Response Plan

Although MMS requires an oil spill response plan in the event of a spill related to the Cape Wind Project, specific response measures shall be identified for roseate tern and piping plover habitat in order to avoid or minimize take. Some adverse effects and possible take (primarily in the form of harm or harassment) may be unavoidable during an emergency response. These effects will be addressed in a post-spill emergency consultation as described in the BO.

3. Review of pre- and post-construction monitoring activities, perching deterrents and operational adjustments.

The Service, MMS and CWA will review the efficiency and efficacy of pre- and post-construction monitoring activities; and the implementation of perching deterrents to determine their effectiveness and/or make adjustments as needed, in order to continue or enhance avoidance and minimization of take.

4. Reporting requirements

Post-construction monitoring may not be able to sufficiently document take of roseate terns and piping plovers resulting from collisions with WTGs or the ESP. Nevertheless, MMA and CWA must report roseate tern and piping plover injury or mortality associated with the Cape Wind Project to the Service within 24 hours.

Operational adjustments

The Service also considered as a reasonable and prudent measure, an operational adjustment to the wind facility that would require the temporary and seasonal shut down of the WTGs through the feathering of the rotors. Feathering of the rotors causes them to face the wind and stop spinning, and would reduce the risk of collision by roseate terns and, to a limited extent,

migrating piping plovers transiting the Horseshoe Shoal project area. Although the Service considered that result in this "operational adjustment" would be based on weather and day light parameters that reduce visibility, and would be limited in time to seasons when plovers and peak numbers of roseate terns are expected to be present (a few weeks in early to mid-May and a few weeks in late August to mid-September), it was determined by MMS and CWA (J. Lewandowski, MMS electronic correspondence including Bennett *in litt.* as attachment, November 20, 2008) to **not** be reasonable and prudent based on the following:

The operational adjustment (shut down of turbine rotors to a neutral position) is not reasonable because it does not meet the RPM regulatory definition as a "reasonable measure" as it modifies the scope of the project in a manner that is adverse to the project's stated purpose and need, that is to make a substantial contribution to enhancing the region's electrical reliability and achieving the renewable energy requirements under the Massachusetts and regional renewable portfolio standards (DEIS 2008 at E-1). MMS considers that this may involve more than a "minor change" (50 C.F.R. § 402.14(i)(2).

MMS has also determined that the RPM is not reasonable because the uncertainty regarding the project's ability to generate electricity during the two time frames (late April to mid-May and late August to mid-September) reduces the project's predicted potential electrical output in a significant enough way to have a deleterious affect on anticipated revenues, financing and power purchasing agreements.

Furthermore, MMS indicates that the proposed timeframes for the operational adjustment, although limited by season, visibility and time of day, constitute peak period hours, when the energy supplied to the ISO New England (the regional transmission organization) has greater market value (see DEIS 2008 at 3-32). Therefore, the RPM may not be prudent because the economic cost makes this measure not feasible for project proponents to implement.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, MMS and CWA must comply with the following terms and conditions to implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. Monitoring:
    a. MMS, CWA and the Service will coordinate in the development of specific pre- and post-construction monitoring protocols discussed in the Framework for the Avian and Bat Monitoring Framework for the Cape Wind Proposed Offshore Wind Facility.

    b. Prior to implementation, monitoring protocols should be peer-reviewed, including at least one European scientist currently conducting similar monitoring efforts at off-shore wind projects. Peer review could allow data collection and analysis to be comparable with other ongoing off-shore monitoring efforts.

EXHIBIT 17:COMMUNICATION RE: CAPE WIND BETWEEN ANGELA HAVENS AND SHERI EDGETT-BARON

Exhibit 17

Re: Cape Wind

Angela Havens
AJW-E15A, Operations Support Center - Boston

to: Sheri Edgett-Baron

03/22/2010 10:45 AM

Cc: Don Bui

Hi Sheri,

Who in the agency makes the decision? We gave our recommendations. Who is the decision maker that puts the agency at risk if the TDX-2000 doesn't work?

If it doesn't work and no provision is made for ASR-11 then the agency is on the hook to pay for the whole thing?

Angela

Sheri Edgett-Baron Hi Angela, We definitely need to have discussio... 03/22/2010 10:33:12 AM

Sheri Edgett-Baron/AWA/FAA
AJR-322, Obstruction Evaluation Services Team

03/22/2010 10:33 AM

To Angela Havens/ANE/FAA@FAA
cc Donna O'Neill/ACE/FAA@FAA
Subject Re: Cape Wind

Hi Angela,

We definitely need to have discussions on this topic. I think the agency needs to make a decision. Is it the TDX-2000 or the ASR-11? If it is the TDX-2000, then that's what it is. If it is the ASR-11, then there will have to be a cost shared agreement with the FAA sharing the expense. It gets problematic to say let's try one thing, and if that does not work, we'll stop everything and revert to plan B. Once development starts on a wind construction site, you can't shut them down when all their resources are allocated for the project and equipment. Shutting them down mid stream will create an undue burden on the developer and could possibly bankrupt them.

One of the consultants told me they have an agreement with Raytheon for an ASR-11 at a reduced cost. Would tech ops consider this type of arrangement? Also, if it is decided the ASR-11 is the way to go, then the equipment and installation needs to be made an agency priority.

Sheri Edgett Baron
Air Traffic, System Operations
Acting OES Manager
202-267-9400
www.oeaaa.faa.gov

Angela Havens Hi Sheri, I received a call from Donna yesterday... 03/19/2010 03:04:27 PM

From: Angela Havens/ANE/FAA
AJW-E15A, Operations Support Center - Boston
To: Sheri Edgett-Baron/AWA/FAA@FAA
Date: 03/19/2010 03:04 PM
Subject: Cape Wind

Hi Sheri,

I received a call from Donna yesterday regarding starting the action to set up reimbursable agreements for Cape Wind.

I was told you would be looking at reimbursable for installation of TDX-2000, with a back up plan if that did not work of ASR-11 with the possibility of cost sharing by the FAA.

I did start the ball rolling yesterday but I did want you to take a look at a document that we had put together with Peter Markus last year regarding the possible solutions, cost and time frames. Please keep in mind they are ball park figures. I'm not sure if you had seen this document but think we should discuss just to make sure you understand the road that has been chosen at this point.

[attachment "Cape Wind Recommendation Paper.doc" deleted by Sheri Edgett-Baron/AWA/FAA]

This document is for internal FAA use only.

Angela Havens
Manager, Operation Support Center - Boston
603-881-1230

Exhibit 18

Nantucket Sound Wind Farm Proposal (Cape Wind)

Presented to: Eastern Service Area Directors

By: Eastern Service Area, P&R Terminal
Team Manager, Richard Hastings

Date: May 3, 2010

Risks/Unknowns

- There are no identical configurations that we can compare to Cape Winds.
- The proposed solution of installing a digitizer is best best educated guess.
- However, there is a small chance that the project may still need additional mitigation.

Worse Case Scenario

- The Sponsor and the FAA will need to review mitigation options. This may include the installation of an ASR-11.
- The FAA can eliminate RADAR returns in the area of the wind farm.
- The FAA will not be able to see primary targets in the vicinity of the wind farm and may have to issue a NOTAM advising pilots that it can not provide advisories in the area of the wind mills.
- Primary IFR aircraft may be required to navigate on the victor airways that go around the wind farm.
- Airspace design might require slight modifications.

Technical Recommendatons

- Install a TDX-2000 to digitize the ASR-8 video output and provide post processing capabilities.
  - Digitizing enables sophisticated processing of radar detections in an effort to reduce the unwanted wind turbine targets to an acceptable level.
  - Unwanted search radar targets that cannot be eliminated by the TDX-2000 will be displayed on air traffic displays at the same intensity as any true target, that is, any leftover unwanted targets will not be intensified.
- Reoptimize the Nantucket ASR-9 utilizing range and azimuth gating of various site parameters to eliminate or reduce any unwanted targets realized from the wind turbines.
- As a final resort, revise the Cape TRACON airspace and procedures to restrict air traffic in the wind turbine area to only aircraft with beacon transponders.

SMS Panel

- The facility, the district and I were originally in favor of establishing a SMS panel to mitigate the effects of the wind farm on the Falmouth RADAR.
- After much discussion and research, we have decided that a panel is not needed.
- A new SMS panel will not be able to identify any new mitigation plans that weren't identified by the OE Evaluation.

Political Implications

- The Secretary of the Interior has approved this project.
- The Administration is under pressure to promote green energy production.
- It would be very difficult politically to refuse approval of this project.

National Security Issues

- The masking of primary RADAR data along the coast may have national security implications.
- OES or the appropriate entity will need to coordinate our plans with the appropriate Defense Organizations.

EXHIBIT 19: COMMUNICATION BETWEEN BRUCE BEARD AND LINDSAY ADRAIN

Exhibit 19

Re: Fw: Wind Turbine Cases
Bruce Beard to: Lindsay Adrain 12/27/2006 10:37 AM

Cc: Alice Yett, Bill Merritt, Elena Marinilli-Shields, Steve Beaulieu

History: This message has been forwarded.

Lindsay -

Bill Merritt will be writing the determination, so you can send you comments directly to him. Also, I you have any questions about how to write your comments, give Bill a call and he can walk you through it.

Keep in mind that if an "objection" is issued, it will be based pretty much on your comments, so no smoke, please. Any "objection" to a wind turbine project will be scrutinized at the highest level (White House, DOE, etc.), so be very thorough and exact. Numbers help immensely, like there will be 50 operations a day that would be impact be the wind turbines.

The Obstruction Evaluation Services is simple not going to write a "no objection" if there is an adverse impact to your operations.

Bruce Beard, Air Traffic Organization
Obstruction Evaluation Services
National Operations Manager
Ofc: 817-222-5536
Fax: 817-222-5981
bruce.beard@faa.gov
Lindsay Adrain/ANE/FAA

Lindsay Adrain/ANE/FAA
12/27/2006 08:30 AM

To Bruce Beard/ASW/FAA@FAA
cc Alice Yett/ASW/FAA@FAA, Bill Merritt/AEA/FAA@FAA, Elena Marinilli-Shields/ANE/FAA@FAA, Steve Beaulieu/ANE/FAA@FAA
Subject Re: Fw: Wind Turbine Cases

Hello all,

I am putting together a statement of impact from the aspect of the Cape TRACON.
As this area of airspace is heavily used, I want to ensure the impact is adequately assessed.

I will have a statement to you shortly, so that you will have a better handle on what the impact would be and how that piece of airspace is used.
But at this point, I will tell you that this will have an adverse impact on our operation, and request that you take our input into consideration prior to rendering your "No Objection" decision.

Thank you for your help,

Lindsay Adrain
Manager, Cape TRACON
Office 508-563-1425
Fax 508-563-1490

EXHIBIT 20: UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA, ARGUED SEPTEMBER 14, 2011; DECIDED OCTOBER 28, 2011

Exhibit 20

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued September 14, 2011 Decided October 28, 2011

No. 10-1276

TOWN OF BARNSTABLE, MASSACHUSETTS
PETITIONER

v.

FEDERAL AVIATION ADMINISTRATION,
RESPONDENT

CAPE WIND ASSOCIATES, LLC,
INTERVENOR

Consolidated with 10-1307

On Petitions for Review of an Order
of the Federal Aviation Administration

W. Eric Pilsk argued the cause for Barnstable, petitioner in No. 10-1276, and for the Alliance to Protect Nantucket Sound, petitioner in No. 10-1307. With him on the briefs were *Catherine M. van Heuven* and *Charles C. Lemley*.

Daniel J. Lenerz, Attorney, U.S. Department of Justice, argued the cause for respondent. With him on the brief were *Tony West*, Assistant Attorney General, *Michael Jay Singer*,

electromagnetic radiation effect on the operation of air navigation facilities" (per the first sentence), and would (ii) "[r]equire a VFR operation, to change its regular flight course or altitude" (per the second sentence, together with § 6-3-3(b)).[1] See Determination at 5, 7. The FAA's complete reliance on § 6-3-8(c)1 is therefore inconsistent not only with the language of that provision (reading into it a non-existent "only"), but with the organization of the handbook, which anticipates that structures qualifying under either segment of § 6-3-3's first sentence are to be assessed for the harms identified in the second sentence's subsections (a) through (f).

Improperly relying solely on § 6-3-8(c)1, the FAA failed to supply any apparent analysis of the record evidence concerning the wind farm's potentially adverse effects on VFR operations. A study by a consulting firm, MITRE, commissioned by the FAA, charted how many flights flew through a three-dimensional zone around the project, the boundaries of which were 500 feet to the side and 1000 feet above the turbines. The study found that over the course of a 90-day period 425 VFR flights flew through the immediate vicinity of the project site and that 94.1% of these 425 were flying at an altitude of 1000 feet or less. J.A. 381, 391–92. The 425 flights would be, of course, more than four and a half times the one flight per day that § 6-3-4 sets as the threshold of significance.

Once the turbines are built, many of these flights may be forced to be rerouted or to proceed in violation of the FAA's own regulation, 14 C.F.R. § 91.119, which requires a 500-foot

[1] In assuming that elements (i) and (ii) are both necessary, we give the benefit of the doubt to the FAA, reading the "first" of § 6-3-3's first sentence as implying that structures qualify as having adverse effects only if they satisfy the criteria of both the first sentence and the second (through one or more of its subsections).

distance between an aircraft and any structure. Further, the FAA's own weather compressibility study concluded that, during instances of inclement weather, "VFR aircraft could potentially be compressed to a lower altitude" to avoid cloud cover, such that they also would come within 500 feet of the turbines in violation of § 91.119. J.A. 469. Indeed, § 6-3-8(b)2 of the handbook says that any structure "that would interfere with a significant volume of low altitude flights by actually excluding or restricting VFR operations in a specific area would have a substantial adverse effect and may be considered a hazard to air navigation." The FAA may ultimately find the risk of these dangers to be modest, but we cannot meaningfully review any such prediction because the FAA cut the process short in reliance on a misreading of its handbook and thus, as far as we can tell, never calculated the risks in the first place.

The FAA repeatedly notes in its brief that the handbook "largely consists of criteria rather than rules to follow." Respondent's Br. at 40. We agree. Any sensible reading of the handbook, and of § 6-3-8(c)1 in particular, would indicate there is more than one way in which the wind farm can pose a hazard to VFR operations. Indeed, other sections of the handbook, especially when read in light of some of the evidence noted above, suggest that the project may very well be such a hazard. Here, by abandoning its own established procedure, see *D&F Alfonso Realty Trust v. Garvey*, 216 F.3d 1191, 1197 (D. C. Cir. 2000), the FAA catapulted over the real issues and the analytical work required by its handbook.

Whether in fact an application of the handbook's guidelines to the studies discussed above will cause the FAA to find the project a hazard, and if so, of what degree, we obviously cannot tell at this stage. But it surely is enough to trigger the standard requirement of reasoned decision-making, i.e., to require the FAA to address the issues and explain its

EXHIBIT 21: COMMUNICATION FROM RICHARD W. HASTINGS TO ANGELA HAVENS

Exhibit 21

Security Issues
Richard W Hastings to: angela.havens 04/01/2010 10:32 PM

Cc: Valerie Thompson, Ron CTR Hubbard, Mark Herrington, Larry Gritti

History: This message has been forwarded.

Hi Angela,

Has anyone checked to see if we have any national securuty issues if we filter primary data out around the windmills that are in the middle of the bay along the coast?
Thanks,

Richard Hastings, PMP
Manager for Terminal Requirements, ESC
(W) 404-389-8233
(C) 404-606-4480

EXHIBIT 22: COMMUNICATION FROM ANGELA HAVENS TO RICHARD W. HASTINGS

Exhibit 22

Fw: Security Issues (Cape Wind)

Angela Havens
AJW-E15A, Operations Support Center - Boston

to: Richard W Hastings

04/05/2010 01:24 PM

Hi Rich,

Tech Ops would not coordinate security issues under the Obstruction Evaluation either (see email string below). Based on our study it is possible that a plane with out a transponder could essentially not be picked up over the wind farm.

Angela
----- Forwarded by Angela Havens/ANE/FAA on 04/05/2010 01:23 PM -----

Donna O'Neill/ACE/FAA
04/05/2010 08:25 AM

To Angela Havens/ANE/FAA@FAA
cc sheri.edgett-baron@faa.gov
Subject Re: Fw: Security Issues (Cape Wind)

Security issues are not (at least not up to this point) a part of an airspace study. It is possible that they might be considered under a different avenue, but that's not normally something that OES gets involved in. We do not coordinate with Homeland Security or other law enforcement entities.

Donna O'Neill
FAA Obstruction Evaluation Service
Airspace Specialist for: MA, CT, RI, VA, ND, NV
Ph: (816) 329-2525 Fax: (816) 329-2574
E-mail: donna.o'neill@faa.gov
-----Angela Havens/ANE/FAA wrote: -----

To: Donna O'Neill/ACE/FAA@FAA
From: Angela Havens/ANE/FAA
Date: 04/05/2010 06:34AM
Subject: Fw: Security Issues (Cape Wind)

Hi Donna,

Would OES coordinate security issues?

Angela
----- Forwarded by Angela Havens/ANE/FAA on 04/05/2010 07:32 AM -----

Richard W Hastings/

To angela.havens@faa.gov
cc Valerie Thompson/ASO/FAA@FAA, Ron CTR Hubbard/ASO/CNTR/FAA@FAA, Mark Herrington/ASO/FAA@FAA, Larry Gritti/ASO/FAA@FAA
Subject Security Issues

Exhibit 23

REPORT TO THE CONGRESSIONAL DEFENSE COMMITTEES

The Effect of Windmill Farms On Military Readiness

2006

Office of the Director of Defense Research and Engineering

approaches. The Department is willing to provide technical assistance, when appropriate, where potential mitigation measures under development have specific applicability to air defense and missile warning radar systems.

Other Potential Impacts on DOD Readiness

The Department conducts its operations in an increasingly complex environment. Wind farm development has the potential to influence Department activities in such diverse areas as military training, testing and development of current and future weapon and other systems, security, and land use to name a few. As operational requirements vary from location to location, any particular characteristic of a wind farm may present a challenge in one location but not at others. In this regard, the challenges that may be posed often but not always, will be similar to those associated with construction of other large objects such as telecommunication towers and in this respect, are not, in fact, unique to wind farms. For example, the de-confliction of land or airspace is an issue that the Department manages in concert with other stakeholders on a daily basis.

The Department has developed and employed, for many years, strategies and mitigation techniques to effectively address those possible impacts. To date, the Department has not identified any specific information that would lead to the conclusion that those methods would not be similarly effective for addressing potential impacts from proposed wind farm developments as they relate specifically to the subject of Other Potential Impacts on DOD Readiness.

Treaty Compliance Sites

The Department, in conjunction with the National Nuclear Security Agency (NNSA) of the Department of Energy, employs special sites to monitor compliance with the Comprehensive Test Ban Treaty. Those sites that employ seismic type sensors to accomplish this task are sensitive to background seismic noise. Increasing the ambient level of seismic noise will degrade the ability of these sites to perform their required task.

The UK has a similar site at Eskadalemuir and has conducted an in-depth study [19] to establish guidelines to ensure adequate offset distances for any wind turbines proposed for construction in that local area. The Department believes an effort should be undertaken to develop similar guidelines for U.S. sites employed to monitor treaty compliance. Additional information on this subject is provided in Appendix 2.

9. CONCLUSIONS

1. Wind farms located within radar line of sight of an air defense radar have the potential to degrade the ability of that radar to perform its intended function. The magnitude of the impact will depend upon the number and locations of the turbines. Should the impact prove sufficient to degrade the

ability of the radar to unambiguously detect and track objects of interest by primary radar alone this will negatively influence the ability of U.S. military forces to defend the nation.

2. The currently proven mitigations to completely prevent any degradation in primary radar performance of air defense radars are limited to methods that avoid locating wind turbines within their radar line of sight. These mitigations may be achieved by distance, terrain masking or by terrain relief and must be examined on a case-by-case basis.

3. The Department has initiated research and development efforts to develop additional mitigation approaches that in the future could enable wind turbines to be within radar line of sight of air defense radars without impacting their performance. Such development efforts should be continued. Such future mitigation techniques will require adequate test and validation before they can be employed.

4. A more comprehensive analysis is required to determine how close wind turbines can be built to early warning radars without causing negative impacts on their performance.

5. The FAA has the responsibility to promote and maintain the safe and efficient use of U.S. airspace for all users. The Department defers to the FAA regarding possible impacts wind farms may have on the Air Traffic Control (ATC) radars employed for management of the U.S. air traffic control system. The Department is prepared to assist the FAA in efforts the FAA may decide to undertake in this regard.

6. The Department is prepared to assist the NWS, where appropriate, in its efforts to develop mitigation techniques for ground-based weather radars where such techniques may have mutual benefit for Department systems.

7. Wind turbines in close proximity to military training ranges, as well as test and development sites, can adversely impact the "train and equip" mission of the Department. Existing processes to include engagement with local and regional planning boards and development approval authorities can be employed to mitigate potential concerns in relation to this.

8. Construction of wind turbines near Comprehensive Test Ban Treaty monitoring sites can adversely impact their performance by increasing ambient seismic noise levels. Analyses should be performed to develop appropriate guidelines regarding how close wind turbines may be built to such sites.

9. Given the expected increase in the U.S. wind energy development, the existing siting processes as well as mitigation approaches need to be reviewed and enhanced in order to provide for continued development of this important renewable energy resource while maintaining vital defense readiness.

EXHIBIT 24: WIND TURBINE ANALYSIS FOR CAPE COD AIR FORCE STATION EARLY WARNING RADAR AND BEALE AIR FORCE BASE UPGRADED EARLY WARNING RADAR, SPRING 2007

Exhibit 24

Wind Turbine Analysis for

Cape Cod Air Force Station Early Warning Radar

and Beale Air Force Base Upgraded Early Warning Radar

Spring 2007

EXECUTIVE SUMMARY

The Missile Defense Agency (MDA) analyzed the potential impact of utility class wind farms on radars.

- Utility class wind farms could have a significant impact on radars, including the missile defense early warning radars (EWRs), the PAVE PAWS radar at Cape Cod AFS, MA, and the Upgraded Early Warning Radar (UEWR) at Beale AFB, CA.
- To mitigate this impact, establish and enforce a wind farm offset zone within the effective "line-of-sight" of the radars, taking into account the direct, refracted, and diffracted signals from the radar. This effectively establishes a zone around the radar of approximately twenty-five kilometers, assuming relatively level terrain.
- Within twenty-five kilometers, further study would be required to assess the impact accounting for location within the radar's field of view and the relative height of the wind turbine.
- After establishing this offset zone, eliminate any remaining impacts on the radar by using gain control and range gating techniques.

History

Studies on the effects of windmill farms on military readiness were documented in a 2006 Report to Congressional Defense Committees. That report focused on the effects of wind farms on radars and the resulting potential impact on military readiness.

The primary historical data and research efforts were focused on air defense radars, characterized as "Primary Surveillance Radars" (PSR) and Air Traffic Control (ATC) radars. Two fixed-site missile Early Warning Radars (EWR) were mentioned in the report but not examined in detail. A testing campaign was planned and executed to establish a technical baseline on the radar cross section and Doppler behavior of a modern utility-class wind turbine that could be used to support development of future mitigation approaches.

Subsequently, the Missile Defense Agency (MDA) was requested to analyze the effect on the early warning radar (EWR) at Cape Cod Air Force Station (AFS) and the upgraded early warning radar (UEWR) at Beale Air Force Base (AFB). This report responds to that request and establishes appropriate offset distances where modern utility-class wind turbines can be constructed without adversely impacting the performance of these radars.

Missile Early Warning Radars

PAVE PAWS is an Air Force phased array radar system with two primary missions: missile warning and space surveillance. While providing surveillance, it is capable of detecting and tracking Inter-Continental Ballistic Missiles (ICBMs) and Submarine Launched Ballistic Missiles (SLBMs) that enter its field of view. After detection, the objects are continuously tracked. The second mission is to support the Space Surveillance Network, which involves the surveillance and tracking of earth satellites and identification of other space objects.

The PAVE PAWS has two faces, as shown in Figure 1, that contain elements that transmit and receive the radio frequency (RF) signals generated by the radar and reflected from the target. The array faces are tilted back 20 degrees from vertical to allow the beam to be scanned from 3 degrees above the horizon (beam center) to 85 degrees above the horizon. At this time the PAVE PAWS radar at Cape Cod AFS is not an Element of the Ballistic Missile Defense System (BMDS).

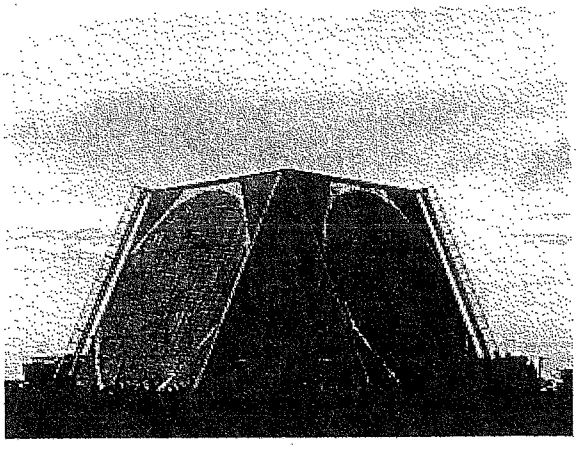

Figure 1. PAVE PAWS Radar

PAVE PAWS at Cape Cod Air Force Station

A PAVE PAWS radar is located at Cape Cod AFS, near Otis AFB. Figure 2 depicts how the PAVE PAWS radar is situated operationally with the north face of the radar covering the 120 degree sector from 347° to 107°; the south face of the radar covering from 107° to 227°. The figure also shows the twenty-five kilometer range extent.

There are two wind farms proposed near the Cape Cod AFS. One of these, known as the Hull turbines, is located, as indicated at the top of Figure 2.

(1.) Hull One: 42 deg 18 min 15.73 sec N, 70 deg 55 min, 19.80 sec W. Ground elevation 9 ft, Turbine height 150 ft with 75 ft blades.

(2.) Hull Two: 42 deg 15 min 41 sec N, 70 deg 51 min 26 sec W (approximate position, seeking verification). Ground elevation approx 25 ft, Turbine height 250 ft with 130 ft blades.

The second wind farm is known as Cape Wind™. Planned for a location near Horseshoe Shoal in Nantucket Sound, it will contain 130 wind turbines, generating 420 megawatts of electricity. Its approximate location is also indicated on Figure 2 near the bottom.

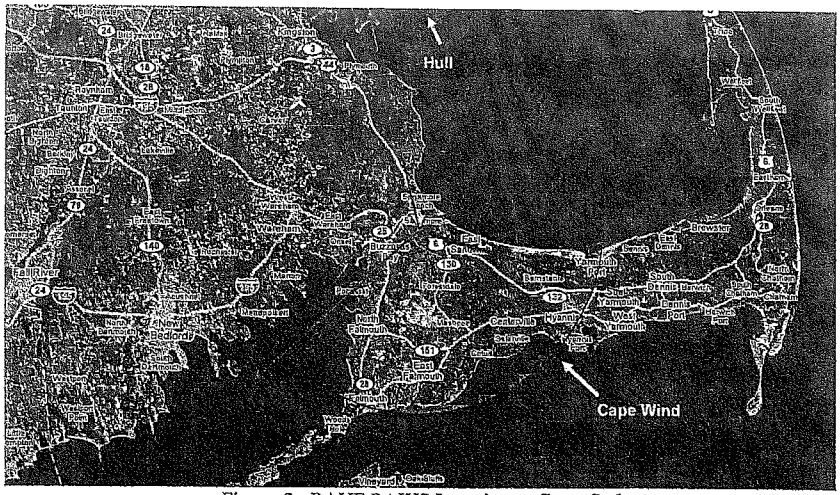

Figure 2. PAVE PAWS Location at Cape Cod

Upgraded PAVE PAWS at Beale Air Force Base

The PAVE PAWS radar at Beale AFB has been upgraded to improve its performance for the Ballistic Missile Defense missions. Consequently, it is referred to now as an Upgraded Early Warning Radar (UEWR). The Beale UEWR is located in the northern Sacramento Valley as shown in Figure 3.

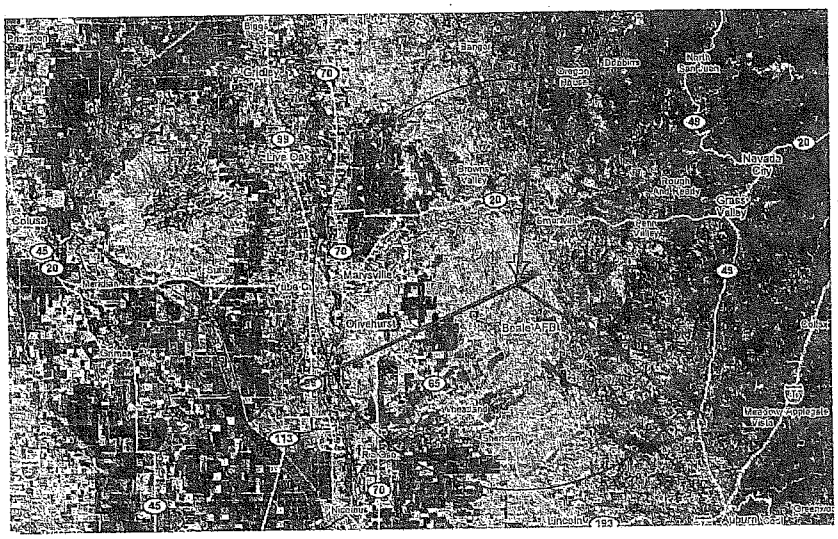

Figure 3. UEWR at Beale Air Force Base, CA

The runways of Beale can be seen immediately west of the UEWR. In the radar's line of sight, the Sutter Buttes, approximately 40 km west of the radar, provide a large radar return that is mitigated through range gating and data processing techniques which could be used to alleviate returns from wind turbines in the radar side lobes.

There are currently no wind farms in the line of sight or the immediate area of Beale AFB. However, three of the largest wind farms in the world are located in California. One of the largest is in Northern California, in Altamont Pass, south of Beale in the San Francisco Bay Area.

Impact and Mitigation of Interfering Signals

As described in the 2006 Report to the Congressional Defense Committees on The Effect of Windmill Farms On Military Readiness, the refraction effect for the frequency band of the EWRs can be approximated by employing a "4/3 earth model." In this approximation, a geometric line of sight is calculated using an effective radius for the earth equal to the actual radius of the earth multiplied by the factor 1.33. Using the 4/3 earth model, the minimum height of the main beam and the height of the bottom of the beam are shown in Figure 4.

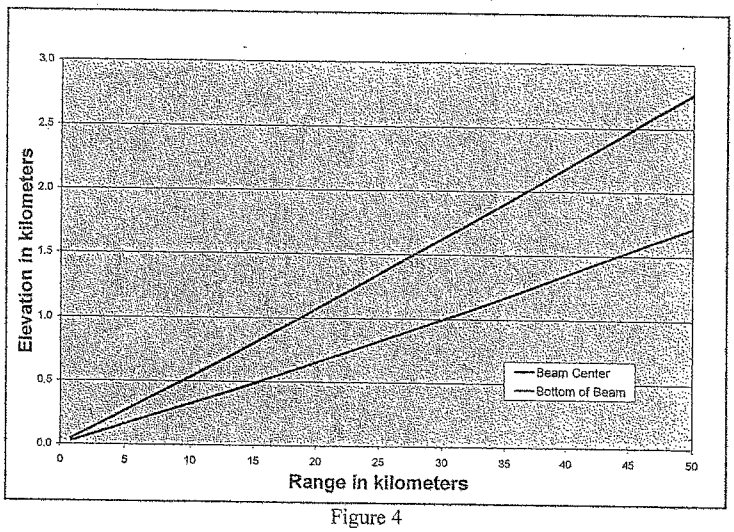

Figure 4

Wind turbines in the main beam, back lobes or side lobes of the radar, as shown in Figure 5, can impact radar performance if not mitigated.

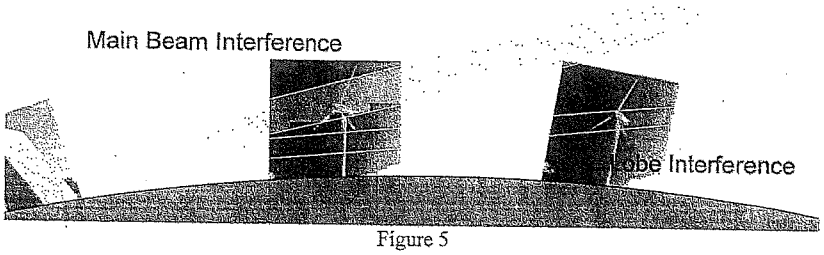

Figure 5

Objects in the path of an electromagnetic wave affect its propagation characteristics. The radar energy may be blocked and reflected (terrain masking) or diffracted around the encountered objects. This reduces the total energy of the beam beyond the objects and is not easily characterized, since the terrain and man-made structures can have a significant impact on the signal strength. This energy reduction substantiates a need to establish keepout zones in the effective line of sight of the main beam of the radar to provide effective mitigation.

The principle impact of wind turbines in the radar sidelobes are the reflected returns. If not mitigated, these could provide false targets to the radars. Since the EWRs are designed to search and track at long ranges (beyond 1000 km), only a small portion of the transmitted energy could be received from objects reflecting energy at ranges less than 100 km, where sidelobe energy may reach wind turbines. At these short ranges, the impact of the energy return from targets is mitigated by pulse eclipsing and range gating, which prevents the radar from receiving the full transmitted pulse energy. In addition, data processing techniques for automatic gain control can mitigate returns from targets close in range, as is performed on the energy reflected from the Sutter Buttes west of Beale AFB.

CONCLUSIONS AND RECOMMENDATIONS

The discussion above supports the following recommendations and conclusions applicable to placement of wind farms in the vicinity of Cape Cod AFS and Beale AFB.

- Utility class wind farms could have a significant impact on radars, including the missile defense early warning radars (EWRs), the PAVE PAWS radar at Cape Cod AFS, MA, and the Upgraded Early Warning Radar (UEWR) at Beale AFB, CA.
- To mitigate this impact, establish and enforce a wind farm offset zone within the effective "line-of-sight" of the radars, taking into account the direct, refracted, and diffracted signals from the radar. This effectively establishes a zone around the radar of approximately twenty-five kilometers, assuming relatively level terrain.
- Within twenty-five kilometers, further study would be required to assess the impact accounting for location within the radar's field of view and the relative height of the wind turbine and the radar's main beam.
- After establishing this offset zone, eliminate any remaining impacts on the radar by using gain control and range gating techniques.

Exhibit 25

nationalgrid

Brooke E. Skulley
Assistant General Counsel

February 13, 2013

VIA HAND DELIVERY AND ELECTRONIC MAIL
Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th Floor
Boston, MA 02110

Re: National Grid, D.P.U. 10-54

Dear Secretary Marini:

Enclosed for filing in the above-referenced docket, on behalf of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid ("National Grid") please find the Second Amendment to Power Purchase Agreement ("Second Amendment") dated as of December 17, 2012.

By Order dated November 22, 2010, the Department of Public Utilities ("Department") approved that certain Power Purchase Agreement between National Grid and Cape Wind Associates, LLC ("Cape Wind") dated as of May 7, 2010, as amended by the First Amendment to Power Purchase Agreement dated as of August 9, 2010 ("National Grid/Cape Wind PPA"). The National Grid/Cape Wind PPA contains a Most Favored Nations Clause at Section 4.1(e) which National Grid may exercise if Cape Wind subsequently enters into an agreement with a separate entity for the purchase and sale of the remaining output of the Facility[1] on terms that National Grid considers to be more favorable than the existing terms of the National Grid/Cape Wind PPA. On March 23, 2012, Cape Wind and NSTAR Electric Company entered into a Power Purchase Agreement pursuant to which NSTAR will purchase a portion of the remaining output of the Facility, which NSTAR PPA was approved by the Department on November 26, 2012 in Docket No. D.P.U. 12-30.

On November 28, 2012, Cape Wind notified National Grid of the Department's approval of the NSTAR PPA and that, in accordance with Section 4.1(e) of the National Grid/Cape Wind PPA and the letter agreement between Cape Wind and National Grid dated March 21, 2012, National Grid had twenty (20) days to (1) to accept all of the terms and conditions of the NSTAR PPA; or (2) to accept only the pricing and term provisions included in the NSTAR PPA; or (3) to decline all of the terms and conditions of the NSTAR PPA. National Grid timely exercised its right to accept all of the substantive terms of the NSTAR PPA, and National Grid and Cape Wind entered into the Second Amendment to align the terms of the National Grid/Cape Wind PPA with the more favorable terms of the NSTAR PPA, subject to the Department's review and approval.

[1] Capitalized terms not defined herein shall have the meaning set forth in the National Grid/Cape Wind PPA.

40 Sylvan Road, Waltham, MA 02451
T: 781.907.1646 ■ F: 781.907.5701 ■ brooke.skulley@us.ngrid.com ■ www.nationalgrid.com

National Grid exercised its right under Section 4.1(e) of the National Grid/Cape Wind PPA to accept the substantive terms of the NSTAR PPA because alignment of the two agreements will provide National Grid's customers parity with NSTAR's customers' participation in the project. There are only two substantive provisions from the NSTAR PPA that are incorporated into the Second Amendment. The first is the adoption of the requirement contained in the NSTAR PPA that Physical Construction of the Facility (as defined in the NSTAR PPA) commence by December 31, 2015, which provides National Grid customers with a date certain by which the Facility must commence physical construction. The second is the REC pricing methodology contained in the NSTAR PPA, which National Grid believes is more favorable than the methodology contained in the National Grid/Cape Wind PPA because it will be based on recent, actual REC transactions in the region, giving National Grid greater visibility into the price of RECs from the Facility.

Pursuant to the Department's Final Order in D.P.U. 10-54 dated November 22, 2010 ("Final Order"), and in accordance with Section 4.1(e) of the National Grid/Cape Wind PPA, the Department has 180 days from the date the parties entered into the Second Amendment to review and approve the Second Amendment. Given that the Most Favored Nations Clause was approved by the Department as part of the National Grid/Cape Wind PPA, and that National Grid is exercising its rights thereunder to adopt the more favorable terms contained in the NSTAR PPA, which were also approved by the Department, the Company submits that the terms it proposes to adopt have effectively been reviewed and approved, and that the Department need only ensure that the Second Amendment is acceptable in terms of incorporating the more favorable terms.

Please contact me with any questions. Thank you for your time and attention to this matter.

Very truly yours,

Brooke E. Skulley

Enclosure

cc: Laura Bickel, Hearing Officer
DPU e-filing
Service List D.P.U. 10-54

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SECOND AMENDMENT TO
POWER PURCHASE AGREEMENT

This **SECOND AMENDMENT TO POWER PURCHASE AGREEMENT** (this "**Second Amendment**") is entered into as of December 17, 2012, by and between Massachusetts Electric Company and Nantucket Electric Company, d/b/a National Grid, each a Massachusetts corporation (collectively, "**Buyer**"), and Cape Wind Associates, LLC, a Massachusetts limited liability company ("**Seller**"). Buyer and Seller are individually referred to herein as a "**Party**" and are collectively referred to herein as the "**Parties**").

WHEREAS, Buyer and Seller are parties to that certain Power Purchase Agreement dated as of May 7, 2010, as amended by the First Amendment to Power Purchase Agreement (PPA 1) dated as of August 9, 2010 (the "**Agreement**"), pursuant to which Seller has agreed to sell and deliver, and Buyer has agreed to purchase and receive, Buyer's Percentage Entitlement of the Products during the Services Term (in each case as defined in the Agreement), which Agreement was approved by the Massachusetts Department of Public Utilities ("**MDPU**") on November 22, 2010 in Docket No. D.P.U. 10-54; and

WHEREAS, Seller and NStar Electric Company ("**NSTAR**") entered into a Power Purchase Agreement dated as of March 23, 2012 (the "**NSTAR PPA**"), pursuant to which NSTAR will purchase a portion of the output of the Facility (as defined in the Agreement), which NSTAR PPA was approved by the MDPU on November 26, 2012 in Docket No. D.P.U. 12-30; and

WHEREAS, Section 4.1(e) of the Agreement and the letter agreement between Buyer and Seller dated March 21, 2012 together provide that Seller will notify Buyer promptly after the MDPU issued its order accepting or rejecting the NSTAR PPA and that Buyer will have twenty (20) days from its receipt of that notice either: (1) to accept all of the terms and conditions of the NSTAR PPA; or (2) to accept only the pricing and term provisions included in the NSTAR PPA; or (3) to decline all of the terms and conditions of the NSTAR PPA; and

WHEREAS, Buyer has opted to accept all of the substantive terms of the NSTAR PPA, which requires the modifications to the Agreement set forth in this Second Amendment;

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. The following definition is added in the appropriate place in Section 1 of the Agreement:

> "**Physical Construction**" shall mean any physical installation of equipment or materials into the seabed of the Facility construction site that is integral to the assembly of the wind turbine generation units included in the Facility.

2. The definition of "Test REC Price" in Section 1 of the Agreement is deleted in its entirety and replaced with the following:

> "**Test REC Price**" shall mean, with respect to each Test Period prior to a Partial Commercial Operation Date, the weighted average contract price paid by Buyer for Class I Renewable Energy Certificates contracted for in the latest competitive solicitation and used in meeting Buyer's Basic Service load obligations.

3. Section 2.2(g) is added to the Agreement, immediately following Section 2.2(f), reading as follows:

> (g) In the event that Seller does not commence Physical Construction of the Facility prior to December 31, 2015, Buyer shall terminate this Agreement as of December 31, 2015. This deadline date for the commencement of Physical Construction is not subject to extension under Section 3.1(c) or Section 10.1. The determination as to whether Physical Construction has commenced shall be made by the MDPU, upon petition by Buyer. The Parties agree that time is of the essence with respect to the commencement of Physical Construction and is part of the consideration to Buyer in entering into this Agreement. Upon such termination, neither Party shall have any further liability hereunder except for obligations arising under Section 6.3 and Article 12 which accrued prior to such termination, and Buyer shall return to Seller its Posted Collateral.

4. The first sentence of Section 10.1(b) of the Agreement is deleted in its entirety and replaced with the following:

> If either Party is unable, wholly or in part, by Force Majeure to perform obligations under this Agreement (other than Seller's obligation to commence Physical Construction under Section 2.2(g)), such performance shall be excused and suspended so long as the circumstances that give rise to such inability exist, but for no longer period.

5. The notice address and the first copy address for Buyer in Section 17 of the Agreement are changed to the following:

If to Buyer:
Corinne Abrams
Manager, Environmental Transactions
Energy Procurement
National Grid
100 E. Old Country Road
Hicksville, NY 11801-4218
Fax: (516) 545-3130
Email: corinne.abrams@nationalgrid.com

With a copy to: Brooke E. Skulley, Esq.
Assistant General Counsel – Renewable Energy
National Grid
40 Sylvan Road
Waltham, MA 02451-1120
Fax: (781) 907-5701
Email: brooke.skulley@nationalgrid.com

6. In Section 2 of Exhibit E to the Agreement, the description of the allocation to RECs is deleted in its entirety and replaced with the following:

RECs = The weighted average contract price paid by Buyer for Class I Renewable Energy Certificates contracted for in the latest competitive solicitation and used in meeting Buyer's Basic Service load obligations (the **"Class I Price"**). In the event that the Class I Price is not readily available, the Parties shall in good faith undertake commercially reasonable efforts to agree on a substitute index that reflects the market value of RECs for RPS Class I Renewable Generation Units. Should such a substitute index not be available or if the Parties are unable to agree upon such a substitute index, the RECs will be valued at the "Alternative Compliance Payment Rate" for the RPS published by the DOER for the applicable billing period.

7. The usage in this Second Amendment of terms which are defined in the Agreement is in accordance with the usage thereof in the Agreement.

8. Except as specifically amended hereby, all terms and provisions contained in the Agreement shall remain unchanged and in full force and effect, and each of the Parties ratifies and confirms all such terms and provisions. In the event of a conflict between the provisions of this Second Amendment and the Agreement, the provisions of this Second Amendment shall govern.

9. In accordance with Section 18 of the Agreement and the MDPU's Decision in Docket No. D.P.U. 10-54, and subject to Section 4.1(e)(iii) of the Agreement, this Second Amendment shall only become effective if it is approved by the MDPU. Seller shall use commercially reasonable efforts to cooperate with Buyer in order to obtain the MDPU's approval of this Second Amendment.

10. Two or more counterparts of this Second Amendment may be signed by the parties, each of which shall be an original but all of which together shall constitute one and the same instrument. Facsimile signatures hereon shall be deemed to have the same effect as original signatures.

11. Interpretation and performance of this Second Amendment shall be in accordance with, and shall be controlled by, the laws of the Commonwealth of Massachusetts (without regard to its principles of conflicts of law).

[Signature Page Follows]

IN WITNESS WHEREOF, each of Buyer and Seller has caused this Second Amendment to be duly executed on its behalf as of the date first above written.

MASSACHUSETTS ELECTRIC COMPANY AND NANTUCKET ELECTRIC COMPANY, D/B/A NATIONAL GRID

By: _____
Name: John V. Vaughn
Title: Authorized Signatory

CAPE WIND ASSOCIATES, LLC

By: _____
Name:
Title:

IN WITNESS WHEREOF, each of Buyer and Seller has caused this Second Amendment to be duly executed on its behalf as of the date first above written.

MASSACHUSETTS ELECTRIC COMPANY AND NANTUCKET ELECTRIC COMPANY, D/B/A NATIONAL GRID

By: _____
Name: John V. Vaughn
Title: Authorized Signatory

CAPE WIND ASSOCIATES, LLC

By: James L. Gordon
Name:
Title: President

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF PUBLIC UTILITIES

Petition of Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid for Approval of Proposed Long-Term Contracts for Renewable Energy with Cape Wind Associates, LLC Pursuant to St. 2008, c. 169, § 83	)	D.P.U. 10-54

CERTIFICATE OF SERVICE

I certify that I have this day served the foregoing upon the Department of Public Utilities and the Service List in the above-docketed proceeding in accordance with the requirements of 220 C.M.R. 1.05.

MASSACHUSETTS ELECTRIC COMPANY
NANTUCKET ELECTRIC COMPANY
d/b/a NATIONAL GRID

Laurie Riley

Laurie Riley
Legal Assistant
National Grid USA Service Company, Inc.
40 Sylvan Road
Waltham, MA 02451
(781) 907-1841

Dated: February 13, 2013