



## Wind Power

*Ensuring Québec's electricity supply*

# HYDRO-QUÉBEC – A PROVIDER OF GREEN ENERGY

Hydro-Québec ranks among North America's largest electric utilities. Its primary mission is to meet the electricity needs of the Québec market. To this end, the company operates a generating fleet with a total installed capacity of about 35,650 MW. Some 97% of its output is hydropower.

Hydro-Québec comprises four divisions:

- Hydro-Québec Distribution supplies Québec with electricity and provides high-quality services to all its customers.
- Hydro-Québec Production generates power and supplies Hydro-Québec Distribution with a heritage pool volume allocated to the Québec market. It also sells electricity on wholesale markets.
- Hydro-Québec TransÉnergie operates the most extensive transmission system in North America.
- Hydro-Québec Équipement and Société d'énergie de la Baie James, a Hydro-Québec subsidiary, are the prime contractors for the company's major construction projects.

In 2007, Hydro-Québec had assets of \$65 billion and posted sales of over \$12 billion.

## A vast market

Hydro-Québec Distribution has some 3.3 million customers spread over a territory of 1.7 million square kilometres. Its 2007 revenues totaled \$10.5 billion on sales of about 173 TWh. Its activities are regulated by the Régie de l'énergie (Québec energy board).

## Market purchases

To meet the growth in demand for electricity, Hydro-Québec Distribution buys power on open markets. All potential power suppliers, including Hydro-Québec Production, are invited to bid on supply contracts.

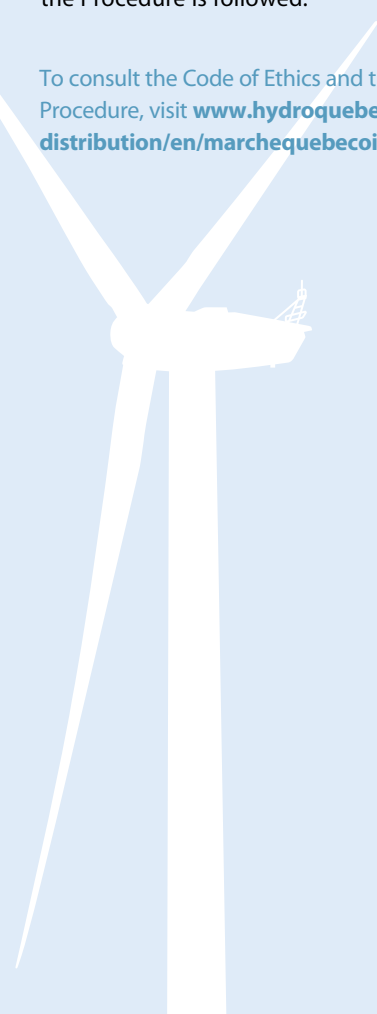
Since 2004, Hydro-Québec's sourcing strategy has focused on the complementary development of hydropower and wind power. Wind farm projects arising from contracts with Hydro-Québec Distribution amounted to 3,000 MW in June 2008.

## A transparent, non-discriminatory tendering process

Hydro-Québec Distribution activities related to the purchase of energy through tendering fall under a regulatory framework, which includes the *Act respecting the Régie de l'énergie, the Code of Ethics on Conducting Calls for Tenders, and the Call for Tenders and Contract Award Procedure*.

All Hydro-Québec employees involved in the tendering process must comply with the Code of Ethics and the Procedure. An independent external firm ensures that the Procedure is followed.

To consult the Code of Ethics and the Procedure, visit [www.hydroquebec.com/distribution/en/marchequbécois](http://www.hydroquebec.com/distribution/en/marchequbécois).



# 500 MW YET TO COME...

## WITH EVEN GREATER ECONOMIC SPINOFFS



### Future 2 x 250 MW set aside for Native and local communities in Québec

Two additional calls for tenders for the purchase of wind power will soon be announced:

- 250 MW for projects proposed by Native communities or nations
- 250 MW for projects proposed by local or regional communities
- Maximum of 25 MW per project
- Regional and Québec content requirements
- Power deliveries must start between 2012 and 2014

### Gaspésie region industry base

As a result of the first call for tenders, the following component manufacturing and assembly plants for 1.5 MW GE wind turbines have been built in the Gaspésie region of eastern Québec:

- Composites VCI plant in Matane (nacelle shells)
- Marmen Énergie plants in Matane (towers and nacelle assembly)
- LM Glasfiber factory in Gaspé (turbine blades)

As a result of the second call for tenders, the following plants in the same region will be built for or by two other wind turbine manufacturers, ENERCON and REpower:

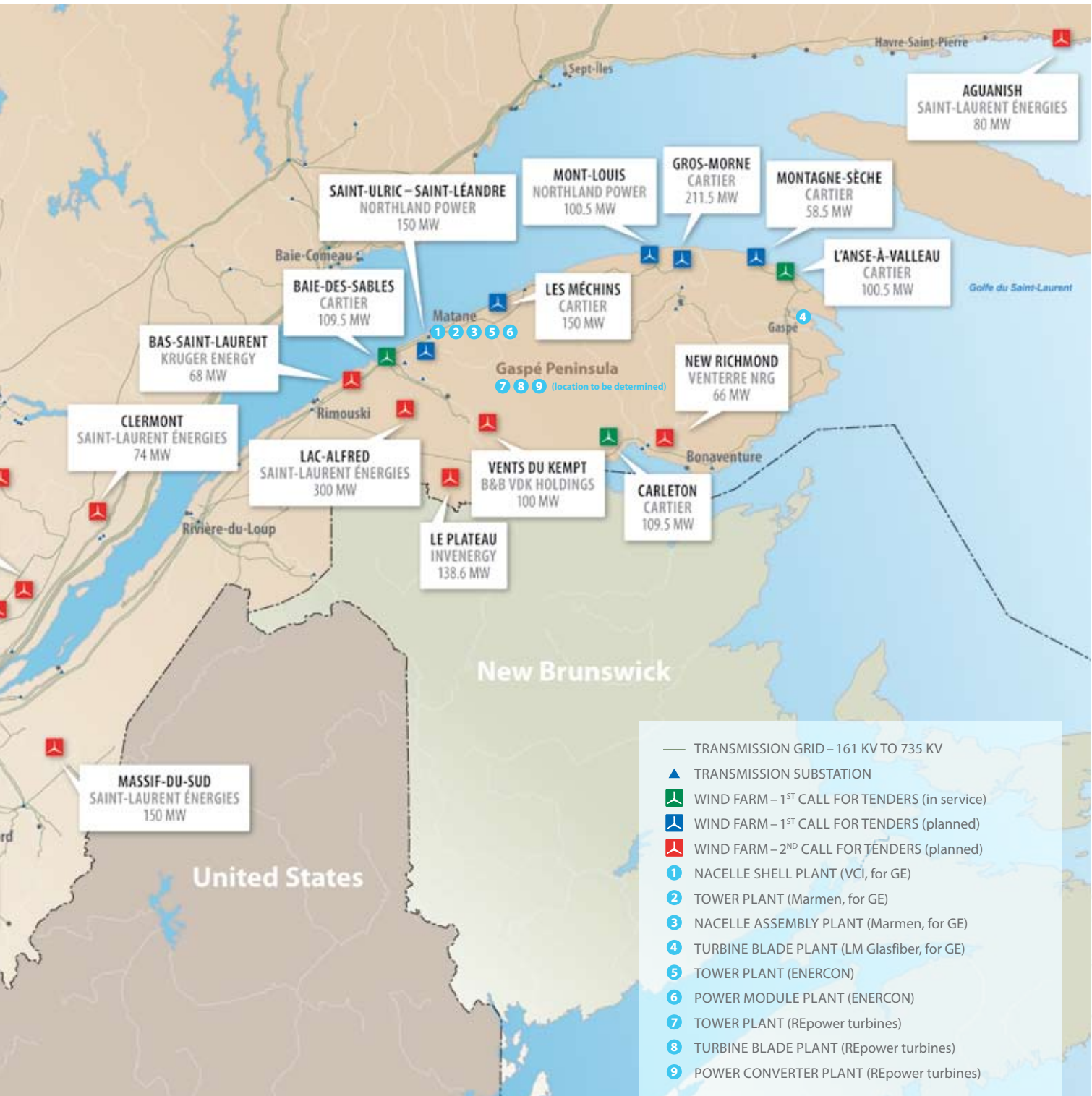
- ENERCON plant in Matane (concrete towers and power modules)
- REpower wind turbine part manufacturing plants (steel towers, turbine blades and power converters)

### Regional job creation

- 150 to 300 jobs during each year of wind farm construction
- 300 jobs per year for work needed on the Hydro-Québec transmission system to integrate wind generation
- 150 permanent jobs for wind farm operation and maintenance
- 450 direct, permanent jobs in the Gaspésie region and the regional county municipality of Matane to manufacture parts for 1.5 MW GE wind turbines
- 430 additional direct, permanent jobs in future plants to manufacture parts for 2 MW ENERCON and REpower wind turbines

### The 23 wind farms under contract with Hydro-Québec Distribution





# 3,000 MW

## AWARDED THROUGH TENDERING

### First call for tenders (1,000 MW)

#### February 2005 – Eight contracts signed

- Total installed capacity of 990 MW for an annual output of 3.2 TWh
- Two suppliers chosen:
  - Cartier Wind Energy (739.5 MW)
  - Northland Power/Northland Power Income Fund (250.5 MW)
- Commissioning of eight wind farms between 2006 and 2012
- Average energy price of 6.5¢/kWh
  - + 1.3¢/kWh transmission cost
  - + 0.5¢/kWh balancing cost
  - = 8.3¢/kWh
- Single model of wind turbine, a 1.5 MW unit manufactured by GE Energy
- All wind farms will be located in the Gaspésie region of Québec
- Minimum 40% to 60% regional content required for each wind farm
- Wind power integration agreement with Hydro-Québec Production to offset any shortfall in wind power deliveries with hydropower, thus ensuring firm capacity at all times

#### June 2008 – Progress made

- Two Cartier Wind Energy farms with a total installed capacity of 210 MW commissioned at Baie-des-Sables and L'Anse-à-Valleau
- Two other wind farms under construction: Carleton (109.5 MW), to be commissioned in late 2008, and Saint-Ulric-Saint-Léandre (150 MW), to be commissioned in late 2009

### Second call for tenders (2,000 MW)

#### June 2008 – Fifteen contracts signed

- Total installed capacity of 2,004 MW for an annual output of 6.4 TWh
- Eight suppliers chosen:
  - Invenergy Wind Canada (138.6 MW)
  - Enerfín Sociedad de Energía (100 MW)
  - 3Ci Energy (156 MW)
  - Kruger Energy (168 MW)
  - Venterre NRG (116 MW)
  - Boralex-Gaz Métro L.P. consortium (271.9 MW)
  - B&B VDK Holdings (100 MW)
  - Saint-Laurent Énergies (954 MW)
- Commissioning of 15 wind farms between 2011 and 2015
- Average energy price of 8.7¢/kWh
  - + 1.3¢/kWh transmission cost
  - + 0.5¢/kWh balancing cost (estimate)
  - = 10.5¢/kWh
- Two wind turbine manufacturers: ENERCON and REpower
- Projects located in eight regions north and south of the St. Lawrence River
- Minimum Gaspésie regional content of 30% for wind turbines and minimum Québec content of 60% for each wind farm



## For further information

### Hydro-Québec Distribution

[www.hydroquebec.com/distribution/en/marchequebécois](http://www.hydroquebec.com/distribution/en/marchequebécois)

### Other sites of interest

Hydro-Québec TransÉnergie

[hydroquebec.com/transenergie/en/commerce/producteurs\\_prives.html](http://hydroquebec.com/transenergie/en/commerce/producteurs_prives.html)

Hydro-Québec

[www.hydroquebec.com/learning/eolienne/parcs\\_eoliens.html](http://www.hydroquebec.com/learning/eolienne/parcs_eoliens.html)

Produced by Direction principale – Communications  
for Direction – Approvisionnement en électricité

Legal deposit - 3<sup>rd</sup> quarter 2008  
Bibliothèque et Archives nationales du Québec  
National Library of Canada  
ISBN 978-2-550-53880-6

*Ce document est également publié en français.*

2008G878A1M

[www.hydroquebec.com/distribution/en](http://www.hydroquebec.com/distribution/en)

