

Proposed Grapevine Canyon Wind Project

Wind Project Overview

Project Overview

Flying M Ranch has entered into a partnership with Foresight Wind Energy to develop a proposed wind energy facility on private and state Flying M ranch lands.

Based on the wind resource and power market, the project could generate up to 500 megawatts of clean energy as early as 2009. This is equivalent to the average annual electricity needs of approximately 125,000 Arizona residences. The project could potentially be built in phases. If fully built out to 500 megawatts, the project would require between 200 and 335 turbines depending on the turbine nameplate capacity.

Modern turbines can be up to 450 ft in height, and are typically sited in rows approximately $\frac{1}{4}$ mile apart with approximately $\frac{1}{2}$ mile spacing between rows. The exact location and size of the wind energy facility will be based on a number of factors including economics, electricity markets, transmission constraints, power purchase agreements, permitting, wind monitoring on site, and the results of other surveys and study work.

Energy generated at the wind facility would interconnect with the regional electric grid via the Western Area Power Authority (WAPA) transmission system. A transmission tie line to connect the wind park with the WAPA transmission system will cross lands administered by the Coconino National Forest; this use will require a right of way from U.S. Forest Service. The wind project will require a conditional use permit from Coconino County.

Project Status

Meteorological instrumentation is being installed to assess the wind quality and characteristics. Transmission capacity and interconnection studies are underway. Comprehensive biological surveys and all other environmental and feasibility studies are being conducted in coordination with appropriate agencies. The public scoping process for the Forest right of way for the tie line crossing will occur this winter, and the county permitting and public hearing process for the wind energy facility will occur next summer.

Contact

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Wind Energy Overview

Wind Energy Basics

Wind energy is credited with boosting energy security, reducing pollution, creating high-tech jobs, conserving scarce water resources, protecting working landscapes as an alternative to subdividing, and revitalizing rural communities.

Wind energy is clean, fuel-free, and cost-competitive with new natural gas generation, making it the most attractive solution to energy supply and climate change challenges.

Arizona utilities are facing growth in energy demand of 3-4% annually. Energy demand in the Southwest is among the fastest growing in the nation. Each megawatt of wind energy can provide electricity to approximately 250 homes, on average. Wind energy is delivered to the electric grid system as part of a utility's energy portfolio.

Wind energy is the fastest growing renewable power source worldwide. The U.S. led the world with the most new wind power in 2006 with 2,454 megawatts of new installed capacity.

Environmental

No water use: In the Desert Southwest and other areas where water conservation is critical, wind energy has a clear advantage. To generate the same amount of electricity as one megawatt of wind power, the use of fossil fuels or nuclear technology generation requires 60 million gallons of water per year for cooling purposes, of which nearly 1 million gallons are lost to evaporation.

No pollution: With no emissions, wind power is one of the most environmentally friendly forms of power generation.

- No CO₂ emissions - Fossil fuel power plants account for 34% of the carbon dioxide (CO₂) emitted in the U.S., the leading global warming pollutant.
- No SO₂ emissions- Fossil fuel power plants account for 63% of the sulfur dioxide (SO₂) and 22% of the nitrogen oxide emitted in the U.S., contributing to acid rain and smog.
- No mercury emissions - Fossil fuel plants are the single largest source of mercury emissions in the U.S., contributing to watershed and habitat contamination.

Avian impacts: Modern wind turbines, appropriate wind park siting, and 20 years of studies at wind sites across the county have significantly reduced wind energy's impact on avian and bat species. New wind projects are carefully planned to minimize any environmental impact. Pre-project studies are typically conducted at proposed wind power sites to collect data that may be used to describe avian and bat resources in the context of the proposed development; assist in addressing potential impacts from the development; assess the relative risk of the development on birds and bats; and to the

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extent possible, assist in wind plant design and siting that minimizes risk to avian and bat resources. In his May 1, 2007 testimony before the U.S. House of Representatives Committee on Natural Resources, the National Audubon Society's Director of Conservation Policy stated "On balance, Audubon strongly supports wind power as a clean alternative energy source that reduces the threat of global warming."

Low land impact: Approximately 2-3% of the area utilized by a wind park is impacted by turbines, access roads, and other infrastructure. Wildlife and livestock grazing can continue unimpeded right up to the base of the turbines.

Economic Benefits

Economic development: Wind development creates jobs, contributes new property tax revenues for counties and school districts, and provides economic diversification for landowners.

Rate payer benefits: Wind energy helps keep electricity costs predictable: once a wind farm is built the cost of wind power remains stable because there are no fuels price increases or volatility.

Wind Energy Policy Context

Wind energy development is in compliance with county, state, local and national goals for sustainable resource management, economic development, and clean energy generation.

- **Coconino County, Diablo Canyon Rural Planning Area** - Wind energy is a desired alternative for additional economic development for ranchlands and working landscapes in the Diablo Canyon Rural Planning Area, adopted by Coconino County Board of Supervisors in August 2005. The Diablo Canyon Rural Planning Area includes Flying M Ranch.
- **Coconino County Wind Project** – Wind energy development is a conditional use in Coconino County and Coconino was the first county in Arizona to fully approve a wind project. Sunshine Wind Park received unanimous support from the Board of Supervisors and the Planning & Zoning Commission. The project was fully permitted in Spring 2005, and is awaiting a power marketing opportunity.
- **Coconino County Sustainable Economic Development Initiative (SEDI)**– Renewable energy development is a target action for sustainable economic development in Coconino County.
- **State of Arizona** – The Arizona Corporation Commission adopted Arizona's new Renewable Energy Standard and Tariff in November 2006. Under this standard, regulated utilities are required to procure 15% of their energy from renewable resources by 2025. Renewable

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energy requirements would step up gradually: 2.5% by 2010, 5% by 2015, 10% by 2020, and 15% by 2025. The previous standard was 1.1% by 2007.

- **State of Arizona** - Arizona's Climate Change Advisory Group, established by Governor Napolitano, recognizes development of renewable energy sources as an action to reduce greenhouse gas emissions and offer the additional benefits of economic development, job creation, cost savings, water conservation, and improved air quality.
- **Arizona Utilities** – APS, TEP and SRP have all expressed their commitment to renewable energy. All three utilities own or procure renewable energy.
- **City of Flagstaff** – Mayor Donaldson signed the U.S. Mayors Climate Protection Agreement on behalf of Flagstaff in September 2006.
- **Northern Arizona University** – NAU President John Haeger recently signed the American College & University Presidents Climate Commitment. As part of this commitment, NAU will develop a comprehensive plan to achieve climate neutrality as soon as possible.
- **National Energy Policy** – President Bush has stated that up to 20% of the nation's electricity needs could be generated with wind. A two-year extension of the federal production tax credit was included in the Energy Policy Act of 2005, and there is strong support in Congress to extend this incentive beyond 2008.

Wind Energy Information

American Wind Energy Association: www.awea.org

Windpowering America, U.S. Department of Energy:
<http://www.eere.energy.gov/windandhydro/windpoweringamerica/>

National Wind Coordinating Committee: www.nationalwind.org/

Foresight Wind Energy: www.foresightwind.com

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Vicinity Map and Proposed Project Site

