FOR THE GREATER GRID

FOR THE GREATER GRID

FOR THE GREATER GRID

LOWERING ELECTRICITY COSTS FOR ONTARIANS

The Lake Erie Connector could not have come at a better time. It fits in very well with climate change policies, national climate aspirations, and the ability to trade our low-carbon electricity into the U.S. market. The Connector provides better capability to both optimize Ontario's generation mix, and optimize the ability to buy and sell at times when it’s most beneficial.

— Dr. Jatin Nathwani, Executive Director University of Waterloo Institute for Sustainable Energy

Innovative infrastructure like the Lake Erie Connector is a unique opportunity to bring savings, efficiency, and flexibility to our electricity system and to help drive electricity costs down. To provide optimal value to customers, we need to enhance all aspects of this vast machine that is the modern electricity grid. The Lake Erie Connector is an essential tool to accomplish this for Ontario.

— Jim Burpee, former President and CEO, Canadian Electricity Association

As the indispensable partner of business in Ontario, we have long advocated for cost-effective energy solutions to benefit communities and consumers. Projects like the Lake Erie Connector that are designed to lower costs, reduce waste and inefficiency in the electricity system, and give us more flexibility to meet our needs in the near- to longer-terms is the right approach.

— Rocco Rossi, President and CEO, Ontario Chamber of Commerce

LAKE ERIE CONNECTOR
1,000 MW HVDC TRANSMISSION LINE CONNECTING ONTARIO TO THE PJM ELECTRICITY MARKET

 Bilder des Bildes
WHAT IS THE LAKE ERIE CONNECTOR?

The Lake Erie Connector (LEC) is a proposed 1,000 MW, bi-directional, high-voltage direct current (HVDC) underwater electricity transmission line that would provide the first direct link between Ontario and PJM - the largest single electricity market in the world composed of 13 U.S. Midwestern and Mid-Atlantic states. The project will provide the first direct electricity trading path between Ontario and a large, multi-state regional transmission market in the U.S.

The LEC project will deliver less expensive electricity to Ontario customers by increasing energy trading with PJM. The project will create new options for Ontario to manage its energy needs and policy goals and respond to shifting supply/demand conditions, outages, and system planning requirements. The project will also help improve the reliability and security of the energy grid.

Ontario has invested in a fleet of clean nuclear, hydro, and wind generation that often produces excess power that is curtailed at great expense. Ontario also has a strong electricity transmission backbone from Haldimand County into the Greater Toronto and Hamilton Area that is under-utilized following the closure of the Nanticoke coal generating station. The LEC would allow Ontarians to optimize these existing assets to generate hundreds of millions of dollars in revenues by exporting excess power when it is not needed, and by importing competitively priced power when there is high provincial demand in the future. Even during periods when Ontario supply and demand is balanced, there will be ongoing market price differences that will provide profitable opportunities for Ontario in power trading with PJM.

- The LEC is an infrastructure solution that will provide ongoing benefits to Ontario in virtually all market conditions.
- This project is being developed by ITC, a large independent electricity transmission company and a subsidiary of Canadian utility Fortis Inc., a leader in the North American regulated electric and gas utility industry.
- The LEC is fully permitted in Canada and the U.S. Securing favorable transmission service agreements with prospective counterparties is the next major milestone. Upon completion, construction on the LEC will begin in 2020/2021 and the project will enter commercial operation as soon as 2024.

PRIVATE VERSUS PUBLIC RISK

ITC has used only its own, private funds to develop the project to the point where it is fully permitted and ready for construction and will continue to fund its development through the years of construction. There will be no costs to Ontario electricity consumers during construction of the line and, when the intertie is completed, ratepayers and the Ontario system will receive abundant savings that will more than offset the project’s cost.

WHAT ABOUT EXISTING INTERTIES?

Ontario has invested in a fleet of clean nuclear, hydro, and wind generation that often produces excess power that is curtailed at great expense. Ontario also has a strong electricity transmission backbone from Haldimand County into the Greater Toronto and Hamilton Area that is under-utilized following the closure of the Nanticoke coal generating station. The LEC would allow Ontarians to optimize these existing assets to generate hundreds of millions of dollars in revenues by exporting excess power when it is not needed, and by importing competitively priced power when there is high provincial demand in the future. Even during periods when Ontario supply and demand is balanced, there will be ongoing market price differences that will provide profitable opportunities for Ontario in power trading with PJM.

- The LEC is an infrastructure solution that will provide ongoing benefits to Ontario in virtually all market conditions.
- This project is being developed by ITC, a large independent electricity transmission company and a subsidiary of Canadian utility Fortis Inc., a leader in the North American regulated electric and gas utility industry.
- The LEC is fully permitted in Canada and the U.S. Securing favorable transmission service agreements with prospective counterparties is the next major milestone. Upon completion, construction on the LEC will begin in 2020/2021 and the project will enter commercial operation as soon as 2024.

ONTARIO WOULD BECOME A REGIONAL TRADING HUB

The LEC would provide the first direct connection to PJM — the largest and most competitive electricity market in the world:

- Hundreds of market participants
- Hourly, daily, medium, and long-term commitments
- Large and growing renewable generation fleet
- Many states have increasing renewable energy requirements and utilize imports for compliance

NOTES:

Quebec is an important power supplier to Ontario but is not a competitive market. Limited capacity for trading.

Existing interties to Michigan and New York are lower-voltage with limited capacity. There are few competitive suppliers or buyers. These neighboring markets often have excess power at the same times as southern Ontario (similar wind/solar profiles).
WHAT ARE THE BENEFITS TO ONTARIO?

- **COST SAVINGS**: Competitively priced imports and exports can fill short-term supply gaps and differences between actual and forecasted demand or supply. Studies and historical data show that the value from electricity exports can dramatically increase during periods of low electricity demand (i.e., mild weather, economic downturns) and can result in additional benefits to ratepayers of $60-$80 million per year.

- **SYSTEM FLEXIBILITY**: Beyond financial benefits, Ontario would have another critical option to help stabilize the electricity system and markets by harnessing ancillary services from the LEC, such as frequency regulation.

- **DOING MORE WITH LESS**: Optimizing infrastructure by avoiding costs associated with nuclear, wind and hydro curtailments or shutdowns, avoiding construction of new power plants, and using existing transmission lines to support electricity demand in the Greater Toronto and Hamilton Area and province-wide.

- **CREATING A NEW, REGIONAL TRADING HUB**: The LEC will enable Ontario to become a new, regional trading hub. By giving the province its first direct access to the largest electricity market in North America, Ontario consumers can take advantage of exchanging power from Quebec and the United States in a much more cost effective, competitive manner.

- **BETTER THAN EXISTING TRADE ROUTES**: Even on hot summer days when Ontario generators are being utilized, the LEC would provide export revenue because Ontario’s gas generators are more efficient than its neighbours. Ontario will have direct access to the largest trading market in North America, which creates additional tolling revenue when other jurisdictions such as Quebec want access to that market.

THE STATUS QUO – **NOT BUILDING THE LEC** – IS MORE COSTLY TO ONTARIANS.

Ontario does not currently have adequate infrastructure in place to export excess power at a competitive rate, leading to the energy being dumped, spilled or sold at a significant discount to other jurisdictions — costing Ontario jobs and much-needed investment.

HOW WILL IT WORK?

1. **EXISTING AC SYSTEM**
2. **AC/DC CONVERTER**
3. **LAKE ERIE**
   - **IMPORT / EXPORT**
4. **ONTARIO (IESO)**
   - The LEC would connect into existing transmission infrastructure at the site of the retired Nanticoke GS, bringing new purpose to substantial existing transmission assets already owned by Ontarians that are currently under-utilized.

5. **AC/DC CONVERTER**
6. **EXISTING AC SYSTEM**
   - **U.S. (PJM)**
   - The LEC will connect Ontario to PJM, providing a direct link to a large market for excess power and creating a revenue stream that doesn’t currently exist.

ELECTRICITY SYSTEM BENEFITS

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Imports &amp; Exports</td>
<td>$100+ million/year</td>
</tr>
<tr>
<td>+ Capacity Benefits</td>
<td></td>
</tr>
<tr>
<td>+ Flexibility &amp; Operating Reserves</td>
<td></td>
</tr>
<tr>
<td>+ Clean Energy Savings</td>
<td></td>
</tr>
<tr>
<td>+ Risk Mitigation</td>
<td></td>
</tr>
<tr>
<td>+ Competitive Benefits</td>
<td></td>
</tr>
<tr>
<td>– Project Cost</td>
<td></td>
</tr>
</tbody>
</table>

ENVIRONMENTAL BENEFITS

Reductions in carbon emissions by 2–3 million tons/year

Ability to import, on demand, from non-emitting generators in the U.S. can help Ontario reduce emissions from gas turbine power generation (projected to increase as multiple Ontario nuclear plants will be offline for several years each for refurbishment).

JOBS & ECONOMIC BENEFITS

- **Jobs**: 383 per year during 3 year construction period
- **Ontario economic impact**: $300 million in business revenues during construction
- **+78 per year** once in operation
- **+$18 million** per year during operation

*Jobs and economic impacts are based on direct provision of goods and services, supply chain relationships and re-spending of wages and salaries.
LAKE ERIE CONNECTOR HIGHLIGHTS:

• Ontario and Canada are positioned to realize numerous and substantial benefits from a controllable, bi-directional transmission line.

• This is a unique opportunity: substantial new infrastructure that not only pays for itself but generates revenue for electricity customers and provides many other significant advantages for the entire province.

• Ontarians will receive export revenue during periods of low provincial electricity demand (such as during an economic slowdown) and enjoy significant savings by importing less expensive, clean power during periods of high electricity demand.

• Direct access to a huge neighbouring market is not only valuable, but useful: providing flexibility and increasing competitive forces that will favor ratepayers.

• The Lake Erie Connector is shovel-ready. ITC has secured all major permits, studied and secured the route, and designed and engineered the project.

• In order to begin construction, ITC needs a long-term commitment from Ontario to use the line and take full advantage of its capabilities. Ontario consumers will receive ~$100+ million/year in new revenue and savings - which would exceed $4 billion over the life of the project!

FOR MORE INFORMATION:

Doug Motley: 905-994-5211 • dmotley@itctransco.com

Project website: www.itclakeerieconnector.com

ABOUT ITC:

ITC owns, operates and maintains more than 25,000 km of high-voltage electricity transmission infrastructure that moves power from where it’s generated to where it’s needed in our communities. Through this work we plan and operate the transmission grid across Michigan’s Lower Peninsula, most of Iowa, and parts of Minnesota, Illinois, Missouri, Kansas and Oklahoma. ITC is a subsidiary of Fortis Inc., a Canadian leader in the North American regulated electric and gas utility industry.

FOR THE GREATER GRID

“Canada is a country with a wide range of natural resources and as we move to a low-carbon future, electricity will have an increasingly larger role. Projects like the Lake Erie Connector are tangible examples of how Canada is demonstrating that the environment and the economy go hand in hand.”

— Hon. Jim Carr, former federal Minister of Natural Resources

PROJECT TIMELINE:

<table>
<thead>
<tr>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ST HALF</td>
<td>2ND HALF</td>
<td>1ST HALF</td>
<td>2ND HALF</td>
<td>1ST HALF</td>
</tr>
<tr>
<td>Reserve Factory Capacity</td>
<td>Cable Manufacturing and Install</td>
<td>Converter Procurement, Installation</td>
<td>TESTING, COMMISSIONING</td>
<td>COMMERCIAL OPERATIONS</td>
</tr>
</tbody>
</table>