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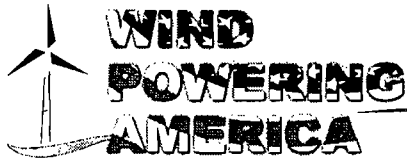
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What is it?

A commitment to dramatically increase the use of wind energy in the United States:

- Establish new sources of income for American farmers, Native Americans, and other rural landowners
- Meet the growing demand for clean sources of electricity

Goals

- Provide at least 5% of the nation's electricity 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 with more than 20 megawatts of wind capacity to 16 by 2005, and triple that number to 24 by 2010
- Increase wind's contribution to Federal electricity use to 5% (1,000 MW) by 2010

Benefits

- \$60 billion in capital investment in rural America over 20 years
- \$1.2 billion in new income for American farmers, Native Americans, and rural landowners over 20 years
- \$8 billion in annual capital investment in 2020
- 35 million tons of atmospheric carbon displaced in 2020
- 80,000 permanent jobs in the wind industry in 2020

Strategy

- Provide Federal leadership
- Develop state and local partnerships
- Educate American public
- Accelerate technology development



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
-

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
-

***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.



Draft
June 18, 1999

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.

U.S. Aims to Have 5% of Electricity From Wind by 2020

By MATTHEW L. WALD

WASHINGTON, June 19 — Energy Secretary Bill Richardson says he will announce on Monday a plan to produce 5 percent of the nation's electricity from wind by 2020, up from one-tenth of 1 percent now. Under the plan, the Federal Government, the nation's largest electricity customer, would rely on wind for 5 percent of its use by 2010.

"We think that wind technology has the most potential of any renewable energy technology right now," Mr. Richardson said in a telephone interview. The other leading renewable contenders are electricity from the sun or from biomass, including crop wastes.

Outside experts agree that wind is the closest to being competitive in price. Charles R. McGowin, the team leader for renewable energy at the Electric Power Research Institute, of Palo Alto, Calif., a utility consortium, said, "There's a lot of untapped wind potential in the United States, particularly in the upper great Plains, North Dakota, Wyoming, South Dakota and Minnesota and Iowa." One problem, though, is that transmission lines will have to be built if wind machines become widespread enough.

Department officials say wind turbines, the industry's preferred term for windmills, are good cash producers for farmers, who can graze cattle or grow crops in their shadow.

Mr. Richardson, who will make the plan public in a speech to the American Wind Energy Association's annual meeting, in Burlington, Vt., said the department would seek to "merge technology with good com-

mercialization."

The department will take steps like encouraging "wind-friendly codes and covenants," investing money in research and development, and encouraging vocational schools to help train "wind smiths."

Around the country, about 2,500 megawatts of capacity are expected to be in service by the end of this month, up from about 1,600 megawatts a year ago. The difference, 900 megawatts, is about the capacity of one medium-size nuclear plant.

The Enron Corporation began construction last month of a 16.5-megawatt plant in California to meet demand for "green power" there. The company expects that, as the power market there is deregulated, customers will choose clean power.

Several projects are scheduled for completion by June 30, when a Federal tax credit of 1.7 cents per kilowatt-hour expires. The Clinton Administration is seeking a renewal for projects completed over the next five years.

The price of a kilowatt-hour from wind has declined to about 5 cents, said Dan W. Reicher, Assistant Secretary for Energy Efficiency and Renewable Energy. It was as high as 40 cents when the Federal Government first pushed wind turbines for electricity production during the oil crises of the 1970's. Combined with the production tax credit, the price is low enough to find buyers.

The department believes that the cost of production must fall to between 2 cents and 2.5 cents per kilowatt-hour to succeed in the first decades of the 21st century.

The average American residential



Associated Press

Energy Secretary Bill Richardson has a plan to harness wind power.

consumer pays about 7 cents per kilowatt-hour, which is enough energy to light a 75-watt bulb for 13 hours.

The industry has made large strides on cost, though, partly by increasing the size of its machines. The first turbines were a few kilowatts, good for a house or two; now they are 1,000 times larger. The biggest being installed now are 1.65 megawatts, with blades the length of the wings on a Boeing 727, but engineers are drawing plans for turbines of up to 4 megawatts in capacity.

Another source of price cuts is improvements in electronics. Blades used to have to turn at a fixed rate to make alternating current at the strict 60 cycles per second required; now they can turn at whatever rate the wind pushes them, and the energy is electronically converted to 60 cycles. Wind machines now cost \$900 to \$1,200 per kilowatt to install; the Energy Department expects the price to decline to \$625 a kilowatt by 2020.

Direct comparisons of construction costs with coal or natural gas plants are difficult, because those plants can operate 24 hours a day, but wind turbines operate only when the wind is blowing. Wind turbines typically produce only a little more than one-third of the amount of electricity that would result from operation 24 hours a day at 100 percent operation. But "once you're up and running, there is no fuel cost and the maintenance cost is negligible as well," said Kent Robertson, a spokesman for the wind association.

Another big change since the 1970's, one helpful to wind, is that states are deregulating their electricity systems, and the manufacturing of power by independent producers, as opposed to utilities, will soon be the norm, many industry executives say. The utilities were never very enthusiastic about building wind capacity themselves, but soon they will not be building any capacity of any sort, and when the utilities are buying all their electricity from independent plants running on coal or natural gas, then buying power from a wind farm will not be much different, experts say.

THE WALL STREET JOURNAL.

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XIII NO. 120 EE/CP ★★

TUESDAY, JUNE 22, 1999

INTERNET ADDRESS: <http://wsj.com>

What's News—

* * *

Business and Finance

* * *

World-Wide

Energy chief Richardson announced the federal government is committed to having wind power produce 6% of U.S. electricity by 2020, compared with a fraction of 1% now. The goal is to develop generators that are able to produce power at half today's cost.

TODAY'S CONTENTS

THE INDEX TO BUSINESSES APPEARS ON PAGE B1

Subject: Wind story in tomorrow's Christian Science Monitor

WEDNESDAY, JUNE 30, 1999

e-mail this story to a friend

USA

Wind power takes off as major energy source

Challenges remain, but technology and new laws aid a worldwide push for this producer of 'clean' energy.

Colin Woodard

Special to The Christian Science Monitor

WASHINGTON

For decades, people have dreamed of generating electricity on a large scale without creating pollution or radioactive waste. That clean-energy dream now appears closer to becoming a reality. The reason is the explosive growth of wind power, which experts say is finally coming of age as a viable energy source.

During the 1990s, wind-energy capacity grew by an average of 26 percent annually, and last year by 35 percent, making it the fastest-growing electricity sector. Despite barriers, it's now a \$2 billion world industry, capable of producing more than 10,000 megawatts of electricity, enough to meet the residential needs of Washington, D.C., for more than 16 years. "It's really the first major new way of generating electricity since the emergence of nuclear power several decades ago," says Christopher Flavin, senior vice president of the Worldwatch Institute in Washington. "The industry ... has major potential to become an important part of electricity generation in the years ahead," he says.

FUTURE USE? An artist's conception created last year shows an experimental high-speed 'aero train' designed by Japanese engineers to use solar- and wind-generated electricity. Testing of a prototype is scheduled to begin in 2002.

REUTERS

"Until not long ago at our conferences we'd still see people with long hair and nice ideas. Now there are more ties and three-piece suits than anything else," says Christophe Bourillon, head of the London-based European Wind Energy Association. "We've moved from being the big boy in the small pond of renewable energy to a mature industry competing with far larger oil, gas, and nuclear sectors."

Most of the recent growth has been in Europe, where governments have encouraged wind-power developments through research investments and other incentives. Denmark generates 8 percent of

its power from wind, and sales of high-tech Danish wind turbines generate \$1 billion in annual sales. Wind turbines produce 20 percent of the electricity used in Spain's industrial state of Navarra, and 11 percent used by Germany's Schleswig-Holstein, says Worldwatch. Industry sources attribute wind's rapid growth to a combination of technological breakthroughs and government policies in support of renewable energy. Growth has also been self-reinforcing because component costs are driven down as the industry reaches increasingly efficient economies of scale.

Spurring the US drive

"There's no longer any doubt that this technology is going to make it in a big way," says Randall Swisher, executive director of the American Wind Energy Association in Washington. Wind power "has really broken out. It's only a question of how far and how fast it will grow." The US industry received an important boost June 21, when Energy Secretary Bill Richardson announced an initiative to have wind supply 5 percent of the nation's electricity. "By 2020, we want wind energy to be a major commercial-power generation technology, helping supply the nation's electricity needs and leading the charge in the transition to renewable energy," Richardson said.

The measure appears to have solid bipartisan support in Congress. Analysts say the US has catching up to do. "The US early on was the big leader in designing and building [wind] machines, but now we're being overshadowed by developments in Europe," says Robert Thresher, director of the National Wind Technology Center, an Energy Department research lab in Golden, Colo. "The real difference is in policy issues," he says. "The Europeans have decided that greenhouse gases are a serious problem, so they are willing to pay a premium to develop clean energy and avoid those emissions."

The development and introduction of new energy technologies is enormously expensive. From nuclear power to ethanol to gas turbines, the US government has invested billions to develop and bring new technologies to market. Renewable-energy proponents say the countries that dominate the emerging wind- and solar-energy technologies will be those that foster growth through public investments, including government research spending, and tax incentives.

Past investments have lowered the cost of wind-generated electricity in the US from nearly 40 cents per kilowatt hour in 1980 to between 4 and 6 cents today. But with oil and gas prices near historic lows, analysts say production costs must fall to 2.5 cents to compete with gas-fired turbines. The new Energy Department initiative is designed to help bridge the gap through grants, a renewal of a decade-old production tax credit, and increased research-and-development spending.

"If we are going to address climate-change challenges, we need to develop zero-pollution energy solutions," says Richardson. "Growth of wind power is good for the environment and good for the economy." The US has enormous potential wind resources, enough to theoretically meet the entire country's energy needs, according to Dr. Thresher.

Limitations to widespread use

In reality, wind could probably never provide more than 10 or 20 percent of the nation's supply. It's impossible to know exactly how much power a given turbine will generate at a given time. The electrical grid is supplied by a combination of "base-load" plants - usually coal- or nuclear-fueled - that run constantly, and "intermediate" and "peak" plants that are turned off during times when demand falls. Wind energy can be stored by, say, pumping water uphill and releasing it during peak hours to drive turbines, but can't really replace base-load plants. The windiest places are also often far from places where energy demand is greatest. In the US, wind resources are concentrated in the Great Plains and in California's mountain passes. Transmission lines are costly. A wind farm in Altamont Pass, Calif., was placed in an area frequented by eagles and other birds. It generated controversy when a study found some 200 had been killed by hitting turbines.

In other places, new wind projects have the support of farmers, who can lease land for turbines. "It generates extra incomes [and] creates good, well-paying manufacturing jobs," says Worldwatch's Mr. Flavin. "It's not every day that you have a new manufacturing sector that's growing by 30 percent a year, and it's to the country's benefit to see that growth continue."

Harnessing the power of wind

The world's capacity to draw energy from wind has grown steadily (see top chart above). The 10,000 megawatts of electricity it can now produce would be enough to meet the residential needs of Maine, for example, for seven years. The US and a handful of European nations lead the drive.

U.S. Sets Goal for Wind Power

By WILSON RING

.c The Associated Press

SOUTH BURLINGTON, Vt. (AP) - Energy Secretary Bill Richardson on Monday promised continued economic support for wind energy research and development and support for tax incentives in announcing a plan to increase the country's capacity to get power from wind.

Richardson committed the government to have wind power produce 5 percent of the nation's electrical needs by 2020. Currently, about one-tenth of one percent of the nation's electric needs are provided by the wind.

"We want tomorrow's generators to produce power at half the cost of today's machines," Richardson said at a wind energy conference. "That is no small challenge, but this administration is committed to making that goal a reality."

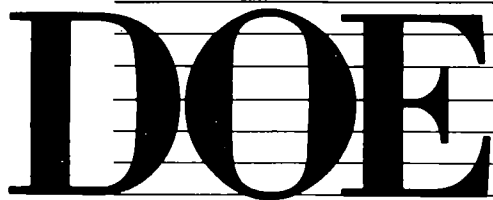
In 1980 wind energy cost about 40 cents per kilowatt hour. Now it's about a nickel.

In addition to the so-called Wind Powering America initiative, Richardson announced \$1.2 million in grants to wind turbine testing projects in 10 states. One of those projects will be in Maine. He did not say where the other nine would be.

The money will be used to provide support for the design and installation of new small wind turbines for field testing.

Richardson's message was welcome news to wind power advocates from across the country.

"We've been wandering in the wilderness since the Carter administration," said Tom Gray, the deputy executive director of American Wind Energy Association, which sponsored the four-day conference.



NEWS

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Michael Terwilliger, 202/586-5806

FOR IMMEDIATE RELEASE
June 21, 1999

Richardson Unveils National Wind Energy Initiative

Clean, Reliable, Renewable Energy Source Will Help Power the 21st Century

Burlington, VT -- U.S. Secretary of Energy Bill Richardson today announced the Clinton Administration's latest renewable energy initiative, *Wind Powering America*, which seeks to dramatically increase the use of wind energy in the United States. Speaking to the opening session of WINDPOWER '99, the annual conference of the wind energy industry, Secretary Richardson also announced nearly \$1.2 million in Department of Energy (DOE) grants to promote wind energy projects.

"Wind energy has been the fastest growing source of energy in the world during the past decade and now represents a major economic opportunity for the United States," Secretary Richardson said. "*Wind Powering America*, together with these latest grants, will help combat global climate change by reducing carbon emissions while also helping us promote regional economic development and increased energy security."

Wind Powering America will build on current and future public and private sector efforts to support the development of wind power. The three main goals of this initiative are:

- Supply at least 5 percent of the nation's electricity needs by the year 2020, with more than 5,000 megawatts of wind energy installed by 2005, and 10,000 megawatts on line by 2010 (10,000 MW of wind capacity is enough electricity to fulfill the annual needs of three million U.S. households);
- 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; and
- Increase the federal government's use of wind generated electricity to 5 percent by 2010.

The initiative will work to improve gains realized by wind power in the past two decades. In 1980, the U.S. had less than 10 megawatts of installed wind capacity and the cost of wind-generated electricity hovered around 40 cents per kilowatt hour. Today, wind capacity in the U.S. totals approximately 2,500 megawatts and the cost of generation has plummeted to between 4 and 6 cents per kilowatt hour.

(MORE)

R-99-153



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The nearly \$1.2 million in grants announced by the Secretary will go to states, cities and wind technology companies for small wind turbine projects in 10 states across the country. These states are Arizona, Iowa, Maine, Massachusetts, Michigan, Montana, New York, Rhode Island, Texas and Utah. The funding will be used to provide technical assistance to support design and installation of new small wind turbines for testing purposes. Please see attached list for detail on these grants.

Almost every region in the U.S. has areas suited for wind energy development. Some states, particularly in the Great Plains from Texas to North Dakota, have substantial wind-based electricity generating potential. Planned activities supported by *Wind Powering America* include targeted transmission studies, updated resource assessment and mapping, performance monitoring of new wind projects, avian research, hybrid research for wind/diesel applications in remote communities, vocational training for wind turbine engineers and technicians ("windsmiths"), and state and local wind feasibility studies.

Wind Powering America will help meet the growing demand for clean energy and help establish new sources of income for American farmers, Native Americans and other rural landowners. The *Wind Powering America* program will provide the technological and institutional support needed help ensure the competitiveness of wind energy and reduce the cost difference between wind and fossil power generation.

A draft action plan for *Wind Powering America* is available at www.eren.doe.gov/WindPoweringAmerica. Public comments will be taken for the next several months and incorporated into the initiative's final action plan.

-DOE-

R-99-153

The Department of Energy: Powering the 21st Century with Wind Energy Technology

A description of 10 grants totaling as much as \$1.2 million follows below.

I. Small Wind Turbine Field Verification Grants

These grants will be cost-shared with industry and the final funding figures are still to be determined. Under this program, DOE will provide cost sharing and technical support for projects to test and evaluate the field performance of small wind turbines in a variety of settings. The cost-share grants, which could total as much \$1 million, include the following:

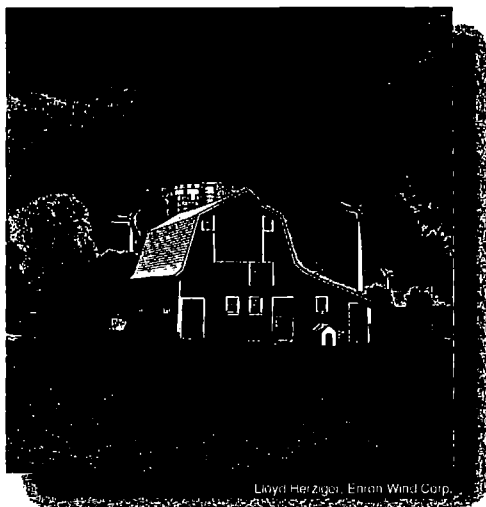
- One project in **Maine** totaling as much as \$163,087 in federal funds for Endless Energy Corporation's Maine Coast Winds project. This project will support the installation of up to four wind turbines at separate locations (including a shipyard, a blueberry processor, a farm and a maritime academy) along Maine's coastline. The project will test and evaluate the performance of each turbine and use the results to develop recommendations for the future utilization of wind turbines for power generation in the state. Endless Energy Corporation is based in New Gloucester, Maine.
- One project in **Montana** totaling as much as \$119,008 in federal funds for the construction of a wind farm with four small wind turbines to be built by the Siyeh Development Corporation (affiliated with the Blackfeet Indian Tribe and based in Browning, Montana). The power produced by the turbines will be used to operate the aeration equipment in the waste water treatment facility for the town of Browning.
- One project in **New York** totaling as much as \$175,519 in federal funds for the installation of four small wind turbines on four sites in New York and New Jersey by AWS Scientific Inc (including a farm, Liberty State Park in New Jersey, and a beach and an agricultural project on Long Island). AWS Scientific Inc. is based in Albany, New York.
- One project in **Rhode Island** totaling as much as \$248,270 in federal funds for the installation of five small wind turbines on Block Island, Rhode Island, by Offshore Services of Block Island. The island has one of the nation's highest electric utility power costs. The wind turbines will be used to generate power for a number of residential, commercial and municipal government customers.
- One project in **Texas** totaling as much as \$137,025 in federal funds for a field test program for the Havatex 2000 wind turbine generator. Havatex Inc., based in Arlington, Texas, plans to test the generator over a 12-month period at four locations (two in Texas, one in California and one in Wisconsin) to determine how efficient the new generator is in a variety of climatic and geographic conditions.

- One project in **Utah** totaling as much as \$104,232 in federal funds for testing of a new model of turbine developed by World Power Technologies. The testing, to be conducted by Woodward Engineering, L.C. of Salt Lake City, Utah, will be conducted at an existing wind energy test and demonstration site near Spanish Fork, Utah.

II. Wind Energy Grant Funding in the State Energy Program Special Projects Grants Program

In May, DOE announced funding for wind energy projects in four states through the State Energy Program Special Projects Initiative. These grants will be awarded to the state energy office in each state. In some cases, the state energy office will then award these funds to a third party for completion of the actual work. This funding, which totals nearly \$200,000, includes the following projects:

- One project in **Arizona** totaling \$65,000 for field testing of a new small wind turbine manufactured by Southwest Windpower, based in Flagstaff, using several new local, regional and international partners. The goal of the project is to demonstrate a high new standard of small battery charging wind turbines.
- One project in **Iowa** totaling \$35,000 to provide funding to the Iowa Department of Natural Resources and the Clarion-Goldfield Community School District for the design, installation and monitoring of a small wind turbine energy production facility. A student-run wind monitoring and education program will be incorporated into the project to encourage education about the benefits of such programs.
- One project in **Massachusetts** totaling \$51,073 for installation of a modern 50-kilowatt wind turbine at an existing "wind farm" in Princeton, Massachusetts. The Princeton Municipal Lighting Authority, which will receive the grant through the Massachusetts Division of Energy Resources, will use the information gained over two years of testing the new turbine to decide whether to upgrade and/or expand the wind power facility.
- One project in **Michigan** totaling \$47,500 to provide financial incentives for the design, purchase and installation of 15 small wind energy systems and conduct on-site assessments of their effectiveness. The project results will be used to provide information to homeowners, farmers, facility managers and business owners regarding the possible applications of such systems. The State Energy Division will solicit applications for the installations statewide.



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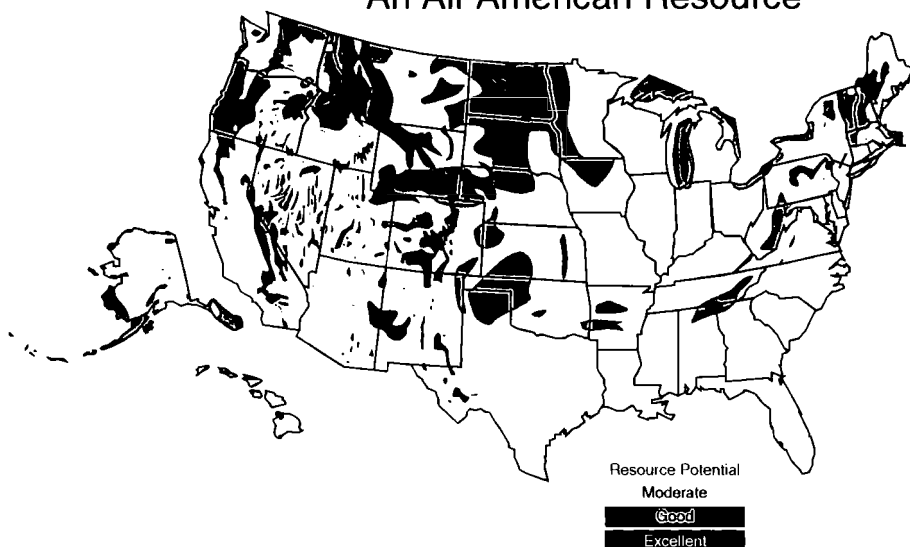
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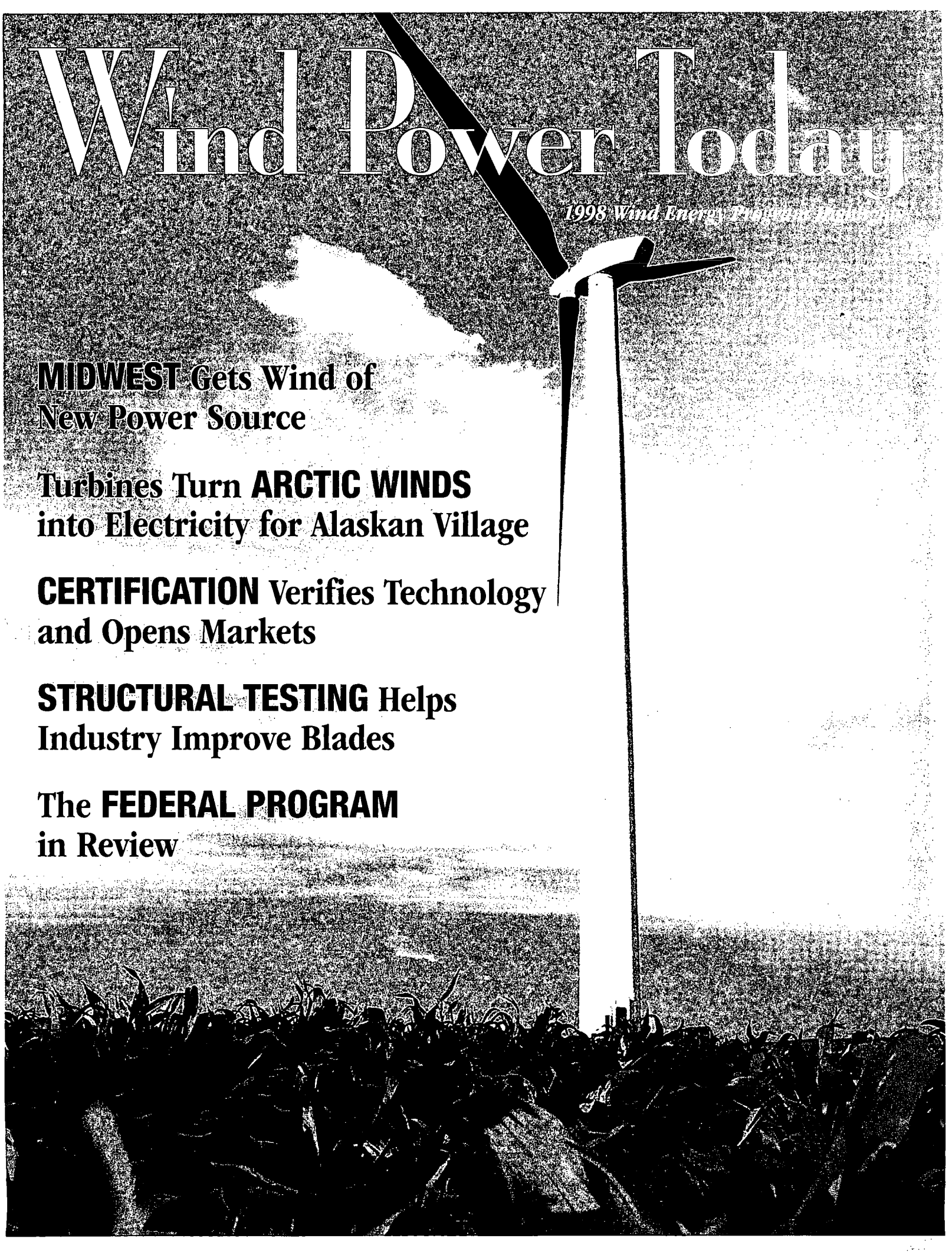
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Wind Power Today



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