



Wind Powering America

DRAFT Action Plan

Introduction

Wind Powering America is a commitment to dramatically increase the use of wind energy in the United States. This initiative will establish new sources of income for American farmers, Native Americans, and other rural landowners, and meet the growing demand for clean sources of electricity. The time has come for wind to take its place as one of the preferred electricity supply options.

Wind has been the fastest growing source of electricity generation in the world through the 1990s. However, the majority of this growth has been in Europe, where conventional energy costs are higher than those in the United States. With large untapped wind energy reserves throughout the country and declining wind energy costs, the United States is now moving forward into the 21st century with an aggressive initiative to accelerate wind technological progress and further reduce its costs, to create new jobs, and to improve environmental quality. *Wind Powering America* will expedite the movement of wind technology into the mainstream of the U.S. electric sector.

Through *Wind Powering America*, the United States will achieve targeted regional economic development, protect the local environment, reduce air pollution, lessen the risks of global climate change, and increase energy security.

Strategic Elements of *Wind Powering America*

- # Establish a regional framework through state and local partnerships
 - # Accelerate technology development
 - # Provide Federal leadership in wind power use
 - # Educate the American public
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Goals

The three goals of *Wind Powering America* are to:

- # Provide at least 5% of the nation's electricity with wind by 2020
 - more than 5,000 megawatts will be installed by 2005
 - over 10,000 megawatts will be on-line by 2010
- # Double the number of states which have more than 20 megawatts of wind capacity to 16 by 2005, and triple the number to 24 by 2010
- # Increase wind's contribution to Federal electricity use to 5% by 2010

The initiative will achieve these goals by building on current and future public and private sector efforts to support the development of wind power.

Wind Powering America will provide the technological and institutional support needed to reduce the cost gap between wind and fossil power generation, help ensure the viability of wind energy in new competitive power markets, and allow U.S. wind technology to compete in world markets. The initiative supports the U.S. Department of Energy's plan to have 25,000 megawatts of non-hydropower renewable generating capacity on-line by 2010. In addition, it supports the Western Governors' Association and Western Regional Air Partnership's goal of increasing the contribution of non-hydropower renewable energy to regional electricity needs to 10% by 2005 and to 20% by 2015, as a means of reducing haze in the West.

Benefits of *Wind Powering America*

- # Adding \$60 billion in capital investment in rural America over 20 years
 - # Reaching \$8 billion in annual investment by 2020
 - # Providing \$1.2 billion in new income for American farmers, Native Americans, and rural landowners over 20 years
 - # Displacing 35 million tons of atmospheric carbon in 2020
 - # Creating 80,000 permanent jobs in 2020
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***Wind Powering America* Actions (Draft for discussion)**

Wind Powering America will be a partnership of a variety of organizations from both the private and public sectors, and will serve as a focal point for the efforts of a wide range of stakeholders, representing all elements of the supplier, user and environmental communities. *Wind Powering America* will reach out to new constituents, to provide an opportunity for participation by other interested parties from the agricultural, Native American and other rural communities.

Almost every region in the United States has some areas of good wind energy resources. Some states, such as those that lie on the Great Plains from Texas to North Dakota, have a substantial electricity-generating potential from wind. The various regions have unique characteristics that will require different approaches to achieving significant wind power development.

Wind Powering America will focus on the following regions: 1) The Great Plains — to foster regional economic vitality through the development of a new source of energy and income; 2) The Southwest — to expand that region's use of wind energy beyond current locations; 3) The Northeast — to achieve significant energy gains while respecting environmental and aesthetic values; and 4) The Northwest — to develop bulk power supplies for a competitive marketplace.

Local Partnerships are essential to the initiative's success. The DOE Regional Offices will work with these local groups to ensure that appropriate resources are available. The National Wind Coordinating Committee and the Utility Wind Interest Group will participate in planning and execution activities to capitalize on the links to key stakeholder sectors already established by these groups. A number of Actions have been identified as central to *Wind Powering America*. These are as follows:

1. Build a national awareness of wind's benefits to build consumer demand

The American public will be informed about how wind can contribute to their local community's economic well-being and how it can contribute to the well-being of generations to come. Consumers of electricity should understand that their power to choose clean energy sources can have profound implications. Potential owners of wind systems will be provided with decision tools that allow them to evaluate wind as an option for their situation. *Wind Powering America* will bring these messages to the American public through an educational effort built around a core of both technical and nontechnical materials prepared for this purpose.

2. Increase Federal wind use to promote technological maturity

Federal facilities offer many opportunities for wind system use. A commitment by Federal agency management to use wind power will be required to realize the full potential of this opportunity. The recently released Executive Order on "Greening the Government Through Energy Efficiency Management" orders each agency to strive to expand its renewable energy use, by installing renewable energy systems and buying electricity produced by renewable energy systems. Each agency's success in using renewable energy will be taken into account in assessing the agency's progress and contribution.

The Federal Energy Management Program will serve as the primary focus of *Wind Powering America*'s outreach to Federal agencies. However, the Departments of Defense, Agriculture, and Interior are natural partners which already have experience with wind systems. The Department of Agriculture's Agricultural Research Service at Bushland, Texas, has long been a pioneer in research on agricultural uses of wind turbines. The program is currently supporting the addition of a third turbine at the Navy facility on San Clemente Island, California, to displace emissions from the existing diesel system.

Programs will be implemented that help these agencies identify their most cost-effective opportunities for wind. Technical expertise will be provided to guide these agencies throughout the process to ensure that their investments in wind systems yield maximum return to the agency and the American public. By providing an expanding early market for wind systems, the Federal government can help build a base of experience with the technology that will come with wider deployment.

3. Foster appropriate policy choices to provide a supportive investment environment

A number of policies that support wind could be implemented, at both the state and Federal levels. These policies are consistent with the goals of restructuring and consumer choice. A tax credit for wind systems based on electricity produced (Production Tax Credit) is critical to developing an early domestic infrastructure that supports a long-term, stable wind industry. A Renewable Portfolio Standard, or minimum required level of renewables, would provide early market momentum. An investment tax credit for small systems will provide additional impetus for that market. *Wind Powering America* will develop information on these policies.

4. Support a lowering of barriers to overcome institutional biases

Wind Powering America will assist local stakeholders as they work with financial and government institutions to ensure that wind energy projects are not unduly hindered by barriers to their use. Through efforts to lower institutional barriers, e.g., access to insurance and zoning restrictions, the cost of borrowing should decline as perceptions of risk are reduced. Support will be provided for activities that develop wind-friendly codes and covenants, and activities that will simplify permitting processes. Certification and testing programs and the development of interconnection standards will help overcome questions about the technology's readiness for the market and about appropriate means for integrating wind into the grid.

5. Advance U.S. technology to ensure competitiveness in the global marketplace

A robust program of technology development will be maintained with industry to ensure that U.S. products are preeminent in the global marketplace. Industry-driven priorities will continue to help guide the Federal wind research program. The National Wind Technology Center, near Boulder, Colorado, will serve as the focal point for this research effort. Contracts with industry and the academic community will ensure the broadest possible participation of the wind community and ensure the continued excellence of the U.S. wind research program.

Other relevant technical issues will also be addressed. For instance, in some regions of the country, areas with excellent wind resources are located far from major electrical load centers. In these cases, a shortage of electrical transmission capacity can become a critical constraint. This initiative will seek opportunities to work with local and regional electrical-transmission stakeholders to improve transmission-system capacity and reliability by relieving transmission bottlenecks. The program will continue to provide technical assistance and support for avian research and other environmental issues. In addition, hybrid research will continue addressing wind turbine integration with diesel systems.

6. Support the development and use of small wind technology

Small wind turbines (less than 50 kW) can be used in many applications in rural America. Long a symbol of the independent spirit of the agricultural community, small wind turbines are well-suited for use in other off-grid, remote applications, or for use in providing distributed power to the homes of rural America. *Wind Powering America* will support small wind technology on a number of fronts. It will provide continued support for technology development. It will help prospective owners of small wind systems with institutional issues such as permitting, siting, and interconnection. Net metering provides a way for owners of small wind systems to realize better returns on their investment in wind, while also providing additional electricity supplies for the local electricity grid. *Wind Powering America* will help promote the establishment of policies, such as net metering, that support small wind deployment.

7. Communicate successes to maintain momentum

A wide range of mechanisms will be used to provide the level of visibility appropriate for a major national initiative.

With the emergence of the Internet as a primary medium for communication, *Wind Powering America* will maintain a web site (www.eren.doe.gov/WindPoweringAmerica), with a mailing list capability, for information dissemination. The website will be updated biweekly and will be heavily oriented toward telling the stories of the people and places where wind is making a difference. An essential element of the program will be to provide incentives and recognition for participation.

An annual meeting will be held to showcase successes and to allow new approaches and ideas to be shared. An awards program will be created for this annual meeting to recognize leadership and innovation.

Traditional information dissemination mechanisms will also be used, including the DOE-sponsored Energy Efficiency and Renewable Energy Clearinghouse.

8. Educate the American public to promote environmental consciousness

Wind Powering America will accelerate development programs for technical vocational schools targeting the education of “wind smiths,” to train them in the principles of wind energy, routine maintenance of key components, and troubleshooting techniques. The initiative will also undertake a university/college partnership to develop programs that will increase student, teacher, and community awareness of renewable energy. This activity will educate students in primary and secondary schools, and provide learning opportunities on wind energy, and science and technology in general. Under this program, schools could install wind turbines to provide on-site electricity generation, or purchase electricity from ‘green’ suppliers, where available. Student involvement could include analysis of renewable energy supply options, assistance in operating and monitoring performance of energy sources, and reporting and outreach functions. This activity will coordinate closely with the EnergySmart Schools program.

9. Integrate wind into other Federal programs to increase the breadth of its constituency

A number of Federal agencies already manage programs for the benefit of the target constituencies of *Wind Powering America*. For example, the U.S. Department of Agriculture has a program called the National Rural Development Partnership that is working with Federal, state, local, and tribal governments, as well as private for-profit and non-profit sectors, to improve rural American communities. USDA’s Rural Electric Program makes insured loans and loan guarantees to nonprofit and cooperative associations — primarily to finance the construction of new facilities. As another example, the Administration for Native Americans in the Department of Health and Human Services runs a grant program that could be used to facilitate wind energy use. *Wind Powering America* will work with these and other agencies to disseminate information, provide training, and seek Federal agency advocates and sponsors.



10. Hold regular meetings to track progress

Program meetings will be held periodically with partners to both facilitate sharing of information and to provide recognition for their efforts. These meetings, which will be held in the target regions, will be an important mechanism for maintaining program momentum. Activity reports will also be posted on the web site on the initiative's status and accomplishments.

**For more information, please visit our web site at www.eren.doe.gov/windpoweringamerica
or contact the U.S. Department of Energy, Wind Energy Program, (202) 586-5348.**
