

# Clean Energy. **Smart Future.**



## **GDF SUEZ Energy North America:** A Diverse Renewables Endeavor

Among its power generation assets, GDF SUEZ Energy North America manages 23 renewable facilities powered by wind, biomass, and hydro energy, totaling a capacity of 410 MW. These carbon-free and carbon-neutral operations make up almost a third of the company's total number of North American power generation facilities.

North America is one of the most rapidly expanding renewable energy markets in the world. To enhance its renewables position, GDF SUEZ acquired FirstLight Power Enterprises Inc. in late 2008. FirstLight owns and operates a collection of traditional hydro and pumped storage facilities in Connecticut and Massachusetts.

Although a longtime player in European wind markets, GDF SUEZ's acquisition of Canadian wind developer Ventus Energy Inc. in late 2007 launched the company's North American foray into wind power with a portfolio of wind energy facilities and development projects in eastern Canada.

Two Canadian wind farms are in operation in the Prince Edward Island province and a third facility is under construction in New Brunswick, Canada, with completion projected at the end of 2009. GDF SUEZ is also currently pursuing 500 MW of wind energy development in Canada and in the United States.

In addition to its interests in hydro and wind, GDF SUEZ is North America's third largest player in the biomass market segment of generating electricity from wood chips. The company operates biomass and biogas plants in the Northeast, Michigan, and Colorado.

### **WIND**

In operation: 2 facilities, 108 MW

In construction: 1 facility, 99 MW

### **BIOMASS/BIOGAS**

In operation: 8 facilities, 129.5 MW

### **HYDRO**

In operation: 12 facilities, 172.8 MW

### **Contact Us:**

1990 Post Oak Boulevard  
Suite 1900  
Houston, TX 77056  
713 636 1555

225 King Street West  
Suite 1401  
Toronto, Ontario, M5V 3M2  
416 214 1112

[www.gdfsuezna.com](http://www.gdfsuezna.com)

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## **GDF SUEZ: A Tradition in Renewable Energy**

More than 40 percent of all of GDF SUEZ's global electric generation capacity produces no carbon dioxide emissions, and another 50 percent produces very little. With operations in 60 countries, the 175-year-old company has established a long commitment to approaching power generation in an environmentally friendly way.

Around the world, GDF SUEZ operates more than 12,600 MW of renewable generation capacity in hydro, wind, biomass, and solar energy. In 2008, the company invested more than \$1.5 billion in new renewable projects.

Hydro electricity makes up 80 percent of the GDF SUEZ renewable portfolio and 19 percent of the company's overall generation capacity, which is second only to its natural gas-fired power. In South America, GDF SUEZ is Brazil's largest private generator, with eight hydro facilities in operation and two more under construction for a total of more than 10,000 MW.

To discover long-term approaches to cleaner power generation and find solutions that are best suited to the needs of its customers, GDF SUEZ relies on 1,200 experts at eight research and development centers. The team's projects include testing of biomass materials other than wood—grain, dried olive pits and pulp, rice hulls, and coffee husks—to identify the best transformation method (drying, crushing, gasification) for combustion efficiency.

Two new projects are also under way in Europe: converting an existing plant to burn 25 percent biomass to reduce its carbon emissions, and constructing a new co-combustion plant designed to use 50 percent biomass and have the installed technology to be carbon-capture ready.

### **WIND OPERATIONS**

Belgium, Canada, France, Italy, Portugal

### **BIOMASS OPERATIONS**

Belgium, Brazil, The Netherlands, Poland, United States

### **HYDRO OPERATIONS**

Bolivia, Brazil, France, Laos, Panama, Peru, United States