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May 28, 2010

Ida McDonnell
U.S. Environmental Protection Agency
Region I – New England
Air Permits Program
1 Congress Street – Suite 1100
Boston, Massachusetts 02114-2023

Re: Draft OCS Air Permit
Cape Wind Energy Project
ESS Project No. E159-504.1

Dear Ms. McDonnell:

Cape Wind Associates, LLC (Cape Wind) has reviewed the draft Outer Continental Shelf (OCS) Air Permit and Fact Sheet, which it received from the United States Environmental Protection Agency (USEPA) on May 25, 2010, for its proposed Offshore Renewable Wind Energy Project on Horseshoe Shoal in Nantucket Sound, Massachusetts. While Cape Wind can comply with the applicable regulatory provisions of the permit that are protective of air quality, Cape Wind believes that the draft OCS Permit does not provide the flexibility that the project will require for its construction.

Based on extensive due diligence Cape Wind believes that it has properly characterized and identified the types of equipment it will use for construction. Similarly Cape Wind has assessed the best information available to estimate the expected timing and duration of its activities. However, the development and construction of offshore wind facilities is a nascent industry. There are currently limited resources from which the equipment required for the construction of an offshore wind farm can be obtained. The limited availability of this equipment and the possibility that new equipment may be developed and manufactured before Cape Wind initiates construction, adds uncertainty to identifying the specific equipment that will be used during construction. Furthermore, there are several factors (contractor selection, availability of suitable equipment and labor pool, weather conditions, etc.) that will determine the actual timing and duration of construction activities. These factors provide additional uncertainty to the determination of the specific equipment to be used for construction and the expected timing and duration of construction activities.

Cape Wind has maintained in all of its submittals associated with the OCS Permit that the equipment and construction activity information being provided was based on its best estimates of the requirements for the project's construction. However the draft Permit includes definitively stated requirements that offer no flexibility to Cape Wind, as if Phase 1 of the project was not a construction project, but a stationary source, where all equipment and operational time frames can be easily specified. Cape Wind will comply with all of the applicable EPA and Massachusetts Department of Environmental Protection (MassDEP) regulations during its construction and operation. However, Cape Wind cannot accept the terms of the draft Permit as it is written.

The following are Cape Wind's comments on the draft OCS Permit:

Page 4, Section IIIA:

Draft Permit: "The owner/operator shall not operate any emission units (including vessel propulsion engines) on any OCS Source except the engines listed in Tables 1 and 2 below."

Proposal: Cape Wind proposes to eliminate this clause as it is unnecessarily limiting. As stated above, Cape Wind has no means to identify the specific construction equipment that will be used or the power output of such equipment. If this clause remains, it could potentially be considered a permit violation for Cape Wind to use a piece of equipment whose precise power output did not exactly match any of the values presented in Tables 1 and 2. The Permit will require Cape Wind to use engines which meet their respective Tier 2 or Tier 3 engine standards, will limit the overall NO_X emissions during Phase 1, and require that sufficient offsets be acquired for those emissions. Cape Wind asserts that there is no regulatory requirement for the Permit to specify the equipment used, as long as compliance with the permitted emissions limits and offset requirements are maintained.

Page 5, Sections IIIB & C

Draft Permit: "The owner/operator shall ensure that the engines used in the equipment listed in Table 1 (Table 2) are certified by their manufacturer to meet or surpass the following emission standards required for 40 C.F.R. Part 89, Tier 3 (Tier 2) engines:"

Proposal: "The owner/operator will document that the engines used are certified by their manufacturer to meet or surpass the following emission standards required for 40 C.F.R Part 89, Tier 3 (Tier 2) engines. In the event that such an engine is not commercially available for an equipment type required for the project's construction, the owner/operator will provide EPA with written substantiation that such equipment is not commercially available."

Cape Wind believes that the word "ensure" could imply that they need to test the engines themselves to demonstrate that the manufacturer's certification is accurate. Cape Wind will require that their equipment suppliers provide documentation that all equipment has been certified to the required EPA nonroad engine standard, and will provide such documentation to the EPA upon request.

Further, as stated above, the offshore wind industry is so specialized that it is reasonable to assume that there may be an equipment type for which a Tier 2 or Tier 3 engine (manufactured since 2006) is not commercially available. This assumption was stated in the March 12, 2009 letter from ESS to the EPA in the Best Available Control Technology (BACT) analysis for the project.

Cape Wind will make every reasonable effort to identify and use equipment for its construction with Tier 2 or Tier 3 compliant engines. However, if Cape Wind cannot identify a supplier for a specific equipment type with such an engine, it must have the means to continue with the construction activities, while maintaining compliance with the permit. The suggested language would provide such flexibility.

Page 6, Section IVB & C

Draft Permit: "From the Phase 1 Start Date to a date one year later, Total OCS Emissions of NO_X shall not exceed 137 tons. From the date one year after the Phase 1 start date to the Phase 1 End Date, Total OCS Emissions of NO_X shall not exceed 56.2 tons."

Proposal: "From the Phase 1 Start Date to the Phase 1 End Date, Total OCS Emissions of NO_X shall not exceed 226 tons."

Cape Wind believes that these clauses of the draft Permit are too limiting. It has been assumed by Cape Wind for the purposes of major source applicability that the construction period would take 1 to 2 years, and that the preconstruction and 70% of construction activities would take place in Year 1, with 30% of construction activities occurring in Year 2. However, the actual duration of the preconstruction and construction activities, and the percentage of those activities that will occur during each year, cannot be definitively determined at this time. Cape Wind will purchase discrete offsets for their total NO_X emissions during Phase 1. The proportion of offsets needed for each year of Phase 1 is not material as long as the total Phase 1 emissions do not exceed the number of offsets acquired.

Cape Wind has revised its preconstruction emissions estimates, as a direct result of the new preconstruction survey requirements imposed by the Minerals Management Services' (MMS) recent Record of Decision (ROD). The total Phase 1 NO_X emissions subject to the OCS Permit will now be 226 tons as a result of this revision. Attached are a revised preconstruction emissions summary and a revised summary of project emissions subject to OCS permitting.

Page 7, Section VD

Draft Permit: "The owner/operator shall monitor visibility as required by Condition III.E.3 and 4 using the opacity testing procedures found in 40 C.F.R. Part 60, Appendix A, Method 9."

Proposal: Cape wind recommends removing this requirement. The opacity limitations listed in Condition III.E.3 and 4 are directly from 310 CMR 7.06. However,

310 CMR 7.06 does not contain any specific requirement for opacity monitoring using Method 9. It would not be consistent with this regulation to require visibility monitoring by Cape Wind for its sources.

Page 7, Section VIA & C

Draft Permit: "The owner/operator shall obtain a minimum of 243 tons of discrete NO_X emissions reductions to offset the NO_X emissions from Phase 1. No later than 30 days before the Phase 1 Start Date, the owner/operator shall submit a report to the EPA documenting that it has obtained 243 tons of discrete NO_X emission credits ... "

Proposal: "The owner/operator shall obtain a minimum of 285 tons of discrete NO_X emissions reductions to offset the NO_X emissions from Phase 1. No later than 30 days before the Phase 1 Start Date, the owner/operator shall submit a report to the EPA documenting that it has obtained 285 tons of discrete NO_X emission credits ... "

As described above, Cape Wind has revised its preconstruction emissions estimates, as a direct result of the new preconstruction survey requirements imposed by the MMS ROD. The total Phase 1 NO_X emissions subject to the OCS Permit will now be 226 tons as a result of this revision. These emissions are required to be offset at a minimum ratio of 1.26 to satisfy the requirements of Massachusetts Nonattainment Review. A total of 285 tons of NO_X offsets will now be required for Phase 1 of the project.

Page 8, Section VIIB

Draft Permit: "The owner/operator shall obtain the power output and emission rates for the OCS vessel from the March 12, 2009 letter from the ESS Group, Inc. to David Conroy..."

Proposal: "The owner/operator shall obtain the power output and emission rates for the OCS vessel from the September 23, 2009 letter from the ESS Group, Inc. to David Conroy..."

At the direction of MMS and EPA, Cape Wind revised its vessel emissions estimates during both Phase 1 and Phase 2 in July of 2009 to reflect the most up to date EPA guidance for such estimations. In a letter dated September 23, 2009, the revised vessel emissions estimates and methodology used for the project were submitted to EPA. The emissions rates and calculation methodologies from the September 23, 2009 submittal to EPA should be used for the Permit.

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Page 10, Section XA

Draft Permit: "EPA may then, by letter, extend the Phase 1 End Date."

Proposal: "EPA shall then, by letter, extend the Phase 1 End Date."

This clause provides Cape Wind with a means to request an extension to the Phase 1 period beyond 24 months. It lists the demonstrations that must be made in such a request, but then leaves the acceptance of the request at the discretion of the EPA. This is not an acceptable proviso for Cape Wind, as it leaves open the possibility that Cape Wind will start construction, meet all of the permit requirements, require an extension of Phase 1 for reasons beyond its control (e.g. weather conditions or equipment availability), and be arbitrarily denied by the EPA to proceed. Cape Wind will have difficulty getting full financing of the project's construction with such uncertainty as to whether the EPA will allow the project construction to be completed if it exceeds 24 months. Cape Wind believes that this section should include the criteria that EPA will use to determine if an extension would be granted, and then provide certainty that if all of those criteria are met, the extension would be granted.

Cape Wind requests that EPA make each of the changes suggested above prior to releasing the draft OCS Permit for public comment. Cape Wind may have additional comments on the draft OCS Permit and/or the Fact Sheet, which will be provided to the EPA during the public comment period. If you have any questions regarding this comment letter, do not hesitate to call me at (781) 489-1149.

Sincerely,

ESS GROUP, INC.

Michael E. Feinblatt
Project Manager

Attachments

C: Donald Dahl, EPA Region I
Brendan McCahill, EPA Region I
Dave Conroy, EPA Region 1
Ronald Fein, EPA Region I
Craig Olmsted, Cape Wind Associates
Rachel Pachter, Cape Wind Associates
Chris Rein, ESS
Terry Orr, ESS

www.essgroup.com

Revised May 2010 as directed by MMS

Cape Wind Energy Project
Preconstruction Emissions Inside of 25 miles

Emission Factors from EPA's "Current Methodologies and Best Practices in Preparing Port Emission Inventories", April 2009

Emission Factors - Ocean Going Vessel Main Engines, Medium-Speed Diesel, Marine Diesel Oil, g/kWh (Table 2-9)

Engine	NOx	VOC (HC)	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPs
MSD & MDO	13.2	0.50	0.20	1.10	0.47	0.43	646.08	0.00635

Diesel Fuel Sulfur Content: 500 ppm

Emission Factors - Harbor Craft, Tier 0, g/kWh (Table 3-8)

Engine Power	NOx	VOC (HC)	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPs
225 - 449 kW (Cat. 1)	10.0	0.27	0.043	1.50	0.30	0.29	690.00	0.0161
450 - 559 kW (Cat. 1)	10.0	0.27	0.043	1.50	0.30	0.29	690.00	0.0161
560 - 999 kW (Cat. 1)	10.0	0.27	0.043	1.50	0.30	0.29	690.00	0.00635
1,000 kW (Cat. 1)	13.0	0.27	0.043	2.50	0.30	0.29	690.00	0.00635
1,000 - 3,000 kW (Cat. 2)	13.2	0.50	0.043	1.10	0.72	0.70	690.00	0.00635

Category 1 vessels are defined by EPA as small harbor craft and recreational propulsion (<1,000 kW)
Category 2 vessels are defined by EPA as OGV auxiliary engines, harbor craft, and smaller OGV propulsion (1,000-3,000 kW)
Category 3 vessels are defined by EPA as OGV propulsion engines (>3,000 kW)
HAP emission factors are from AP-42 (Sections 3.3 & 3.4)
Load Factors are from Table 3-4 of the EPA Port Emissions Guidance Document
Emissions (tons) = Engine Power Rating (kW) x Load Factor (%) x Activity (hrs) x Emission Factor (g/KWh) x (1 lb/454 g) x (1 ton/2000 lb) x (# of sources)

Diesel Fuel Sulfur Content: 15 ppm

Emission Factors (g/hp-hr) Diesel Recip. <600 hp Based on AP-42 Vol.1 , Tables 3.3-1 - 3.3-2

NOx	TOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPs
	1.14	0.01				521.63	0.012

EPA Nonroad Diesel Engine Emission Standard (Tier 2 or Tier 3 if available), g/KW-hr

Engine Size	NOx *	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPs
225≤kW<450	4.0			3.5	0.20	0.20		

* EPA emission standard is for NOx+NMHC. It has been assumed that all emissions are NOx to be conservative.

Emission Factors (lb/MMBtu) Natural Gas 4-Stroke Based on AP-42 Vol.1 ,Table 3.2-2

NOx	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPs
0.85	0.12	0.00059	0.56	0.000077	0.000077	110.00	0.072

Emission Factors (g/bhp-hr) for 50-100HP 4-stroke, outboard marine engines. Based on Exhaust Emission Factors for Nonroad Engine Modeling: Spark-Ignition. EPA420-R-05-019, Table 10. Worst case emissions factors were selected from carbureted, indirect injection and direct injection engine types. When calculating emissions, HC and PM were equated with VOC and PM10, respectively.

NOx	HC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPs
5.82	5.82		152.25	0.06			

Activity Type	Vessel Type/ Emission Source	Number of Sources	Equipment Size (HP)	Equipment Size (kW)	Activity	Count	Duration	Operating Hours (per unit)	Assumptions	Load Factor	Auxiliary Engine Power Adjustment	Emissions (tons)							
												NOx	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPs
Preconstruction Period - Activities within 25 Miles of the Project																			
Geophysical - WTG's	42' Diesel Lobster Boat	1	1,000	746	-Travel b/w Falmouth and WP	100 days	12 hrs/day	1200	- 2 hrs. @ 15 knots then 8 hrs. @ 3 knots	0.43	1.100	4.7	0.1	0.0	0.7	0.1	0.1	321.6	0.0
Geophysical - 33 kV Inner Array Cable	42' Diesel Lobster Boat	1	1,000	746	-Travel b/w Falmouth and WP	20 days	12 hrs/day	240	- 2 hrs. @ 15 knots then 8 hrs. @ 3 knots	0.43	1.100	0.9	0.0	0.0	0.1	0.0	0.0	64.3	0.0
Geophysical - 115 kV Interconnect Cable	42' Diesel Lobster Boat	1	1,000	746	-Travel b/w Falmouth and WP	7 days	12 hrs/day	84	- 2 hrs. @ 15 knots then 8 hrs. @ 3 knots	0.43	1.100	0.3	0.0	0.0	0.0	0.0	0.0	22.5	0.0
Electrical Generator	Gas Fired	1	8.7	6.5		195 days	12 hrs/day	2340				0.060	0.008	0.000	0.040	0.000	0.000	7.853	0.005
Borings	Tug Boat	1	1,500	1,119	Travel b/w Falmouth and	195 days	24 hrs/day	4680	Full Load @ 1hr/day	0.31	1.100	26.0	1.0	0.1	2.2	1.4	1.4	1356.5	0.0
Boring Drill Rig	Truck mtd Rig	1	350	261	1.5 borings/day	195 days	12 hrs/day	2340	Rig Stays on HSS till done			2.7	1.0	0.0	2.4	0.1	0.1	470.5	0.0
Vibracore Boat		1	1,000	746	Final Cable Design and Constructability survey	17 days	12 hrs/day	204	- 33 kV: 1 core/3 miles of cable, total 22 - 115 kV: 2 /mile of cable, total 26 - 5 /day	0.43	1.100	0.8	0.0	0.0	0.1	0.0	0.0	54.7	0.0
Multibeam Survey	26' Boat	1	300	224	Shallow area multibeam survey	130 days	12 hrs/day	1560		0.43	1.100	1.8	0.0	0.0	0.3	0.1	0.1	125.4	0.0
Electrical Generator	Gas Fired	1	4	3		130 days	12 hrs/day	1560				0.019	0.003	0.000	0.012	0.000	0.000	2.416	0.002
Crew Movement	Zodiac Boat	1	100	75	1 boring/day	195 days	12 hrs/day	2340	Zodiac only needed for boring program			1.5	1.5		39.2	0.015			
Preconstruction Emissions - Stationary Sources												**2.8**	**1.0**	**0.0**	**2.4**	**0.1**	**0.1**	**481**	**0.0**
Preconstruction Emissions - Transit												**36.0**	**2.7**	**0.1**	**42.7**	**1.7**	**1.6**	**1945**	**0.0**
Total Preconstruction Emissions												**38.8**	**3.8**	**0.1**	**45.1**	**1.8**	**1.8**	**2426**	**0.0**

All operating hours will be metered to track actual emissions.

Table 1-1
Cape Wind Energy Project
Project Emissions Subject to OCS Permitting - Revised May 2010

PHASE 1 - PRECONSTRUCTION & CONSTRUCTION								
Potential Emissions	Total Emissions (Tons)							
	NO_X	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPS
Preconstruction Potential Emissions - Total	38.8	3.8	0.1	45.1	1.8	1.8	2,426	0.0
Inside 25 Miles - Transit	36.0	2.7	0.1	42.7	1.7	1.6	1,945	0.0
Inside 25 Miles - Stationary Sources	2.8	1.0	0.0	2.4	0.1	0.1	481	0.0
Construction Potential Emissions - Total	187.2	7.9	2.1	24.6	7.0	6.5	10,510	0.1
Inside 25 Miles - Transit	172.6	6.3	2.1	16.0	6.5	6.0	8,778	0.1
Inside 25 Miles - Stationary Sources	14.6	1.6	0.0	8.6	0.5	0.5	1,732	0.0
Potential Emissions - Total	226.0	11.7	2.2	69.7	8.8	8.3	12,936	0.1
Inside 25 Miles - Transit	208.6	9.0	2.2	58.7	8.2	7.6	10,723	0.1
Inside 25 Miles - Stationary Sources	17.4	2.6	0.0	11.0	0.6	0.6	2,213	0.0
Estimated Annual Emissions	Annual Emissions (Tons Per Year)							
	NO_X	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPS
Phase 1 - Year 1 (Preconstruction + 70% Construction)	169.84	9.31	1.57	62.32	6.70	6.33	9,783	0.07
Phase 1 - Year 2 (30% Construction)	56.16	2.37	0.63	7.38	2.10	1.95	3,153	0.03
Emissions Offsets	Total ERCs (Tons Per Year)							
	NO_X	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPS
Phase 1 - Year 1 Emissions Offsets (1.26:1 Offset Ratio)	214	0	0	0	0	0	0	0
Phase 1 - Year 2 Emissions Offsets (1.26:1 Offset Ratio)	71	0	0	0	0	0	0	0

PHASE 2 - OPERATION								
Potential Emissions	Annual Emissions (Tons Per Year)							
	NO_X	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPS
Potential Emissions - Total	13.0	0.8	0.0	9.6	0.7	0.6	688	0.0
Inside 25 Miles - Transit	13.0	0.8	0.0	9.6	0.7	0.6	688	0.0
Inside 25 Miles - Stationary Sources	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
Proposed Annual Emission Limits (Note 7)	Annual Emissions (Tons Per Year)							
	NO_X	VOC	SO_2	CO	PM_{10}	$PM_{2.5}$	CO_2	HAPS
Phase 2 - 12-month rolling total	49.9	3.1	0.0	36.8	2.7	2.3	2,641	0.0

Notes

1) Project emissions have been estimated using conservative equipment usage assumptions and EPA approved emission factors. The operating hours of all equipment used will be metered to track actual emissions.

2) The NO_x, VOC, SO_2, PM_{10}, $PM_{2.5}$ and CO_2 emissions from all vessels equipped with diesel engines have been estimated at the direction of the EPA and MMS using the appropriate emission factors and load factors from EPA's "Current Methodologies and Best Practices in Preparing Port Emission Inventories, Final Report", April 2009. The HAP emissions from these vessels have been estimated using AP-42 emission factors for diesel engines. The total engine power output estimated for each vessel has been increased by 10% to account for emissions from auxiliary engines.

3) The NO_X, CO, PM_{10}, and $PM_{2.5}$ emissions from all of the stationary nonroad diesel-fired engines to be used for the project have been estimated using the Tier 2 (or Tier 3 if available) emission standards from 40 CFR 89.112, Table 1 for each engine size. Additional CO and PM emissions control will be achieved through the use of diesel oxidation catalysts (DOC) on all project stationary source diesel engines.

4) The VOC, SO_2, CO_2, and HAP emissions from all of the stationary nonroad diesel-fired engines to be used for the project have been estimated using the appropriate emission factors from EPA's AP-42, "Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources". Additional VOC and HAP emissions control will be achieved through the use of DOC on all project stationary source diesel engines.

5) The SO_2 emissions from all of the diesel-fired non-road engines to be used for the project have been estimated assuming a diesel fuel sulfur content of 15 ppm, which will be the fuel sulfur content standard for all nonroad diesel fuel beginning June 1, 2010. The SO_2 emissions from all diesel-fired marine engines used for preconstruction and construction activities have been estimated assuming a diesel fuel sulfur content of 500 ppm, which is the current marine diesel fuel sulfur content standard. The SO_2 emissions from all diesel-fired marine engines used during operation have been estimated assuming a diesel fuel sulfur content of 15 ppm, which will be the marine diesel fuel sulfur content standard beginning June 1, 2012. The EPA's non-road and marine diesel sulfur content standards can be found at 40 CFR 80.510.

6) The emissions from the zodiac boats to be used for the project have been estimated using worst-case emission factors from the EPA document: "Exhaust Emission Factors for Nonroad Engine Modeling: Spark-Ignition", EPA420-R-05-019, Table 10.

7) The Project will be permitted for up to 49.9 tons per year of NOx emissions during Phase 2, to include a contingency for unexpected equipment maintenance and/or repair activities, while remaining a minor source of emissions. The proposed permit limits of the other pollutants have been determined by scaling their individual potential emissions by the ratio of the permitted versus potential NOx emissions.