

Integration of Wind Power into the Grid

230-kV **New Richmond** Wind Farm Line

The New Richmond wind farm project, developed by Venterre, was selected following Hydro-Québec Distribution's second tender call for the purchase of wind-generated electricity.

To bring the output from this future 66-MW wind farm onto the transmission grid, Hydro-Québec TransÉnergie must build a 230-kV single-circuit line about 10 km long, from the wind farm developer's substation to the Hydro-Québec system at Cascapédia substation.

This information bulletin describes the line routes under study and analyzes them according to technical and environmental criteria.

PUBLIC CONSULTATION • May 2010

Study area

The project study area covers approximately 45 km². It is almost entirely located in the municipality of New Richmond, except its northeast section, which includes small parts of the municipalities of Saint-Alphonse and Caplan.

The study area is bordered by the Petite Rivière Cascapédia and Chemin de Saint-Edgar to the west, the right-of-way for the 230-kV and 69-kV lines that connect to Cascapédia and New Richmond substations to the south, a steep slope towards Saint-Alphonse and Caplan to the east and the wind farm developer's planned substation to the north.

Except for a few parcels of land in the northern section of the study area, all of the lots that may be affected by the project are privately owned.







Main criteria for selecting the location of the line

Technical criteria

- Avoid rugged-relief zones and future wind turbines.
- Look for most direct trajectory, minimizing the number of angle towers.
- Look for proximity to access roads to facilitate line construction.

Environmental criteria

- Limit impacts on populated areas.
- Make use of existing rights-of-way whenever possible.
- Take into account protected agricultural zones and land used for farming.
- Consider landscape.

Description of proposed routes

The two routes under study (east and west) start at the New Richmond wind farm substation and make use of the less rugged zones in the study area. They meet at the limits of the existing right-of-way for the 230-kV line (circuits 2351-2352) and the 69-kV line (circuit 717), before reaching Cascapédia substation in New Richmond. Two sections are common to both routes: sections A-B and C-D (see map).

East route

The east route (A-B-east variant-C-D) is 10.2 km long. As it exits the wind farm substation, it goes along Chemin du Calvaire for approximately 280 m, and then runs parallel to the limits of a lot over a distance of 4.8 km. For the next 1.8 km, it bypasses a rugged-relief zone and a small farming zone along the road between concessions 2 and 4, and then runs along the existing right-of-way for 3.3 km. This route mainly affects woodlands (42 ha).

The east route crosses mostly wooded areas with few open spaces. The uneven terrain and tree cover facilitate the line's integration to the landscape. At the end of its trajectory, the route joins an existing right-of-way, thereby limiting its impact on the landscape.

West route

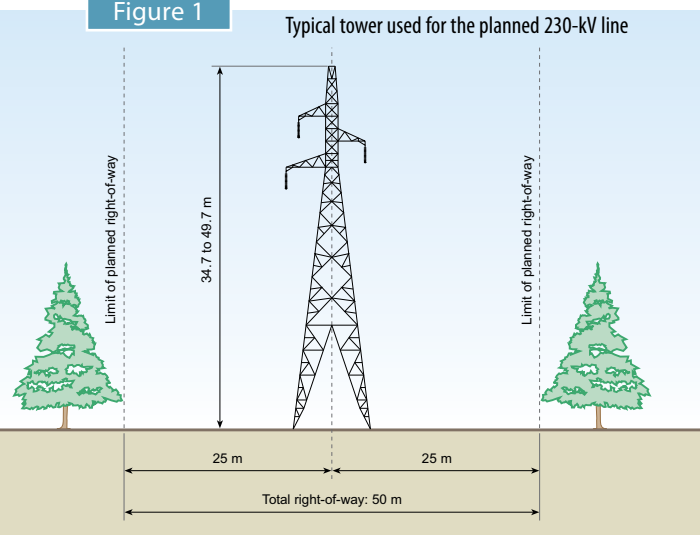
The west route (A-B-west variant-C-D) is 9.1 km long. As soon as it exits the wind farm substation, it more or less follows the same axis as Chemin du Calvaire over 4.7 km, at a distance of about 50 to 500 m. It then runs along the edge of the protected agricultural zone for 2.3 km, and later bypasses it to join the existing right-of-way for 2.1 km before connecting to Cascapédia substation. This route affects mainly woodlands (40 ha), of which 3.7 ha border planting areas.

Even though the west route runs close to Chemin du Calvaire, the distance between the line and the road is large enough to preserve a strip of woodland which will hide the towers. In the sector where the line moves in closer to the farmland next to concession 4 east, the tree cover maintained between the route and cultivated land, as well as the wooded mountainside in the background, allow for the integration of the line into the landscape. Nonetheless, the top part of the towers will be visible.



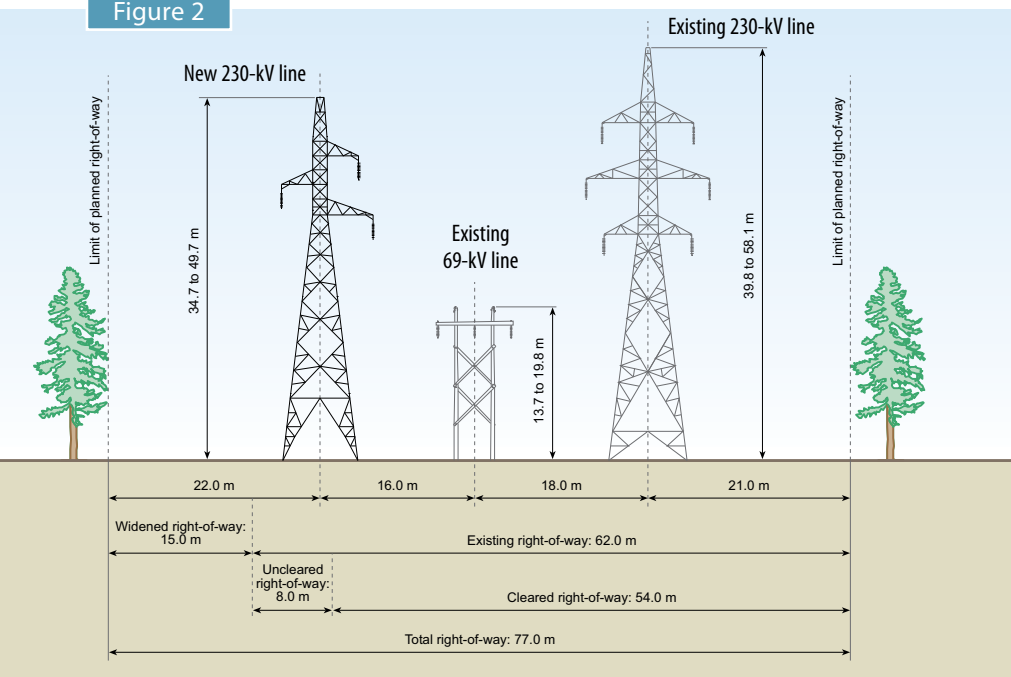
Tower type and width of right-of-way

Figure 1



Since the new line runs through forest, lattice towers will be used and the right-of-way will be 50 m wide. As for the sections where the future line will run along existing lines, Hydro-Québec will have to acquire a 15-m servitude to expand the right-of-way of existing lines. Clearing, however, will have to be done on 23 m, as an 8-m wide portion of the Hydro-Québec servitude (on the north side) was never cleared.

Figure 2



www.hydroquebec.com/projects

This project is presented on the Hydro-Québec Web site.

Community participation

Hydro-Québec's goal is to integrate the future line as harmoniously as possible into the environment. The company invites all organizations, owners and individuals affected to share their concerns with regard to the project. Hydro-Québec will take these concerns into consideration when defining the final project characteristics and determining mitigation measures.

Project schedule

PRELIMINARY STUDIES

Information and consultation	Spring 2010
Information on the route selected	Summer 2010

PROJECT

Filing of environmental assessment	Spring 2011
Permitting	Summer 2011
Construction	Winter and spring 2012
Commissioning	Summer 2012

For more information

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