



Fenner — 30 MW Wind Power Generation Facility

Project Overview

The Fenner Wind Power Project, a 30 megawatt wind generation facility located in the Town of Fenner, New York, was developed to help meet New York's demand for clean, green electricity. The Fenner Wind Project is currently the largest operating wind farm in New York. Completed in late 2001, the project comprises 20 GE Wind Energy 1.5 megawatt turbines, the largest wind turbines manufactured in America. Owned by Canastota Windpower, LLC, a subsidiary of CHI Energy, Inc. ("CHI"), the project was co-developed by CHI and Atlantic Renewable Energy Corp. The Project was funded with the assistance of the New York State Energy Research and Development Authority ("NYSERDA") under NYSERDA's competitive wind power solicitation. M.A. Mortenson Company, a Minneapolis-based contractor, constructed the Project. More than six miles of underground 24.9 kV power collection system connect the wind turbines to a new substation where the voltage is stepped up to 115 kV for connection to an adjacent Niagara Mohawk transmission line. The project is interconnected with the NYISO through a newly built substation. Unusual to the wind industry, the Project was constructed without a power purchase agreement in place – the Project's clean, green electricity is currently being marketed by Community Energy to environmentally minded customers throughout the region. For more information, visit the Fenner website at www.fennerwind.com.

Project Capacity: 30 MW

Estimated annual generation: Approximately 89,000 megawatt hours per year

of Wind Turbines: 20

Project Location: The Fenner Wind Power Project is located in north-central New York in the Town of Fenner in Madison County, New York, approximately 40 miles southeast of Syracuse, NY. The Project encompasses an area of approximately 2,000 acres of farmland leased from 14 local landowners. The Fenner area is rich in history and tradition. Visit their website at www.borg.com/~mcholli/fenner.htm.

- **Project Owner: Canastota Windpower, LLC (a Subsidiary of CHI Energy, Inc.)**

CHI, owner and co-developer of the Fenner Wind Power Facility is an independent power producer with more than 80 renewable generating facilities in the U.S. and Canada. 19 of these facilities are located in New York State. CHI is the leading wind power producer in New York with two-thirds of the operating projects totaling more than 36 megawatts. CHI is part of the EnelGreenPower Group based in Rome, Italy, the largest company in the world dedicated solely to the production of electricity by renewable power sources. For more information, visit CHI's website at www.chienergy.com.

- **Project Co-Developers: Atlantic Renewable Energy Corp. and CHI Energy, Inc.**

The Fenner Wind Power Project was developed through a joint effort by Atlantic Renewable and CHI. With 130 MW of installed wind projects in New York, Pennsylvania and West Virginia, representing more than 80% of all installed capacity, Atlantic Renewable is the leading developer of wind projects on the east coast. Atlantic Renewable initiated the Fenner Project in 1998 and completed the co-development with CHI in 2001. For more information, please visit Atlantic Renewable Energy's website at www.atlantic-renewable.com.

- **Wind Turbine Supplier, Installer and Operations & Maintenance Provider: GE Wind Energy**

GE Wind Energy ("GEWE") provided both the generation equipment and turbine installation services and will also operate and maintain the Fenner Project on behalf of the owner. GEWE is a world leader in the wind industry and one of the world's largest wind turbine manufacturers. With manufacturing facilities in the U.S., Germany, Spain and the Netherlands, the company designs and manufactures wind turbines ranging from 900 kW to 3.6 MW. Since 1981, the company has developed and/or sold more than 5,300 wind turbines comprising 2,800 megawatts of capacity around the globe.

- **Power Marketer: Community Energy, Inc.**

Community Energy, founded in 1999, is the leading wind energy marketer in the country. Community Energy markets the wind energy associated with the Fenner Wind Power Project as "New Wind Energy" to a variety of customers, including universities, electric utilities and other corporations and government agencies. For more information about purchasing New Wind Energy from the Fenner Project, visit the Community Energy website at www.newwindenergy.com.

- **Technology**

Wind Turbine Manufacturer: GE Wind Energy

Wind Turbine Type: GE Wind Energy 1.5 MW. GE Wind Energy's 1.5 MW Series wind turbine is the largest wind turbine manufactured in America. The 1.5 MW wind turbine utilizes a variable-speed, constant-frequency design and custom designed airfoils for enhanced reliability and high energy capture. The Fenner Wind Power Project's wind turbines were manufactured in Tehachapi, California. For more information on the 1.5 wind turbine, visit the GE Wind Energy website at www.gewindenergy.com.

Rated output: 1.5 MW



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- **Technology (continued)**

Turbine Height (at highest point): 328 feet (approx. 100 meters)

Turbine Hub-height: 213 feet (65 meters)

Turbine Weight: Approximately 92 tons (185,000 lbs.)

Foundation:

Each wind turbine foundation consists of an octagonal concrete spread footing, approximately 38' in width. The turbine tower is secured to steel anchor bolts embedded in the concrete foundation.

Footprint: The wind turbine utilizes a 38 foot wide octagonal base, tapering up to a 13.5 foot diameter circular pedestal. The 20 turbines are randomly spaced inside a rectangular land area approximately 1.5 miles wide by 2.5 miles long.

Concrete: Approximately 305 tons of concrete was utilized per foundation. Over 6,000 tons of concrete was used in completing all 20 foundations (more than 300 truckloads) – enough concrete to make a 3 foot by 3 inch sidewalk approximately 20.5 miles long.

Tower: Constructed of Tubular Steel

Height: 213 ft. (65 meters)

Weight: 95 tons (190,000 lbs.)

Blades:

Length: 112 ft. (34 meters)

Rotor Diameter: 231 ft (70.5 meters) – 10% longer than the wingspan of a jumbo jet (a Boeing 747-400 has a wingspan of 210 ft (64 meters)).

Revolutions per minute: 11-20 (one revolution every 3 - 5.5 seconds).

Swept Area: 42,000 square feet (3,900 square meters) per turbine or 1.7 times the sail area of a flying clipper ship. The clipper ship Star of India has 24,000 square feet (2,200 square feet) of sail area (see www.sdmaritime.com).

Construction:

Groundbreaking: June 2001

Completion: December 2001

- **Households Served:**

The Fenner Wind Project will provide enough clean, renewable electricity to annually serve approximately 10,000 average American homes*.

- **Wind Energy:**

Wind energy was the world's fastest growing energy source over the last five years, with an annual average growth rate of 31%.

In the United States, wind power installations increased 66% in 2001 to 4,261 megawatts (enough electrical capacity to serve approximately one million average American households according to the American Wind Energy Association). Globally, installed wind capacity increased to 24,000 megawatts during 2001 (enough to serve 5 million average U.S. households). Today, Denmark Germany, and some regions of Spain now have between 10 and 20 percent of their electricity needs being served by wind energy. Forecasts for wind power continue to be favorable with more than 79,000 cumulative megawatts predicted worldwide by 2006 — an increase of more than 55,000 megawatts over the next five years.

Jobs Created:

Construction Jobs: 78

Ongoing O&M Jobs: 3

* According to the American Wind Energy Association (AWEA).

