# SHILOH Wind Power Project



### **Project Details**

#### Project Capacity: 150 MW

**Number of Wind Turbines:** 100 GE Energy 1.5 MW turbines **Project Location:** Near Birds Landing, California, in Solano County. The project encompasses about 6,800 acres of land leased from 26 local landowners. The land continues to be used for grazing.



#### **Customers:**

**Pacific Gas & Electric:** PG&E Corporation is an energybased holding company, headquartered in San Francisco. With assets valued at \$34 billion, its operations include electric and gas distribution, natural gas and electric transmission, and electric generation. It is the parent company of Pacific Gas and Electric Company - one of the largest combination natural gas and electric utilities in the United States - which provides gas and electric service to approximately 15 million people throughout northern and central California. The utility maintains a generating portfolio with one of the lowest rates of air emissions in the country. For more information, visit the web site at www.pgecorp.com.

**Peninsula Clean Energy** (PCE) is a Community Choice Aggregation program that provides residents and businesses in San Mateo County, California with clean, renewable energy from resources like solar and wind.

**CleanPowerSF** is San Francisco's Community Choice Aggregation program. CleanPowerSF is a not-for-profit entity, and works in partnership with the local investorowned utility (PG&E in San Francisco) to deliver cleaner energy to residents and businesses.



**City of Palo Alto Utilities:** The City of Palo Alto Utilities (CPAU) is the only full-service municipal utility in California that operates services including electricity, commercial fiber optic, wastewater, natural gas and water. Visit www.cpau.comfor more information.

**MCE** established California's first Community Choice Aggregation program in 2010 and currently serves 17 communities in Northern California to reduce their carbon footprint and lower their greenhouse gas emissions.

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page 2

#### Technology

Wind Turbine Type: GE 1.5 sle Rated Output: 1.5 MW (1,500 kW) GE's 1.5 MW series wind turbine is assembled in the United States. It was



the first of its size class to become commercially available and is among the world's most popular wind turbine units. This GE 1.5 MW turbine is a variable-speed, constant frequency design with aerodynamically designed airfoils on a 77 meter rotor. For more information on the 1.5 MW wind turbine, please visit GE Energy's web site at www.gewindenergy.com.

#### **Tower Facts**

Type: Three-section tubular steel Height: 76 towers at 80 meters each, and 24 towers at 65 meters each

#### **Blade Facts**

Swept area: 50,050 square feet (4,657 square meters) Length: 122 feet (37 meters) Rotor Diameter: 253 feet (77 meters) Revolutions per Minute: 11-20 (one revolution every 3 to 5 seconds)



#### **Balance of Plant Infrastructure**

Foundations: Each individual wind turbine foundation consists of an octagonal spread footing 48 feet in diameter and 7 feet deep. Transmission Interconnection: A new 34.5kV/230kV substation is located adjacent to a new PG&E 230kV switching station.

#### **Engineering and Construction**

**Project Site Workforce:** Averaged 95 employees on site with a peak of 160 for a total of about 160,000 personhours. Construction began in August 2005.

Project Benefits Number of Landowners: 26 Approximate Acreage: 6,800 acres Construction Jobs: Average 95, peak 160 (160,000 person-hours) Ongoing O&M Jobs: 12 Property Taxes: Over \$1 million each year

Lease Payments: Hundreds of thousands of dollars each year

#### **Environmental Benefits**

According to the EPA average emissions in California, the project will help offset over 380 million pounds of carbon dioxide, over 450,000 pounds of nitrogen oxide and over 250,000 pounds of sulfur dioxide. The actual emission offset will vary on the basis of what facilities might otherwise have been generating during a given hour that the facility produced energy for the California grid.\*

\*An estimate of the nitrogen oxides, sulfur dioxide and carbon dioxide emissions benefits from the Shiloh project can be calculated using EPA e-grid information and its Power Profiler assessment tool for average emissions in the state of California.

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