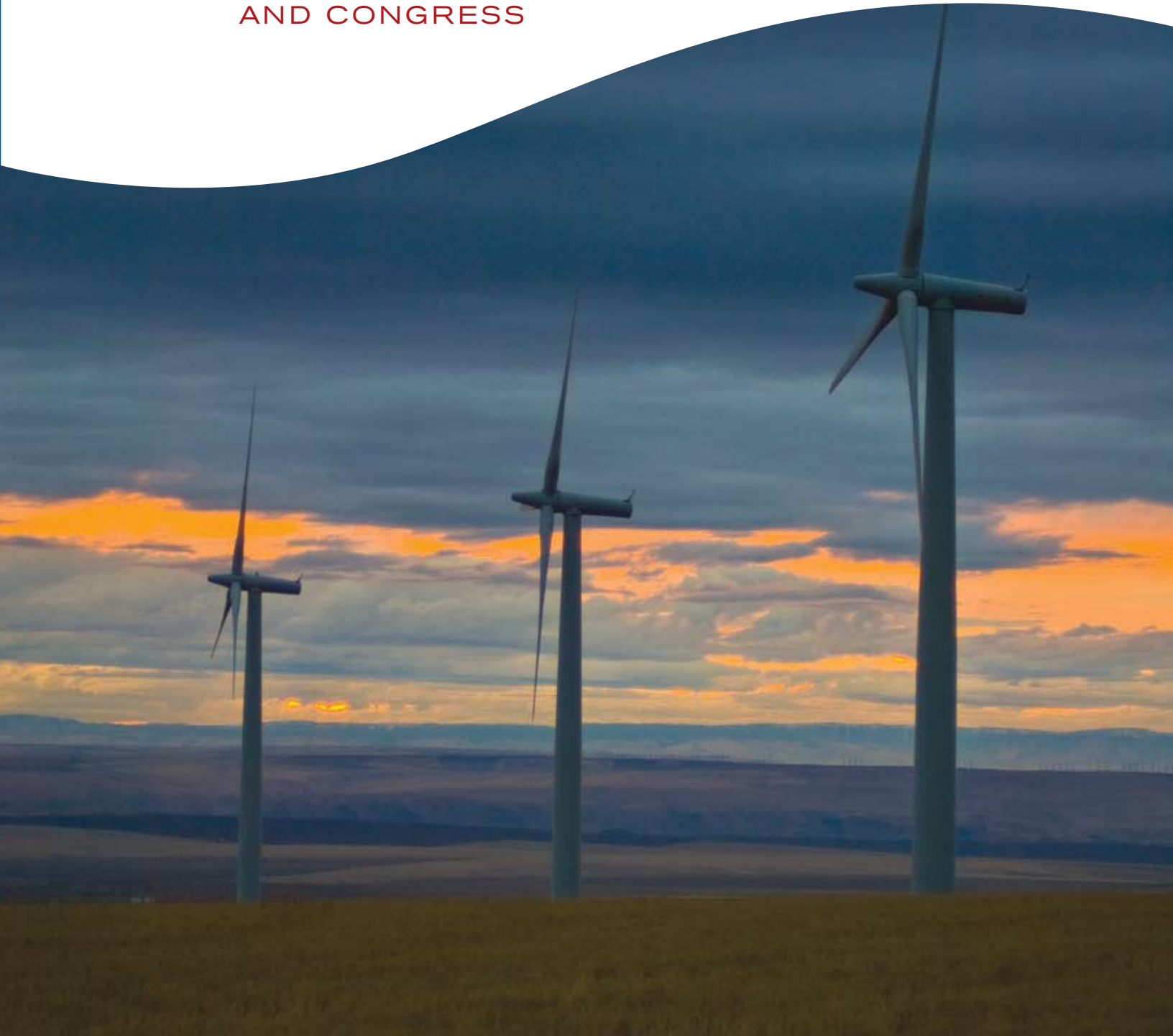


WIND ENERGY FOR A NEW ERA



AN AGENDA
FOR THE NEW PRESIDENT
AND CONGRESS



AMERICAN WIND ENERGY ASSOCIATION

American Wind Energy Association
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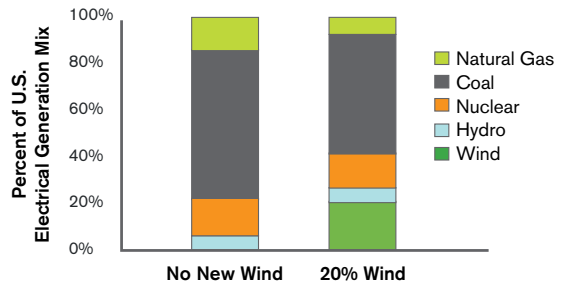
AWEA is the national trade association of America's wind energy industry, with more than 1,600 member companies, including global leaders in wind power and energy development, wind turbine manufacturing, component and service suppliers, and the world's largest wind power trade show. AWEA is the voice of wind energy in the U.S., promoting renewable energy to power a cleaner, stronger America.

20% Wind Energy By 2030

20% Wind Energy By 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply, a report released in May 2008 by the U.S. Department of Energy, concludes that the U.S. possesses sufficient and affordable wind resources to obtain at least 20% of its electricity from wind. No technological breakthroughs are required and the costs would be modest. But the benefits are substantial. Achieving the 20% wind vision will dramatically cut greenhouse gas emissions, reduce electricity costs, foster long-term price stability, promote our energy security, and support hundreds of thousands of new American jobs.

The 20% report is the driver of the wind industry's proposed agenda for the new President and Congress.

20% Wind Vision: Impact on U.S. Electrical Generation Mix in 2030



Building to 20% wind power in 2030 would reduce electric utility natural gas consumption by 50%, reduce electric utility coal consumption by 18%, and avoid the construction of 80 GW of new coal power plants. Source: U.S. Department of Energy, 20% Wind Energy By 2030

Benefits of Achieving the 20% Wind Energy by 2030 Vision

Environment:

- ▶ Reduces carbon dioxide emissions from the electric sector 25% by 2030, the equivalent of taking 140 million vehicles off the road, and nearly single-handedly keeps electric sector emissions at today's levels while helping meet growing electricity demand.
- ▶ Reduces water consumption in the electric sector by 4 trillion gallons between 2007 and 2030 (or 17% in 2030), with nearly one-third of this reduction occurring in the arid Western states.
- ▶ Does not contribute to acid rain, urban smog, mercury contamination, or other toxic pollution associated with the extraction, transport, and combustion of fossil fuels.

Economy:

- ▶ Directly stimulates 150,000 domestic jobs in wind turbine manufacturing, installation, operations, maintenance, and management.
- ▶ Indirectly generates 350,000 domestic jobs in support of the wind industry, including steel workers, electrical manufacturing workers, accountants, lawyers, and additional positions related to increased local spending.
- ▶ Pays rural land owners more than \$600 million a year by 2030 through lease payments that range from \$2,000 to \$4,000 per megawatt annually.
- ▶ Increases property tax revenue in rural communities by as much as \$1.5 billion annually by 2030. These funds can be and are being allocated to schools, infrastructure, medical centers, and other public services.

U.S. Energy Security:

- ▶ Generates electricity from a domestic, safe, and inexhaustible source.
- ▶ Reduces natural gas demand by 50% in the electric sector and 11% overall, relieving supply and price pressure in the domestic natural gas market and potentially reducing future need for imported liquefied natural gas from the Middle East, Russia, or other areas.
- ▶ Potentially reduces U.S. reliance on foreign oil by generating electricity that can be used for plug-in hybrid vehicles.

Sound Economic Investment:

- ▶ Requires an initial investment of \$43 billion, just 2% more than meeting future projected energy demand without any new wind energy. Calculated over time, this expense amounts to about an additional 50 cents per month on an average household electricity bill.
- ▶ Provides fuel cost savings, economic investments, emission reductions, and other benefits valued at \$200 billion, including:
 - \$128 billion consumer savings from displacement of variable-priced natural gas-fired generation with fixed-price wind power, according to supplemental analysis.¹
 - \$98 billion in consumer savings through reduced exposure to carbon regulation costs, depending on the stringency and timing of future carbon regulation, according to supplemental analysis.²

Executive Summary

A new approach to energy offers a clear path to a more secure and prosperous future and a more livable world. Increased use of wind, solar, and other renewable energy sources will spur economic growth, create high-quality American jobs, enhance our national security, protect consumers from price spikes or supply shortages associated with global fuel markets, and dramatically reduce the pollution that is warming the planet.

Wind energy is already a clean, mainstream source of electric power and a major force for economic growth. In 2008, the United States became the largest generator of wind power in the world, producing enough electricity to power more than 5 million homes. In 2007, wind power provided 35% of the nation's new electric generating capacity and contributed critical growth to the hard-pressed U.S. manufacturing sector. Since the beginning of 2007, more than 50 wind industry manufacturing plants have been opened, expanded, or announced, creating many thousands of permanent, high-paying American jobs in a difficult economic climate.

And that is just the start. In May 2008, the U.S. Department of Energy released a major report documenting the potential for wind energy to provide at least 20% of the nation's electricity by the year 2030. Wind power at this level would support 500,000 jobs¹, save consumers \$128 billion through lower natural gas prices², and cut greenhouse gas emissions as much as taking 140 million automobiles off the road. No technological breakthroughs are required for wind power to reach this level. All that is needed are supportive government policies that reflect a long-term national commitment to clean, home-grown renewable energy.

This report offers an in-depth review of the key national policies needed to support the growth of wind energy consistent with the 20% vision.

A brief summary of those policies follows.

“A green, renewable energy economy isn't some pie-in-the-sky, far-off future – it is now. It is creating jobs – now. It is providing cheap alternatives to \$140-per-barrel oil – now. And it can create millions of additional jobs, an entire new industry, if we act – now.”

Barack Obama

June 24, 2008, Las Vegas, Nevada



Key National Policies Needed to Achieve 20% Wind Power

National Renewable Electricity Standard

1 A national renewable electricity standard (RES) – also known as a renewable portfolio standard – would, for the first time, signal a long-term, national commitment to expand the use of renewable energy in the U.S. Utilities in every state would obtain a minimum percentage of their electricity from renewable sources by a certain date or purchase tradable credits for renewable electricity produced elsewhere. This vital incentive would drive new and greater investment in domestic wind industry manufacturing. Twenty-eight states already have RES policies, which have been effective and economical incentives for the development of wind and other renewable energy sources. A national policy would streamline this uneven patchwork and bring renewable energy benefits to all parts of the country. A national RES should call for 25% of the nation's electricity to come from renewable energy by 2025. An aggressive near-term target, such as the 10% by 2012 objective called for in the Obama-Biden *New Energy for America* plan, is essential to ensure rapid deployment of renewables. The target levels should increase incrementally in the years that follow.

Renewable Energy Production Tax Credit

2 The renewable energy production tax credit (PTC), a credit of 2.1 cents per kilowatt-hour, is the primary federal incentive for wind energy and has been essential to the industry's growth. Other electricity generation technologies have their own forms of federal support, often permanent in tax law, so wind power would be disadvantaged in the absence of a PTC or other comparable incentive.

Still, there are two significant problems with the PTC. First, it offers little benefit in an adverse financial climate, where demand for a tax credit is limited. The renewable energy sector is seeking changes to the structure of the credit that make it possible to fully realize its value, particularly in a down market, and allow participation by a broader pool of investors.

Second, the credit has routinely been extended for only one-year or two-year terms, and has been allowed to expire on three separate occasions -- in 1999, 2001, and 2003. The uncertainty of this on-again, off-again pattern has discouraged companies from making long-term, sizeable investments in wind power manufacturing and development. An extension of at least five years would, for the first time, provide the wind energy industry with the policy stability that other energy industries have long enjoyed.

Lastly, small wind systems, used to power homes, farms, and small businesses, are ineligible for the PTC and instead rely on a federal investment tax credit. This credit needs to be adjusted to remove the cost caps, which greatly reduce its effectiveness.

Federal Renewable Energy Transmission Policy

3 Perhaps the biggest obstacle to the long-term growth of wind power and other renewables in the U.S. is the lack of available transmission. Simply put, we don't have enough transmission capacity to deliver electricity from the rural, windy areas where it is generated most abundantly and cost-effectively to the populated areas where most electricity is consumed. The wind industry supports federal policies that would bring about the construction of a high-voltage interstate transmission highway system for renewable energy, as envisioned in DOE's 20% wind report. Our agenda includes federal legislation, regulatory initiatives by the Federal Energy Regulatory Commission and the Department of Energy, and federal financial support. The cost would be an increase in annual transmission investment from approximately \$8 billion today to \$11 billion, but this investment would quickly be offset by lower electricity costs and reduced fuel costs, and would lead to greater energy independence.

National Climate Change Legislation

4

As the most readily deployable source of carbon-free electricity generation, wind power is uniquely positioned to contribute to the global warming solution, especially in the early years of the climate protection effort when few other options are available. Generating 20% of U.S. electricity from wind would be the climate equivalent of removing 140 million vehicles from the roadways. But that potential will not be realized unless climate legislation provides an economic incentive to switch to clean energy sources. Under a cap-and-trade system, any method of distributing emission allowances must include a fair allocation to renewable energy. In addition, climate legislation must include an aggressive near-term goal, such as a 15% to 20% carbon dioxide emissions reduction by 2020, in order to promote a near-term shift to renewable energy and get the quick start on greenhouse gas emissions reductions scientists tell us is needed. Finally, a portion of the revenues generated by auctioning allowances should be used to finance key renewable energy priorities, including a renewable energy production incentive, a new interstate transmission highway system, training for the growing renewable industry workforce, incentives for manufacturers, and research and development. For small wind systems, climate legislation should also include consumer rebates and incentives for states, utilities, and manufacturers.

Wind Power Project Siting Policies

5

Federal agencies have a key part to play in developing our renewable energy potential because of their role in the siting of wind projects and new transmission lines, especially on federal lands. Proposals for responsibly-sited renewable energy projects on federal lands (including offshore waters) should be prioritized and federal agencies should create review processes that are streamlined, transparent and timely, with permitting and review capabilities that are scaled up as needed to meet demand. In addition, the President should direct the Department of Defense, the Federal Aviation

Administration, and the Department of Homeland Security to adopt a cooperative approach to resolving possible conflicts between wind projects and radar operations. Each federal agency should be asked to plan how it will use its authority to facilitate the growth of wind power and other renewable energy sources.

Federal Research & Development and Wind Program Funding

6

Federal funding for wind energy research and development (R&D) and other programs is inadequate, especially when compared with funding levels for other fuels and energy sources. The DOE wind program currently receives about \$50 million annually, which is well below its all-time high of \$63 million appropriated in Fiscal Year (FY) 1980. In comparison, the annual R&D budget for nuclear power is over \$960 million, while coal receives nearly \$500 million, solar receives over \$160 million, and biomass receives roughly \$200 million. The overall program budget for DOE's Office of Energy Efficiency and Renewable Energy for FY 2008 was over \$1.7 billion. The wind industry recommends increasing the annual funding level for wind R&D and other programs to \$217 million over the course of the next three to five years. Most of this funding should be directed to DOE's Office of Energy Efficiency and Renewable Energy's wind program.

Conclusion: A Rare Opportunity

With the right policies in place, wind power can make a major contribution in the effort to protect the planet's climate, while spurring tens of billions of dollars in economic investment, supporting hundreds of thousands of new American jobs, making America more independent and secure, and saving consumers more than \$100 billion.

Let's act – now – to put the right policies in place.

Wind Power Project Siting Policies

Resolving wind power project siting issues is an important part of expanding wind energy development. Policies and procedures not properly coordinated between the wind industry and the government can cause, and, in fact, have caused, unnecessary delays for wind projects.

The federal government controls millions of acres of surface land and seabed across the U.S. The Bureau of Land Management (BLM) controls 258 million acres, the U.S. Forest Service (USFS) controls 193 million acres, and the Minerals Management Service (MMS) controls the Outer Continental Shelf, which extends to international waters. A significant amount of this land and ocean area may be feasible for wind energy development.

Federal agencies are recognizing how the growth of the wind industry is related to the resources and policies for which they are responsible. Some of these agencies are writing policies on wind development. For example, wildlife issues remain a focal point not only for the U.S. Fish & Wildlife Service (USFWS), but for the BLM, USFS and other agencies as they consider policies for lands that they manage. Multiple agencies are having difficulty accommodating wind industry growth within their existing review processes. Unless proactively addressed, these issues will multiply as wind energy growth continues.

To achieve 20% wind power in the U.S., the principles applied to wind energy siting issues must promote efficient, fair, and open permitting processes at the federal, state and local levels. Also, project siting guidelines must address wildlife and habitat issues, military and non-military infrastructure, and community concerns.

Key Recommendations on Wind Power Project Siting Policies

Prioritization of Renewable Energy Development

[The next President should issue an Executive Order to prioritize responsibly-sited renewable energy development on federal lands.](#)

Several federal agencies manage land that might be appropriate for wind energy project development, including

the BLM, the USFS, and the MMS. Wind power and other renewable energy project development should be a priority on federal lands, especially in light of other energy resource development that is already underway on those lands.

In 2001, President Bush signed Executive Order 13212, directing all federal agencies to advance energy-related projects (both conventional and renewable) by expediting reviews of permits or taking other actions to accelerate the completion of energy projects. However, little has improved with respect to renewable energy. The next Administration should take more forceful action in relation to advancing renewable energy development on federal lands.

Federal Agency Staffing and Operations

[The new Administration or Congress should require annual programmatic reviews at each federal agency to assess requirements associated with accommodating the 20% wind vision.](#)

These reviews should address inter-agency coordination for assessing constraints on or support for future wind development resulting from their respective policies and actions. This could be accomplished through an Executive Order or established by Congress. The resulting annual reports should be made public and, as appropriate, submitted to Congress.

The Department of Energy's (DOE) 20% report identifies delays and limits associated with government review as a potential barrier to increased wind development. Some agencies do not have sufficient resources to handle expansion of wind development. Other agencies are likely to be unaware of the impacts that an annual wind power installation rate of 16 gigawatts, as needed to secure 20% wind power, will have on their operations.

A larger issue is the cumulative effect of overlapping land use restrictions put in place by different agencies. For example, overlaying wildlife setback areas and military airspace restrictions with macro wind resource data, may leave very little land available for wind development. Agencies should consider their collective actions within the context of the overall national goal of expanded wind energy development to achieve environmental, economic and energy security objectives.

To help deal with staffing constraints at the BLM, the Administration should support legislation to dedicate rental revenue from wind and solar projects on BLM lands expressly for the purpose of increasing staff to process additional wind and solar applications.

Wind and solar energy development are the only major activities on BLM lands for which there is neither revenue nor staff dedicated solely to ensuring the timely processing of permit applications. For other activities, including oil and gas, geothermal, film production, and communications towers, a portion of rental and/or royalty payments is recycled back into the BLM to fund staff specifically to process additional applications. Legislation is needed to dedicate rental revenue from wind and solar development on BLM lands back to the agency for the purpose of processing additional renewable energy applications.

As of January 2008, there were more than 150 applications pending for site testing and wind farm construction on BLM land. Due to limited staffing, site testing permits for wind energy, which ordinarily would take only 30-90 days to process, are taking a year or longer. These delays make it difficult if not impossible to develop and construct projects that are sorely needed to address climate change.

New BLM appointees in the next Administration should offer clear directives to field offices about the importance of accurate and consistent implementation of the wind development policy, additional staff training for field staff, and hiring of staff dedicated to processing wind energy permits.

In 2003, BLM initiated a Programmatic Environmental Impact Statement (PEIS) to address and plan for the impacts of future wind energy development on public lands. This effort was driven by the *Energy Policy Act*, which expressed the "Sense of Congress" that 10,000 megawatts (MW) of non-hydro power renewable energy resources should be located on public lands by 2015. The PEIS evaluated the development of wind energy on a large scale, established best management practices, and outlined a reasonable way to develop the nation's wind resources.

The wind industry supports the BLM's Wind Energy Development Policy, but the agency needs to administer it more effectively. Some of the problems are due to staffing constraints. However, some wind developers are encountering other problems at BLM field offices, an indication that additional training is needed.

The next Administration and Congress should increase staffing at the Federal Aviation Administration (FAA), USFWS, the National Weather Service and the Long Range Radar Joint Program Office (JPO) to allow for timely review and response to wind industry applications.

Wind energy projects are not subject to any comprehensive federal review, unless there is a federal nexus which triggers the *National Environmental Policy Act*, such as placing a project on federal land or connecting into a federal transmission system such as the Western Area Power Administration. However, even with that limited federal nexus, several agencies with evaluation requirements are overwhelmed by the sheer number of wind energy projects proposed. To date, the agencies most affected by hiring limitations are the FAA, the BLM, the USFWS, the National Weather Service and the Long Range Radar JPO of the Department of Defense (DOD) and the Department of Homeland Security (DHS). Additional government agencies and offices may be affected in the future. The Administration should ensure adequate funding and staffing to process renewable energy applications in a timely manner.

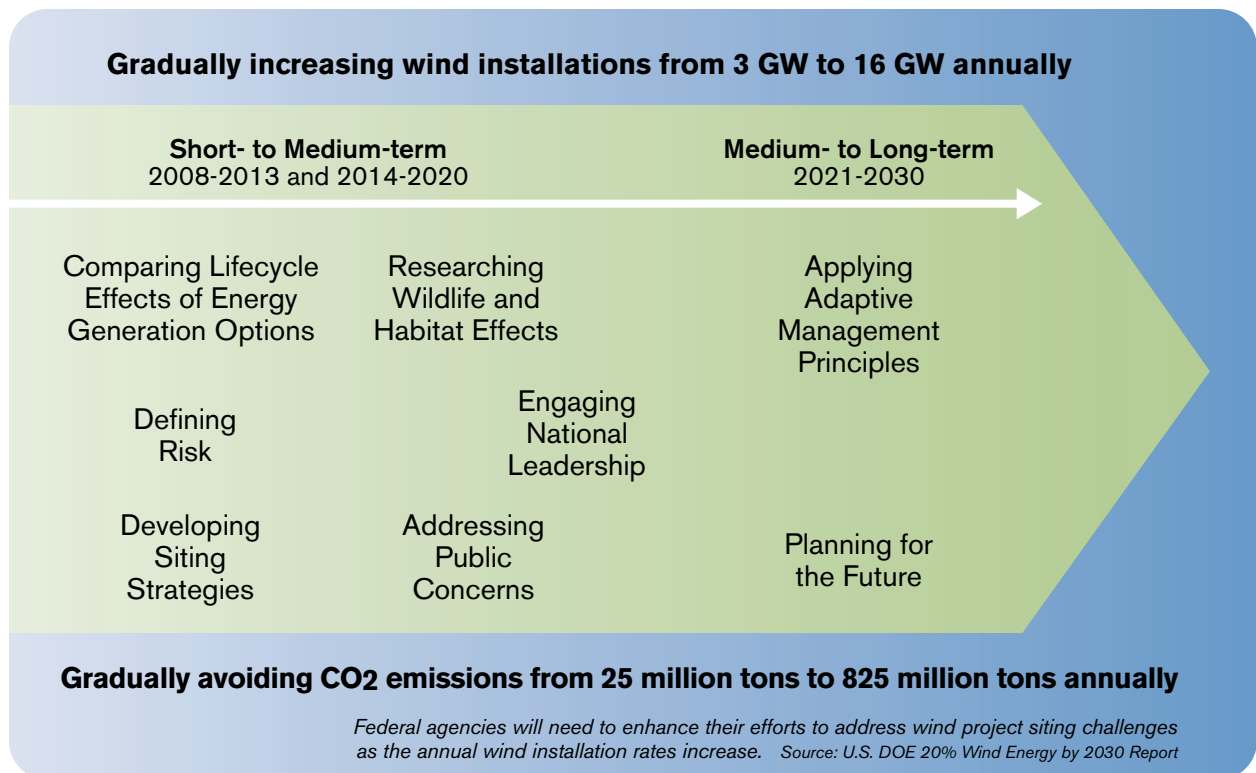
Siting Guidelines and Regulations

The next Administration should direct agencies to proactively engage with the wind energy industry and the DOE, consistent with existing federal law, when drafting policies that impact the siting, construction, or operation of wind energy facilities, to ensure that the resulting policies are workable and will not unnecessarily limit wind energy deployment.

When federal land management agencies develop siting policies for projects on their land, they often become models for state and local jurisdictions that develop their own rules. Therefore, policies must be developed with sufficient wind industry and public input to ensure they are workable. Adding the DOE to discussions would further inform other agencies about the unique aspects of wind energy development. Once reasonable, predictable, transparent, and timely siting policies are established, efficient and consistent implementation will be essential.

The new Administration should encourage the USFS to release an "interim final" draft of siting guidelines so the industry can try to help the USFS create a workable final document.

Actions to Support 20% Wind Energy by 2030



Currently there are a handful of wind power projects proposed for USFS land. The agency is considering them on an ad hoc basis. In September 2007, the USFS released draft directives to guide wind energy development on National Forest Service land. Before the release of this document, the wind industry repeatedly attempted to engage the staff drafting the directives and supply information about the wind project development process and constraints. USFS staff repeatedly stated that they were unable to have a more substantive discussion without violating the *Administrative Procedures Act*. The draft directives released in September 2007 included suggestions that are unworkable for the industry, such as allowing turbines to be relocated if unacceptable impacts were found, implying that two years of pre-construction wildlife studies might be required for temporary meteorological towers, and assigning one-size-fits-all wildlife monitoring guidelines, despite the variation among sites.

Given the significant flaws in the first draft, the wind power industry has serious reservations as to whether the necessary changes will be made in the next iteration

to make the directive workable. In order to give the wind industry another opportunity to comment on and improve the proposal before it becomes final, the Administration should release the next draft as an "interim final" document.

If they are not completed as promised by the end of 2008, the new Administration should direct MMS to complete offshore wind regulations in a timely manner and to address any remaining concerns by amending the regulations after adoption rather than delaying them further.

The *Energy Policy Act of 2005* provided MMS with lead agency status to permit offshore alternative energy projects, including wind energy, on the Outer Continental Shelf. Congress directed MMS to complete regulations within one year. Completing the necessary review process and drafting the regulations has taken considerably longer—more than three years and counting. MMS published the draft rule on July 9, 2008, and AWEA's Offshore Wind Working Group filed comments on September 8, 2008.

Wind companies pursuing offshore projects in federal waters are concerned about the length of the regulatory process so far, and believe that further delay would be troublesome. MMS repeatedly asserts its intention to complete the regulations and publish a final rule by the end of 2008. If the rules are not published by then, the new Administration should ensure that the MMS publishes the final rules early in 2009 – in fact, as soon as possible.

Radars and Military Issues

[The Administration should establish a process within existing law through which developers can engage the DOD. This process should be timely, transparent and predictable, and include an opportunity to appeal negative decisions and discuss mitigation options.](#)

Wind turbines can impact radar systems. DOD is primarily concerned about impacts to Long Range Radars used to monitor the U.S. Some of the Long Range Radars deployed are older systems. The FAA was in the process of phasing out these facilities, but after the September 11, 2001, attacks, the DOD wanted to track activity in the interior U.S. and so assumed ownership of the Long Range Radars. The DOD pays the FAA to maintain the systems today.

In 2006, the FAA essentially placed a moratorium on wind development in the upper Midwest, tying up more than 1,000 MW of wind development. This action brought the issue of radar impacts to the fore. The U.S. Congress has directed the DOD to conduct a comprehensive study on wind turbine impacts to military readiness, primarily with regard to radar facilities. This prompted a joint office of the DOD, the DHS and the Long Range Radar JPO, to issue a letter saying it would object to any wind turbines within a long range radar line of sight. While the policy was later clarified to state that a site-by-site review of each individual turbine and project was appropriate, it is clear that the FAA/DOD coordinated radar impact review process is not working.

A developer must submit Form 7460-1 to the FAA for each wind turbine over 200 feet above ground level. This triggers a review by the U.S. Air Force. If the project is within line-of-sight of a long range radar, there is a more formal DOD review. It is unclear how this process works, as it is not transparent. If the FAA issues a Notice of Proposed Hazard for a project, there is little recourse for a predictable appeal. Projects issued a Notice of Proposed Hazard for a potential conflict with a radar system or military airspace have followed different paths to success, but many have not

made it through, tying up millions of dollars and thousands of megawatts of renewable energy potential. The new Administration should direct the FAA and DOD/DHS to adhere to a transparent, timely and predictable review and appeal process for wind turbine obstruction evaluations.

[The new Administration should direct DOD and FAA to create an early feasibility review that allows project proponents an opportunity to understand potential DOD concerns and points of contact.](#)

FAA posted the Long Range Radar tool on the Obstruction Evaluation website that allows for a quick line-of-sight review. However, this does not provide a detailed technical review, nor does it identify any facility operator to contact to understand whether there are real impacts to that specific facility or to identify potential mitigation options. A more comprehensive early feasibility study that can be implemented before submitting Form 7460-1 is needed.

[Congress and/or the President should direct the DOD, in coordination with FAA, to identify high priority Long Range Radar facilities that can be upgraded to enable wind energy development. Congress and/or the President will also need to appropriate funds to see these upgrades through.](#)

Given that there are likely to be a limited number of facilities impacted by wind turbines, DOD, in coordination with FAA, should be able to identify some high-priority radar systems targeted for upgrades. Some Congressional offices have expressed interest in helping the wind industry identify sites and securing appropriations to upgrade some facilities to enable wind energy development.

[The new Administration and Congress should provide \\$10 million annually for a radar mitigation R&D program at DOE in collaboration with DOD/DHS and the wind industry.](#)

Mitigation measures to reduce radar impacts related to wind turbines must be pursued. Concepts such as stealth blades show some promise. Modifications to turbines or modifications to the radars themselves are likely to be necessary in some instances, depending on the type of interference, the type of radar, and the layout of the project. Both the U.S. government and the wind energy industry are likely to pursue research on mitigation methods. These efforts should be coordinated to the maximum extent possible.

[New political appointees at the DOD should clarify that red/yellow/green maps are not decision making tools; they](#)

are information-only tools designed to help determine the appropriate level of scrutiny a given project should receive.

Red/yellow/green maps related to military airspace use in some California counties, as well as a red/yellow/green screening tool related to Long Range Military radar facilities, are available. It is relatively easy for overwhelmed agency staff or for those opposed to development in a particular area to state that red or yellow areas are off-limits, based only on the map. The information reflected on a map is often far too coarse to use for site-specific decision making. For example, the Long Range Radar map is a simple line-of-sight assessment assuming 750-foot turbines (meanwhile, on-shore turbines in the U.S. today actually don't exceed 500 feet), so any areas indicated as red on the map should not automatically be off-limits. The visual nature of maps makes them powerful tools, but potentially misleading, so it is critical that their use be characterized as informational only.

Federal Coordination with Industry

[The new Administration should maintain and improve existing government/industry collaborative efforts and consider supporting new initiatives.](#)

The Department of the Interior established the Wind Turbine Guidelines Advisory Committee in October 2007. The 22-person federal advisory committee has been charged with making recommendations to the Secretary of the Interior to minimize impacts to wildlife from wind project development. The Committee has a two-year charter through October 2009, although the plan is to complete its recommendations by May 2009. The membership is divided among the wind energy industry, federal agencies, state agencies, and environmental organizations.

The USFWS intends to use the Committee's recommendations to inform a rewrite of the 2003 interim guidance document, criticized by the wind industry and others as not including wind/wildlife expertise. As it stands, the 2003 interim guidance is still the official policy of the USFWS with regard to siting wind energy projects in a manner which protects wildlife.

In the context of achieving 20% wind energy in the U.S., wildlife issues will continue to be a concern among permitting officials and policymakers. The work of this Committee is necessary to allow for industry expansion without overly restrictive mandatory regulations. It will be critical for the final recommendations to protect

wildlife while not overly constraining wind energy development. Committee deliberations are progressing in a positive direction, albeit slowly. The new Administration should continue this work and incorporate its final recommendations into a new voluntary federal guidance document.

[The new Administration should support the National Academy of Sciences' \(NAS\) comparative study on the health, environmental, and wildlife impacts of various energy sources.](#)

The U.S. lacks a comprehensive assessment of the costs and benefits of all energy sources' environmental impacts. Without an apples-to-apples comparison it is difficult to make energy policy decisions in an increasingly carbon-constrained market. It is also difficult for wind energy to capture any of the external benefits inherent in a clean, emissions-free technology, especially in the context of siting decisions and wildlife impacts, without such an assessment.

The *Energy Policy Act of 2005* directed the NAS to conduct a study of the costs and benefits of all energy sources, but funds were not appropriated until 2008, when \$1.5 million was set aside. NAS staff indicated that \$2.5 million would be required, so additional funds may be needed to complete this critical report. The comparative study was begun in 2008 and is entitled "Health, Environmental, and Other External Costs and Benefits of Energy Production and Consumption." The study will include a quantitative comparison of wildlife impacts of various energy sources. The prepublication version of the report is due in August 2009.

[The new Administration should continue to fund federal agency participation in collaborative efforts and support the American Wind Wildlife Institute \(AWWI\).](#)

The federal government, through the DOE, USFWS and other agencies, collaborates with the wind energy industry on a variety of wind/wildlife issues and other research efforts and dialogue forums including the National Wind Coordinating Collaborative (including the Grasslands Shrub Steppe Species Collaborative) and the Bats and Wind Energy Cooperative.

The newly formed AWWI, a joint effort of the wind energy industry and environmental organizations, is seeking financial support from the federal government to identify and fund additional wildlife research.



NOTES

Background: 20% Wind Energy by 2030:

¹ National Renewable Energy Laboratory. *Power System Modeling of 20% Wind-Generated Electricity by 2030*. June 2008; Number reflects mid-case secondary natural gas savings from 20% Wind (2006 dollars).

² *Ibid*; Number reflects mid-case carbon savings from 20% Wind (2006 dollars) and assumes a \$21.8/ton carbon cost.

Executive Summary:

¹ U.S. Department of Energy. *20% Wind Energy by 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply*. May 2008.

² National Renewable Energy Laboratory. *Power System Modeling of 20% Wind-Generated Electricity by 2030*. June 2008; Number reflects mid-case secondary natural gas savings from 20% Wind (2006 dollars).

Renewable Electricity Standard:

¹ A March 2007 analysis conducted by energy research firm Wood Mackenzie, *Impact of a Federal Renewable Portfolio Standard*, found that a 15% renewable electricity by 2020 standard would save consumers more than \$100 billion. It is anticipated that the 25% RES would create an even more substantial consumer savings.

² Energy Information Administration. *Energy and Economic Impacts of Implementing Both a 25-Percent Renewable Portfolio Standard and a 25-Percent Renewable Fuel Standard by 2025*. August 2007.

PHOTO CREDITS

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WIND ENERGY FOR A NEW ERA



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AWEA is the national trade association of America's wind energy industry, with more than 1,600 member companies, including global leaders in wind power and energy development, wind turbine manufacturing, component and service suppliers, and the world's largest wind power trade show. AWEA is the voice of wind energy in the U.S., promoting renewable energy to power a cleaner, stronger America.

More information on wind energy is available at the AWEA Web site:

www.awea.org

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