ONTARIO CLEAN AIR ALLIANCE

www.cleanairalliance.org

AIR QUALITY ISSUES FACT SHEET **#23**

A New Bruce Transmission Line

▶ *Does it make sense for Ontario?*

In 2006 the Ontario Power Authority (OPA) established a standard offer program for new small-scale renewable electricity projects. The program pays individuals, farmers, co-ops and companies 11 cents per kilowatt-hour for electricity from small-scale renewable power projects.

Unfortunately, the OPA is refusing to purchase electricity from green power projects in the Bruce Area (See Map #1) because Hydro One does not have sufficient transmission capacity to bring *all* of the Bruce Area's *potential* nuclear and renewable electricity supplies to market during *every* hour of the year.

Figure 1 shows the OPA's projections of nuclear and renewable power generation in the Bruce Area from 2007 to 2020; and Hydro One's existing transmission capacity in the Bruce Area.

As Figure 1 reveals, starting in 2007, if all of the Bruce Area's nuclear and renewable power plants operate at 100% of their capacity, Hydro One will not have sufficient capacity to bring all of Bruce Area's output to customers in southern Ontario.

To alleviate this transmission bottleneck, the OPA is recommending that Hydro One reinforce its existing transmission line and build a new high-voltage transmission line from the Bruce Nuclear Generating Station to the Town of Milton. According to the OPA, it will cost $200 million to reinforce the existing transmission line and $600 million to build a new transmission line to Milton.

Map 1: Southwestern Ontario transmission constraint area

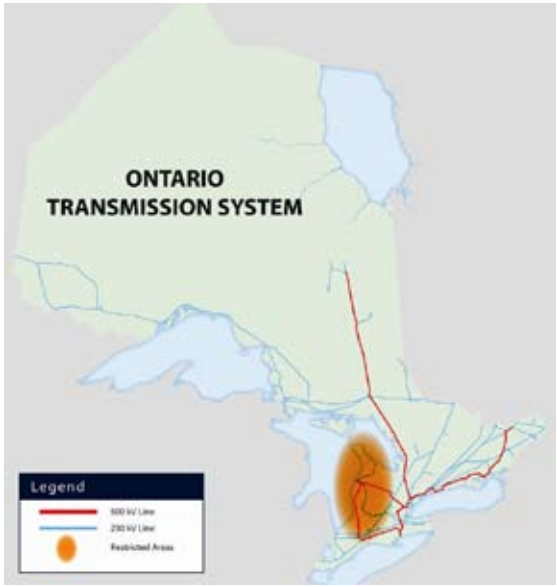

Fig. 1: Bruce Area Generation and Transmission

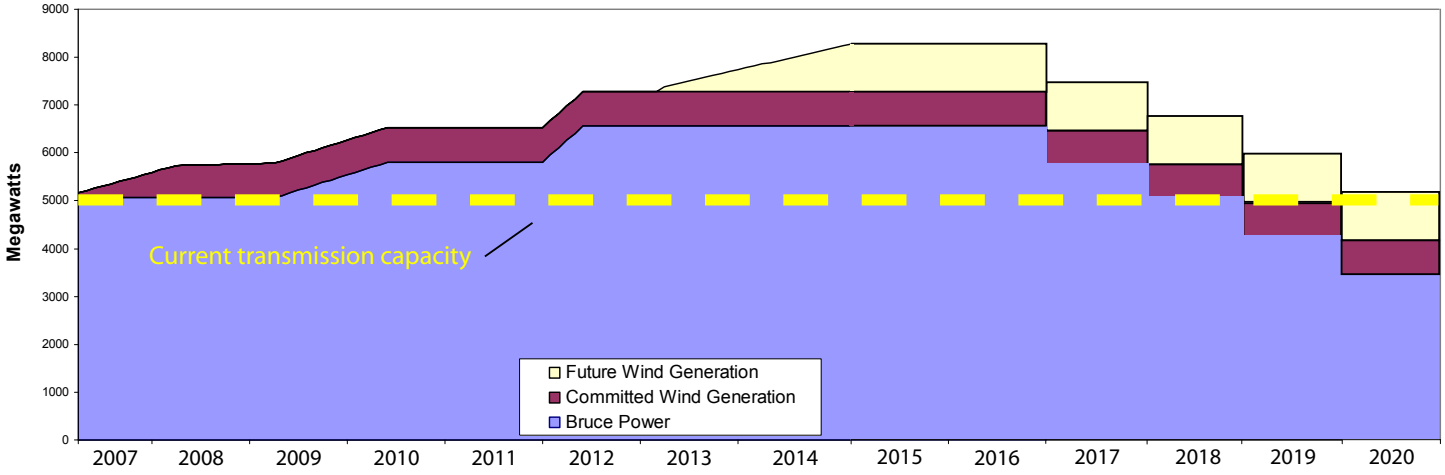

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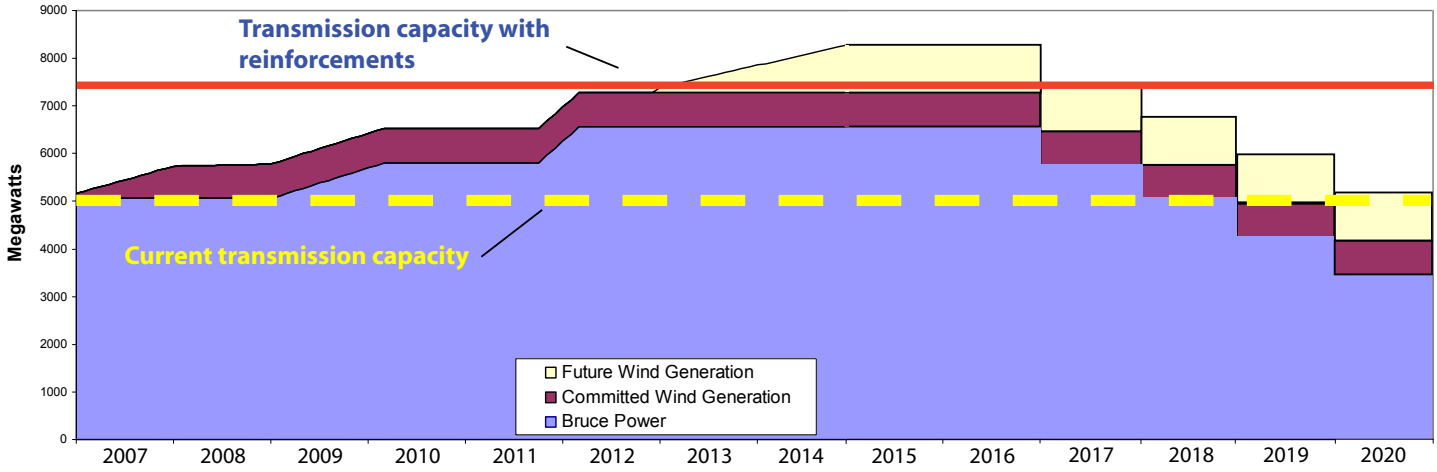
Figure 2 shows the impact of reinforcement measures on the capacity of the existing Hydro One transmission line. Figure 2 reveals a number of important facts:

Fig. 2: Bruce Area Generation and Transmission with reinforcements



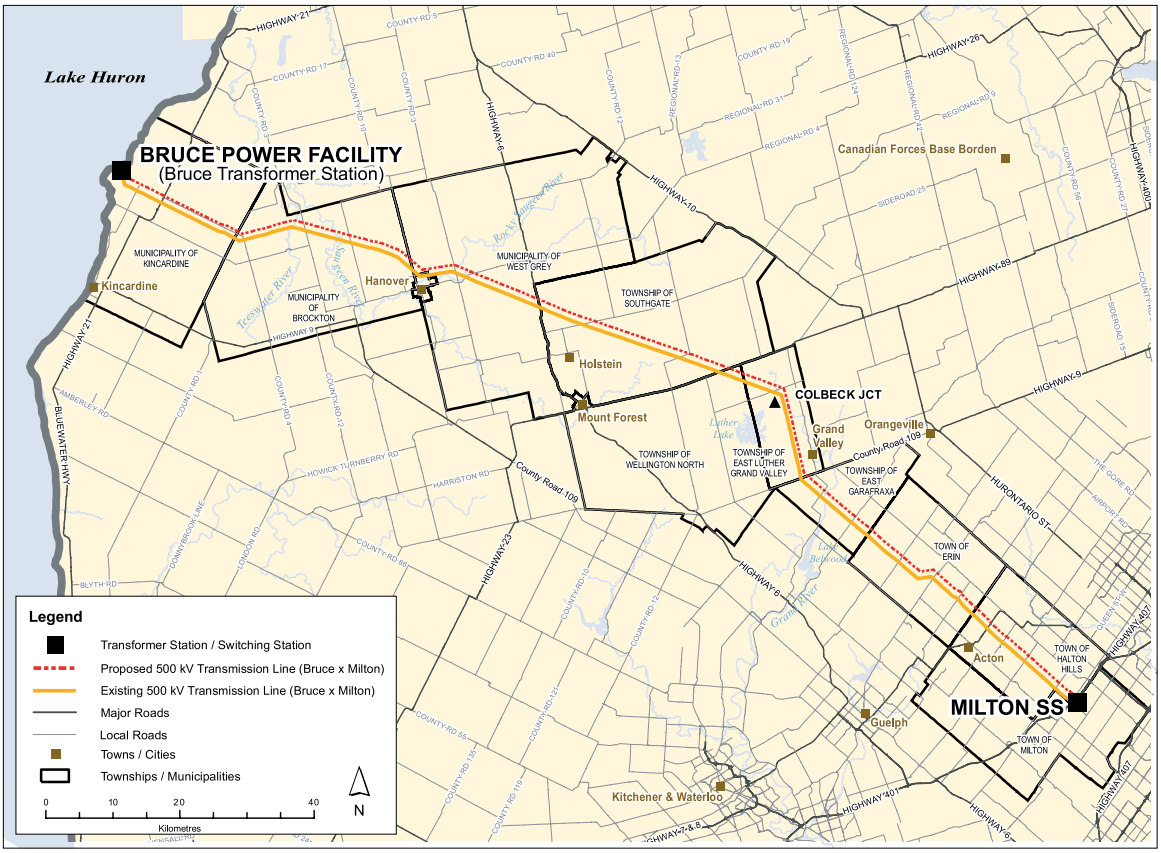
1. With these reinforcements, the existing line will be able to bring *all* of Bruce Power's nuclear electricity to customers in southern Ontario *all* of the time.
2. Between 2017 and 2020, Bruce Power's nuclear generation will decline by 785 megawatts per year as the four Bruce B nuclear reactors come to the end of their service lives. As a result, with the proposed reinforcements to the *existing* Hydro One transmission line, a gap between the Bruce Area's total nuclear and renewable generation and transmission capacity will exist for at most four years – from 2013 to 2017.
3. According to Figure 2, the temporary four-year gap between the Bruce Area's generation and transmission capacity could be up to approximately 1,000 megawatts. However, this gap is based on the assumption that all of the Bruce area's nuclear and wind generation is operating at 100% capacity. This will never occur. In 2006 the average capacity utilization rate of Ontario's fleet of nuclear reactors was 69%. Furthermore, according to the OPA, the average annual capacity utilization rates of Ontario's wind turbines will be 28%. Therefore, assuming these capacity factors, on an average day between 2013 and 2017, the output of the Bruce Area's nuclear and wind generation will be 4,873 megawatts. Furthermore, assuming the proposed reinforcements to the *existing* transmission line, its transmission capacity will be approximately 7,300 megawatts. Therefore, on an average day between 2013 and 2017, the capacity of the *existing* transmission line could exceed the Bruce Area's electricity output by approximately 2,400 megawatts (7,300 megawatts – 4,873 megawatts).

Does it make sense to spend $600 million to build a new transmission line which will only be needed to bring power from the Bruce Area to southern Ontario consumers for a limited number of exceptional days over a limited four year period (2013-2017)?

Does the proposed route for the new Bruce Transmission Line make sense?

Map 2 shows the OPA's proposed route for the new Bruce Transmission Line.

Map 2: Bruce Transmission Line Route



MAP: HYDRO ONE NETWORKS

The OPA is proposing that the new transmission line be built right alongside the existing Bruce to Milton transmission line. As a result, a tornado or ice storm that knocks down the existing transmission line would probably also knock down the proposed new transmission line.

If Hydro One is going to build a second transmission line from the Bruce, shouldn't it develop a new transmission corridor to increase our security of supply?

A better alternative

1 Hydro One should reinforce its *existing* Bruce to Milton transmission line as recommended by the OPA. This will address the need for greater capacity to deal with growing renewable power supplies in the Bruce region.

2. The OPA should lift its moratorium on the purchase of renewable electricity from power projects in the Bruce Area and instead encourage currently stalled projects in the area to move forward. Ontario needs to obtain as much new, clean renewable electricity as it possibly can -- as soon as possible. It makes no sense to refuse to purchase green power in the Bruce area just because there may not be sufficient transmission capacity to bring 100% of the Bruce area's total electricity supplies to southern Ontario during *every* single hour during the 2013- 2017 period.

3. Instead of spending $600 million to marginally increase the Bruce Area's total electricity exports to southern Ontario during exceptional days between 2013 and 2017, we should invest in more cost-effective options to meet our electricity needs such as energy conservation, renewable power and small-scale combined heat and power plants located where power is needed and not hundreds of kilometres away.

For more information

For more information on how Ontario can meet its electricity needs by a combination of energy conservation, renewables and small-scale combined heat and power plants please download our report *Rolling the Dice* from www.cleanairalliance.org.

What you can do

If you support our recommendations, please contact Premier McGuinty or your local M.P.P. and let them know.

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