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RENEWABLE ENERGY

Wind Power's Contribution to Electric Power Generation and Impact on Farms and Rural Communities

GAO Highlights

Highlights of GAO-04-756, a report to the Ranking Democratic Member, Committee on Agriculture, Nutrition, and Forestry, U.S. Senate

Why GAO Did This Study

Wind power provides electricity without polluting the air or depleting nonrenewable resources. Wind power relies on steady winds to turn the blades of power-generating turbines. Because these turbines generally are located on rural lands, wind power could also provide economic benefits to farmers and rural communities. The 2002 farm bill created a renewable energy program and authorized $115 million for the U.S. Department of Agriculture (USDA) to provide assistance for renewable energy projects, including wind power. GAO was asked to examine (1) the amount of electricity generated by U.S. wind power and prospects for its growth, (2) the contribution of wind power to farmers' income and rural communities, (3) the advantages and disadvantages for farmers of owning a wind power project versus leasing land for a project, and (4) USDA's efforts to promote wind power in rural communities.

What GAO Recommends

To ensure USDA's timely and full implementation of its renewable energy program, USDA should (1) identify ways to accelerate its development of the program regulation, (2) work with the Environmental Protection Agency (EPA) to determine what assistance that agency can provide, and (3) continue to examine ways to streamline the program application process. USDA agreed with GAO's recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-04-756.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Lawrence J. Dyckman at (202) 512-3841 or dyckmanl@gao.gov.

What GAO Found

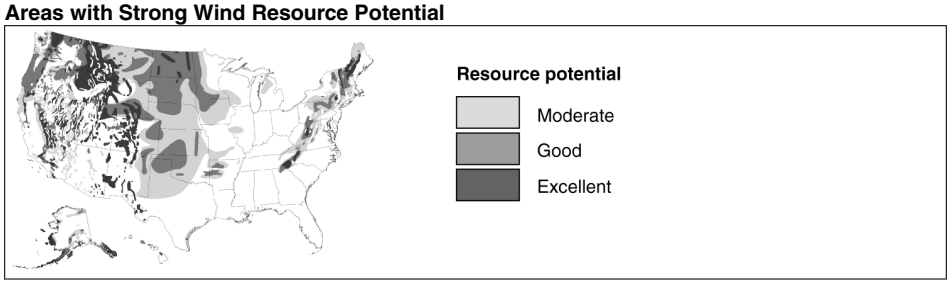
Wind power accounted for only about one-tenth of 1 percent of total U.S. electric power generation capacity in 2003, but wind power capacity quadrupled between 1990 and 2003, and the Department of Energy has projected continued growth through 2025. However, most of the nation's wind potential remains untapped. Wind power's growth will depend largely on the continued availability of federal and state financial incentives, including tax credits, and expected increases in prices for fossil fuels.

Although wind power does not contribute significantly to total farm income in the 10 states with the highest installed wind power capacity, it has considerably benefited some farmers and rural communities. For example, a farmer who leases land for a wind project can expect to receive $2,000 to $5,000 per turbine per year in lease payments. In addition, large wind power projects in some of the nation's poorest rural counties have added much needed tax revenues and employment opportunities.

Farmers generally find leasing their land for wind power projects to be easier than owning projects. Less than 1 percent of wind power capacity installed nationwide is owned by farmers. Leasing is easier because energy companies can better address the costs, technical issues, tax advantages, and risks of wind projects. However, ownership of a turbine may double or triple the farmer's expected income over leasing.

USDA has not fully utilized all of the farm bill's renewable energy provisions to promote wind power. In particular, although it offers grants under its renewable energy program, USDA has not issued a regulation to offer loans and loan guarantees as well. A higher program level could be achieved by using these funding mechanisms. Loans also may be a more cost-effective way to provide federal assistance than grants. USDA also is missing opportunities to obtain EPA's assistance in implementing the program. For example, EPA's Office of Air and Radiation has extensive contacts with utilities interested in purchasing power from renewable sources. Finally, applicants and others have raised concerns about the complexity of the application process and short time frame for completing applications.

Areas with Strong Wind Resource Potential



Source: U.S. Department of Energy, National Renewable Energy Laboratory.