



**Comments of the American Wind Energy Association  
To the Interagency Ocean Policy Task Force  
August 14, 2009**

The American Wind Energy Association (AWEA) appreciates the opportunity to submit these comments on the Ocean Policy Task Force's (Task Force's) initial report to President Obama under the President's June 12, 2009 ocean policy Memorandum. AWEA believes that any serious discussion of ocean and coastal policy must focus first on climate change. AWEA commends the President for emphasizing climate change in his Memorandum, and urges the Task Force to weigh the need for immediate action on climate change as it formulates its response.

Offshore renewable energy development, which currently means the generation of electrical power from offshore wind, is the only offshore activity under consideration by the Task Force that can make a meaningful near-term contribution to urgently needed reductions in greenhouse gas emissions. An extensive body of data and analysis, including post-construction studies of offshore wind farms in Europe (which has an 18-year head start on the U.S. in the development of offshore wind resources), demonstrates any adverse environmental effects of offshore wind projects, sensibly sited in accordance with existing procedures, will be localized, minor, and easily controlled. The most significant environmental risk facing U.S. policy makers with respect to offshore wind is the risk that demands for delay will prevail — that the environmental benefits of timely offshore wind development will be sacrificed while we seek to refine our understanding of environmental costs that are known from the outset to be far less consequential.

Offshore wind is a proven source of renewable electric power. At the end of 2008, there were 33 operational offshore wind projects in European Union waters with a total capacity in excess of 1.4 Gigawatts, supplying power to consumers in eight countries. Dozens of additional projects are currently in development, and EU offshore wind capacity is expected to increase to 120 Gigawatts by 2030.<sup>1</sup> Offshore wind can make similar contributions in the U.S. by generating clean electricity at stable prices close to coastal demand centers, helping coastal states meet their Renewable Electricity Standards, and creating new jobs in coastal cities.

The U.S. recently marked the end of a de facto four-year freeze on offshore wind development with the publication of a long-delayed leasing rule for renewable energy projects on the Outer Continental Shelf (OCS). Publication of the rule followed issuance of a comprehensive Programmatic Environmental Impact Statement that was itself two years in the making. The rule was authorized by section 388 of the Energy Policy Act of 2005, which established a reasonably clear statutory framework for interagency and

intergovernmental coordination concerning renewable energy development on the OCS. AWEA believes that this framework can be made to work more efficiently, and has set out some suggestions to this end below. However, AWEA strongly opposes any delay, moratorium, or fundamental restructuring of the regulatory framework for offshore wind development. Such a move at the present time — before a single commercial lease has been issued under the long-awaited OCS renewable energy rule — would send a strong signal to potential investors, including firms now considering investments in the vital offshore supply chain, that U.S. policy makers still are not committed to providing a minimally stable legal framework for the development of the offshore wind industry. In addition, leases have already been granted and private and state capital committed for offshore meteorological testing.

### **AWEA's Interest and the Plan of this Submission**

AWEA is the national trade association of America's wind industry, with more than 2,300 member companies, including project developers, component manufacturers, and service suppliers. AWEA's Offshore Wind Working Group consists of approximately 250 individuals (representing more than 130 companies and organizations) pursuing development of offshore wind energy. This submission was prepared by a standing subgroup of AWEA's Offshore Wind Working Group, which follows and comments on federal legal developments of importance to the offshore wind industry.

As requested by the Task Force's working group on public outreach, the organization of these comments tracks the President's initial instructions to the Task Force. The next three headings correspond to the three tasks that the President asked the Task Force to complete within 90 days: (a) articulation of a national policy for oceans, coastal areas and the Great Lakes that emphasizes environmental stewardship and sustainable economic uses; (b) development of a framework for policy coordination that will promote effective interagency and intergovernmental cooperation to achieve those policies; and (c) formulation of an implementation strategy that identifies and ranks appropriate operational objectives. Our comments concerning an implementation strategy include some brief, preliminary observations concerning marine spatial planning (MSP) — a topic that the President has asked the Task Force to address in more detail in its second report. AWEA expects, in keeping with the process described by the public outreach working group, to submit more detailed comments concerning MSP at a later date.

### **Articulating a National Policy for the Oceans, Coasts and Great Lakes**

AWEA applauds the June 12 Memorandum's commitment to the development and implementation of oceans and coastal policies that emphasize environmental stewardship and sustainable economic activity. The Memorandum's recognition that responsible environmental stewardship requires an effective policy response to anthropogenic climate change (Mem. at 1 & 2) is particularly constructive. Because climate change poses such a significant threat to our oceans and coasts and wind power is among the few proven means of combating that threat, AWEA believes that harnessing the potential of offshore wind must be a key component of any new oceans policy initiative.

### *Addressing climate-related threats to the coasts and oceans*

The Reports of the Pew Oceans Commission and the U.S. Commission on Ocean Policy (hereafter the “Oceans Commission”), published in 2003 and 2004, respectively, summarized the then available evidence of the grave threat that anthropogenic climate change poses to coastal and marine ecosystems. Both Reports described the inundation of vital coastal areas by rising seas, the destruction of coral reefs and reef-dependent marine life by rising water temperatures and acidification, and the risk of abrupt, potentially catastrophic changes in thermohaline circulation.<sup>2</sup>

This body of evidence has grown more compelling in the intervening years. Sea level projections have been revised upward in light of new data on the rate of ice melt and improved understanding of ocean currents.<sup>3</sup> Evidence continues to accumulate that the oceans’ absorption of carbon dioxide from the air is increasing the acidity of the oceans “with dramatic consequences for organisms from corals to the planktonic foundation of marine food webs.”<sup>4</sup> Continuing research on climate and ocean currents has underscored earlier warnings of the risk that increased water temperatures and the influx of fresh water from ice melt will lead to abrupt changes in those currents, with severe consequences for marine life and global weather patterns.

AWEA believes, in short, that responsible stewardship of coastal and ocean resources must begin with a focused, purposeful approach to the threat of climate change. Timely development of renewable energy resources, including offshore wind, is central to this effort. Offshore wind farms can safely use the oceans and, more specifically, the energy in the air above the oceans, to combat the most pressing threat to ocean ecosystems.

### *The role of offshore wind in combating climate change*

As the leading carbon-free, readily deployable electrical power source, wind energy can play a vital role in efforts to reduce carbon emissions, particularly in the critical early years. Electric power generation is the largest single source of carbon dioxide emissions in the U.S. economy, accounting for close to 40 percent of U.S. emissions. Life-cycle analyses of emissions from electric power generating technologies, which account for emissions produced during the manufacture of capital equipment as well as during operation, have shown that wind farms generate less than two percent of the carbon emissions of coal-fired plants per Megawatt-hour of power delivered. Prompt deployment of wind power can reduce carbon loading into the atmosphere now while other emerging clean technologies are developed and commercialized.

In July 2008, the U.S. Department of Energy (DOE) published a report, based on more than 2 years of analysis and stakeholder input, analyzing wind power resources and the environmental benefits of prompt development.<sup>5</sup> The *DOE Report* found that “[w]ind energy... can be widely deployed across the United States and around the world to begin reducing greenhouse gas emissions now.”<sup>6</sup> Focusing on the U.S. electrical power sector, the DOE found that the U.S. can obtain 20 percent of its electricity from wind by 2030. The *DOE Report* looks to offshore winds to provide a substantial proportion of U.S. wind

power, calling for the installation of 54 Gigawatts of U.S. offshore wind generating capacity by 2030.<sup>7</sup> Other studies of U.S. offshore wind resources indicate that offshore wind could exceed this contribution.<sup>8</sup>

The *DOE Report* quantified some of the environmental benefits of achieving the 20 percent scenario. These include:

- Avoiding approximately 825 million metric tons of CO<sub>2</sub> emissions from the electric sector in 2030;
- Reducing cumulative CO<sub>2</sub> emissions from the electric sector by 7,600 million metric tons through 2030, and by 15,000 million tons through 2050;
- Avoiding more than 80 GW of new coal-fired generating capacity (and mitigating energy price increases by reducing demand for coal and natural gas);
- Reducing natural gas consumption across all industries by 11 percent; and
- Reducing cumulative water consumption in the electric sector by 8 percent, or 4 trillion gallons, by 2030 with nearly 30 percent of the savings occurring in western states where water is particularly scarce.<sup>9</sup>

Offshore wind is not a stand alone solution to climate change. There is no single solution. It is, however, a proven source of badly needed reductions in greenhouse gas emissions. For offshore wind to make a significant contribution within the needed time frame, the process of permitting and building the first generation projects of U.S. offshore wind farms as well as developing the needed supply chain and industry-specific infrastructure must get underway.<sup>10</sup> As Environmental Defense Fund President Fred Krupp has stated, in describing the need for prompt action on federal legislation to combat climate change, “[t]he worst thing we can do for our economy and our environment is to do nothing at all, the second worst thing we can do is to delay.”<sup>11</sup>

#### *Offshore wind’s potential contributions to energy security and green job growth*

The development of offshore wind can also make important contributions to energy security and green job growth. Wind power offers exceptional price stability. As wind farms do not burn fuel, the price of wind power can be locked in for the life of a project — generally 20-25 years. In addition, wind farms generate power independently from numerous turbines spread across wide project areas. As a result, increased reliance on wind power can help to make the U.S. energy infrastructure more robust.

The U.S.’s 28 coastal states have extensive offshore wind resources in close proximity to electrical load centers. The development of manufacturing and services for the offshore wind industry can create stable high paying jobs while promoting a truly home-grown energy source. In 2008, the U.S. wind industry opened, expanded, or announced new manufacturing facilities in 24 states, raising total wind industry employment to 85,000 people by the end of the year.<sup>12</sup> Offshore wind can build on this solid foundation and contribute significantly to energy diversification and greater energy independence.

### *Managing local effects of offshore wind development*

Developing the first generation of offshore wind farms under existing law will not result in significant environmental harms. The Minerals Management Service's (MMS) leasing process requires extensive environmental review before a site is leased or a wind farm is built.<sup>13</sup> Moreover, environmental studies of offshore wind development, including program-wide and project-specific environmental impact statements for U.S. offshore wind farms<sup>14</sup> and look-back reviews of European offshore projects,<sup>15</sup> demonstrate that the climate benefits of offshore wind development vastly outweigh any adverse localized impacts. Indeed, the most significant risk of avoidable harm is that efforts to realize the needed environmental benefits of offshore wind development will be foregone while data collection, consultations, and a new ocean zoning regime is developed.

Some opponents of offshore wind have asserted that a freeze or delay on offshore wind development, pending formulation and implementation of a unified, ecosystem-based marine planning regime, is needed to prevent a "submerged land rush" for alternative energy sites on the OCS. These assertions are misguided. Due to technical, legal and financial challenges of developing the first generation of U.S. offshore wind farms, only a handful of qualified firms are currently active in the field. Moreover, MMS's recently promulgated rule establishes technical and financial qualification standards for would-be lessees designed to prevent misuse of the leasing process by entities that are not qualified to develop projects. Freezing or delaying offshore wind projects while a new regulatory process runs its course, just after the industry emerged from a four-year freeze during the MMS rulemaking process, will strongly discourage needed investment in offshore-wind projects and industry-wide infrastructure.

### *Obama Administration and state support for offshore wind development*

President Obama and his administration have strongly supported the development of renewable energy sources in general and offshore wind in particular. Coastal governors have also acted to bring the environmental and economic benefits of offshore wind to their states. Some significant recent examples of federal and state leadership in making offshore wind development a priority are set out below:

- On January 13, 2009, Massachusetts Governor Deval Patrick announced a state goal of 2000 Megawatts of wind energy by 2020, stating that "[w]ith the growing interest in wind turbines we see in communities across the Commonwealth and the abundant wind resource we have off our coast, wind power is going to be a centerpiece of the clean energy economy we are creating for Massachusetts."
- In April 2009, Secretary of the Interior Ken Salazar, speaking at the "25 X '25 America's Energy Future" meeting, acknowledged that "[t]he realities of climate change are upon us," and affirmed that [b]uilding America's clean energy future is front and center on President Obama's agenda."

Weeks later, speaking at the May 2009 Windpower Conference and Expo, Secretary Salazar pledged that “President Obama and I will do all we can to support the innovation that will repower our nation,” and that “America will lead the world in offshore wind production.”

- On Earth Day (April 22) 2009, President Obama announced the release of MMS’s final rule for renewable energy development on the OCS during a speech at Trinity Structural Towers in Newton, Iowa. The President stated that:

The choice we face is not between saving our environment and saving our economy — it’s a choice between prosperity and decline. We can remain the world’s leading importer of oil, or we can become the world’s leading exporter of clean energy. We can allow climate change to wreak unnatural havoc, or we can create jobs working to prevent its worst effects.

It is estimated that if we fully pursue our potential for wind energy on land and offshore, wind can generate as much as 20 percent of our electricity by 2030, creating as many as 250,000 jobs in the process. As with so many clean energy investments, it’s win-win: good for environment and great for our economy.

- On May 12, 2009, U.S. Energy Secretary Steven Chu, announcing a federal grant for a new blade testing program at Massachusetts Wind Technology Testing Center, stated that “[t]his is part of President Obama’s broad agenda to make sure that our country leads the world in capturing the clean energy jobs of the future.”
- On June 23, 2009, Secretary Salazar and New Jersey Governor Jon Corzine issued statements marking MMS’s approval of exploratory leases for wind energy on the OCS. Secretary Salazar stated that:

Other nations have been using offshore wind energy for more than a decade. We made the development of offshore wind energy a top priority for Interior. The technology is proven, effective and available and can create new jobs for Americans while reducing our expensive and dangerous dependence on foreign oil.

Governor Corzine applauded MMS’s action as an important step toward realization of his Administration’s plan to promote 1 Gigawatt of offshore wind by the end of 2013 and 3 Gigawatts by 2020. The Governor stated that

This is tremendous news for New Jersey and I thank Secretary Salazar and the Obama Administration for issuing these leases

which are so critical to getting the development of our offshore wind turbine projects underway.

### **Developing a Framework for Policy Coordination**

AWEA appreciates the Task Force's interest in improving OCS governance under existing statutes, rules and policies. In keeping with our view that responsible stewardship of coastal and ocean resources requires timely, effective action on climate change, AWEA urges that the Task Force's recommendations to the President on the subject of oceans policy coordination emphasize this objective.

Regulatory authority on the OCS, as the Pew Commission, the Oceans Commission and others have observed, is highly fragmented. The regulatory framework for offshore wind conforms to this general pattern. In addition to a lease from MMS, developers of offshore wind farms on the OCS need permits or other approvals from, Army Corps of Engineers, EPA, FERC, the Fish & Wildlife Service, NOAA, the Coast Guard, and state coastal zone managers, among others.

Routine calls for improved interagency cooperation and communication will not eliminate the bottlenecks in this process. To achieve coordination that can shorten and regularize project timelines, the Task Force should recommend sustained, high-level supervision of meaningful, concrete streamlining measures. Our recommendations include:

- Ensuring that MMS has sufficient staff to process OCS wind leases;
- Provisions for pre-filing MMS review of submissions such as leasing proposals and draft site assessment plans, construction and operating plans and to identify and eliminate problems that could lead to unnecessary delay;
- Clear delineation of MMS's responsibilities as leasing agency, including clarification of MMS's exclusive responsibility to determine whether leasing is in the public interest, broadly construed, reach a broad public interest determination;
- Establishment and high-level enforcement of administrative deadlines, which should be particularly firm with respect to straightforward, ministerial actions such as initial review of the completeness of submissions;<sup>16</sup> and
- Creation of a unified administrative record from which all federal agencies act.

The Task Force was created as a temporary entity. Its recommendations concerning policy coordination should therefore include the designation of a body to provide the

needed high-level supervision of these efforts going forward. The Task Force should consider assigning this responsibility to the Committee on Ocean Policy or to a subgroup of that Committee. To be effective, this body will need a sustained commitment to regular monitoring of interagency coordination process and the stature to obtain agency responses to its inquiries and directions.

Policy coordination among agencies with a role in the regulation of offshore wind projects could also make profitable use of adaptive management principles. As offshore wind is new to the U.S., there is no post-construction data on the operation of projects in U.S. waters. There may be opportunities for federal agencies and first-generation wind project developers to streamline initial leasing and permitting actions through agreements concerning the collection of post-construction data that would inform management decisions and second-generation permitting.

Finally, if the Task Force recommends legislation aimed at improving oceans governance, AWEA urges that its proposal include provisions designed to promote interagency coordination on matters relating to litigation. Under existing law, offshore wind developers and agencies face threats of multiple federal lawsuits, which can be brought in different courts on the basis of different administrative records. To minimize litigation-related delay to renewable energy projects on the OCS, challenges to these projects should be decided in consolidated proceedings, on an expedited basis, in the court of appeals for the region where the project was to be sited. It should also, as noted above, proceed on the basis of a single, unified administrative record.

### **Devising an Implementation Strategy**

From AWEA's perspective, the most important insight that the Task Force can bring to the formulation of an implementation strategy for the policies it articulates is skepticism of the common assumption that additional study, process, consultation, and review can always operate to improve environmental stewardship. For many large-scale undertakings that government officials are asked to fund or authorize, the most significant environmental risks involve action taken in advance of adequate understanding, and this assumption holds true. In the case of offshore wind development, however, for the reasons discussed above, the most significant environmental risk involves unnecessary delay in realizing urgently needed environmental benefits. In this circumstance, stewardship requires resistance to delay.

Our concern that the Task Force fully consider the environmental costs of delaying offshore wind development informs our comments on both implementation strategy topics that were discussed during our meeting with the outreach working group: MSP and the possibility of adopting a five-year planning process for renewable energy projects on the OCS.

### *Limitations of MSP*

AWEA is not opposed in principle to MSP. If properly implemented, MSP could lead to more accurate analyses of potential environmental threats and wiser resolutions of conflicts among users. AWEA believes, for example, that truly “comprehensive, integrated and ecosystem-based” MSP (Mem. at 2) would strongly favor offshore wind development. Our concerns with MSP pertain to the difficulties of: (1) collecting and managing the information needed to implement MSP in a sensible manner; and (2) managing the transition to an MSP regime in a manner that avoids harm to the nascent U.S. offshore wind industry.

Gathering and organizing the information needed to perform “comprehensive, integrated and ecosystem-based” MSP across the OCS and Great Lakes is a formidable task. The purpose of MSP is to identify permissible and impermissible (or favored and disfavored) locations for particular activities. The officials who administer MSP must therefore combine judgments about where particular actions are economically viable with judgments about where those activities are environmentally appropriate.

Existing information bearing on the economic viability of offshore wind sites is particularly sparse. The siting of offshore wind turbines depends on detailed physical data, including hub-height wind speed, site-specific geophysical and geotechnical information, and information on wave conditions through the seasons. This information does not now exist on the scale or level of detail that would be required to reach sensible OCS-wide judgments about where offshore wind farms should be sited.

Siting factors relating to human systems and policies add further complexity to any effort to zone for offshore wind projects. Offshore wind projects require access to onshore transmission grid connections and access to markets in which there is public support for renewable energy development (through, for example, renewable electricity standards). An attempt by planners to zone for (and against) offshore wind development without reference to these (changeable) political and legal factors could confine offshore wind projects to areas where they are not, in fact, commercially viable. AWEA believes that at this time, when the U.S. offshore wind energy industry is establishing itself and technical and economic limitations sharply limit the number of commercially viable sites, the only areas barred from development prior to site-specific investigation should be those that have been placed off limits by statute. National Environmental Policy Act requirements and MMS regulations still require a full environmental review and mitigation of any significant site specific impacts before a project may proceed.

In addition to the extreme difficulty of the proposed MSP initiative — implementing OCS-wide planning for offshore wind development and for all other federally regulated activities on the OCS — AWEA is concerned that the campaign to establish an MSP regime will result in an extended period of legal uncertainty and delay. From the perspective of offshore wind developers and potential investors, including firms that are considering substantial investment in key elements of the supply chain and service infrastructure, MSP threatens to add a new layer of regulation and delay for offshore

wind at a time when the ink is barely dry on the latest regulatory framework. These new restrictions may emerge, at some point in the future, from an exceedingly ambitious, government-wide planning exercise that has, at present, no defined timetable or endpoint. **Section 388 of the Energy Policy Act of 2005 directed MMS to issue regulations governing renewable energy development on the OCS within 9 months.<sup>17</sup> The final rule took 44 months.** In promulgating the rule and preparing the programmatic EIS that preceded it, MMS sought comments from industry and other interested parties and responded to those comments. Embarking now on a new, far more ambitious centralized planning process would signal that the U.S. still has not committed to a stable framework for offshore renewable energy development, threatening billions of dollars in renewable energy investment and tens of thousands of clean tech jobs.

The Energy Policy Act of 2005 reduced regulatory uncertainty by defining federal agency roles with respect to leasing for alternative energy development on the OCS. Section 388 of the Act, which reflected a bipartisan approach to this issue, designated MMS as the lead permitting agency, while providing consultative roles for the Coast Guard and other federal departments and agencies, and for affected state and local governments. The 2005 Act also called for “an interagency comprehensive digital mapping initiative for the outer continental shelf to assist in decision-making relating to the siting of activities [there under].” More than six years passed from the time when Congress began considering OCS alternative energy leases in 2003, to the time when the MMS rule took effect in June of this year. For almost two months, the U.S. offshore wind industry has been able to work within a legal framework with sufficient clarity and apparent stability to support capital investment on the scale needed to develop offshore wind projects and infrastructure. The Task Force should take care that its recommendations concerning MSP protect this progress.

#### *Limitations of Five-Year Planning*

A five-year planning process, patterned on the planning process that Congress established for offshore oil and gas leasing in the Outer Continental Shelf Lands Act (OCSLA), would not meet the planning and permitting requirements of the offshore wind industry. Unlike oil and natural gas, electricity cannot be stored and sold on global commodities markets. Electricity from offshore wind projects is delivered at the moment of generation through the cable that connects the wind farm to the land-based grid. This power is sold under a long-term contract (*e.g.*, 20-25 years), which provides the assured revenue stream required to obtain project financing. The commercial viability of an offshore wind project depends on the availability of a long-term purchase commitment from a coastal utility, which in turn depends on state energy regulatory planning and policies. As a result, development timetables for offshore wind projects must conform to demand-side planning efforts by state and regional officials, including electrical grid and transmission line planning and wholesale electrical procurement planning. We do not believe that a five-year planning cycle for federal leases, which would necessarily be out of step with many existing state and regional planning efforts, would be workable at this time.<sup>18</sup>

AWEA believes that federal planning during the early stages of offshore wind development should follow an iterative approach. Lessons learned from early leasing efforts will be important for offshore renewable energy development as more information is collected and then applied to future projects. However, a five-year effort is unlikely to meet the needs for these projects that are subject to many other factors such as construction schedules, generation and transmission planning and wholesale utility purchase cycles.

## **Conclusion**

Offshore wind power is poised to begin making a significant contribution to U.S. efforts to combat climate change, enhance energy security, and create an entire sector of new clean-tech jobs. The Task Force can speed this process by taking concrete steps to streamline permitting and improve interagency coordination under existing law. Conversely, the Task Force can delay and thereby irrevocably limit the contributions of offshore wind by failing to account for climate benefits and the substantial body of existing evidence that any adverse environmental effects are localized, minor and easily mitigated.

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## **Notes**

<sup>1</sup> European Wind Energy Assoc., *Seas of Change: Offshore Wind Energy 1* (2009) (available at [http://www.ewea.org/fileadmin/ewea\\_documents/documents/publications/factsheets/EWEA\\_FS\\_Offshore.pdf](http://www.ewea.org/fileadmin/ewea_documents/documents/publications/factsheets/EWEA_FS_Offshore.pdf)).

China has begun construction on its first offshore wind farm, the Shanghai Donghai Bridge Offshore Wind Farm Project. Energy Business Review, *China Updates On Offshore Wind Farm Construction at Shanghai East China Sea Bridge* (April 17, 2009) (available at [http://www.energy-business-review.com/news/china\\_updates\\_on\\_offshore\\_wind\\_farm\\_construction\\_at\\_shanghai\\_east\\_china\\_sea\\_bridge\\_090417](http://www.energy-business-review.com/news/china_updates_on_offshore_wind_farm_construction_at_shanghai_east_china_sea_bridge_090417)).

<sup>2</sup> The Pew Oceans Commission described climate-related threats to coastal and ocean ecosystems in the following terms:

In addition to these varied threats [of coastal development, nutrient runoff, overfishing and invasive species], climate change over the next century is projected to profoundly impact coastal and marine ecosystems. Sea-level rise will gradually inundate highly productive coastal wetlands, estuaries, and mangrove forests. Coral reefs that harbor exceptional biodiversity will likely experience increased bleaching due to higher water temperatures. Changes in ocean and atmospheric circulation attributable to climate change could adversely affect coastal upwelling and productivity and have significant local, regional, and global implications on the distribution and abundance of living marine resources.

Pew Oceans Commission, *A Report to the Nation: Recommendations for a New Ocean Policy* vii (2003) (hereafter “*Pew Report*”) (available at [http://www.pewtrusts.org/our\\_work\\_detail.aspx?id=130](http://www.pewtrusts.org/our_work_detail.aspx?id=130)).

The Oceans Commission provided a similar assessment, including the following passages:

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Average global temperatures have been rising over the last several decades. Scientists believe these changes are probably due primarily to the accumulation of greenhouse gases in Earth's atmosphere from human activities... . The average thickness of sea ice in the Arctic has decreased by approximately 4.25 feet from the late 1950s to the late 1990s.... In the tropics, coral reef diseases and bleaching are occurring more frequently, and coral growth may be inhibited by increasing concentrations of dissolved carbon dioxide in the sea.... The specter of abrupt change, and a growing awareness of the impacts even gradual climate change can have on coastal development, ecosystems, and human health, call for a significant improvement in climate research, monitoring, assessment, and prediction capabilities.

U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century: Final Report of the U.S. Commission on Ocean Policy* 44 (hereafter "*Oceans Commission Report*") (available at [http://oceancommission.gov/documents/full\\_color\\_rpt/01\\_chapter1.pdf](http://oceancommission.gov/documents/full_color_rpt/01_chapter1.pdf)).

<sup>3</sup> See, e.g., Jianjun Yin<sup>1</sup>, Michael E. Schlesinger & Ronald J. Stouffer, *Model Projections of Rapid Sea-Level Rise on the Northeast Coast of the United States* (March 2009) (summarizing emerging analysis of the combined effects of ice melt, thermal expansion and current changes on sea level) (available by subscription at <http://www.nature.com/ngeo/archive/index.html>).

<sup>4</sup> Christopher A.G. Toulou, Michael L. Goo, Patrick A. Parenteau & John Costenbader, *Climate Change and the Marine Environment* 571, 573, in Donald C. Baur, Tim Eichenber & Michael Sutton eds., *Ocean and Coastal Law and Policy* (2007); see also U.S. Global Climate Change Research Program, *Global Climate Change Impacts in the United States* 79 (2009) ("Coastal and near-shore ecosystems are already under multiple stresses. Climate change and ocean acidification will exacerbate these stresses.") (available at <http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts>).

<sup>5</sup> U.S. Department of Energy, *20% Wind Energy by 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply* (July 2008) (hereafter "*DOE Report*") (available at <http://www.20percentwind.org>).

<sup>6</sup> *DOE Report* at 107.

<sup>7</sup> *DOE Report* at 9-10.

<sup>8</sup> For example, the National Renewable Energy Laboratory has estimated that offshore wind resources, located in the band between 5 and 50 nautical miles from the U.S. coast, could provide up to 1000 gigawatts of wind energy. Walt Musial *et al.*, National Renewable Energy Laboratory, *Energy from Offshore Wind* 1-2 (2006) (National Renewable Energy Laboratory Offshore Tech. Conference Paper NREL/CP-500-39450) (available at <http://www.nrel.gov/wind/pdfs/39450.pdf>).

<sup>9</sup> *DOE Report* at 13-15.

<sup>10</sup> The unacceptable cost of delaying the pursuit of any viable strategy for reducing greenhouse gas emissions is aptly illustrated by the concept of "stabilization wedges." Robert Socolow, Roberta Hotinski, Jeffery B. Greenblatt & Stephen Pacala, *Technologies Available to Curb CO<sub>2</sub> Emissions*, 46 *Env't No.* 10 at 8, 11 (2004). Under this analysis each wedge represents the progress over time of a significant policy initiative to reduce greenhouse gas emissions (and atmospheric carbon) below the existing trend line. A wedge begins narrow as the policy initiative is first adopted, but widens over time with broader adoption. The critical lesson is that a responsible response to climate change requires timely implementation of a combination of ambitious initiatives. For every promising carbon-reduction policy that is rejected or delayed, another must be substituted.

Although the concept of stabilization wedges retains its explanatory value, the authors' view of the challenge before us, based on data and analysis available in 2004, is now widely regarded as overly

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optimistic. The authors outlined policies need to avoid a doubling of carbon dioxide concentrations from pre-industrial levels — that is from about 280 to 550 ppm — based on the view that “[a]voiding a doubling of CO<sub>2</sub> levels is predicted to reduce substantially the likelihood of the most dramatic consequences of climate change, such as shutdown of the ocean’s thermohaline circulation (which transports heat from the equator to northern climes) and disintegration of the West Antarctic Ice Sheet.” *Id.* Subsequent developments have persuaded many leading climate scientists that a lower ceiling on carbon dioxide concentrations — 450 or even 350 ppm — is needed.

<sup>11</sup> The cost of delay is addressed in the following excerpt from testimony provided to the Senate Environment and Public Works Committee.

If the legislation is enacted and takes effect in 2012, the emissions caps would result in an annual reduction of emissions of just under 2% per year and, for covered sources, arrive at a reduction of 15% below current levels by 2020. But what happens if we delay enacting legislation by two years? Just two years of delay — holding everything else constant — has major consequences. As you can see in the diagram behind me, in order to result in the same amount of cumulative emissions by 2020 (and with climate change, it is the cumulative emissions that matter), a two-year delay will require that emissions fall by 4.3% every year — over twice as quickly! Instead of a reduction of 15% in the annual emissions for the year 2020, two years of delay means 2020 emissions have to be reduced by 23% — just to get to the same place. The worst thing we can do for our economy and our environment is to do nothing at all, the second worst thing we can do is to delay.

*America’s Climate Security Act: Hearing Before the Senate Comm. on Env’t and Public Works* (Nov. 2007) (prepared statement of Fred Krupp, President of Environmental Defense) (available at [http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore\\_id=8fffbfa7-4e50-45d5-8c55-6e73a1adb25a](http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=8fffbfa7-4e50-45d5-8c55-6e73a1adb25a)).

<sup>12</sup> American Wind Energy Association, *Annual Wind Industry Report* (2009) (available at <http://www.awea.org/publications/reports/AWEA-Annual-Wind-Report-2009.pdf>).

<sup>13</sup> See Department of the Interior, Minerals Management Service, *Final Rule: Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf; Final Rule*, 74 Fed. Reg. 19,638, 19639-40 (2009) (discussing NEPA review required for leases, site assessment plans and construction and operating plans under C.F.R. pt. 285).

<sup>14</sup> U.S. Department of the Interior, MMS Minerals Management Service, *Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf* (Oct. 2007) (available at <http://ocsenergy.anl.gov/eis/guide/index.cfm>); U.S. Department of the Interior, MMS Minerals Management Service, *Cape Wind Energy Project: Final Environmental Impact Statement* (Jan. 2009) (available at <http://www.mms.gov/offshore/AlternativeEnergy/CapeWindfeis.htm>).

<sup>15</sup> Post-construction environmental monitoring of offshore wind farms in Europe has confirmed pre-construction assessments that adverse environmental effects would be minor, localized and susceptible to effective mitigation. See, e.g., BoWind, *Barrow Offshore Wind Farm Post Construction Monitoring Report: First Annual Report* 3-4 (2008) (reviewing effects on fish, benthos, operational underwater noise, oceanography, seabed morphology, and bathymetry and concluding “In general, the surveys undertaken during the first year of operation of the wind farm did not register major or unforeseen environmental impacts.”) (available at [http://www.bowind.co.uk/pdf/MPCR%20BOW/BOW\\_PCMR\\_december%202007\\_15012008\\_v2.pdf](http://www.bowind.co.uk/pdf/MPCR%20BOW/BOW_PCMR_december%202007_15012008_v2.pdf)); Riso DTU, *Offshore Wind Power Experiences, Potential and Keys Issues for Deployment*. (2008) (available at [http://www.risoe.dk/Knowledge\\_base/publications/Reports/ris-r-1673.aspx?sc\\_lang=en](http://www.risoe.dk/Knowledge_base/publications/Reports/ris-r-1673.aspx?sc_lang=en)). (finding “strong evidence,” based on post-construction monitoring of the North Hoyle offshore wind farm, that the project “represents a benign marine development in environment impact terms,” that “[a]ny minor construction impacts quickly dissipated within one or two years,” and that

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“construction and operation of the wind farm, to date, has shown no measurable indication that any significant environment impact has occurred”).

Danish researchers recently reviewed post-construction environmental analyses of Denmark’s offshore wind farms and concluded that the “Danish experience from the past 16 years shows that offshore wind farms, if placed right, can be engineered and operated without significant damage to the marine environment.” Jørgen Lemming, Poul Erik Morthorst & Niels-Erik Clausen, *Offshore Wind Power Experiences, Potential and Key Issues for Deployment Division* (2009) (available at <http://www.slideshare.net/Calion/offshore-wind-power-experiences-potential-and-key-issues-for-deployment>).

<sup>16</sup> Deadline provisions of FERC’s recently established Integrated Licensing Process, which apply to actions by applicants, the Commission and other federal agencies, may provide a useful model. See 18 C.F.R. pt. 5. FERC’s central purpose in establishing the Part 5 procedures was to “provide an efficient and timely licensing process that continues to ensure appropriate resource protection through better coordination of the Commission’s processes with those of Federal and state agencies and Indian tribes that have the authority to condition Commission licenses.” 18 CFR § 5.1 (e).

<sup>17</sup> 43 U.S.C. § 1337(p)(8) (setting 270-day deadline for issuance of “any necessary regulations to carry out this subsection”).

<sup>18</sup> In any event, AWEA strongly opposes curtailment or elimination of offshore wind developers’ existing ability, under MMS rules, to initiate the leasing process on a site-specific basis through the filing of an unsolicited request for leasing on a non-competitive basis. 30 C.F.R. §§ 285.230-.232. These provisions preserve essential flexibility for MMS to streamline the federal leasing process for projects that have already prevailed in state-sponsored competitions to choose new suppliers of energy.