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May 21, 2007

Maureen Bornholdt
MMS Alternative Energy & Alternate Use Programmatic EIS
Argonne National Laboratory EVS/900
9700 S. Cass Ave.
Argonne IL 60439

RE: Comments on Draft Programmatic Environmental Impact Statement (PEIS) for Alternative Energy Development and Production and Alternative Use of Facilities on the Outer Continental Shelf

VIA E-MAIL AND FACSIMILE

Dear Ms. Bornholdt:

Thank you for the opportunity to comment on the above referenced Draft PEIS. The issues described in the document are of great interest to California, as we have some areas with high potential for offshore alternative energy use, potential for re-use of existing structures, and a commitment to support the use of environmentally appropriate renewable resources in the state. However, we have a number of concerns about the PEIS as currently presented, as explained in the comments below.

We previously provided comments in a February 27, 2006, letter on the MMS Advanced Notice of Proposed Rulemaking on Alternative Energy-Related Uses on the Outer Continental Shelf. That letter recognized the potential benefits of offshore alternative energy facilities, but also identified a number of concerns about the potentially extensive impacts associated with such facilities. It expressed the Coastal Commission's concerns about the potential conversion of offshore oil and gas platforms to other uses and noted that the Commission has routinely required that oil and gas infrastructure be removed from the ocean at the end of its operating life. The letter also noted our concerns about "rigs-to-reef" proposals, based on inconclusive science about the role of such structures as habitat. We recommended that "rigs-to-reef" conversions not be allowed, but that if such conversions are permitted, they be allowed only after case-by-case review and be placed in fully protected status (i.e., no fishing zones) until more conclusive science is available about their role in the ocean ecosystem. Finally, the letter expressed our serious concerns about converting these platforms into aquaculture facilities. This type of conversion would likely result in significant adverse effects due to biological and chemical pollution, use conflicts with commercial and recreational fishing, and introduction of non-native species and their accompanying problems into coastal waters. We continue to be concerned about these issues as well as several others, and, as noted below, the current PEIS does not provide information adequate to address these concerns.

We have provided two sets of comments below – first, several general concerns about the document, followed by comments on several specific issue areas. Briefly, our main comments about the document are:

- The PEIS does not provide adequate information to serve as the basis for the proposed permitting and regulatory program that would be developed to authorize these OCS activities. We recommend that decisions regarding proposed alternative uses of the OCS continue to be made on a case-by-case basis until additional information can be developed to support such a program. Alternatively, we recommend that any program arising from the PEIS be used only to permit and regulate pilot-scale proposals.

- The PEIS's definitions of impact levels (i.e., "negligible," "minor," "moderate," or "major") do not match many of the impacts described in the document – that is, a number of impacts described in the document that should be considered "major" are described only as being "negligible" to "moderate."

- The PEIS identifies project-related impacts and describes mitigation measures that could be required to avoid or reduce those impacts. However, unless the measures are required, their effectiveness in avoiding or reducing project-related impacts is questionable. The PEIS also needs to evaluate more extensively possible mitigation measures such as avoiding putting facilities in certain habitats (e.g., avoid all hard bottom habitat, kelp beds, etc.) and selecting preferred designs for various facilities due to their having few or less severe impacts than other designs.

These concerns are described in more detail below. We have also provided comments on several specific issue areas, including proposed re-use, noise in the marine environment, aquaculture, effects on birds, and others.

General Comments on PEIS

- **Proposed Action and Alternatives:** Section 2 of the document briefly describes three possible alternative actions that would result from this PEIS review: (1) develop a permitting and regulatory program for demonstration and full-scale alternative energy facilities and alternative OCS platform uses; (2) conduct case-by-case review for such proposals; and, (3) take no actions to develop regulations or to allow such activities in the OCS. We recognize that this document represents a programmatic environmental review and is therefore meant to provide a more general evaluation of potential impacts, not the more detailed evaluation that would be expected during environmental review of a particular project. Still, the level of information provided in the document is too general to serve as the basis for creating a permitting and regulatory program meant to guide development of these admittedly nascent technologies. Because most of the technologies are relatively new and untested, there are few studies available that adequately describe their likely effects on marine resources or the measures that may be feasible and necessary to mitigate potential impacts.

80071-001

Given that the PEIS is meant to cover only a short time period (from 2007 to 2014) and that most of the technologies described are either in their early development stages or will need substantial additional testing and study to determine their feasibility, effectiveness, and impacts, it appears premature to establish a programmatic approach or regulations at this time. We recommend that instead of developing a new program and regulations based on the PEIS, that alternative energy and alternative use proposals be evaluated on a case-by-case basis during the next several years. The experience gained through reviewing proposed applications of these technologies could then be used to develop an appropriate program and regulations applicable to larger-scale proposals. Even those technologies that the PEIS describes as being further developed – i.e., wind energy – will need substantial additional research before they are constructed and operated in offshore waters.[1] We also recommend the MMS use this time to conduct some of the resource-specific studies needed to further develop and to support a regulatory program – e.g., studies to identify which areas may be not be suitable for offshore energy due to their high habitat value, the effects of noise from these facilities on marine mammals, the effects on electromagnetic frequencies from facility-to-shore cables, the fate and transport of hazardous materials associated with "shell mounds" at the base of existing offshore oil and gas structures, etc.

Postponing the development of a regulatory program is particularly important with regards to the proposed re-use of offshore structures. California is in the midst of scientific studies, data collection, and debate about the role of such structures in the marine environment, and developing a program at this point for re-use of these structures would be premature. We believe postponement of no more than a few years would be overall beneficial in that it would allow the MMS and the public to use the experience gained from case-by-case review and the knowledge gained from various studies to be used to develop a more rigorous and supportable program. If this short-term case-by-case approach is for some reason not acceptable, we alternatively recommend that any permitting or regulatory actions established using this PEIS be applicable to demonstration projects only, rather than full-scale proposals.

80106-001 (cont.)

- **Definitions of Impact Levels:** Section 5.1 of the document identifies the criteria used to define impacts as "negligible," "minor," "moderate," or "major." However, for many issue areas evaluated in the document, the type and extent of impacts described do not match the assigned impact level. For example, many of the potential activities described in the document would result in the take of marine mammals, would cause substantial adverse effects on species listed as endangered or threatened, or would otherwise adversely affect fully protected species; yet, for the most part, the document describes these adverse effects only as ranging from "negligible" to "moderate." Section 5.2.5, for instance, states that some activities could cause marine mammals to avoid large areas of habitat or could cause permanent hearing loss, yet these impacts are described only as "minor" to "moderate." Since both these effects would be considered "take" (under the Marine Mammal Protection Act, or MMPA) and since hearing loss would likely lead to the death of the affected animals,

80106-002

[1] For example, Section 3.2 states that because of experience with projects elsewhere in the world, developers of proposed offshore wind energy facilities would likely skip the demonstration phase and move directly into full-scale operations. Even with that experience, however, we do not yet adequately understand the adverse effects that would be caused by offshore large-scale wind energy developments. This is of particular concern in some areas off the California coast known to support large populations of bird life, including many species listed as endangered, threatened, or otherwise protected under federal or state law.

these activities should instead be described as causing "major" impacts. It appears that the document describes only one impact to marine mammals as "major" – their potential entanglement in the many mooring lines that would be used to secure wave energy devices. However, as is evident from past reviews of proposed OCS activities, and as is evident from ongoing OCS activities and studies, there is much more potential for major adverse impacts to marine mammals and to other ocean resources than are described in this PEIS.

We note, too, that the document barely addresses concerns related to cumulative impacts. These should be evaluated as part of nearly every issue area in the PEIS.

80106-002 (cont.)

- **Mitigation measures:** Related to the issue above, the document in many instances justifies assigning a lower impact level to an activity by citing mitigation measures that could be required. The document should be revised throughout to instead describe what mitigation measures will be required. Without certainty that mitigation measures will apply to various activities, the document should state that project impacts would be more severe than currently described. For example, the PEIS in a number of sections describes potential effects on hard bottom habitat that would be caused by construction, cable laying, anchoring, and other activities. It further states that these effects could be avoided or reduced by using pre-project surveys, properly siting facilities, or other means. However, until those measures are required as part of the proposed program or regulations, they should not be characterized as providing effective mitigation. We therefore recommend that the document be revised to either identify how anticipated impacts would be avoided or reduced by using required mitigation measures or that it identify the level of impacts that would occur when mitigation measures remain only optional.

80106-003

As part of its evaluation of mitigation measures, the document should also describe how to avoid or reduce impacts by avoiding placing facilities at certain locations. The PEIS discusses the locations in which offshore alternative energy facilities or platform re-use may be most productive; however, it also needs to describe and evaluate which locations may be unsuitable due to their sensitive resource values. These areas should include sensitive breeding or feeding grounds, migration routes, areas of hard bottom habitat, and other locations that provide significant habitat value and high potential for adverse impacts. In California, these areas would also include nearshore areas such as estuarine areas, seagrass beds, and kelp beds that might be affected by cable crossings or other project-related activities. The revised PEIS should describe the reduced levels of adverse effects that would occur if all facilities were required to avoid such areas.

80106-004

The PEIS should also include this same type of evaluation for different facility designs. Although many proposed projects are still in the design stage, there is enough known about certain types of proposed facilities to identify likely impacts and necessary mitigation measures. For example, several wave energy devices depend on pumping seawater in and out of structures, which could cause significant entrainment impacts to planktonic organisms and have a substantial adverse effect on nearby or regional ecosystems dependent on those organisms. Other wave energy designs completely avoid this type of impact. Similarly, the document should describe standard wind energy devices and evaluate which designs would minimize bird strikes (e.g., larger and slower blades vs. shorter and faster blades). The PEIS should therefore include evaluations of known or likely facility designs, what impacts are most likely from those designs, and what mitigation measures may be needed.

80106-005

Comments on Specific Issue Areas

- **Re-use of existing structures:** The PEIS does not adequately address the issues associated with the substantial change in policy direction that would be represented by the re-use of existing offshore oil and gas structures. Nearly all the structures in California were approved with a requirement that be removed at the end of their operating life. Many agencies, individuals, and interest groups have understood for years or for decades that these structures would be removed, with some due to be removed in the relatively near future. This document does not provide anywhere near the level of information needed to evaluate such a significant policy shift on the eventual disposition of these structures. The PEIS needs to thoroughly evaluate the issues associated with extending the life of these structures, including structural stability, the fate and transport of toxic or hazardous substances associated with these structures (e.g., shell mounds), the level of cleanup needed at the structures, the effects (adverse, beneficial, and cumulative) of these structures on local or regional marine biota, the continuing space conflicts they represent to fishing, public views, navigation, and other interests, and others.

80106-006

- **Noise in the marine environment:** The document inappropriately minimizes the effects of noise on marine mammals. Although Section 4.2.5 provides a good discussion about sound in the marine environment, subsequent sections of the document downplay the effects of project-related sounds on marine life. For example, and as noted above, Section 5.2.5 states that effects on marine mammals could range from avoidance of large areas to permanent hearing loss, yet these impacts are described only as "minor to moderate." Marine mammals would likely die due to a loss of hearing caused by these activities, so activities causing this impact should clearly be considered "take" under the MMPA and therefore considered to cause a "major" impact. The document also describes some activities that are likely to cause marine mammals to avoid substantial areas of ocean, which should also be categorized as a "major" impact, particularly if their avoidance would affect migration, breeding, or other critical life stages.

80106-007

- **Aquaculture:** As described in our February 2006 comment letter, the Commission has a number of concerns about converting offshore platforms to aquaculture facilities. The current PEIS includes a cursory description of some of the potential impacts associated with offshore aquaculture (in Section 6.3.2), but it lacks sufficient detail and analysis to adequately address these impacts and it fails to mention or describe the full range of potential impacts to water quality and marine resources associated with offshore aquaculture. For example, the following potential impacts are of concern to the Commission and should be fully evaluated in this document:

  - Ecosystem concerns: Many industrially cultured marine finfish species are carnivorous and consume large amounts of fishmeal and fish oil. For example, between two and five pounds of wild fish are typically required to produce one pound of farmed marine finfish (including seabass, cod, haddock, halibut and flounder).[2] Therefore, the ecological footprint of culturing some commercial fish may be large. Raising these fish may potentially deplete wild stocks of low-trophic level species that are used as feed for the cultured species. Increased fishing pressures may be directed towards these low-trophic

80106-008

[2] Naylor et al. 2000. "Effect of aquaculture on world fish supplies." *Nature*, Volume 405, pgs. 1017-1024.

level species (such as krill, menhaden, sardines, mackerel, anchovies and herring) which may result in adverse impacts to the wild populations of fish, seabirds and marine mammals that rely on these species for high quality forage. The PEIS should evaluate mitigation measures that would avoid or reduce this concern, such as prohibiting the use of wild fish stocks as feed in aquaculture operations.

Another ecosystem-related concern is that the intensive cultivation of filter-feeding shellfish species such as mussels and oysters can extract large amounts of phytoplankton and particulates from local marine waters. This alteration in the availability of these phytoplankton and nutrients for other marine organisms can affect the abundance and diversity of organisms in both the water column and benthos. The PEIS needs to address this issue.

- Space/Use Conflicts: The physical presence of aquaculture operations can conflict with existing uses, such as commercial and recreational fishing and boating. Poorly sited aquaculture operations can also interfere with marine life migratory routes and aggregation areas.

- Exotic invasive species: California law currently prohibits raising non-native fin-fish species and transgenic freshwater and marine fishes, invertebrates, crustaceans or mollusks in State waters (Fish and Game Code 15007 as amended in 2003 by Senate Bill 245). However, this prohibition does not specifically prohibit the cultivation of exotic shellfish or crustacean species. Commercial rearing of exotics is a serious concern, as escaped exotics can become an invasive species that could potentially out-compete native species for habitat and food resources and irreversibly change local and regional ecosystems.

- Organic pollution: Discharges of waste and excess feed can cause impacts to the benthic environment underneath and downcurrent of fish pens and invertebrate grow-out facilities. The amount of waste and unconsumed feed depends not only on the digestibility of the food, but also on a range of other environmental and husbandry factors such as water temperature, current speed, disease status of cultured organisms and feeding frequency, timing and amount.

  Fish feeds are often fish meal/oil based, but they also contain a wide range of components including wheat, soy meal, crustacean meal, vitamins, amino acids, minerals, pigments and nutrients. Fish and shellfish wastes often contain plant nutrients such as nitrogen and phosphorus. The accumulation of these discharges has been known to result in extensive bacterial mats, to cause anaerobic "dead zones" around fish pens due to the chemical requirements of the decomposition process, and to contribute to plankton and algal blooms in surrounding waters. Nutrient pollution around aquaculture pens can alter the species composition and density of benthic and planktonic organisms and trigger cascading ecosystem health affects. Species of toxic diatoms and dinoflagellates can increase in abundance due to nutrient pollution and as a result, the health of both humans and marine life that consume these organisms can be negatively affected.

80106-008 (cont.)

Additionally, the brief mention of mitigation measures provided in Section 6.3.2.3 raises the same concerns that are described above regarding the general lack of specific and clear-cut mitigation requirements throughout the PEIS. This section is also lacking even the most preliminary discussion of a number of important potential mitigation strategies. These include pre-operational baseline benthic and water quality characterization studies and ongoing benthic and water quality monitoring during operations to quantify changes to water quality and/or benthic habitat; using preventative measures to reduce the incidence and number of fish escapes; siting aquaculture operations sufficient distances from recreational fishing and boating areas and marine mammal and seabird migration routes, breeding sites, aggregation areas and feeding locations; habitat creation, enhancement or conservation requirements to offset the aquaculture operation's use of low trophic level organisms for feed stock; restrictions on the use of anti-fouling chemicals and antibiotics; and monitoring to minimize the potential releases of exotic invasive species in feed stock.

80106-008 (cont.)

- **Effects on birds:** Birds that use offshore areas are likely to experience some of the most significant adverse environmental impacts caused by alternative energy projects, particularly wind power projects. Although the potential adverse effects of many activities – e.g., construction-related, fuel spills, etc. – could be avoided or reduced by implementing known and effective mitigation measures, the designs of some facilities – particularly wind power projects – will almost certainly result in substantial impacts to bird life.

  The PEIR provides only a cursory evaluation of potential effects on birds, and in some sections, makes unsupported conclusions. We note in particular this statement in Section 5.2.9.4.1:

  > *Because many of the threatened and endangered birds that could be found in coastal habitats would not be expected to fly to areas where offshore wind parks may be located, impacts to these species may be negligible. Other marine and coastal birds, as well as migrating inland birds… may readily encounter offshore wind parks and thus have the greatest potential for colliding with rotors and towers. Impacts to these species may be minor to moderate, depending on the species involved and the number of individuals affected.*

  This statement could be interpreted to suggest in its first sentence that because a bird is threatened or endangered, it would not fly into a wind facility, while other birds would. Next, it suggests that the loss of other birds would not cause significant impacts. There is no basis for this statement, especially since there are a number of threatened or endangered bird species in California that use shoreline, nearshore, and offshore areas, and would likely be adversely affected. Additionally, many bird species, while not protected under the federal Endangered Species Act, are protected under the federal Migratory Bird Act, and would likely be adversely affected. Further, as the PEIS states, if the offshore structures serve as fish attracting devices, then it is likely that birds would be attracted to the area and therefore subject to even more substantial adverse impacts.

  The PEIS should be revised to address these concerns by evaluating which wind power designs are more harmful or less harmful to birds, what locations and layouts may reduce bird strikes, and what mitigation measures are available to reduce impacts. Additionally, and as noted above, the document should identify which areas may not be suitable for certain

80106-009

types of facilities due to their heavy use by birds. As noted above, we recommend that the MMS use the opportunity provided by the few years of postponing the development of the proposed permitting and regulatory program to instead develop and implement more rigorous studies of the existing effects of offshore structures on birds, the potential effects of proposed wind energy structures, and needed mitigation measures.

80106-009 (cont.)

- **Effects on Plankton:** The document briefly describes potential turbidity effects on plankton, but does not evaluate the effects some projects would have on local or regional planktonic communities. Several wave energy designs provide energy by moving seawater in and out of various structures, which would result in the entrainment of numerous planktonic organisms. The entrainment effects of larger wave energy facilities could be substantial; however, the PEIS includes no discussion of this issue. We recommend the document be revised to include evaluation of this issue, and we recommend that the MMS use several recent studies conducted at California coastal power plants as the basis of its review.

80106-010

- **Space Conflicts:** The PEIS touches on, but does not adequately evaluate, effects on commercial and recreational fishing that may be caused by placement of new structures or by re-use of existing structures. In some areas, this issue could cause significant conflicts between the fishing community and project proponents. This issue is also one for which a revised PEIS should evaluate the mitigation effectiveness of placing certain areas off limits to alternative energy development – that is, not only should some areas be off limits because of their high habitat value, but also because of the level and quality of their use for fishing.

80106-011

Closing

Thank you again for the opportunity to comment on this PEIS. We look forward to reviewing future revisions of the document and future proposed projects.

Sincerely,

Tom Luster
Staff Environmental Scientist
Energy, Ocean Resources, and Federal Consistency Division

cc: MMS – Maurice Hill
Resources Agency – Chris Potter

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80107
Date: Monday, May 21, 2007 6:41:26 PM

Thank you for your comment, Peter Jenny.

The comment tracking number that has been assigned to your comment is 80107. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 21, 2007 06:42:33PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80107

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Comment Submitted:
As president and CEO of The Peregrine Fund and a biologist with more than 40 years experience working with raptors, I am very concerned with the potential impact that an extensive wind farm could have on migrant bird populations along the South Texas coast. The south Texas coast is a well known migration corridor for raptors and other neo-tropical migrants, many of whom migrate at night. It is also the only concentrated northward migration corridor for the Peregrine Falcon. I would encourage those involved, to conduct a thorough study to determine the impact of the proposed wind farm project prior to construction. 80107-001

Respectfully Submitted,

J. Peter Jenny

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80108
Date: Monday, May 21, 2007 8:11:58 PM
Attachments: DPEIS_Comment-SupvBellone_Babylon_80108.doc

Thank you for your comment, Steven Bellone.

The comment tracking number that has been assigned to your comment is 80108. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 21, 2007 08:13:08PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80108

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Comment Submitted:
In preparing the second Draft Programmtic, MMS might seriously consider tearing several pages from the recently released study on wind power from the National Academy of Sciences

Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

Comments from Supervisor Steve Bellone - Town of Babylon
On the MMS Draft Programmatic Environmental Impact Statement

At the April 25, 2007 Minerals Management Service public hearing held here on Long Island, I stated that "my concern is that MMS, the agency responsible for oversight here, is acting more as an expediter of these projects rather than as a regulator."

The Draft Programmatic has revealed the need for MMS to heed two salient points: it is imperative to dispense with industry advocacy and adopt a framework of objectivity. Whether intended or not, many excerpts from the Draft Programmatic, as the following will exemplify, read as if they were written in accordance with principles advocated by FPL in their Rulemaking submission to MMS on February 28, 2006. It would be instructive, therefore, for MMS to study and emulate the tone and tenor of the recently released **Environmental Impacts of Wind-Energy Projects** from the National Academy of Sciences (http://books.nap.edu/openbook.php?record_id=11935&page=1).

Consider examples that convey the distinct impression MMS is reading from the same page as FPL:

>"*It would be a waste of time for MMS to contemplate as alternatives to actual proposed projects certain hypotheticals*," FPL stated.

>>The DPEIS concurs: **"MMS does not have (and cannot reasonably attain) the requisite information to 'map-out' the best areas for alternative energy project activity. The MMS is hoping that such information will be developed in the future with the assistance of…potential applicants."**

>"*FPL Energy does not recommend that MMS launch a comprehensive assessment of the OCS for wind energy potential…. The best approach would be for MMS to encourage the wind industry to conduct the necessary due diligence.*" Furthermore, "*The information collected by potential developers as to the wind and other characteristics of a site is critical business information and should, without question, be treated as the property of the potential developer.*"

>>The DPEIS obliges: **"For the present, the MMS intends to ask industry to identify those areas with the most potential for development."**

80108-001

>"*FPL Energy recommends that MMS step out of the issue of economic viability entirely. The federal government is never going to have the same information or incentives that the private sector developer has to weigh.*" -p.16

>>The DPEIS acquiesces, offering not a word on the economics of offshore wind.

80108-002

>"*MMS should not*," FPL wrote, "*view pilot projects as mandatory precursors to full-scale development…. Europe is, in effect, serving as a pilot project for offshore wind development in the United States…. There is* ***no reason*** *for MMS* ***to mandate pilot projects****, given the industry's operational experience.*" [p.21]

>>In the DPEIS, MMS concurs: **"European pilot and commercial offshore wind projects have provided information to demonstrate the feasibility of offshore wind power generation."**

80108-003

>"*FPL Energy encourages MMS to consider, seriously, adoption of the system relied upon by FPL Energy (for compliance & monitoring)." p18 "FPL Energy recommends that MMS require developers to use internal compliance auditing…. Third party monitoring is unnecessary…. FPL Energy notes that its extensive experience with onshore wind projects has revealed very few issues of environmental concern." p.21*

"MMS should avoid recommending actions that are reckless, unsafe, and unworkable, such as some suggestions for the currently proposed offshore wind projects to have full time manned barges or jack-up rigs to monitor wildlife." p.27

>>In the DPEIS, MMS offers a compatible view: "**Wind Energy In general, impacts from all phases of development and production (i.e., technology testing, site characterization, construction, operation, and decommissioning) are expected to be negligible to minor if the proper siting and mitigation measures are followed** *[p5]*

80108-004

><Responding to the Notice of Intent to Prepare an Environmental Impact Statement (EIS) on August 21, 2006, FPL wrote under the heading, **"EXPEDITE THE LONG ISLAND OFFSHORE WIND PARK":**

"FPL Energy is pleased MMS's efforts to assume responsibility for a new regulatory sector. MMS is unquestionably doing everything it can to assume the regulation of offshore renewable energy in a manner consistent with US policy. However, regarding the LIOWP EIS, FPL Energy is very concerned about requirements calling for years of additional radar or other pre-construction avian monitoring. Such requirements could hinder the permitting process, and will not provide the MMS with any incremental increase in outcome-determinative data. We are particularly concerned about this since FPL Energy has gathered a substantial amount of radar information. This considerable investment in data collection has already produced a significant avian data resource."

<>The year before MMS's sister service, Fish & Wildlife wrote the following, and reiterated at the time of the above submission that FPL had done nothing comply:

"After initially committing to conducting studies, the applicant decided in early 2005 to cancel radar surveys of the project site. The decision was made after being informed of the much more complete data set being collected by radar equipment on the Cape Wind offshore energy project. It was conveyed to the applicants that the Cape Wind project aerial and boat surveys resulted in the observation of approximately 210 birds flying at turbine height while the radar surveys conducted for the same project resulted in the tabulation of over 127,697 targets within the proposed rotor swept zone. This difference in data reflects the superior utility of radar equipment to determine avian abundance, location (including altitude), and direction of flight within the project airspace and potential impact zone.

80108-005

In summary, the Service requests that the Corps *hold the permit application in abeyance* until proper environmental studies can be completed by the applicants.

Likewise, we recommend that the Corps *not issue a permit* until adequate information is collected on the spatial and temporal use of the project's airspace by wildlife at all times of the year."

>MMS-DPEIS: "*Aesthetic concerns include the potential loss of "naturalness" of landscape/seascape views, and concern about possible effects on land values and tourism. However, a number of research studies on visual impacts of offshore and onshore wind energy developments have indicated that wind power enjoys strong support among the public (Yale University 2005; Dong Energy et al. 2006; Warren et al. 2005; SEI 2003), and unlike most large-scale energy facilities, wind turbines are in some cases viewed as a positive visual impact by significant portions of the public (Minnesota Project 2005; Warren et al. 2005; SEI 2003).*"

>>Put aside the salient fact that Dong is a Danish Energy company and SEI is a branch of the Irish government whose "mission is to promote and assist the development of sustainable energy." Then consider that the wide ranging Yale survey which indicated that the 87% who favored "expanding wind farms" was 3% less than those who wanted more solar and 6% more than those who wanted hydrogen-powered cars. Only then should the referenced PDF from the Minnesota Project be pulled up; it speaks for itself:

Visual Impacts

Perhaps the most significant concern or issue associated with wind development is the most subjective issue - visual impacts. The structures are large and located on high ground in open landscapes. Commercial turbines can be seen for miles. Whether people find them objectionable varies dramatically from person to person, place to place and project to project. Some people find a change in the view shed unacceptable and offensive. Others find wind turbines to be interesting and appealing. Others might find wind development acceptable in one place but not another.

Development in special scenic areas will likely generate more concern and opposition than in other places. For example, bluffs overlooking a river valley may be viewed as relatively unspoiled in an area dominated by intensive agriculture. Also development may be accepted generally in a landscape but not in close proximity to natural or recreational areas such as State Parks or historic sites.

80108-006

As it turns out, glossy representations of "public" perceptions are not confined to this DPEIS. Bruce Kaplan, Senior Environmental Professional for Mangi Environmental Group, while interviewing the Town of Babylon assessor, contended that many Europeans living near offshore wind farms have grown fond of them. As Mr. Kaplan was conducting a study of the potential impact of 440' offshore wind turbines on adjacent property values, he was asked if he had looked at conclusions on this issue by the Royal Institution of Chartered Surveyors. He had not and thus was not aware that "*60% of the sample suggested that wind farms decrease the value of residential properties where the development is within view and 67% of the sample indicated that the negative impact on property prices starts when a planning application to erect a wind farm is made.*" The critical point here is that those tasked by MMS to evaluate issues and projects should seek a balance of anecdotal estimates and not act as advocates.

Take another glaring example from the DPEIS that reprinted a passage about the load capacity of offshore wind projects in Europe. It was lifted virtually verbatim from a 2005 International Energy Agency glossy which itself did not provide specific references for its data:

80108-007

>DPEIS **3.2 WIND**

"*For onshore WTGs, reasonable capacity factors are 0.25 to 0.3, and a good capacity factor would be 0.4 (AWEA 1998). The potential capacity factors for offshore WTGs are greater: in 2004, the capacity factor for the Nysted Wind Facility in Denmark was just under 40%; in the first four months of 2005, the capacity factor was more than 47%. For the Hors Rev Wind Facility in Denmark, the full-year 2004 capacity factor was 26%, but major technical problems caused 30% to 50% of the turbines to be unavailable throughout the year; when the turbines were fully operational at all times, the capacity factor reached just over 53%. Because 2004 was considered to be an average wind-speed year for the Danish climate, long-term capacity factors are estimated to be about 40% for Nysted and about 45% for Horns Rev (IEA 2005).*"

>>"Offshore Wind Experience" 2005 -International Energy Agency, p23:

"**While there is limited information, the anticipated wind energy resource does seem to be apparent. Production data are available for the Nysted and Horns Rev wind farms in Denmark. In 2004 Nysted saw a capacity factor of just under 40% while production in the first four months of 2005 yielded a capacity factor of over 47%. Horns Rev saw major technology problems in 2004 resulting in unavailability of 30%-50% of the turbines throughout the year. Thus, its full-year capacity factor is only 26% in 2004, while during the first four months of 2005, when the turbines were fully operational at all times, the capacity factor reached just over 53%. Given that 2004 was considered an average windspeed year for the Danish climate, long-term capacity factors can be expected at around 40% for Nysted and around 45% for Horns Rev, meeting or even exceeding initial expectations.**"

80108-007 (cont.)

Now go to http://www.dtistats.net/energystats/dukes7_4.xls at the UK's Department of Trade & Industry to ascertain that Britain's offshore load capacity for '04-'05 was approximately 26%.

Hopefully, those at MMS who oversee the preparation of the PEIS will, in the interest of attaining and projecting some level of objectivity, then feel compelled to study the example set by the National Academy of Sciences in their recently released **Environmental Impacts of Wind-Energy Projects**:

> The generation of electricity from wind energy is surprisingly controversial. At first glance, obtaining electricity from a free source of energy—the wind—seems to be an optimum contribution to the nation's goal of energy independence and to solving the problem of climate warming due to greenhouse gas emissions. As with many first glances, however, a deeper inspection results in a more complicated story. How wind turbines are viewed depends to some degree on the environment and people's predilections, but not everyone considers them beautiful. Building wind-energy installations with large numbers of turbines can disrupt landscapes and habitats, and the rotating turbine blades sometimes kill birds and bats. Calculating how much wind energy currently displaces other, presumably less-desirable, energy sources is

80108-008

complicated, and predicting future displacements is surrounded by uncertainties. *-p.ix*

The benefits of wind energy depend on the degree to which the adverse effects of other energy sources can be reduced by using wind energy instead of the other sources. Assessing those benefits is complicated. The generation of electricity by wind energy can itself have adverse effects, and projecting the amount of wind-generated electricity available in the future is quite uncertain. In addition, the amount of potential displacement of other energy sources depends on characteristics of the energy market, operation of the transmission grid, capacity factor of the wind-energy generators as well as that of other types of electricity generators, and regulatory policies and practices affecting the production of greenhouse gases. *-p.x*

The committee began its work expecting that there would be measurable environmental impacts, including biological and socioeconomic impacts, and that there would be inadequate data from which to issue definitive, broadly applicable determinations. Given the complexity of the electric-power industry, the dynamics of energy markets, and the rapidity of technological change, we also expected that predicting the environmental benefits of wind energy would be challenging. On the other hand, the lack of any truly coordinated planning, policy, and regulatory framework at all jurisdictional levels loomed larger than expected throughout our deliberations. Although some predictions about future adverse environmental effects of wind-energy use can be made, the committee recognized gaps in our knowledge and recommended specific monitoring studies that will enable more rigorous siting and operational decisions in the future. Similarly, the report includes descriptions of measures of social impacts of wind-energy development, and recommends studies that would improve our understanding of these impacts. *-p.x*

80108-008 (cont.)

Standardized studies should be conducted before siting and construction and after construction of wind-energy facilities to evaluate the potential and realized ecological impacts of wind development. Pre-siting studies should evaluate the potential for impacts to occur and the possible cumulative impacts in the context of other sites being developed or proposed. Likely impacts could be evaluated relative to other potentially developable sites or from an absolute perspective. In addition, the studies should evaluate a selected site to determine whether alternative facility designs would reduce potential environmental impacts. Post-construction studies should focus on evaluating impacts, actual versus predicted risk, causal mechanisms of impact, and potential mitigation measures to reduce risk and reclamation of disturbed sites. Additional research is needed to help assess the immediate and long-term impacts of wind-energy facilities on threatened, endangered, and other species at risk. *P.6*

There are systematic and well-established methods for assessing and evaluating human impacts (described in Chapter 4); they allow better-informed and more-enlightened decision making.

Although aesthetic concerns often are the most-vocalized concerns about proposed wind-energy projects, few decision processes adequately address them. Although methods for assessing aesthetic impacts need to be adapted to the particular characteristics of wind-energy projects, such as their visibility, the basic principles (described in Chapter 4 and Appendix D) of systematically understanding the relationship of a project to surrounding scenic resources apply and can be used to inform siting and regulatory decisions. *-p.6*

AESTHETIC IMPACTS

Aesthetics is often a primary reason for expressed concern about wind-energy projects (Figure 4-1). Unfortunately, few regulatory review processes adequately address aesthetic issues, and far fewer address the unique aesthetic issues associated with wind-energy projects in a rational manner. This section begins by describing some of the aesthetic issues associated with wind-energy projects. It then discusses existing methods for identifying visual resources and evaluating visual impacts in general, and it provides recommendations for adapting those methods to the assessment of visual impacts associated with wind-energy projects. Finally, the section briefly examines the potential for developing guidelines to protect scenic resources when planning for, siting, and evaluating prospective wind-energy projects. Visual impacts are the focus of this discussion of aesthetic impacts, but noise is considered to the extent that it is related to the overall character of a particular landscape. Noise and shadow flicker are discussed further in this chapter, under the section addressing potential impacts on human health and well-being associated with wind-energy projects.

80108-008 (cont.)

Aesthetic Issues

The essence of aesthetics is that humans experience their surroundings with multiple senses. We often have a strong attachment to place and an inherent tendency to protect our "nest". Concern over changes in our personal landscapes is a universal phenomenon; it is not limited to the United States or to the present day. Public perceptions of wind-energy projects vary widely. To some, wind turbines appear visually pleasing, while others view them as intrusive industrial machines. Unlike some forms of development (e.g., cell towers), there are many people who find

wind turbines to be beautiful. Nevertheless, even beautiful objects may not be desirable in one's current surroundings. Research has shown strong support for wind energy generally but substantially less support for projects close to one's home (Thayer and Hansen 1989; Wolsink 1990; Gipe 2002). -p.97

Determination of Unacceptable or Undue Aesthetic Impacts
Guidance on when projects may be found unacceptable tends to be lacking or inadequate in many review processes. The information gathered in the above process can inform this decision by providing a detailed understanding of the particular issues involved in the visual relationship between the project and its surrounding context. Appendix D provides questions that could help determine the degree of visual impact. Among the factors to consider are:

- Has the applicant provided sufficient information with which to make a decision? These would include detailed information about the visibility of the proposed project and simulations (photomontages) from sensitive viewing areas. New York's SEQRA process offers an example of clearly identifying the information required and the mitigation measures that need to be considered.
- Are scenic resources of local, statewide or national significance located on or near the project site? Is the surrounding landscape unique in any way? What landscape characteristics are important to the experience and visual integrity of these scenic features?
- Would these scenic resources be significantly degraded by the construction of the proposed project?
- Would the scale of the project interfere with the general enjoyment of scenic landscape features throughout the region? Would the project appear as a dominant feature throughout the region or study area?
- Has the applicant employed reasonable mitigation measures in the overall design and layout of the proposed project so that it fits reasonably well into the character of the area?
- Would the project violate a clear, written community standard intended to protect the scenic or natural beauty of the area? Such standards can be developed at the community, county, region, or state level. -p.102

- Photomontages and photo simulations are essential tools in understanding project visibility, and appearance. Accurate representations involve exact technical requirements, such as precise camera focal lengths, GPS records of the photo location, and digital elevation (GIS-based) software. The technologies are changing, and it is important that simulations are accurately constructed (Stanton 2005). Local planning boards and the general public should be consulted in determining photomontage locations. They should illustrate sensitive or scenic viewpoints as well as "worst-case" situations such good weather conditions and the most scenic perspectives. -p.104

U.S. Fish and Wildlife Service Interim Guidelines
On May 13, 2003, the USFWS released "Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines" (USFWS 2003). Adherence to the guidelines is voluntary, as the guidelines note:
"… the wind industry is rapidly expanding into habitats and regions that have not been well studied. The Service therefore *suggests* a precautionary approach to site selection and development and will employ this approach in making recommendations and assessing impacts of wind-energy developments. We *encourage* the wind-energy industry to follow these guidelines and, in cooperation with the Service, to conduct scientific research to provide additional information on the impacts of wind-energy development on wildlife." -p.128

80108-008
(cont.)

80108-008
(cont.)

While one may not concur with all aspects of the NAS evaluation, the academic rigor and objective spirit with which they engage these issues is indisputable. While MMS may not be able to match the resources and skill-sets of the National Academy of Sciences, there is much in **Environmental Impacts of Wind-Energy Projects** the Service might strive to emulate. The resulting effort would be nothing less than a significant improvement on the first Draft Programmatic Environmental Study.

Respectfully submitted,

STEVEN BELLONE
Supervisor, Town of Babylon

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80109
Date: Monday, May 21, 2007 9:26:47 PM
Attachments: MMS-pDEIS_Comments1_80109.doc

Thank you for your comment, David Heimann.

The comment tracking number that has been assigned to your comment is 80109. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 21, 2007 09:28:00PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80109

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Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

Massachusetts
Chapter

Thursday, May 10, 2007

MMS Alternative Energy & Alternate Use Programmatic EIS
Argonne National Laboratory EVS/900
9700 S. Cass Ave.
Argonne IL 60439

Attn: Written Comment Review Officer
Re: Comments on the OCS Alternative Energy and Alternate Use Draft Programmatic EIS

To Mineral Management Services:

We are greatly pleased to have this opportunity to comment upon the ground-breaking efforts of Mineral Management Service's (MMS) to originate a systematic methodology for the evaluation and promotion of alternative energy sources on the Outer Continental Shelf (OCS). The Sierra Club firmly believes that finding and developing "alternative" (non-fossil fuel) energy, along with efficiency and conservation, are vitally necessary to fending off the worst case scenarios of anthropogenic climate change. We appreciate the MMS's commitment to alternative energy solutions, and take your involvement as a signal that the federal government is increasingly ready to engage the challenge.

We are in receipt of your "Programmatic Draft Environmental Impact Statement" (pDEIS) of March 2007, and write to offer comments thereto. We understand fully that the MMS now seeks comment on general procedures and methodologies, not on any particular project proposal. Nonetheless, the Massachusetts Chapter has been intensively engaged in the review process for the Cape Wind turbine array proposed for Nantucket Sound; we think that the five-year-plus history of this proposal has much to offer by way of illustration, and our comments will make use of such illustrations from time to time. We would begin by emphasizing that we are in strong agreement with most of what's presented in the pDEIS, by pointing out areas of similarity between your views and ours:

- We agree with your preliminary finding that both the "no action" and "case-by-case" alternatives are significantly worse than your recommended proposed action of an orderly administration and regulation of off-shore alternative energy production. 80109-001
- We agree with your emphasis on dealing with sources and technologies likely to arise and be conducive to adoption by private industry in the next five years. We also agree that technology innovations for ocean-based energy production are likely to arise very rapidly, which means your policies and regulations may need to evolve rapidly to keep up. 80109-002
- We concur with you that, of all the technological possibilities, wind power and wind farms are, in the near term, the most likely technically viable, financially competitive, and operationally dependable options.

Gifford Pinchot, the first Chief of the United States Forest Service (1905-10), chose to define "conservation" as "the greatest good for the greatest number for the longest time." We think this definition illuminates the true mission of the MMS and many other federal agencies. Our com-

ments speak to six major policy directions we ask the MMS to consider as it elaborates its proposed action:

(1) HISTORICAL REFERENCE. While the OCS alternative energy picture is complex and multi-dimensional, it is not virgin territory. In the US Northeast, the Cape Wind proposal has already been subject to intense scrutiny of its potential threats to avian species, benthic disturbances, degradation of the tourist assets of Cape Cod and Islands, and similar legitimate concerns, as well as its benefits for renewable energy supplies and the economy. These and other topics have been treated in great detail by the Army Corps of Engineers (ACE) in its own multi-year Environmental Impact Review process. The efforts of ACE provide a wealth of relevant examples (both good and bad) of data collection and analysis, impact prediction and mitigation options, and participatory process engaging the various interest groups. Accordingly, **we urge the MMS to thoroughly familiarize itself with the prior work of ACE, and to take advantage of lessons taught or learned by the Cape Wind review process.** In a similar vein, **Europe is now well ahead of the US in terms of ocean- or water-based alternative energy projects, and the MMS should derive useful conclusions from their experience.** Although the MMS is taking on a difficult assignment, it is not writing on a blank slate.

80109-003

(2) TASK COMPLEXITY. The pDEIS speaks to characterization of the ocean environment and possible (negative) impacts of developing alternative energy sources on the OCS. The listing of OCS attributes and potential targets of impact can be broadly characterized as:

- **Biophysical:** natural phenomena including avian and aquatic species, and their behaviors and interactions; benthic conditions and topography; weather and climate, including prevailing wind patterns; and water characteristics such as chemistry, temperature, and current flows. Data about biophysical conditions of the ocean is famously hard to collect, and also hard to maintain, since important variables change over time as well as space.
- **Socioeconomic**: human activity and use, including commercial fishing and shipping; recreational fishing and boating; tourism, along with scenic and cultural appreciation; and resource extraction (undersea minerals, oil and gas). Each such activity tends to have an interest group formed around, and formulating ocean policy (energy or otherwise) necessarily involves dialogue among people who see things differently.
- **Administrative (jurisdictional)**: the overlapping networks of public regulation and administration, usually organized on an economic sector basis, and directed toward managing the range of socioeconomic activities competing for OCS resources. the MMS has already made clear that its own jurisdiction for project approval (but not for impact evaluation) stops short of "exclusion zones" like National Marine Sanctuaries and similar elements of the National Park system.
- **Energy yield**: amount of energy produced, reliability, variability, costs, impact on fossil-fuel-based energy use, impact on pollution, and especially impact on global warming.

Given this extensive collection of variables, the MMS may choose to develop a system of parametric rating scales which, for any specific project proposal, can be applied to site evaluation, risk and impact assessment, and ultimately to proposal approval, approval with conditions of mitigation, or as necessary, proposal rejection. We agree that rationalized evaluation systems can help bring fairness, predictability, and timeliness to the otherwise contentious or open-ended process

80109-004

of proposal review and approval. Our concern would be that while the MMS seeks to invent, perfect and explain such an approach, the energy crisis and global warming will self-resolve — and not resolve in our favor. Accordingly, with respect to the elaboration and implementation of the proposed action, **we recommend that the MMS seek to balance the need for scientific validity and widespread public acceptance with the equally vital need for immediate development of alternative energy sources.** An adequate system for approving pioneer energy projects <u>today</u>, while fending off obvious and substantial negative consequences, will do the US more good than an excellent system for approving flawless energy projects in the year 2020. We need to mobilize thoughtful demonstration projects of relevant scale, and learn from them as we go. This brings us directly to our next point …

80109-004 (cont.)

(3) RISKS AND COMPREHENSIVE MONITORING. The Cape Wind project has revealed a wide variety of public concerns about the possible threats of ocean-based wind farming. Some of these threats seem plausible but undefined in magnitude, like the potential for bird and bat strikes by the rotating blades; others, like vista degradation leading to disruptions of the Cape Cod tourist industry, appear implausible and not well substantiated. Accordingly, **we recommend that the MMS ensure that its early alternative energy project approvals are contingent upon collecting adequate further baseline data of pre-existing conditions, and collect additional data over time to monitor how the project affects these conditions.** The goals of such monitoring programs include minimizing controversy in future reviews; imposing more effective mitigations on marginally acceptable proposals; and establishing a sound scientific and cost-benefit basis for permit approval or denial. The effort and costs of comprehensive monitoring over time could be borne both by the project proponents, and the coordinated involvement of government agencies charged with safeguarding the public interest.

Focused monitoring of the early projects, and of evolving technologies, is sufficiently important that we are sending you a companion letter of comments dealing with this topic in detail.

80109-005

(4) EQUITY OF REQUIREMENTS VS. THOSE OF FOSSIL-FUEL PROPOSALS. Traditional fossil-fuel-related construction and resource extraction on the OCS have already confronted the MMS with controversies and challenges such as decommissioning and leasing rates. For instance, do abandoned drilling platforms provide diversity-inducing habitat, or are they just sea junk? Is it appropriate to dismantle and dispose of such platforms at sea, or is this ocean dumping? Who pays for this; should future removal costs be bonded off? What sort of insurance should cover mishaps or collisions at the oil derrick? Do low leasing rates and extraction royalties help the American economy get the resources it needs cheaply — or are these low rates a give-away enriching private parties at the expense of the public interest or public treasury?

The MMS has come up with answers to such questions with respect to fossil-fuel-based proposals. We recommend that the permit and leasing requirements for alternative energy projects be comparable to those applicable to conventional energy projects. In other words, **do not set the regulatory bar higher for wind farms than it is for drilling platforms.**

80109-006

We will go further: The Sierra Club is convinced that the public interest is best served by public support of alternative energy development, and by gradually increasing the cost of fossil fuel usage as one way of (a) representing the true costs of greenhouse gases, and (b) discouraging inefficiency and over-consumption of a finite and increasingly problematic resource. **We therefore ask the MMS to explicitly consider the pros and cons of tilting the OCS playing field *in favor of* alternative energy production, and away from fossil fuel extraction** — for instance, low entry and operating charges for wind farms (which after all rely on a daily renewable re-

source owned by no one), and gradually increasing charges for extraction of our declining public reserve of fossil fuels.

(5) AFFECTED ENVIRONMENTS AND OCEAN ZONING. Given that "zoning" traditionally means regulation of land-based, privately owned surface topography, there is some debate as to whether "zoning" is a tool readily and usefully transferred to the three-dimensional, publicly-owned water environment of the OCS. Without engaging all the nuances of this debate, we note simply that zoning typically involves: (1) a ***classification*** of candidate uses and their attributes (dimension, density, etc); (2) subdivision of a large territory into smaller ***districts***; (3) a set of ***regulations*** uniformly applied to each district, and governing the types, intensities and characteristics of uses allowed or precluded; and finally (4) a public administrative and review process that eventually yields a ***permit*** for a specific kind of construction or activity at a defined location. In these terms, many examples of ocean zoning — ranging from Australia's Great Barrier Reef Marine Park, to Edgartown's (MA) "Surface Water District" — are already in place.

One stated goal of the MMS's recommended program alternative is that of streamlining the review process and expediting permit delivery for appropriate alternative energy projects. We believe that this goal can be facilitated in part by an ocean zoning map that enhances predictability of the review and approval process. In its most simplified form, alternative energy zoning would have two districts describing two essential types of "core areas":

- Districts classified as GOOD for alternative energy development. "GOOD" districts are ones where the potential gain for non-fossil-fuel energy generation are major and the potential impacts on the biophysical and socioeconomic characteristics of the environment are minor or easily mitigated. "GOOD" districts could receive benefits such as expedited permitting or public incentives, encouraging private parties to step forward with compliant projects.
- Districts classified as POOR for alternative energy development, i.e., those where the potential energy gain is minor or the potential adverse biophysical and socioeconomic characteristics are major. In "POOR" districts, alternative energy projects would be prohibited altogether, or perhaps allowed only after offering extraordinary mitigations. Private parties would understand in advance that POOR districts are a poor choice for project proposals, and would re-direct their investment planning to more promising areas.

80109-007

In the early stages of zoning for alternative energy, some, much, or maybe even most of the OCS could be left un-zoned, waiting for additional data collection and analysis. In these un-zoned, "intermediate" areas, projects could be considered, but would likely be subject to more extensive review, more mitigation requirements, and higher development costs. Clearly, different alternative energy technologies, having different potential impacts, would have varying appropriateness for districts — wave energy recovery, for instance, might be appropriate in districts where wind farming is not. Such technical complexities notwithstanding, **we strongly urge the MMS to consider, as part of its long-range management strategy, the devising and implementation of ocean zoning as a means of encouraging project development and simplifying the public review process.**

(6) EXPEDITIOUS PROGRESS. Too often missing from discussions of energy reform is any sense of magnitude or urgency. We find it useful to synopsize the challenge ahead:

80109-008

The United States currently uses about 100 quads (quadrillion BTUs) of energy each year. Of that, about 85 quads come from fossil fuel combustion, and the CO_2 released from this is the primary cause of the increasing greenhouse effect. The accumulating scientific consensus provides that we should be looking to eliminate about 80% of this release by mid-century; i.e., 68 quads. Some of this reduction will come from efficiency and conservation reforms, while the rest will come from renewable energy sources, like the ones the MMS seeks to promote. If one sets a goal of, say, one-third of our reduction as coming from alternative energy, that's 23 quads of new, alternative energy output required.

Can we get this from wind? 23 quadrillion BTUs of wind energy is the output of about 8,500 wind farms the size of that proposed for Nantucket Sound — the equivalent of *four major wind farms a year for each of the next 40 years, for every State of the Union.* Needless to say, progress to date has not been commensurate with achieving this goal. Accordingly, **we urge the MMS to move forward swiftly to demonstrate that OCS alternative energy projects can be approved in a timely manner, completed promptly, and brought on line without undue delay or significant disbenefit.** Another five years of delay before the first approvals of large-scale OCS wind farming would, in our view, contribute to a failure of catastrophic proportions.

80109-008 (cont.)

In this commentary, we've made no mention of the other mandate assigned to the MMS by the Energy Policy Act of 2005: that of finding alternative uses for the pre-existing infrastructure of fossil fuel extraction. We have two remarks on this topic. First. as America learns to trade reliance on fossil fuels for reliance on substitute supplies, the accelerating retirement of ocean-based extraction structures will bestow greater importance on an intelligent recycling program of such facilities. Second, as the need for new oil and gas supplies is displaced by efficiency, conservation, and substitution, the MMS staffing and funding dedicated to the review, approval and management of new fossil fuel leases will decline substantially. We would urge that this staff and funding be usefully re-directed to the successful and expeditious promotion of alternative energy projects on the Outer Continental Shelf.

80109-009

Please feel free to contact us if you have questions or requests regarding our comments.

Sincerely,
THE MASSACHUSETTS CHAPTER OF THE SIERRA CLUB

David Heimann
Chapter Executive Committee Chair

Philip Dowds AIA
Chapter Energy Committee Chair

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80111
Date: Monday, May 21, 2007 9:28:48 PM
Attachments: MMS-MonitoringComments1_80111.doc

Thank you for your comment, David Heimann.

The comment tracking number that has been assigned to your comment is 80111. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 21, 2007 09:30:02PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80111

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Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

Massachusetts
Chapter

May 21, 2007

MMS Alternative Energy & Alternate Use Programmatic EIS
Argonne National Laboratory EVS/900
9700 S. Cass Ave.
Argonne IL 60439

Attn: Written Comment Review Officer
Re: Comments on the OCS Alternative Energy and Alternate Use Draft Programmatic EIS

To Mineral Management Services:

In a companion letter of comments directed broadly at the "programmatic" DEIR (pDEIR) of March 2007, we emphasize the importance of systematic project monitoring, data collection and analysis to the long-range success of using the Outer Continental Shelf (OCS) for alternative energy production facilities. In this letter, we offer a more detailed set of suggestions for the monitoring component.

The data collected during the monitoring program and the spatial/temporal coverage for this data collection effort needs to be driven by the management information needs. Our comments are based upon the following conceptual model (ranging from more general to more specific):

Management information needs →
Ecological indicators/reference points in management plan→
Information synthesis →
Monitoring data.

We assume that the Minerals Management Service (MMS) will develop an ecosystems status report (ESR) for the Exclusive Economic Zone (EEZ) regions in which alternative energy projects can be deployed, as well as developing an accompanying ecosystems assessment report (EAR) which evaluates the impacts of various human activities that occur in these ocean landscapes. The project proponents for various alternative energy projects would carry out site specific baseline studies as part of the DEIS permitting/management oversight process. The proponents would also carry out the necessary monitoring program detailed in the MMS permit. The MMS monitoring program would provide the regional context for these site specific efforts and would collect a variety of data on the biological, chemical, geological, meteorological and physical aspects of the environment required to support the information needs in the ESR. The EAR would incorporate additional data on human multiple use patterns (including compatibility analysis); socioeconomic aspects of these human activities; cross agency (federal and state) and cross sector (human uses) policy issues; political mandates/societal goals (like protecting the environment, public bottomlands, and natural trust resources, while increasing national wealth); etc. 80111-001

We present our vision of the components of the baseline MMS monitoring program, with the assumption that the site specific alternative energy projects will represent a component of the regional program dependent on the issues of concern at each site. In order to examine the impacts of each individual project one needs a regional baseline (which may shift as a result of climate change or regime shifts from other widespread activities- such as fishing or water quality changes) from which one can differentiate natural variability from human effects and assess cumulative impacts of human activities. This implies that each site specific monitoring program will require a baseline before the project goes online and the MMS regional monitoring program will be repeated periodically to detect shifting baselines and regime shifts. The MMS should make use

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of existing monitoring endeavors by other agencies (NOAA Fisheries; EPA, etc.) and produce a product analogous to the Environmental Protection Agency's National Coastal Condition report. Presumably this monitoring effort would combine satellite/airborne remote sensing data with data gathered from research vessels, gliders, autonomous underwater vehicles (AUVs), remotely operated vehicles (ROVs), ships of opportunity (SOOP), etc. Since the EEZ includes the continental shelf, shelf/slope boundary with submarine canyons, and continental rise/sea mounts, the regional monitoring program should focus on the areas in which alternative energy projects are most likely to be deployed (based on constraints to locate facilities in areas in which connections can be made to the regional electric grid on land). It is certainly possible in the future that these technological constraints will be reduced or eliminated.

The following provide a broad overview of potential variable categories to be addressed in the monitoring program and some examples of potential approaches for measurements. As mentioned earlier the appropriate temporal/spatial scales for the monitoring program and specific variables to be collected depend on the management information needs and ecological indicators/reference points defined in the MMS management regime for alternative energy projects within the EEZ.

- Meteorological: wind direction and speed (average and variability); atmospheric pressure (average and variability); sunlight energy (average and variability); cloud cover; air temperature and humidity; etc. This is carried out by moored buoys at strategic locations supplemented by Ocean Observing System (OOS)/NOAA data buoys, and by use of satellites for sea surface temperature, wind speed/direction; sea surface height, etc.

- Ocean Water Column Physical Dynamics: temperature and conductivity with depth (CTDs), use of acoustic doppler current profilers (ADCP) for current speed direction and magnitude (average and variability); tidal amplitude and speed; wave height and direction; etc. This is carried out by moored buoys (see above) supplemented with ROVs, AUVs or gliders for wider spatial coverage.

- Ocean Water Column Chemistry: pH/alkalinity; nutrients (nitrogen, phosphorus, silicon, iron); contaminants (heavy metals and POPs which can bioaccumulate through the food chain); chlorophyll A (to see true satellite ocean color estimates); suspended sediments; etc. This is carried out by a combination of moored buoys and research vessels/gliders.

- Ocean Water Column Biology: ocean color for phytoplankton abundance; hydroacoustic sampling methods for mesozooplankton, macrozooplanton, and pelagic forage fish (with periodic sea truthing with nets/midwater trawls); bottom trawls surveys for demersal fish and mobile invertebrates; line transect surveys for marine mammals and seabirds; catch and release surveys for Apex predators (tunas, sharks, billfish, etc.); etc. This will provide information on the distribution/abundance of key components in the ocean's foodweb. This will depend upon research vessels supplemented by gliders/AUVs/ROVs and SOOP towing undulating oceanographic recorders.

- Benthic Sediment and Habitat Mapping: use multibeam mapping techniques supplemented by towed video cameras for bottom truthing. May need to conduct decadal benthic epifauna/infaunal surveys using grabs and dredges to link maps with organisms on the bottom that are key prey species or provide essential fish habitat. The benthic sediment distribution patterns will need to be bottom truthed with cores. It might be worthwhile gathering data on benthic physical disturbance processes, since many of the alternative energy sites may be at depths subject to storm waves, tidal action, bottom currents and debris flows. The geological sedimentary mapping will need to be augmented by sediment grain size analysis and composition; shear strength; bioturbation estimates; sediment mobility estimates; etc. This endeavor combines benthic biology, geology and physical dynamics in an integrated program conducted from research vessels.

80111-001
(cont.)

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Massachusetts
Chapter

- Benthic Chemistry: redox potential (Eh)/pH; sediment contaminant levels (heavy metals and POPs); contaminant levels in selected epibenthic invertebrates (heavy metals and POPs); particulate and dissolved organic carbon and nitrogen concentrations; sulfide levels; etc. This is carried out using research vessels to gather samples with grabs/cores with later laboratory analysis. This might be combined with the periodic surveys of benthic epifauna/infauna or bottom truthing of sediment/habitat mapping.

- Miscellaneous Measurements: sound and vibration levels (natural versus anthropogenic)and biotic response behavior; water transparency; biodiversity of living, protected and natural trust resources; influence of bathymetry on hydrography; etc. Presumably the monitoring program would be part of an adaptive management approach which links models/analytical approaches to ecological indicators/management reference points to data collection and synthesis in order to meet the management information needs. The ESR and EAR should provide the conceptual basis for this adaptive management approach. It may be necessary to conduct some process oriented research to fill in gaps in our understanding on how the data collected or proxy indicators are linked to the models/analytical approaches required to provide the needed information. Thus this will be an iterative process in which learning from our experience and updating the conceptual models will be important. MMS will have to work with its federal/state partners and key constituent groups to develop the management framework and to define the information needs for the monitoring program.

80111-001
(cont.)

It would be wise from a political perspective to have an independent third party conduct the monitoring and develop the products relating the monitoring program results to the ecosystem status (ESR) and cumulative impacts (EAR) from diverse human activities being carried out within the EEZ. Models for such an approach can be found in the Australian ecosystem approach to management (EAM) that utilizes the CSIRO (Commonwealth Scientific and Industrial Research Organization) and the Canadian Integrated Ocean Management Plans developed by the Department of Fisheries and Oceans under the Oceans Act. Even though the U.S. has a different regulatory approach for the EEZ than either Australia or Canada, there are lessons to be learned from the experience garnered elsewhere. When Congress enacts legislation based on the recommendations of the U.S. Oceans Commission, it should make it easier to manage diverse human activities within the EEZ in a more holistic fashion.

Please feel free to contact us if you have questions or requests regarding our comments.

Sincerely,
THE MASSACHUSETTS CHAPTER OF THE SIERRA CLUB

David Heimann
Chapter Executive Committee Chair

David Dow
Cape Cod and Islands Group

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80113
Date: Monday, May 21, 2007 10:53:43 PM
Attachments: IAGC_Comments_Alt_use_PEIS_2007_05_21_80113.pdf

Thank you for your comment, Chip Gill.

The comment tracking number that has been assigned to your comment is 80113. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 21, 2007 10:54:49PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80113

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Attachment: C:\Documents and Settings\chip\My Documents\Americas\America Data License\2007 MMS Alt. Uses EIS \IAGC_Comments_Alt_use_PEIS_2007_05_21.pdf

Comment Submitted:
Please see IAGC's comments, which are attached.

Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

May 10, 2007

MMS Alternative Energy and Alternate Use Programmatic EIS
Argonne National Laboratory, EVS/900
9700 S. Cass Avenue
Argonne, IL 60439

James Bennett
United States Department of the Interior
Minerals Management Service
Environmental Assessment Branch, MS 4042
381 Elden Street
Herndon, Virginia 207710

Houston Office

RE: MMS Alternative Energy and Alternate Use Programmatic EIS

To Whom It May Concern:

The International Association of Geophysical Contractors (IAGC) is pleased to respond to your request for comments on the MMS Alternative Energy and Alternate Use Programmatic EIS. The IAGC is a worldwide organization that represents all facets of the geophysical business including but not limited to, seismic acquisition, seismic data processing and non-exclusive/multi-client data ownership. IAGC members are sharply focused on oil and gas development from the domestic offshore and our interest in the development and implementation of regulations regarding the alternate uses of the outer continental shelf is significant.

IAGC member companies have and continue to invest vast amounts of capital in the acquisition, processing a reprocessing of non-exclusive geophysical data. Specifically, annual aggregate investments by IAGC seismic companies in the Gulf of Mexico and other OCS areas are in the hundreds of millions of dollars. The value of the cumulative investment of data still owned and used today is measured in the billions of dollars, and represents a significant percentage of the current book value of some of the companies in the geophysical industry.

Seismic companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of non-exclusive data. Non-exclusive data has become an integral part of the exploration, development and production of hydrocarbon resources and is utilized in the preparation and decisions made by exploration and production companies as well as the MMS relative to each lease sale. [For a more in-depth discussion of this topic, please refer to IAGC's comments dated September 16, 2002 on MMS' proposed rulemaking; Oil and Gas and Sulphur Operations in the Outer Continental Shelf; Geological and Geophysical (G&G) Explorations of the Outer Continental Shelf – Proprietary Terms and Data Disclosure (67CFR46942 – July 17, 2002).]

As we noted in our comments dated February 28, 2006 to the MMS regarding the Advanced Notice of Proposed Rulemaking concerning alternate Energy-Related Uses on the Outer Continental Shelf, developing and implementing regulations for the multiple

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use / activity within the OCS after years of having oil and gas exploration and development as the primary, if not sole activity, will require thoughtful consideration by all parties. The contribution that alternative energy sources such as offshore wind farms and wave generation can make to meet the ever growing energy demands of our nation is important. However the significance and need for continued exploration and development of the offshore resources should be recognized and it should remain a high priority.

With the MMS' indulgence, the IAGC again provides the following general comments regarding the rulemaking process associated with the multiple use / activity of the OCS.

- Areas of the OCS that have existing oil and gas activity, as well as those areas that have oil and gas potential but currently are not productive, are under moratoria or are not scheduled for leasing are important to meeting near term U.S. energy demands. Therefore as MMS develops processes and regulations for alternate energy related uses, access to those areas for natural gas and oil exploration and production should be given priority.

- In considering multiple use of an area of the OCS, the federal government should consider the most productive use of the area (i.e. hydrocarbon resource versus alternative energy generation).

- If an OCS block is removed or significantly limited or impaired from hydrocarbon development due to the siting of an alternate use structure, the revenue generated from that use should be sufficient to compensate the federal government for the potential lost revenue from hydrocarbon production.

- If an OCS block is removed or significantly limited or impaired from hydrocarbon development due to alternate energy uses, it will have a chilling effect on exploration for and production of natural gas and oil, and on the acquisition and ownership of non-exclusive geophysical data.

  The availability of non-exclusive data has become an important component of the exploration for and production of natural gas and oil. The underlying assumption supporting non-exclusive data investments is that by lowering the cost of obtaining (licensing) high quality seismic data, E&P companies will be able to afford to license seismic data and use it to explore over a particular OCS block or area in order to assess hydrocarbon potential. By utilizing latest technologies, E&P companies find and produce more of the existing resource base, supplying the U.S. with this critical resource. If blocks are removed or impaired by alternative uses such that oil and gas activity is limited, it will significantly affect the ability to meet the sales projections on which the seismic surveys were founded and upon which investments were made (financial impairment).

- Today, seismic data acquisition (exclusive and non-exclusive) is an integral and important step in the exploration and development of hydrocarbon resources, and also to the calculation of hydrocarbon reserves. New seismic surveys are acquired with better technologies and produce higher resolution images of the subsurface, thereby allowing ever greater precision in these endeavors. Data from these programs are widely utilized by, and are critical to MMS in the

80113-001

management of natural gas and oil in the OCS, and ultimately become available to the public.

Following the laws of physics, a 'rule of thumb' can be asserted: to create the 3-D subsurface image of one output OCS block, it requires input of nine OCS blocks to obtain post-stack time migrated data and input of up to forty OCS blocks to obtain pre-stacked depth migrated data. If an OCS block has been relegated to alternative uses such that a large surface area is obstructed, impaired or considered an exclusion zone, it will hinder the ability to acquire seismic data over the necessary surface area. It therefore follows that the inability to obtain seismic coverage over a particular area will affect the ability to properly image adjacent areas.

However it will also hinder the ability to acquire it by the efficient, cost effective towed streamer method (no room for the towed streamer spreads to fit). In relegating acquisition options to the more costly seafloor based options, it follows that the more costly a survey, the higher the economic hurdles are for a project and therefore the less likely it will be funded.

In conclusion, the MMS should take into consideration seismic operations when considering multiple uses and should attempt to minimize possible logistical encumbrances of future seismic data acquisition programs. Pushing seismic data acquisitions to those more costly techniques should be minimized wherever possible. If and when existing non-exclusive seismic data surveys are financially impaired (given today's extensive coverage this seems unavoidable), MMS should fairly compensate the owners of the data. Compensation should be based upon a method that considers full project costs (including the time value and the lost opportunity of the investment) as well as project revenues.

80113-002

IAGC appreciates the opportunity to provide comments on the MMS Alternative Energy and Alternate Use Programmatic EIS. If you have any questions or need additional information, please do not hesitate to contact me.

Regards,

Chip Gill
President

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80114
Date: Monday, May 21, 2007 10:55:14 PM
Attachments: Recreational_Uses_80114.DOC

Thank you for your comment, Neil Good.

The comment tracking number that has been assigned to your comment is 80114. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 21, 2007 10:56:29PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80114

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Attachment: C:\Documents and Settings\Owner\Desktop\Recreational Uses.DOC

Comment Submitted:
Please see attachment

Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

Neil Good
56 Scituate Road
Mashpee, MA 02649
neilgood@juno.com

MMS PEIS Testimony
Dedham, MA. May 25th 2006

Recreational Uses

I thank you for the opportunity to testify as a concerned citizen regarding how MMS should consider the issue of recreation in its Programmatic Environmental Impact Statement.

In a 1998 report, the National Oceanic and Atmospheric Administration estimated that in 1995 travel and tourism provided $746 billion, to the U.S. gross domestic product, which amounts to about 10% of U.S. output. Beaches are the leading tourist destination while national parks and historic sites are the second most popular destination. Approximately 180 million people visit the coast for recreational purposes, with 85 percent of tourist-related revenues generated by coastal states.

According to an EPA study, cited in this same report, over 77 million Americans participated in recreational boating as of 1996. In 1996 alone, Americans spent approximately $17.7 billion on boats and directly-related

items. For non-boaters, beach-going was nonetheless a favorite activity. In seven states, beachgoers spent $74 billion with the most popular recreational activities being swimming, sunbathing, and walking in coastal areas.

In short, coastal recreation is immensely important to the nation. The consideration of recreational impacts must factor heavily in MMS's new regulatory program.

As an example, offshore wind has the potential to significantly impact a major recreational area. The effects of offshore wind energy on tourism have received mixed reviews. It appears that in some areas, the presence of an offshore wind energy facility may benefit a recreational area. But whether tourism is adversely affected by offshore alternative energy development depends on the reasons one visits a particular area. In other words, it depends on the type of recreation for which an area is popular.

Industrial development is inconsistent with and will adversely impact areas most valued for their scenic, avian, and aesthetic characteristics, such as Nantucket Sound. Development can substantially interfere with recreational boating, recreational fishing, whale and bird watching, and a host of other activities. While such areas may not cease entirely as recreational sites, their primary characteristics may be significantly eroded by development. When such risk is present, MMS should prohibit development within a reasonable distance from the coast.

80114-001

MMS should conduct a review of the nation's most popular beach destinations and determine what forms of alternative energy development are consistent with those sites. Where certain types of development present significant conflicts, those areas should be made off-limits to developers. Too much is at stake to allow unfettered industrial development in our nation's most prized coastal areas.

80114-001 (cont.)

Thank you for the opportunity to provide comments on this important issue.

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80115
Date: Tuesday, May 22, 2007 9:12:09 AM
Attachments: Draft_comments_for_progamatic_DEIS_80115.doc

Thank you for your comment, Maureen Dolan Murphy.

The comment tracking number that has been assigned to your comment is 80115. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 22, 2007 09:13:23AM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80115

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Attachment: C:\Documents and Settings\MAUREEN\My Documents\Renewbale Energy\Draft comments for progamatic DEIS.doc

Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

CITIZENS CAMPAIGN FOR THE ENVIRONMENT

❑ 225A Main Street • Farmingdale, NY 11735 516-390-7150
❑ 19 Court Street, Lower Level • White Plains, NY 10601 914-997-0946
❑ 744 Broadway • Albany, NY 12207 518-434-8171
❑ 735 Delaware Road, Box 140 • Buffalo, NY 14223 716-831-3206
❑ 466 Westcott Street, 2nd Floor • Syracuse, NY 13210 315-472-1339
❑ 129 Church Street, Suite 221 • New Haven, CT 06510 203-785-9080

Protecting the environment and working for a healthy community.

May 21, 2007

MMS Renewable Energy and
Alternate Use Programmatic Draft EIS
Argonne National Laboratory
9700 S. Cass Ave.
Argonne IL 60439

To whom it may concern:

Citizens Campaign for the Environment (CCE) is an 80,000-member, non-profit, non-partisan, advocacy organization working to protect public health and the natural environment in New York State and Connecticut. CCE works to build widespread citizen understanding and advocacy for policies and actions designed to manage and protect land and water resources, wildlife and public health.

CCE is very active in promoting policies and actions at the local, state, and federal level that support the development and use of renewable energy, which is derived from sources that are not depleted when used at sustainable levels. Today we face dwindling supplies of traditional energy sources; substantial increases in oil and gas prices, and significant pollutants that have an adverse impact on human health and the environment. Our nation must look towards alternative energy sources to meet our rising energy demand.

CCE, since its inception in 1985, has also been extremely active in working to protect water quality across New York State, Connecticut and throughout the Nation. Currently, CCE actively works on protecting many of New York's largest and often most impacted waterways including the Hudson River, the Long Island South Shore Estuary Reserve, the Great Lakes, the Finger Lakes, the Peconic River, and Long Island Sound. Additionally, CCE is an active member of the Long Island Sound Study Citizens Advisory Committee and the South Shore Estuary Reserve Citizens Advisory Committee.

CCE believes the development of all offshore renewable energy, including but not limited to offshore wind technology, wave technology, and under water current technology, can be an important energy source for America.

The programmatic DEIS offers a reasonable initial analysis of these emerging technologies and can be used as a valuable tool for their development. However, CCE also believes that for each project a site-specific EIS must be conducted. The process for developing a site-specific EIS must be comprehensive and include adequate public participation. The programmatic DEIS is *not* a substitute for a site specific analysis.

CCE offers the following specific comments:

1. CCE generally supports the development of the programmatic EIS, which can help to streamline the process of renewable technology off the outer continental shelf. However, ***CCE fully supports that each project undergo a site specific analysis***, which includes characterization of bottomlands, bird monitoring, wave characterization, threatened and endangered species analysis, and migration patterns of wildlife in the surrounding area. 80115-001

2. CCE opposes a no action alternative. A no action alternative would mean the halt of all renewable energies off the outer continental shelf. Renewable energies are home-grown, pollution-free sources of energy. CCE believes that steps should be taken to reduce America's dependence on foreign fossil fuels and to use clean, emission-free sources of energy that benefit the quality of our air and water sources. 80115-002

3. CCE supports a demonstration project for deep-water wind technology. However, ***CCE does not believe that current wind technology should be halted until newer technology is developed***. 80115-003

4. CCE opposes any "no-public access zone" or any "no fishing zone" surrounding above water projects. Below water projects need to be evaluated on a case by case basis but the greatest level of consideration should be given to eliminate a need for such zones. 80115-004

CCE understands both the importance of reducing our dependence on fossil fuels and the significance of protecting our marine environment. Fossil fuel production releases devastating carbon dioxide emissions, which are a major contributor to global climate change. **Global climate change is one of the greatest threats to our world's oceans**.

Currently, clear indicators of climate change are negatively impacting our oceans. Documented sea level rise, the bleaching of coral reefs, greater intensity of hurricanes, high mercury levels in fish and a dramatic increase in the acidity level of our ocean waters are some of the negative impacts directly associated with CO2 emissions . We must find a balance in which our marine environment is protected and our dependence on fossil fuels is reduced. Offshore renewable technologies have the promise to accomplish both of these critical needs.

CCE urges MMS to accept the Draft programmatic EIS and proceed with site-specific amylases for each individual projects. Each project should follow an open process and include public participation.

Thank you for this opportunity to comment.

Sincerely,

Maureen Dolan Murphy
Program Coordinator

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80116
Date: Tuesday, May 22, 2007 1:51:49 PM

Thank you for your comment, Fred Mayes.

The comment tracking number that has been assigned to your comment is 80116. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 22, 2007 01:53:02PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80116

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Privacy Preference: Don't withhold name or address from public record

Comment Submitted:
The Energy Information Administration (EIA), under P.L. 93-275 and P.L. 95-91, has the authority to collect a comprehensive set of energy information to inform policymakers and the public on the Nation's energy status and future. To this end, EIA fields a wide variety of surveys.

One of EIA's major challenges in the electricity area is to develop a comprehensive list of survey respondents. For fossil fuel plants, this is realtively easy, because they are required to obtain an operating permit from the Environmental Protection Agency. Renewable energy electricity plants, however, are under no such requirement. 80116-001

In order to serve the public interest, it would be helpful if, as a condition of obtaining an operating license on Federal lands, all renewable energy plants were required to file not later than 90 days prior to commercial operation the EIA Form EIA-860M or its equivalent. 80116-001 (cont.)

Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80117
Date: Tuesday, May 22, 2007 4:21:17 PM
Attachments: Draft_PEIS_Comments_May_14_2007_80117.PDF

Thank you for your comment, Donald Kent.

The comment tracking number that has been assigned to your comment is 80117. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 22, 2007 04:22:30PM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80117

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Attachment: P:\KENT\Administration\Correspndence\Kent\Draft PEIS Comments May 14 2007.PDF

Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

May 14, 2007

MMS Alternative Energy and Alternate Use Programmatic EIS
Argonne National Laboratory, EVS/900
9700 S. Cass Avenue
Argonne, IL 60439

Re: Draft PEIS for Proposed Alternative Energy and Alternate Use Program, 72 Fed. Reg. 13307-13308 (March 21, 2007)

Mr. Chris Oynes:

The Hubbs-SeaWorld Research Institute submits this letter to comment upon MMS's draft programmatic environmental impact statement (PEIS) referenced above. We provided initial comments on February 18, 2006 to assist in development of the draft PEIS. By our review of the draft we find that MMS has reflected the concerns of lobbying groups (environmental advocacy, commercial fishing, etc.) that oppose the development of marine aquaculture. However, the erroneous rhetoric represented by these concerns as published in the draft PEIS are already the subject of intense review by other federal agencies that have mandated management authority over those concerns.

HSWRI has cooperated with NOAA Fisheries on the development of educational outreach materials that deal with each of the aquaculture concerns raised in the draft PEIS. For a review of the need for our nation to develop a more diverse aquaculture industry, I refer your staff to the NOAA Fisheries aquaculture webpage: http://www.nmfs.noaa.gov/mediacenter/aquaculture/

The following link on that page takes readers to the materials we helped develop that deal with each of the concerns recounted in the draft PEIS: http://www.nmfs.noaa.gov/mediacenter/aquaculture/docs/HUBBS_Aquaculture%20Quick%20Facts%20and%20Issues_Nov%202006.pdf

80117-001

Rather than MMS staff reinventing the wheel regarding the delineation, review and incorporation of responses to these poorly informed concerns, I suggest that MMS staff work directly with NOAA Fisheries staff to use the existing educational materials that are already vetted by the appropriate federal agency and that have been available for several years at publicly accessible sites. This would afford MMS a much more informed and authoritative response to the erroneous rhetoric that surrounds the development of marine aquaculture. It would also promote consistency between public agencies regarding issues under public review. By copy of this correspondence to Dr. Michael Rubino, the NOAA Aquacutlure Program Manager, I am requesting that he contact your office to offer NOAA's perspective on the draft PEIS.

Thank you for consideration of these comments, and we are available to provide whatever assistance MMS may require as it finalizes the PEIS.

Sincerely,

Donald B. Kent
President

cc: Dr. Michael Rubino

2595 Ingraham Street ▮ San Diego, CA 92109 ▮ T: 619.226.3870 ▮ F: 619.226.3944
6295 Sea Harbor Drive ▮ Orlando, FL 32821 ▮ T: 407.370.1650 ▮ F: 407.370.1659 ▮ www.hswri.org

From: ocsenergywebmaster@anl.gov
To: mail_ocsenergyarchives; ocsenergywebmaster@anl.gov;
Subject: OCS Alternative Energy and Alternate Use Programmatic EIS Comment 80118
Date: Wednesday, May 23, 2007 11:31:18 AM
Attachments: document2007-05-22-115624_80118.pdf

Thank you for your comment, Stephanie Stavrakas.

The comment tracking number that has been assigned to your comment is 80118. Once the comment response document has been published, please refer to the comment tracking number to locate the response.

Comment Date: May 23, 2007 11:32:21AM CDT

OCS Alternative Energy and Alternate Use Programmatic EIS
Draft Comment: 80118

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Attachment: \\imshrnna1\boatmanm\My Documents\document2007-05-22-115624.pdf

Questions about submitting comments over the Web? Contact us at: ocsenergywebmaster@anl.gov or call the OCS Alternative Energy and Alternate Use Programmatic EIS Webmaster at (630)252-6182.

6-4-07 11 am

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

In Reply Refer To:
FWS/AFHC/DCN031219

MAY 3 1 2007

Memorandum

To: Director, Minerals Management Service
Attention: Maureen Bornholdt
Deputy

From: Director Kendall Lathi

Subject: Review of Draft Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternative Use of Facilities on the Outer Continental Shelf (EC07/0002)

The Fish and Wildlife Service (Service) has reviewed the Minerals Management Service (MMS) Draft Preliminary Environmental Impact Statement (DPEIS) for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf (OCS). The MMS has prepared the DPEIS to support the establishment of a program that provides for development of alternative energy projects on the Federal OCS, primarily for evaluating energy-harnessing methods such as wind, wave, and ocean current technologies, as well as the alternate use of offshore facilities for other energy and marine-related activities.

The Service supports the objective of the DPEIS for the promulgation of regulations and the establishment of consistent OCS development rather than conducting case-by-case analyses. As stated in the DPEIS, the regulations that would be required under the proposed action will include consistent stipulations for data collection, facility siting, mitigation, and ongoing impact evaluation. We recommend the MMS employ a collaborative approach for development of the leasing process. We also encourage the inclusion of adaptive management principles in the development of the MMS leasing rules for the new technologies evaluated. Given the uncertainty of environmental impacts associated with the development of renewable energy on the OCS, and potential for cumulative impacts from multiple projects, it will be important to build adaptive management measures into lease agreements that reflect knowledge gained from monitoring and other studies.

80118-001
80118-002
80118-003

We appreciate the opportunity to provide these comments. If you have specific questions concerning these comments, please contact Dr. Mamie A. Parker, Assistant Director, Fisheries and Habitat Conservation at (202) 208-6394.

Attachments

TAKE PRIDE IN AMERICA

Attachment 1

U.S. Fish and Wildlife Service's Comments on the Draft Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternative Use of Facilities on the Outer Continental Shelf

General Comments:

The Draft Programmatic Environmental Impact Statement (DPEIS) notes that the Energy Policy Act of 2005 (EPAct) amended section 8 of the Outer Continental Shelf Lands Act (OCSLA) (43 USC 1337) to give the Secretary of the Interior authority to issue a lease, easement, or right-of-way on the Outer Continental Shelf (OCS) for activities that are not otherwise authorized by the OCSLA, or other applicable law, if those activities:

1) Produce or support production, transportation, or transmission of energy from sources other that oil and gas; or
2) Use, for energy-related purposes or other authorized marine-related purposes, facilities currently or previously used for activities authorized under the OCSLA, except that any oil and gas energy-related uses shall not be authorized in areas in which oil and gas related activities are prohibited by a moratorium.

This authority does not apply to any area on the OCS within the exterior boundaries of any unit of the National Wildlife Refuge System, National Park Service, National Marine Sanctuary System, or any National Monument.

The Fish and Wildlife Service (Service) generally favors the action proposed by MMS to establish an Alternative Energy and Alternative Use Program on the OCS and promulgate associated regulations pursuant to the authority granted the Secretary of the Interior in the EPAct. However, the Service recommends sections of the DPEIS be significantly strengthened (e.g., regulatory framework, affected environment, potential and cumulative impacts, analysis of the proposed action and its alternatives). The Service recommends that the DPEIS sufficiently address both resource development and resource conservation, as is discussed in more detail below, particularly under sections 2.2, 2.3, 2.4.1, and 2.4.2. The Service would be willing to assist MMS to improve the final analysis.

80118-004

Because there are no renewable energy facilities currently on the OCS, environmental impacts due to such establishment of facilities on the OCS are uncertain. However, a number of migratory bird species and other wildlife, including endangered and threatened species, that frequent the OCS (and coastal areas) are undergoing declines due to adverse past, present, and ongoing cumulative effects. The Service supports MMS' development of a new program and associated regulations. We encourage MMS, to the extent possible, to avoid environmental impacts to Federal trust wildlife resources including their habitat on the OCS and affected coastal areas.

Because both the OCS renewable energy program and the subject technologies are new, the Service suggests that MMS be cautious in the development of the program and regulations and provide safeguards to protect and conserve affected wildlife and their habitats. For example:

- Identify and favor "green" areas for each of the renewable energy types under MMS jurisdiction; i.e., economic energy resource areas with little or no wildlife use or value.
- Identify and hold in reserve "amber" areas for each of the renewable energy types under MMS jurisdiction; i.e., economic energy resources areas with moderate wildlife use or value.
- Identify and restrict the "red" areas for each of the renewable energy types under MMS jurisdiction; i.e., economic energy resource areas with high wildlife use or value, including coastal National Wildlife Refuges (NWR).
- Request the assistance of the Service in identifying the green, amber, and red areas, above.
- Review and consider adapting applicable portions of the United Kingdom (Crown) procedures for leasing offshore wind energy facilities.

80118-005

The Crown[1] program has been successfully administered for a number of years by the Crown's Department of Environment, Food and Rural Affairs (DEFRA). Program guidance for offshore wildlife studies are presented in two dated documents:

a) Best Practice Guidance for the Use of Remote Techniques for Observing Bird Behavior in Relation to Offshore Wind Farms, (Remote-5-2004) prepared for COWRIE (Collaborative Offshore Wind Research Into the Environment) by Desholm, Fox, and Beasley; and,
b) Nature Conservation Guidance on Offshore Windfarm Development, prepared in 2005 by DEFRA.

The Service encourages MMS to develop consistent and rigorous stipulations for data collection, facility siting, mitigation, and ongoing impact evaluation. The DPEIS states that it does not extend beyond the next 5 to 7 years, nor identify favorable areas (zones) for leasing or an energy target in that period. Additionally, the DPEIS does not adequately address the cumulative impacts of the OCS program, particularly for wind energy, during that period. MMS is encouraged to include clear and enforceable rules on materials, activities and operations of facilities on- and off-shore associated with alternative energy projects on the OCS to protect and conserve wildlife resources, including their habitat on the OCS and affected coastal areas.

With regard to antifouling paints and coatings, the Service respectfully suggests that the pesticide tributyltin (TBT) be removed from Table 4.2.6-1 (section 4.2.6.1, page 4-42) as a hazardous material likely to be used at alternative energy project sites on the OCS. Its use continues to be restricted and TBT is not expected to be domestically available. It is highly toxic, has high environmental risks, and alternatives are available. In addition, Service recommends

80118-006

[1] The Crown program has been implementing its renewable energy goals for wind energy while administering wildlife studies deemed necessary by the Crown for wind energy projects. Specifically, the Crown determines the scope of the issues, the information and study needs for the project, interprets the data, and evaluates risks to wildlife, mitigation to avoid or minimize risk of harm to wildlife, and the conditions under which a project can be authorized. The Project conducts the studies at its expense and partially reimburses the Crown for its expenses. The Crown study duration is usually 5 to 8 years: 2 years of initial study, during construction, and 2-5 years post construction. Bird movements, day and night, are often surveyed, including during some inclement weather. Multiple techniques often used together including: small radar systems utilizing detection software, plane surveys (off-shore), boat surveys (off-shore), and human observation.

reconsideration of including copper-based antifouling paints and coatings in the same table, and the need for antifouling. If alternate energy systems on the OCS require fouling protection, the use of available low-risk alternatives should be promoted. See Attachment 2 for more detailed comments and information regarding antifouling and contaminant issues.

80118-006 (cont.)

The Service recommends against the use "park" and "farm" to describe a wind powered generating facility in the DPEIS or by MMS in other venues. The word "park" is typically associated with the National Park Service. Using "park" to describe a wind generating facility may add confusion of terms and mission within the Department of the Interior (Department).

80118-007

Fishery Impacts

The Department shares the responsibility for interjurisdictional fishes with the Department of Commerce. As such, we are concerned about potential impacts to diadromous species. We recommend tracking studies be conducted for diadromous species when existing information regarding ocean movement is inadequate or lacking. This will assist in the proper siting and timing of operations of future projects. Additionally, because there is a paucity of information regarding the impacts of ocean current turbines to fishes, we recommend site-specific studies be conducted to assess fishery impacts of ocean current turbines.

80118-008

Underwater structures may have similar impacts to turbines in river dams. Ocean turbines should incorporate screening or directional vanes to keep aquatic animals and drifting plants out of structures which might harm the animals or damage the turbine.

Avian Impacts

In general, the DPEIS provides an adequate description of potential impacts to birds in the Gulf of Mexico. However, the DPEIS primarily focuses only on federally threatened and endangered birds. No bird management plans are referenced or considered in the DPEIS. There is no mention of Birds of Conservation Concern. In order to promote the conservation of migratory bird populations and their habitats, we recommend MMS implement those strategies outlined in Executive Order 13186, where possible. We encourage the use of Avian Protection Plans (APP) as described in *Avian Protection Plan Guidelines, A Joint Document prepared by The Edison Electric Institute's Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife Service*. The APP Guidelines presented in that document are intended to serve as a "tool box" from which a utility can select and tailor components applicable to its site specific needs. Those guidelines are intended to be used in conjunction with APLIC's *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996* and *Migrating Bird Collisions with Power Lines: The State of the Art in 1994,* or the most current editions of these documents, which contain more detail on construction design standards and line siting recommendations. These APPs should be developed with our field offices to ensure the most up-to-date information is used for each State.

80118-009

Additionally, we recommend further description of the potential impacts to birds of the Atlantic coast. The Atlantic coast, especially along the Gulf Stream off of Cape Hatteras, North Carolina is now known to be very important habitat for non-breeding pelagic seabirds, as well as for

foraging breeding birds. The coastal habitats on the Atlantic are well-developed and provide important foraging and nesting habitat for beach-nesting birds such as Sandwich Terns, American Oystercatcher, Piping Plover, Wilson's Plover, Black Skimmer, Brown Pelican and others. These beaches and barrier islands support wintering and migrating shorebirds. Well-developed estuarine wetlands are important foraging and breeding habitat for long-legged wading birds, including the endangered Wood Stork and sensitive marshbirds such as King Rail and Black Rail. All sections regarding potential impacts of offshore alternative energy development need to be expanded for the Atlantic coast.

The Service recommends the DPEIS mitigation sections include a requirement of conducting surveys to determine impacts of alternative energy development on birds before, during, and after each phase of development. The sections that require additional information include the description of wind-farm impacts to migratory birds and the mitigation measures identified to minimize those impacts.

80118-009 (cont.)

In general, we recommend tracking studies be conducted for imperilled avian species when existing information regarding movement is inadequate or lacking. This will assist in the proper siting and timing of operations of future projects. There is a paucity of information regarding the impacts of offshore wind generation to avian species. Assessing offshore wind impacts is complicated by the difficulty in retaining physical avian evidence, as this evidence would be lost in the ocean after the impact occurs. To provide information regarding the impacts of offshore wind generation to avian species, we recommend conducting site-specific studies using heat activated infrared video to capture impacts as they occur.

Wind

The key for minimizing impacts to migratory birds is siting. The Service recommends evaluating potential locations with regard to migratory pathways, key foraging areas, or nonbreeding congregations. This should be done prior to the geophysical and geological site characterizations. Geophysical and geological investigation is costly, and if the site is inappropriate based on migratory bird use, then it is not cost effective to proceed with those evaluations. It is not possible to mitigate for lost migratory pathways. There is no means available to create alternate pathways for birds to travel or to forage in. Therefore, the Service recommends avoidance of key areas to minimize impacts to birds during migration or foraging bouts. One suggested solution may be to include radar on the meteorological station to monitor bird use of the site prior to other site characterization activities. In general, comprehensive pre-siting evaluation for migratory bird impacts is recommended and construction of onshore facilities should be conducted in the non-breeding season to minimize impacts.

80118-010

The DPEIS listed the impacts from the operation of offshore facilities as minor to moderate for migrating inland birds depending on species (especially those using the Gulf of Mexico). The evidence to support this statement, however, was not provided. Please provide explanation and/or justification for classifying offshore facilities as having a minor to moderate impact on migrating inland bird species.

80118-011

The section in the DPEIS that references principal components of wind farms did not identify the cable system that connects the wind turbine generators to the central electric service platform and

80118-012

the cables that connect the wind operation to an onshore substation. The impacts of the cable system are detailed in other sections of the document and should be mentioned as a principle component feature of a wind-farm operation.

80118-012 (cont.)

Bats

The DPEIS does not address potential wind-farm impacts to bats. Therefore, we recommend text be added to address this issue.

80118-013

Wave Energy Technology

Construction of onshore facilities should occur during the non-breeding season. Mitigation of lost breeding habitat (beaches/wetlands) should be required. Wave energy operation may cause impacts such as seabird entanglement. Methods to deter seabirds should be employed to reduce the potential for impacts.

80118-014

Ocean Current Technology

The areas that provide potential for development of ocean current technology also provides habitat for migratory birds. For example, the Florida current, particularly offshore of Cape Hatteras, North Carolina is known to be a very important foraging area for pelagic seabirds. During the breeding season, some of these birds travel significant distances on a daily basis from their nests on Caribbean islands to this area of the Florida current to forage. In addition to entanglement concerns, a loss of foraging habitat may occur if alterations to local aquatic systems result from reduced energy along the current. This should be carefully studied to evaluate potential changes in food resources for foraging seabirds, using available tools, such as modeling. Likewise, there is little information regarding the impacts of ocean current turbines to diving birds. We recommend site-specific studies be conducted to assess avian impacts of ocean current turbines.

80118-015

Sea Turtle Impacts

Along the coast of Georgia, all sea turtle nesting areas occur on barrier islands (see Attachment 3). As an additional mitigation measure, we recommend onshore facilities and cable landfalls be located outside State or federally-owned, or otherwise protected, barrier islands. Another recommended mitigation measure is to use sea turtle-friendly lighting during the nesting and hatching season. In Georgia, this period is May 1 through October 31 (GDNR 1994); however, this period will vary coastwide with latitude.

80118-016

Other Impacts

Pollution

Oil spills (crude and synthetic) can cause bird mortality; degrade shorebird feeding, roosting, and nesting habitat; and reduce pelagic and benthic prey. Preventative measures during construction, maintenance, and deconstruction should be used such as deployment of absorbent booms. An oil response plan for each region should be developed, appropriate training should be provided to potential responders, and holding facilities should be identified.

80118-017

Use of Facilities as Artificial Reefs

Submerged structures may be colonized by invertebrate marine life that will attract fish and other aquatic organisms. Avian predators may also be attracted and more likely to collide with structures or be exposed to pollutants. We recommend text be added to discuss this issue.

80118-018

Lighting

The impact of artificial lighting at facilities upon wildlife is an issue that is not discussed in the DPEIS. For example, lighting can increase incidence of bird collisions. It may attract birds (and other marine life) to platforms and structures and cause collisions or exhaustion and other impacts. We recommend text be added to discuss this issue.

80118-019

Specific Comments:

Executive Summary

Page ES-1. Bullet 1: regarding "*. . . sources other than oil and gas . . ..*" It is unclear what activities would be allowable but not feasible or permissible on the OCS. For clarity, please explain what other energy sources would not be used to "*produce or support production, transportation, or transmission of energy*" in the bullet or in a subsequent paragraph.

80118-020

Page ES-2, and 2.1.2 Alternate Uses of Existing Oil and Gas Platforms, Page. 2-2: *"MMS was also given jurisdiction over other projects that make alternate use of existing oil and gas platforms in Federal waters [OCS waters of the Gulf of Mexico and southern California]."* If wind turbines are being proposed for installation on top of existing oil and gas platforms, detailed reports indicate that trans-Gulf migrants – especially during periods of inclement weather on their migrations across the Gulf of Mexico – frequently alight on these platforms, sometimes in numbers exceeding 10,000 birds/platform. We recommend detailed coordination between MMS and the Service's Ecological Services and Migratory Bird specialists regarding this issue in order to avoid potentially catastrophic consequences.

80118-021

Page ES-4: *"As a further consequence [of taking the no action alternative], a potentially significant option for meeting U.S. energy demands would be eliminated, and the United States would be less competitive in alternate energy development and implementation worldwide. In turn, the impacts from coal, nuclear, and natural gas usage to satisfy expanding energy demand would be increased..."* While the Service supports alternate energy, including wind energy development – provided it is done in the most wildlife- and habitat-friendly ways – wind energy will not entirely replace fossil-fuel energy. Wind energy is the fastest growing energy initiative both Stateside and worldwide, however, coal and natural gas energy sources continue to also grow exponentially, especially in the United States. Wind-generated electricity will provide some of the energy needs for the growing energy demands in the U.S., but will not completely replace CO_2-producing fuel sources. This issue needs to be clarified in the final PEIS.

80118-022

Page ES-4: 2nd paragraph under "Summary of Potential Impacts . . . " Minor impacts are described as impacts that "could be avoided . . . or the affected resource would recover completely if the impacting agent were eliminated." A minor impact under this definition could result in the inability of the resource to recover if the impacting agent was not eliminated; in

80118-023

certain situations or with listed or sensitive species, such impacts may be of concern. Please consider such potential situations in this definition to further distinguish it from "moderate" or "major" impacts. 80118-023 (cont.)

Pages ES-4-6 Wind Energy: Impacts and minimization measures for birds are mentioned (e.g., nesting/forage habitat); however, please be more specific regarding plans for analysis and avoidance of collision impacts for migratory birds for this activity. Guidelines have been developed for similar terrestrial activities, and some of the guidelines would be applicable for facilities located on the OCS (http://www.fws.gov/habitatconservation/wind.htm). 80118-024

Page ES-6 Mitigation Measures: Marine and aquatic reserves should be included in "areas of special concern," and eelgrass/seagrass and other vegetated habitats should be included under "seafloor habitats." 80118-025

Page ES-10, 3rd Paragraph, Operations of Ocean Current Energy: There would be direct physical impacts to aquatic species from underwater turbine-like generators located in ocean currents which are important migratory corridors. These underwater structures might have impacts similar to turbines in river dams. Ocean turbines would need screening or directional vanes to keep aquatic animals and drifting plants out of structures which might harm the animals or damage the turbine. It has been postulated that the sound from turbines and generators may affect passage of some fish species in dam fishways. Assessment of the effects of generator sounds on marine aquatic species should be evaluated. 80118-026

The Service recommends impacts to the migration patterns of aquatic animals (such as tuna and marine mammals) from power generating turbines located in important migratory corridors be evaluated. It also would be prudent to evaluate the effects of disrupting ocean current energy on productivity. (For example, how would the disruption of ocean current energy affect the flow of nutrients, forage, and organic material in the ocean?)

Page ES-12, Aquaculture: The concerns identified in the Executive Summary are common for most aquaculture applications. However, placing aquaculture facilities offshore would make net pen applications vulnerable to the extremes of ocean weather and wave action, greatly increasing the potential for escape of the penned animals. Please discuss the potential for entanglement of predators and the use of measures to avoid these and other impacts. 80118-027

Page ES-14, Cumulative Impacts: *"[Cumulative impacts] to some terrestrial birds migrating over the OCS..."*. The Service recommends cumulative impacts be considered for all avian species – landbirds, songbirds, waterbirds, raptors, shorebirds, seabirds, and other suites of avifauna. These cumulative impacts to be assessed include (1) the cumulative impacts of each wind facility on avifauna, (2) the cumulative impacts of all offshore wind facilities on birds, (3) the cumulative impacts of all terrestrially-operating wind facilities, and (4) the combined impacts of all anthropocentric structures on birds. The cumulative impacts to populations of bats should be considered in the same manner as impacts assessed for birds. Migratory bats can be found far out to sea during seasonal migrations, especially if prevailing winds force them offshore. 80118-028

ES, All Activities: Construction and decommissioning are discussed in this DPEIS; however, please also ensure that cables and other facility components are constructed of appropriate materials and placed in a manner to avoid and minimize impacts from repair activities to habitat and/or biota, particularly during sensitive life history stages (e.g., nesting seabirds, etc.). 80118-029

We suggest a discussion of the use of anchors and substrate-disturbing activities (other than pile driving, page ES-6), and measures to avoid disturbing sensitive habitats (e.g., seagrass/eelgrass) when these are used.

Chapter 1 Introduction

Page 1-9 Second Paragraph: *"This EIS focuses on leaving structures in place rather than removing them at the end of production."* The DPEIS does not mention a facility removal program for expired, retired, or poorly sited facilities. Please explain if the retention of facilities on location would apply to all energy development structures including those not yet permitted. The Service encourages the MMS to include removal plans for facilities in the final PEIS as well as any leasing rules that result from this DPEIS. 80118-030

Page1-10: *"Aside from oil and gas, the only other significant mineral resources currently extracted from the OCS are sand and gravel used for coastline restoration projects."* Considerable care must be given to assessing shoals where wind facilities may likely be developed. The "mining" of these sites for sand and gravel puts certain sea ducks, especially scoters, at direct risk since sand and gravel extraction reduce scoter winter rafting and feeding habitats. However, if these shoals are left intact for wind development, this may also put these birds at direct risk of collision, site avoidance, and habitat quality modification. The White-winged Scoter, Black Scoter, Surf Scoter, and perhaps to a lesser extent the Harlequin Duck, and Long-tailed Duck (Oldsquaw) represent five species of immediate concern. Eiders such as the Common and King Eider may also be potentially put at risk. Please include impacts to shoals as a result of project development. 80118-031

Table 1.6-1, beginning on page 1-14: This table lists Federal legal authorities relevant to activities on the OCS. The Service recommends that the National Wildlife Refuge System Administration Act and Refuge Improvement Act of 1997 be added to the table. Among other things, they provide that no use on refuge lands be allowed unless it is compatible; i.e., would not materially interfere with or detract from the fulfillment of the mission of the system or the purposes of the refuge. The Service will provide copies of these laws, as well as pertinent regulations and administrative procedures, to MMS upon request. MMS is aware that Congress has created an extensive system of land-based, coastal NWRs for the purpose of protecting and conserving migratory birds and other wildlife and their habitats. In other sections, the DPEIS acknowledges that, to be located on a NWR, OCS-related activities, transmission, and infrastructure would have to be found by the Service to be compatible with the purposes of the refuge. From a programmatic view, the Service recommends that the final PEIS and regulations programmatically exclude OCS-related activities and infrastructure from all NWRs, not just those on the OCS as stated on page ES-1. 80118-032

Table 1.6-1, p. 1-15: *Migratory Bird Treaty Act (MBTA) and Executive Order 13186.* The summary of pertinent provisions under this section is not technically correct. The MBTA is a strict liability, criminal statute prohibiting the unauthorized take of any protected migratory bird, including the take by a Federal agency. Executive Order 13186, which is based on the legal premise of the MBTA, requires Federal agencies taking actions or about to take actions likely to negatively impact migratory birds and their populations to enter into a Memorandum of Understanding (MOU) with the Service. In Table 1.6-1, the DPEIS acknowledges that the EO requires MMS to enter into a Memorandum of Understanding (MOU) with the Service on how it will implement those responsibilities. An MOU has not yet been completed.

As a designated Federal entity under the Executive Order, MMS must develop and implement an MOU with the Service, explaining how they plan to minimize impacts to protected avifauna from offshore wind development. That effort has not yet been completed. A status report from MMS on progress in developing and implementing this MOU should be reported in the final PEIS.

The Service is in anticipation of a response from MMS on the draft MOU it sent to MMS in August 2004. As MMS continues to consider the new OCS program, the Service is ready to assist MMS in having an MOU in place prior to the issuance of the final PEIS to protect and conserve migratory birds on the OCS. Four recommendations to include in the MOU follow: 80118-033

1) Map migratory bird resources areas, as has been done for wind resource areas, and identify the relative value of each based on functions and values for birds;
2) Identify migratory bird areas that will be off limits for the various types of energy and activity for which MMS has jurisdiction under section 8 of the EPAct;
3) For remaining areas, identify categories of bird-related information that will be required to provide a sound basis for deciding whether or not, and under what conditions, MMS will authorize a proposed renewable energy project or alternative use on the OCS; and
4) Establish a 3-stage consultation process with the Service (modeled after 18 CFR 4.38) for projects to complete prior to filing an application with MMS.

If the MOU is not in place prior to final PEIS, the responsibilities of MMS under the EO are not diminished.

Additionally, there is no mention of the Bald and Golden Eagle Protection Act (16 USC 668-668d). Eagles could potentially be put at risk by offshore wind development, both resident bald eagles, and migrating bald and golden eagles. We recommend this statute and potential impacts be included in the final PEIS.

Chapter 2 Proposed Action and Alternatives

The Service is concerned that the DPEIS lacks balance between resource development and resource conservation interests.

Pages 2-3 – 2-4, Sections 2.2 and 2.3 Case-by-case alternative and No Action Alternative: One issue in this Chapter and also in Chapter 7 is the discussion for energy development without a counterbalance for energy conservation. Specifically, Sections 2.2 and 2.3 state that any 80118-034

increased power demand would have to be met by other sources, including fossil fuels, nuclear fuels, and onshore alternative energy sources. Energy conservation is not mentioned. This DPEIS has the potential for a well rounded discussion of the role that energy conservation could serve in meeting the Nation's energy demand, particularly as a component of the No Action Alternative. 80118-034 (cont.)

Page 2-4, Section 2.4.2 Identifying and Analyzing Specific Areas in Federal Waters Along the Coast with the Greatest Resource Potential: The Service would like to assist MMS in identifying zones in the Northeast that have significant wildlife management values and concerns to warrant being a no-development zone.

In addition, MMS should not solely rely on the coastal States and potential applicants to identify the locations in Federal waters on the OCS with key resources. The Department of Energy reasonably attained the requisite information to "map-out" the wind resources on land for most of the Nation. MMS is encouraged to provide this data and additional information to guide this burgeoning industry and program. The DPEIS mentions in a number of places many areas where development should not occur; e.g., various preserves, parks, and refuges; military, flyways, over-wintering areas for birds, etc. Fishing areas should be added to the list. (The potential for space-use conflicts between commercial fishing methods and OCS construction, service vessels, and fixed OCS facilities located in previously fished areas is mentioned in the first paragraph of page 4-112). These areas should be mapped according to uniform standards and made available for the public to download off the MMS web site. Doing so will be helpful to all concerned and assist the renewable energy industry in focusing its efforts on areas not restricted. The Service is willing to respond to a call for relevant boundary information and invites MMS to request the information. 80118-035

Chapter 3 Overview of Potential Alternative Energy Technologies on the OCS

Page 3-2, Section 3.1 Screening of Alternate Energy Technologies: *"Screening should also consider the distance between the offshore facility and the onshore connections."* Where offshore wind energy is to be developed, and transmission and distribution lines and their infrastructures must be sited, the Service recommends that MMS require permittees consult with the Service. The Service can assist permittees with reviewing and using the currently scientifically validated tools/techniques to avoid and/or minimize avian wire collisions and electrocutions. The two key documents available providing guidance on techniques to avoid or minimize power line electrocutions and strikes include, respectively, *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (electrocution avoidance), and *Mitigating Bird Collisions with Power Lines: the State of the Art in 1994* (the strike avoidance is now being updated). We suggest inclusion of this discussion in the final PEIS with our recommendation to MMS regarding permittee consultation. 80118-036

Page 3-3, Section 3.2 Wind: At the bottom of page 3-3 in this section, an exclusion zone (200 meters wide) is mentioned in association with the Horns Rev and Nysted offshore wind projects in Denmark. The purpose, extent in space and time, and prohibited uses at these exclusion zones should be explained. Whether MMS intends to exclude other uses, such as fishing, from areas leased for wind energy should be specified in the final PEIS. 80118-037

Page 3-4, First Paragraph After the Bullets: *There are also navigation and aerial warning lights.* The Service suggests that MMS work closely with the Federal Aviation Administration to avoid using steady-burning L-810 red incandescent lights, or any other steady-burning lights that might be recommended for use on turbines or their infrastructures, including out-buildings and buoys. In 2.5 years of research on communication towers just completed in Michigan, study results showed that the elimination of all steady-burning lights reduced avian strike mortality by 71% (Gehring *et al.* 2006). The Service also recently recommended to the FCC that they require use of minimum intensity, maximum "off" flash white strobe lighting. If this lighting cannot be used we recommend minimum intensity red-strobe and/or minimum intensity red blinking incandescent lighting. Our complete recommendations to the FCC can be found in FCC Docket 03-187, "Effects of Communication Towers on Migratory Birds," submitted for the record to the FCC on February 2, 2007, in regard to proposed rulemaking. 80118-038

Page 3-7, First Paragraph: An electric service platform is described as a central offshore platform that provides a common electrical interconnection for all of the wind turbine generators in the array and also provides a central service facility with staff and service facilities, temporary living quarters, helicopter landing pad, crane, communication equipment, and more. The Service suggests that an electric service platform could also be used for deployment of equipment to assess bird and bat use in the vicinity of the wind turbine generators over multiple years of project operation. For example, the platform could be equipped with remote sensing equipment (radar and thermal detectors) useful for detecting and tracking migratory birds and bats. This could be a condition of a lease issued by MMS, along with operational control measures to avoid turbine strikes during periods of high activity of birds and bats, pursuant to EO 13186: Responsibilities of Federal Agencies to Protect Migratory Birds. 80118-039

Page 3-9, Second Paragraph: There is a discussion on the extreme requirements placed on tower foundations that are important constraints on OCS wind development. It is stated that gravity foundations pose greater environmental impacts due to their large diameters (about 66 feet). Gravity foundations weigh between 500 and 1000 tons. Seabed preparation is required and divers must remove silt and prepare a smooth bed to ensure uniform loading. The amount of material to be removed, the method of removal, and placement and location of disposal material is not mentioned, and should be clarified in the final PEIS. The potential impacts on the benthos as a function of substrate type should also be described in detail in Chapter 4: Affected Environment. 80118-040

Page 3-12, Section 3.3.2 Attenuators, Figure 3.3-2: Please elaborate and clarify how the umbilical cable attachment connects between the junction box and the floating structure. (How does the umbilical cable maintain a clear connection without wrapping around other objects?) Please clarify and describe whether or not birds and seals can roost on top of the multi-segmented floating structures. If so, what is the potential for birds or seals to become ensnared and crushed? 80118-041

Page 3-22, Section 3.5.3 Facility Construction: Under *Port preparation*, the DPEIS states that existing ports may require expansion and that construction including dredging and dock expansion may be needed. Since this work is an extension of the OCS project, the Service recommends that MMS include appropriate mitigation measures to permit. This should include a 80118-042

description of how the Army Corps of Engineers and the State permitting processes will be integrated into the MMS program if this information is not presented in another chapter. 80118-042 (cont.)

Chapter 4 Affected Environment

Page 4-57, Section 4.2.9.1 Threatened and Endangered Species: Many marked birds, from the Great Lakes piping plover breeding population (listed as endangered) have been documented wintering on the southern Atlantic Coast. These populations have been observed on migration as far north as New Jersey. For more on the marked plovers, contact Anne Hecht, Endangered Species Biologist at Anne_Hecht@fws.gov. 80118-043

Page 4-57, Section 4.2.9.2 Nonendangered Species: Pelagic seabird use should be discussed. 80118-044

Pages 4-57 – 4-59, Section 4.2.9.3 Use of Atlantic Coast Habitats by Migratory Birds: This section fails to discuss the migrations of songbirds that may be driven hundreds of miles off shore and off course during both spring and fall migrations by inclement weather. When weather conditions become inclement and visibility deteriorates during the nighttime, migrants frequently drop down from higher migration elevations, possibly putting them directly at risk with the rotor swept areas of proposed wind facilities along their routes (Manville 2005). The Service recommends this issue be addressed in the final PEIS.

Atlantic coastal waters offshore from Cape Hatteras are critically important feeding grounds for a number of pelagic seabird species. Some of these are globally imperiled, notably the Bermuda Petrel, a federally endangered species which is now a regular visitor in this area of the OCS. Another imperiled species is the Black-capped Petrel whose total global population is likely to be less than 2,000 individuals. Black-capped Petrels are in danger of becoming extinct due to loss of breeding habitat, especially in Haiti. All evidence at present indicates that waters in or adjacent to the Gulf Stream between north Florida and southern Virginia provide for the primary non-breeding range of Black-capped Petrels. Concentrations of birds can be found along the Gulf Stream in U.S. waters throughout the year, but particularly in May, August, and late December through early January. The main foraging area appears to be along the Gulf Stream directly east of Cape Hatteras National Seashore, North Carolina. Concentrations during winter, when peak breeding activity is underway, is suggestive of breeding birds foraging along the Gulf Stream moving to and from breeding colonies (Lee 1986). Other species of concern include Northern Gannet, Greater Shearwater, Cory's Shearwater, Band-rumped Storm Petrel (more so in the Gulf of Mexico), Bridled Tern, Manx Shearwater and nonbreeding Sooty Tern and Brown Noddy. A list of these species should be included in this section similar to what is provided in Table 4.3.9-1. 80118-045

Page 4-60, Figure 4.2.9-1 Major North American Migration Flyways: In regard to this diagram, species are often found occupying areas outside of these delineations. Flyways are generally administrative designations, especially for waterfowl management. Ducks, geese, and swans, for example, fly hundreds of miles outside these designated political corridors/boundaries. Neotropical migratory songbirds generally fly in broad fronts during spring and fall migrations, with masses of probably billions of songbirds moving from the Rocky Mountain Front to the Atlantic Ocean and along the Pacific Coast during nighttime movements. This behavior makes it 80118-046

much more difficult to delineate specific pathways or corridors for many species of migratory birds since the pathways can be very large, and they can change in concentration and timing within and between seasons and years. 80118-046 (cont.)

Page 4-61, Section 4.2.11 Fish Resources and Essential Fish Habitat: Fishery management plans are discussed and listed in Table 4.2.11-1. However, fishery management plans developed by the Atlantic States Marine Fisheries Commission (ASMFC) and the Gulf States Marine Fisheries Commission (GSMFC) are not included. This section should include applicable fishery management plans that have been developed by these entities. These plans can be found on their websites, www.asmfc.org and www.gsmfc.org. Additionally, "The Striped Bass Fishery of the Gulf of Mexico, United States: A Regional Management Plan" (GSMFC 2006), which is not available on the GSMFC website, was not included in this section. 80118-047

Page 4-66, Section 4.2.11.1 Threatened or Endangered Fish Species: The federally-threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi)*, is not included. Additionally, the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus)*, was designated a candidate species under the Endangered Species Act (ESA) on October 17, 2006, by the National Marine Fisheries Service. These should be included in this section. 80118-048

Page 4-85, Table 4.2.15-1 Marine Protected Areas in the Atlantic Region: Several errors and omissions need to be corrected on pages 4-86 and 87 in Table 4.2.15-1 (cont.) - Marine Protected areas in the Atlantic Region. Specifically, Rachel Carson NWR is in Maine (not New Hampshire), Blackwater NWR is in Maryland (not Delaware), and Sayville NWR and Lido Beach Wildlife Management Area on Long Island, New York need to be listed. Likewise, Carlton Pond Waterfowl Production Area in Maine should be added to the table. 80118-049

Page 4-145, Section 4.3.9 Marine and Coastal Birds: Hummingbirds should be added to list of migrating landbirds. 80118-050

Page 4-146, Section 4.3.9.1 Threatened and Endangered Species: Red Knot should be added as a potential candidate for listing. 80118-051

Page 4-149, 4.3.9.3 Use of Gulf of Mexico Habitats by Migratory Birds: **"***The Gulf of Mexico is an important pathway for migratory birds, including many coastal and marine species, and large numbers of terrestrial species."* It needs to be noted that the Gulf of Mexico, and the offshore areas being considered for commercial wind development, represent a **critically** important pathway for probably at least 150 species of neotropical migrants, plus numerous other species of shorebirds, waterfowl, waterbirds, and others. Particularly during spring migration when many of these trans-Gulf migrants are approaching landfall, depending on winds and weather conditions, they frequently arrive completely exhausted, dropping out at the shoreline for landings. Many migrant species will fail to reach their final destination if wind facilities are sighted in these locations. 80118-052

Page 4-150, Figure 4.3.9-1: This Figure needs a footnote indicating that these migration routes are only general representations of travel corridors, which can change sizably between seasons 80118-053

and years, depending on weather and prevailing wind conditions in the Gulf of Mexico, the Atlantic Ocean and the Caribbean Ocean. 80118-053 (cont.)

Chapter 5 Potential Impacts of Alternate Energy Development on the OCS and Analysis of Potential Mitigation Measures

Page 5-18, Section 5.2.5 Acoustic Environment: This section analyzes in a generic fashion the potential effects of noise during construction and operation phases on fish, marine mammals, and humans. However, we could find no discussion of noise effects on birds or bats. We suggest that this be added in the final document. 80118-054

Pages 5-46, 5-178, & 5-292, Sections 5.2.8.6, 5.3.8.6, & 5.4.8.6 respectively, Marine Mammals Mitigation Measures: We recommend a mitigation measure be added to ensure ESA consultation will take place for the federally-endangered West Indian manatee (*Trichechus manatus*). Vessel strikes in inland waterways are a major cause of death in the manatee population [United States Fish and Wildlife Service 2001]. As noted in section 5.2.8, manatees could encounter OCS-related vessels traveling between construction sites and inland harbors and marinas. We have enclosed our *Standard Manatee Conditions and Procedures for Aquatic Construction* [United States Army Corps of Engineers (Corps), Service, and Georgia Department of Natural Resources (GDNR) 2003], *Standard Manatee Conditions for Blasting* (Corps, Service, and GDNR 2003), and *Manatee Standard Conditions for Marinas/Docks/Piers* (Corps, Service, and GDNR 2005) used within Georgia for your review (see Attachment 4). However, the timing restrictions included in these conditions may need to be adjusted for areas outside the State of Georgia if they are used rangewide. 80118-055

Page 5-47, Section 5.2.9 Marine and Coastal Birds: The Service recommends this section also include a discussion on all potential behavioral issues for waterbird staging and resting; and for overflight of migrating songbirds and chiroptera – including federally listed species. They are not in this DPEIS. 80118-056

This section of the document should include migrating inland birds in the title.

Page 5-48, Section 5.2.9.2 Site Characterization: The Service recommends examining potential bird use of the area as a primary consideration in site characterization because siting is the only mitigation measure available for decreasing or minimizing impacts to migratory/coastal/and pelagic birds. 80118-057

Page 5-49, Section 5.2.9.2.2 Collision with Meteorological Towers: The Service suggests that the statement made in this subsection (that hundreds of millions of birds colliding with communication towers, windows, electric transmission lines, and other structures are killed each year) be qualified. The DPEIS fails to state that these are estimates based on extrapolation procedures with wide, perhaps indeterminable error or confidence intervals. No research study or comprehensive evaluation of bird mortality at man-made structures, with the possible exception of tall communication towers, has been completed to provide verification for these estimates. The Service cautions there is even less information on collision-related mortality in offshore areas. 80118-058

Page 5-49, Section 5.2.9.3 Construction: Construction of onshore facilities may displace foraging birds from wetlands or beaches. If construction is carried out during the breeding season, nesting may be interrupted or nest habitat destroyed. The Service recommends construction be timed to minimize impacts to nesting shorebirds and wading birds. 80118-059

Page 5-50, Section 5.2.9.3.3 Onshore Construction: This section should identify potential impacts to federally listed critical habitat for piping plovers. 80118-060

Page 5-51, Section 5.2.9.4 Operation: This section mentions that marine and coastal birds may be benefited by offshore turbine platforms. The statement needs to be elaborated on to clarify exactly how such benefits would be derived. 80118-061

Page 5-51, Section 5.2.9.4.1 Turbine Collisions: Migrating inland birds should be added in the last sentence of the first paragraph in this section to the list of birds affected by collisions.

This same oversight mentioned above for Section 5.2.9.2.2 is repeated in Section 5.2.9.4.1. In addition, the DPEIS makes the statement in this section that frequent bird mortality at inland wind projects has been reported from only a few exposed sites with high migration density or a large number of soaring birds. While wind energy developments are still early in the buildout phase in the northeastern U.S., we are unaware of any wind project in the Northeast that does not lead to bird mortality. Our review of the mortality studies at Buffalo Ridge, Minnesota; Buffalo Mountain, Tennessee; Kewaunee County, Wisconsin; and Mountaineer, West Virginia indicates that about one-third of the species collected at these wind projects were species undergoing long-term population decline based on breeding bird survey data. While we have no mortality data for offshore wind projects, the issue should be thoroughly evaluated. Clearly, significant cumulative impacts are affecting many migratory bird and bat populations. 80118-062

Page 5-52, Section 5.2.9.4.2 Service Vessel Traffic: A statement is made that disturbance effects due to maintenance vessel visitation would not be expected to result in adverse effects. However, vessel traffic will cause birds to flee and result in potential mortality. We believe this disturbance should be considered as a potential adverse effect.

The Service suggests the DPEIS address the potential habitat fragmentation impact associated with the construction and operational phases of wind projects. Species avoidance of an area is a form of exclusionary occupation of public waters and also represents a loss of an existing use. The Service believes that habitat fragmentation has the potential to have major adverse effects and recommends evaluation of specific sites and potentially designating areas unsuitable for wind energy development. 80118-063

Page 5-54, Section 5.2.9.6 Mitigation Measures: Migrating inland birds should be added to the list of affected birds in this section.

The Service suggests that mitigation actions be listed separately for pre- and post-construction phases and that the hierarchy be established with avoidance first, followed by minimization, and then by compensatory measures. 80118-064

Additionally, the Service recommends the following items be added and sorted accordingly to the bulleted list of mitigation measures:

- Conduct preliminary avian monitoring for a two-year period prior to the wind farm construction phase. Preliminary monitoring should consist of a combination of the following monitoring techniques (acoustic, thermal, radar, and observational).
- Conduct direct collision monitoring during the two-year preliminary monitoring period by installing a pilot wind mill that will monitor avian collisions for 9-months, including one fall and one spring migration period. Collision monitors should detect height of impact. Additionally, a laser net to detect fallout within a 600-foot arc at a 100-foot elevation should be installed. Continuous read cameras should also be installed during bird migration.
- Use inclement weather conditions as a trigger for stopping or reducing turbine operation to minimize bird collisions.
- Where the height of the rotor-swept area produces a high risk for collision, adjust the tower height to reduce the intensity of bird strikes.
- Use a turbine design that can be lowered down to 200 feet or less when the wind operation is hostile due to high concentrations of migrating birds.
- Reduce or stop operation of turbines that are located in migration paths during peak migration periods.
- If existing structures are used, retrofit to minimize perch sites.
- Conduct post-construction monitoring for a minimum of five years after construction to measure marine and coastal bird displacement and bird strikes.
- Restore habitat in surrounding area caused by disturbance from facility.
- Avoid locating facilities in areas of known high migratory bird use.
- Time major noise-generating activities to occur outside of nesting seasons of marine and coastal birds.
- Use monopole towers rather than lattice towers to minimize bird perch sites.
- Use low-intensity white strobe lights to minimize attracting night migrants.
- Turbine blades should not come within 100 feet of the ocean surface due to marine bird flight patterns.
- Paint moving rotors to increase visibility.

80118-064 (cont.)

MMS suggests reducing or stopping operation of turbines during peak migration periods. This is an important recommendation but needs to be expanded. Use of thermal imagery cameras – as we are now seeing at some offshore wind facilities in Europe – may help to validate when these migrations are taking place. Because bird migration (both land-based and offshore) is essentially a year-round event, "feathering" shutdowns need to be timed to the migrations of various suites of avifauna which will frequently differ considerably in timing, duration, intensity, and location. Where listed or imperiled birds are documented to be present, shutdowns should be keyed to these species to minimize impacts and avoid unauthorized takes. Lighting is also a key issue, but the MMS reference (Curry and Kerlinger 2002) needs to be updated. As previously referenced, based on studies conducted by Gehring *et al.* (2006) and Evans *et al.* (2007), minimum intensity, maximum off-phased (3 seconds between flashes) white strobe lights should represent the preferred lighting alternative for offshore facilities. The Service recommends no steady-burning lights (red, white or multicolor) be used. Removing steady-burning L-810 red lights at 18 communication towers, for example, reduced avian collision mortality by 71% (Gehring *et al.* 2006). The Service in February 2, 2007, comments to the Federal Communications Commission (Docket 03-187, "Effects of Communication Towers on Migratory Birds") provisionally recommended use of minimum intensity, maximum off-phased red strobe lights and/or minimum intensity blinking red incandescent beacons, provided that white strobes could not be used. 80118-064 (cont.)

The Service is aware of very limited research on audio deterrents, specifically infrasound, which is only presently known to deter homing pigeons. This may be a promising deterrent, but requires considerably more study. Research has shown that blade painting does not seem to effectively deter land birds in a statistically significant way. Because little information is known about offshore waterbirds, blade painting may be a more effective deterrent for offshore birds. Additional offshore studies on waterbirds are needed. All the issues suggested above need much greater review and analysis in the final PEIS.

Page 5-54, Section 5.2.10 Terrestrial Biota: A discussion of migrating landbirds under the section regarding operation of turbines should be included. There is a great deal of potential for collisions, especially in the Gulf of Mexico, if turbines are not sited with respect to migratory pathways. 80118-065

Page 5-55, 5.2.10.2 Site Characterization: Guy-supported meteorological towers are known to kill birds in terrestrial environments. We recommend offshore towers be required to be unguyed, self-supporting monopole structures. However, if monopole structures cannot be self-supporting, unguyed, a self-supporting lattice structure would be an acceptable alternative. Additionally, we suggest that these requirements be included as part of the rulemaking once regulations are proposed. 80118-066

Page 5-56, 5.2.10.5 Operation: While bats – including listed species – are not known to forage while migrating over water, they have been well documented to migrate over OCS waters, especially when prevailing winds drive them off the Atlantic Coast well out to sea. Where thermal imagery cameras document bat presence within rotor swept areas of operating wind facilities, temporary blade "feathering" should be considered a mitigation tool for reducing collision mortality to these mammals. The Service recommends including the above reference to bats in the final PEIS. 80118-067

Page 5-57, 5.2.10.6 Mitigation Measures: In addition to the timing of facility construction to avoid bird nesting, care should also be taken to avoid disturbing newly fledged juvenile avifauna which may frequently continue to be dependent upon adult feeding and teaching behaviors. Mitigation should include: avoid siting in migratory bird routes and avoid siting onshore facilities near high density migration staging areas or areas where large fallouts occur during spring migration. We recommend that MMS expand this section in its final PEIS. 80118-068

Page 5-74, Section 5.2.12.6 Mitigation Measures: The last three bullets on this page (bullet three, four, and five) address sea turtle nesting beaches, potential affects, and mitigation measures. Applicable statutes, regulations, and stipulations are generally referred to without identifying them or where they may be identified elsewhere in the document. We recommend the applicable statutes, regulations, stipulations and mitigation measures are identified in a table in this section or in an appendix; and, that the table and/or appendix be referenced in the text.

In these bullets, it is stated that implementation of all mitigation measures required by Federal and State statutes and regulations would greatly limit the potential for impacts to nests and emerging hatchlings. However, none of the mitigation measures to be incorporated are noted.

Additionally, Table 7.1.1-1 (cont.) on page 7-8 claims that minor to major impacts will occur and that if mitigation measures are employed that populations level impacts would not be expected. Because sea turtles are protected, measures to minimize population impacts need to be in place. For that purpose, the Service recommends avoiding locating onshore facilities and cable landfalls in known sea turtle nesting areas generally and on NWRs. The Service web site lists following northeast United States NWRs where sea turtles have been sited: 80118-069

Eastern Shore of Virginia NWR ……..Kemp's ridley, loggerhead, leatherback
Fisherman's Island NWR……..Kemp's ridley, loggerhead, leatherback
Oyster Bay NWR……..Kemp's ridley, loggerhead, leatherback
Back Bay NWR……..loggerhead
Chincoteague NWR……..loggerhead
Elizabeth Morton NWR……..loggerhead
Target Rock NWR……..loggerhead
Wertheim NWR……..loggerhead

Page 5-85, Section 5.2.15 Areas of Special Concern: The Service recommends that wilderness and proposed wilderness areas be considered areas of special concern, particularly when on a NWR. Many wilderness designations sit in "proposed status" for many years until a report is prepared and approved by Congress. Service refuge managers are required to manage proposed wilderness as designated wilderness in anticipation of Congressional action. 80118-070

Page 5-87, Section 5.2.15.3 Construction: In several areas of the DPEIS, impacts to wildlife and their habitats on or off shore are assumed to be minimized due to regulations. For example, it states on page 5-76 the following for onshore construction impacts to coastal habitats: "Impacts would generally require permitting from Federal, State, or local regulatory agencies. Therefore, impacts from construction of facilities and installation of power cables would likely result in 80118-071

negligible to moderate impacts to coastal habitats." The final PEIS should clarify if MMS will issue best management practices or standards with which compliance will be required in any authorization it may issue.

The DPEIS considers NWRs to be Areas of Special Concern, which are given special consideration as an affected environment. With regard to transmission lines, it states on page 5-88 that "*...transmission lines may be allowed to pass through ...national wildlife refuges...if the managing agency grants a right-of-way...to the facility operators*." For NWRs, the National Wildlife Refuge System Administration Act of 1966 (NWRSAA), as amended, requires that these areas be administered by the Secretary of the Interior through the Service. Only the Service is delegated the authority to approve uses, such as the designating of an energy corridor on a national wildlife refuge. The NWRSAA requires that any use of a NWR must be compatible with refuge purposes and the mission of the National Wildlife Refuge System. Compatibility policy and regulations adopted to implement the law require that this determination must include, in the analysis consideration, all associated facilities, structures, and improvements, including those constructed or installed by the Service or at its direction. Each proposal for designation of a corridor or issuance of a right-of-way through a refuge would require a case-by-case evaluation. 80118-071 (cont.)

Refuge managers must evaluate potential impacts to refuge lands and wildlife resources to determine if such use is appropriate and compatible. Service policy states that inherent in fulfilling the National Wildlife Refuge System mission is not degrading the ecological integrity of the refuge. If the proposed use cannot be made compatible with stipulations or modifications, the Service cannot allow the use.

Please refer also to our General Comments above, specifically "Avian Impacts."

Page 5-88 – 5-89, Section 5.2.15.4 Operation: MMS indicates that changes in the ecological community due to the placement of artificial platforms (turbine towers) in the ocean will not be of concern but provides little support for this conclusion. Please explain how these platforms may or may not affect ecological communities. 80118-072

Page 5-90, Section 5.2.15.6 Mitigation Measures: See recommendation under the Section 5.2.15 heading above to include wilderness and proposed wilderness areas as areas of special concern. To mitigate visual impacts (see page 5-91 and also page 5-119, section 5.2.21), the DPEIS recommends, "*Avoid, to the extent practicable, placement of OCS wind energy facilities within visible distances from areas of special concern, especially National Parks and National Seashores*." The Service recommends including wilderness areas in this list of areas that should be avoided due to the potential visual impacts. 80118-073

Page 5-119 Section 5.2.21 Visual Resources: The Service recommends that wilderness areas be considered in the discussion on visual resources in this subsection, particularly when on a NWR. 80118-074

Page 5-179, Section 5.3.9 Marine and Coastal Birds: Include the loss of foraging habitat due to changes in aquatic resources that result from reduced wave energy. Also include loss of 80118-075

foraging/nesting wetland and beach habitat again as a result of reduced wave energy and onshore construction of facilities. 80118-075 (cont.)

Page 5-180, Section 5.3.9.2 Site Characterization: In addition to concerns over fuel and contaminant discharges to birds, and impacts from marine plastic debris and other debris entanglement issues, the Service suggests the final PEIS address construction vessels and maintenance vessel traffic using steady-burning "crab" lights and other steady-burning, bright lighting. These types of lighting have been well documented to attract birds, especially during inclement weather. 80118-076

Page 5-184, Section 5.3.9.6 Mitigation Measures: Mitigation should include restoration of related wetland and/or beach habitat after construction is completed. 80118-077

Page 5-212, Section 5.3.14.6 Mitigation Measures: In addition to impacts from vessel traffic and anchorages on coral reefs and the sea bottom, the Service recommends that MMS carefully review known and potential impacts from "sand mining" operations especially to scoters, eiders and other sea ducks – as was previously mentioned. Since these shallow water areas are or may be important feeding, rafting, and staging grounds for scoters, eiders, Longtail and Harlequin Ducks (among others), we recommend that a careful review and assessment of this issue be included in the final PEIS. 80118-078

Page 5-293, Section 5.4.9 Marine and Coastal Birds: The Service is concerned that the Florida Current is a very important area for seabirds, including several globally imperiled species, and impacts should be avoided. 80118-079

Chapter 6 Alternate Uses of Existing Oil and Natural Gas Platforms on the OCS

Page 6-9 Section 6.3.2 Aquaculture: Converting of offshore oil and gas facilities to aquaculture facilities may attract high numbers of seabirds due to the presence of large quantities of fishes confined in one place. By inadvertently attracting diving birds and aerial foraging birds to the site, there is increased potential for impacts due to entanglement in netting or the material used for pen construction. The Service recommends the DPEIS include measures to reduce these impacts. 80118-080

Chapter 7 Analysis of the Proposed Action and Its Alternatives

Page 7-1, Section 7.1.1 Offshore Alternative Energy: The list of potential impacts to living resources and their habitats is incomplete and does not adequately characterize the suite of potential impacts. To better capture the potential impacts, we suggest changing the bullet "*Marine and coastal birds*" on page 7-3 to include bats. 80118-081

Additionally, we suggest changing the "severity of impacts" rating noted in Table 7.1.1-1 on page 7-7 from "*negligible to moderate*" to "*negligible to severe*." Collision mortality with towers and rotor blades is a separate adverse effect. Impacts include, but are not limited to, collision mortality and habitat fragmentation (direct loss of habitat, increased human disturbance,

increased stress, interruption of travel patterns and activities, displacement, decrease in habitat suitability, and other behavioral effects). 80118-081 (cont.)

Page 7-4: "*Most adverse impacts could be greatly reduced or eliminated by implementation of appropriate mitigation actions. In many cases, the recommended mitigation is to avoid the siting of facilities in areas of special concern or in ecologically sensitive areas.*" The Service recommends the qualifier "In many cases" at the start of the second sentence be eliminated. 80118-082

Page 7-8, Table 7.1.1-1 (cont.) Sea Turtles: See comments above for "Page 5-74, Section 5.2.12.6 Mitigation Measures." 80118-083

Page 7-14, Section 7.4 Impacts of Other Energy Sources: The Service recommends providing an analysis of the impacts of other energy sources on wildlife and their habitat, especially wave-generation hydropower. Additionally, we strongly encourage MMS include in this analysis an evaluation of energy conservation as an alternative to developing new energy sources in the final PEIS. 80118-084

Pages 7-15 – 7-19, Sections 7.4.1 Coal Fired and 7.4.2 Natural Gas Fired Generation: In addition to discussing cooling water in this section, we suggest providing information on dry cooling alternatives. Dry cooling technology has been used extensively in the northeastern U.S. to achieve siting objectives and eliminate water use impacts due to cooling water use. 80118-085

Page 7-28, Section 7.5.1.1.1 Atlantic Region: Although there are currently no offshore platforms in the Atlantic, the DPEIS mentions that there is one new lease for the sale of oil and gas in the Atlantic. Alternative uses for the platforms may be an issue for the Atlantic in the future. We recommend precluding aquaculture among the allowed uses until it has been shown that the potential impacts listed on page ES-12 can be resolved. 80118-086

Page 7-37, Section 7.5.2.9 Marine and Coastal Birds: This section should be revised as discussed above under "Page 7-1, Section 7.1.1 Offshore Alternative Energy" to place qualifications on the reference to "hundreds of millions of bird strikes" and to expand the list of impacts. Additionally, this section should acknowledge that many species of migratory birds and bats are already experiencing significant, long-term population decline due to cumulative effects from mortality at man-made structures and other factors. The expansion of wind projects into the OCS will add to these cumulative effects by authorizing the construction and operation of avoidable known hazardous structures to migratory birds and bats where none currently exist. 80118-087

Chapter 8 Consultation and Coordination

Page 8-5, Section 8.3.1 Biological Assessment and Opinion for Threatened and Endangered Species: We encourage MMS to engage in informal consultation with the Service early in the process to determine whether actions identified in the DPEIS may affect listed species. If during informal consultation the Service determines listed species may be adversely affected, MMS can initiate formal consultation. 80118-088

Literature Sources and Sites:

Evans, W. R., Y. Akashi, N.S. Altman, and A.M. Manville, II. 2007. Response of night-migrating songbirds in cloud to colored and flashing light. North American Birds 60 (4): 476-488.

Gehring, J.L., P. Kerlinger, and A.M. Manville, II. 2006. The relationship between avian collisions and communication towers and nighttime tower lighting systems and tower heights. Draft summary report to the Michigan State Police, Michigan Attorney General, Federal Communications Commission, and U.S. Fish and Wildlife Service. 19 pp.

Lee, D. S. 1986. Seasonal distribution of marine birds in North Carolina waters, 1975-1986. American Birds. 40(3): 409-412.

Manville, A.M., II. 2005. Bird strikes and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science – next steps toward mitigation. Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002, C.J. Ralph and T.D. Rich (eds.). U.S.D.A. Forest Service General Technical Report PSW-GTR-191, Pacific Southwest Research Station, Albany, CA: 1051-1064.

Attachment 2

Antifouling and Contaminant Details
For the Minerals Management Service's Outer Continental Shelf
Programmatic Environmental Impact Statement

The DPEIS is silent on the availability, toxicity, and adverse effects of tributyltin (TBT) - based antifouling paints/coatings, and low-risk alternatives. The DPEIS contains unsubstantiated statements on antifouling that belie the facts. (For example, see pages 5-16, 5-81, 5-82, 5-83, 5-160, 5-161, 5-208, 5-209, 5-211, 5-276, 5-282. 5-323 and 5-326.) Pursuant to the National Environmental Policy Act, the DPEIS should report how and to what extent TBT-based antifouling will adversely affect the human environment and other relevant information. To assist MMS and as support for the above recommendations, relevant information is provided in the paragraphs that follow.

TBT has been identified as an endocrine disruptor and described as the most toxic substance ever intentionally introduced into the marine environment.[1] TBT ranks as one of the most hazardous compounds (worst 10 percent) to ecosystems and more hazardous than most chemicals in 4-out-of-4 ranking systems.[2] TBT compounds are highly to very highly toxic to many species of aquatic organisms and can be considered moderately toxic to birds.[3] TBT and its toxic degradates are very persistent in the aquatic environment and concentrate in the sediment, causing documented damage to benthic species. For example, TBT causes adverse morphological effects in oysters, including economically important species, and reproductive effects in certain marine snails. These affected species are considered sentinels that indicate the potential for adverse effects in a greater number of species. This pesticide is particularly harmful because it accumulates in these organisms and in the fish and mammals that consume them. TBT concentrations in some aquatic organisms, such as oysters, can be up to 250,000 times higher than surrounding seawater. TBT can cause irreversible reproductive damage and infertility in some aquatic creatures, leading to local extinction of some species. Human consumption of fish contaminated with TBT can suppress the immune system.[4]
There is also evidence of adverse effects (lowered disease resistance, beachings) in marine mammals exposed to TBT in the natural environment (particularly via bioaccumulation in prey species).

In June 1988, the President signed into law the Organotin Antifouling Paint Control Act (OAPCA), which built on risk and benefit assessments developed by the U.S. Environmental Protection Agency (EPA). OAPCA restricted the use of organotins to effect a reduction in use and environmental concentrations. Other countries implemented similar restrictions (e.g., UK, France, and Australia). Within the next few months, EPA added further restrictions on who could apply the paints and how waste materials were to

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(cont.)

be handled, and mandated implementation of a long-term monitoring program of butyltins in water, sediment, and tissue in coastal regions and the Great Lakes. Based on the monitoring data, the EPA subsequently concluded that the restrictions had lowered butyltin concentrations somewhat in water, but that ambient levels were still in excess of levels that cause adverse effects in nontarget organisms. These findings led the U.S. to participate in negotiations on an international ban of TBT antifouling systems and to the phase-out of domestic production and sales of TBT antifouling paints. Exceptions were made only for minor uses in oceanographic probes and rubber sonar domes. The last legal date of manufacture for a TBT antifouling paint to be sold in the U.S. was in December 2005. It is expected that stocks in the channels of trade are greatly depleted and that such paints will not be available in the U.S. in the near future. The global antifouling treaty was signed in 2001 and is on its way to entry-into-force. The White House has identified ratification of the treaty as one of its priority goals for 2007. The implementing legislation would prohibit the domestic use of TBT paints and allow the U.S. to prohibit the entry of vessels painted with TBT into U.S. ports.

Decisions on phasing out TBT paints were based on an understanding of the risks and the availability of less risky antifouling systems. Alternative antifouling paint and coatings exist. Concerns about the high concentration of copper in conventional antifouling systems have led to the development of copper-free paints and the self-polishing paints that are lower in copper concentration. A number of nonmetallic organic antifoulants and nonbiocidal systems are also available.[5]

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(cont.)

The Navy recognized the environmental risks associated with organotin antifouling paints prior to the enactment of OAPCA, and discontinued their use. TBT was a desirable component of antifouling paints because of its extreme effectiveness against target organisms, and because TBT technology had evolved to self-polishing paints with greater longevity. The longevity derives from the exposure of fresh biocide on the paint surface as spent layers erode and slough off, an action facilitated by the movement of the treated vessel through the water. The Navy has long employed a hull husbandry program involving scrubbing and scraping of the painted hull by Navy divers, which extends the life of the antifouling paint. Maintaining the same kind of workforce is not economically feasible within the shipping industry. Furthermore commercial vessels are subject to regularly scheduled dry-docking for inspection and maintenance, and shippers tend to conduct dry-dock activities like painting on the same schedule to limit time out of service. Under commercial conditions, the TBT paints have a practical longevity of 3-5 years.

TBT paints are almost always formulated with a copper co-biocide. Paints with copper compounds as the sole active ingredient dominated the antifouling market before TBT came into use and continue to be used today. Conventional copper–based antifouling paints generally have a shorter service life than TBT + copper paints, three years on the

[1] Professional communication, Jill Bloom, Review Manager for Tributyltin Antifoulants, Office of Pesticide Programs, EPA; May 2, 2007.
[2] See: http://www.scorecard.org/cemical-profiles/hazard-indicators.tcl?edf_substance_id=688%2d73%2d3
[3] See: http://extoxnet.orst.edu/pips/tributyl.htm
[4] See: http://www.centralsan.org/education/tbtfact.html

[5] For information on these alternative products, and their environmental fate, effects, and occupational risks contact EPA Office of Pesticide Programs. Ms. Jill Bloom, Review Manager for Tributyltin Antifoulants.

outside for commercial vessels, more typically 1-2 years for recreational vessels. Recently, the paint industry has developed self-polishing copolymer formulations of copper-based antifouling paints with improved longevity, approaching the service life of TBT in commercial service. These paints typically contain an organic co-biocide in addition to the copper. The only related use of TBT in the U.S. is impregnated rubber used for sonar domes. The EPA determined this use was necessary for critical operations and contributed very little TBT to the environment. Other uses of treated rubber are not registered or allowed.

The need for fouling control on OCS Alternate Energy systems structures is assumed and not articulated in the DPEIS. In particular, the DPEIS is silent on the benefit of using antifoulants on stationary structures supporting offshore wind turbine generators. Antifoulants reduce drag on ships and thereby reduce fuel consumption and air pollution, which are considerations not relevant to static structures. It is natural and expected that a variety of organisms will attach to and congregate near such stationary structures. If the functionality of the structures is not improved by fouling prevention, or if the risks associated with the antifouling systems are not offset by improved functionality, the need for antifoulants on these structures should be reexamined. External fouling of rubber hoses associated with these structures should be subject to similar thinking. Flexing and the flow of water through the hose should prevent internal fouling of operational hosing. With regard to wave and ocean current energy capture systems, even though the structures and materials used are generally not well known and subject to change, it is suggested that antifoulants may not be needed on stationary parts and that wave action on moving parts could limit fouling. The DPEIS should have addressed the need for antifouling on stationary and other structures and the expected functional improvement of each type of structure.

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Attachment 3

Sea Turtle Locations and Nesting and Hatching Season Dates

Loggerhead Sea Turtle

Location	Nesting and Hatching Season Dates
Northern Gulf of Mexico beaches (includes Louisiana, Mississippi, Alabama, and Escambia through Pasco Counties in Florida)	May 1 through November 30
Southern Gulf of Mexico beaches (includes Pinellas through Monroe Counties in Florida)	April 1 through November 30
Southern Florida Atlantic beaches (includes Brevard through Dade Counties)	March 15 through November 30
Northern Florida Atlantic beaches (includes Nassau through Volusia Counties) and Georgia beaches	April 15 through November 30
South Carolina beaches	May 1 through November 30
North Carolina beaches	May 1 through November 15

Green Sea Turtle

Location	Nesting and Hatching Season Dates
Northern Florida Gulf of Mexico beaches (includes Escambia through Pasco Counties)	May 15 through October 31
Southern Florida Gulf of Mexico beaches (includes Pinellas through Monroe Counties)	May 15 through October 31
Southern Florida Atlantic beaches (includes Brevard through Dade	May 1 through November 30

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(cont.)

Counties)

Northern Florida Atlantic beaches (includes Nassau through Volusia Counties) and Georgia beaches	May 15 through November 15
South Carolina and North Carolina beaches	May 15 through November 15

Leatherback Sea Turtle

Location	Nesting and Hatching Season Dates
Northern Florida Gulf of Mexico beaches (includes Escambia through Pasco Counties)	June 1 through September 30
Southern Florida Atlantic beaches (includes Brevard through Dade Counties)	February 15 through November 15
Northern Florida Atlantic beaches (includes Nassau through Volusia Counties) and Georgia beaches	April 15 through September 30
South Carolina and North Carolina beaches	April 15 through September 30

Hawksbill Sea Turtle

Location	Nesting and Hatching Season Dates
Monroe County, Florida	June 1 through December 31
Southern Florida Atlantic beaches (includes Brevard through Dade Counties)	June 1 through December 31
Volusia County, Florida	June 1 through December 31

80118-016 (cont.)

Attachment 4

STANDARD MANATEE CONDITIONS AND PROCEDURES FOR AQUATIC CONSTRUCTION

2003

SAVANNAH CORPS DISTRICT
U.S. FISH AND WILDLIFE SERVICE
GEORGIA DEPARTMENT OF NATURAL RESOURCES

The permittee should comply with the following manatee construction conditions for all aquatic construction projects conducted in areas in which manatees are known to inhabit:

A. Instruct all personnel associated with the project of the potential presence of manatee(s) and the need to avoid collisions with them. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).

B. Advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatee(s), which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.

C. All vessels associated with the construction project should operate at "no wake/idle" speeds at all times in the construction area. All vessels will follow routes of deepwater whenever possible.

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D. Temporary signs concerning manatees should be posted prior to and during all construction/dredging activities. All signs are to be removed by the permittee upon completion of the project. A sign measuring at least 3 feet by 4 feet, reading "*Manatee Habitat - Idle Speed in Construction Area,*" should be installed and maintained at prominent locations within the construction area/docking facility prior to the initiation of construction. For marinas, community/recreational docks, and similar proposed projects, one temporary sign should be located prominently adjacent to the construction permit and, if required, a second temporary construction sign should be installed in a prominent location visible to water-related construction crews. Larger aquatic construction projects, such as port berths and dredging, may require more than two temporary construction signs placed in more appropriate location(s) (i.e., on the dredging barge). In these cases, the Savannah Army Corps District and the U.S. Fish and Wildlife Service will determine the number of construction signs necessary and the best placement location(s) for the signs.

E. Extreme care should be taken in lowering equipment or materials, including, but not limited to, all dredging equipment, piles, sheet piles, casings for drilled shaft construction, spuds, pile templates, anchors, etc., below the water surface and into the stream bed; taking precaution not to harm any manatee(s) that may have entered the

construction area undetected. All such equipment or materials should be lowered at the lowest possible speed to prevent harm to any manatee(s) that may not have been detected.

F. When siltation barriers are used, care should be taken not to entangle manatee(s). The barriers should be properly secured and regularly monitored to avoid manatee(s) entrapment.

G. All temporary construction materials should be removed upon completion of the work, and salt marsh areas should be restored. No construction debris or trash shall be discarded in the water.

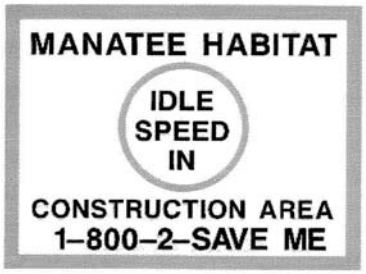
H. For construction activities requiring dredging during the warm season (March 1 through November 30), dredging should be limited to daytime with a professional manatee observer on post and aboard the barge from which dredging is occurring. Nighttime dredging should occur during the cold season months (December 1 to February 28) only. If other times are proposed for nighttime dredging, formal consultation under section 7 of the Endangered Species Act and with the U.S. Fish and Wildlife Service may be necessary dependant on the project and location.

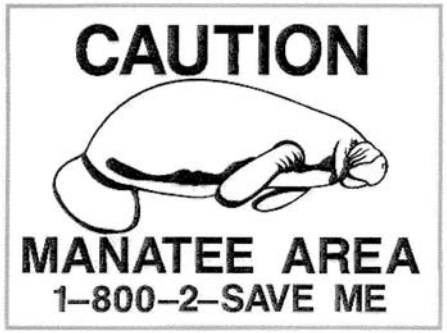
I. If manatee(s) are seen within 100 yards of the active daily construction/dredging operation or vessel movement, all personnel in the construction area should be alerted. Operation of any equipment closer than 50 feet to a manatee(s) should immediately be shutdown. Activities will not resume until the manatee(s) has departed the project area of its own volition.

J. Any collision with and/or injury to a manatee(s) should be reported immediately to the Georgia Department of Natural Resources (Weekdays 8:00 a.m. to 4:30 p.m. at 912-264-7218 or 1-800-272-8363; nights and weekends at 1-800-241-4113), the U.S. Fish and Wildlife Service, Brunswick Field Office (912-265-9336), and the Corps of Engineers (912-652-5058). Any dead manatee(s) found in water must be secured to a stable object to prevent the carcass from being moved by the current. In the event of injury or mortality of a manatee, all aquatic activity in the project area must cease pending section 7 consultation under the Endangered Species Act with the U.S. Fish and Wildlife Service and the lead Federal agency.

K. A log detailing sightings, collisions, and/or injuries to manatee(s) should be kept for that contract period. Following project completion, a report summarizing the above incidents and/or sightings should be submitted to the U.S. Fish and Wildlife Service, 4270 Norwich Street, Brunswick, Georgia 31520 and the lead Federal agency.

80118-055 (cont.)





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STANDARD MANATEE CONDITIONS FOR BLASTING

2003

SAVANNAH CORPS DISTRICT
U.S. FISH AND WILDLIFE SERVICE
GEORGIA DEPARTMENT OF NATURAL RESOURCES

A. Aquatic blasting should not be allowed during the following time periods for the respective Georgia counties:

1. April 1 - October 31: in Effingham, Chatham, Bryan, and Liberty Counties
2. March 15 - November 30: in McIntosh and Glynn Counties
3. March 1 - December 30: in Camden County

B. If aquatic blasting is planned for these restricted windows, additional section 7 consultation will be necessary with the U.S. Fish and Wildlife Service and the lead Federal agency. Additional protective measures will be necessary and should be coordinated with the agencies well in advance (at least 6 months) of the actual blasting.

80118-055 (cont.)

MANATEE STANDARD CONDITIONS FOR MARINAS/DOCKS/PIERS

2005

SAVANNAH CORPS DISTRICT
U.S. FISH AND WILDLIFE SERVICE
GEORGIA DEPARTMENT OF NATURAL RESOURCES

The permittee should comply with the following manatee construction conditions for all marinas, piers, commercial/recreational docks, etc. conducted in areas in which manatees are known to inhabit:

A. The Standard Manatee Conditions for Aquatic Construction should also be adhered to during construction of these facilities. Private single, or dual-family docks are not required to adhere to these conditions. Depending on the size of the facility and the number of manatee sightings in that county, in-water construction may be least harmful to manatees during the winter season months (December 1 through February 28). If in-water construction is conducted outside of these months, a professional manatee observer may be recommended.

B. Permanent waterway display sign(s) (*Protect Georgia's Manatees – Use Idle Speed*) on or adjacent to the facility should be installed prior to operation of the marina or community/recreational dock. Please see the Permanent Sign Placement Procedures for specific sign information and display instructions.

C. Permanent informational display (*Manatee Basics for Boaters*) signs should be installed prior to operation of the marina and/or community/recreational dock. Please see the Permanent Sign Placement Procedures for specific sign information and display instructions.

D. Both *Manatee Basics for Boaters* and *Protect Georgia's Manatees* signs should be displayed for all facility types (marinas, community/recreational docks, piers, etc.). The permittee may contact the Georgia Department of Natural Resources (GDNR) (912-264-7218) for additional information and/or clarification on sign placement procedures.

E. A notarized verification letter stating that all permanent signs have been installed at designated locations with color photos documenting this placement should be forwarded to the Corps of Engineers, Savannah District Office as soon as they are installed. A notarized documentation letter from the professional surveyor stating that the footprint of the facility is accurate and that all permanent signs are visible should also be forwarded to the Savannah District Office. Signs remain the responsibility of the permittee and are to be maintained in a clearly visible condition in perpetuity.

F. Best Management Practices (BMPs) for marina facilities and docks using hoses, faucets, and/or freshwater discharges should be instituted and maintained in perpetuity to prevent freshwater leakage into manatee habitat(s). Maintenance of these freshwater sources would minimize attraction of manatee(s) to the dock/marinas where boats are concentrated and a potential for increased boat/manatee collisions exists.

G. Oil and sewage spill contingency plans and BMPs should be created for marinas and community dock facilities.

H. An extensive manatee education awareness program should be instituted and maintained by the applicant in perpetuity. The education program should focus on educating boaters on manatee biology, how watercraft can adversely affect manatees, and actions boaters can take to avoid adverse impacts. The program should be coordinated with the Savannah Corps District, the U.S. Fish and Wildlife Service, and GDNR for approval. Specific educational topics should include but are not limited to: manatee habitat and feeding behaviors; why feeding of manatees or luring by freshwater should not be encouraged; how to spot and

80118-055 (cont.)

avoid manatees while boating in Georgia coastal waters; and information on what to do if an injured, dead, or sick manatee is observed. Mechanisms for educating boaters should include but not be limited to: educational materials (videos, signs, and posters); charts, handouts, and kiosks; and the State-required educational signage. For additional information on education programs and facts, please visit the web pages for Save the Manatee Club (www.savethemanatee.org/) and the Florida Wildlife Conservation Commission, Bureau of Protected Species Management, Manatee Program (http://floridaconservation.org/psm/manatee/). The U.S. Fish and Wildlife Service, Brunswick Field Office also has examples of educational material.

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