



315/25-kV Saint-Jean Substation and 315-kV Supply Line

April 30, 2015



Presentation overview

- Regulatory process
- Saint-Jean project in DDO
- Development of transmission system on the island of Montréal
- Technical aspects of overhead and underground lines
- Brief comparison of options (Saint-Jean project)
 - Planned 315-kV line and right-of-way
 - Electromagnetic fields
 - Noise levels
 - Real-estate and property-value issues
- Schedule

Régie de l'énergie

- Transmission operations regulated by the Régie de l'énergie on the basis of cost of service
- Régie de l'énergie requirements
 - Hydro-Québec must submit the best possible project, one that is technically, economically, environmentally and socially sound and that benefits its customers
 - It must be carried out at the best possible cost
- Decision by the Régie will be based on technical and economic criteria
 - www.regie-energie.qc.ca

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MDDELCC and BAPE

- Project is subject to section 31.1 of the *Environment Quality Act*.
- Environmental impact assessment by Hydro-Québec
- Impacts analyzed and evaluated by the Ministère du Développement durable, de l'Environnement et Lutte contre les changements climatiques (MDDELCC)
- Environmental impact statement made available to the public by the Minister
- Public information mandate assigned to the Bureau d'audiences publiques en environnement (BAPE) by MDDELCC
- BAPE holds public consultations and produces a report on its findings.
 - www.bape.gouv.qc.ca
- Environmental impact statement submitted by Minister to the Cabinet
- Cabinet's decision based on the environmental impact statement

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Current Saint-Jean substation

- Substation characteristics:
 - Built in 1957
 - Located at the intersection of boulevards Saint-Jean and De Salaberry
 - 120/12-kV equipment
- It currently supplies electricity to parts of Dollard-des-Ormeaux, Pointe-Claire, Kirkland and Beaconsfield.

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Reasons for the Saint-Jean project

Need to replace aging equipment at Saint-Jean substation

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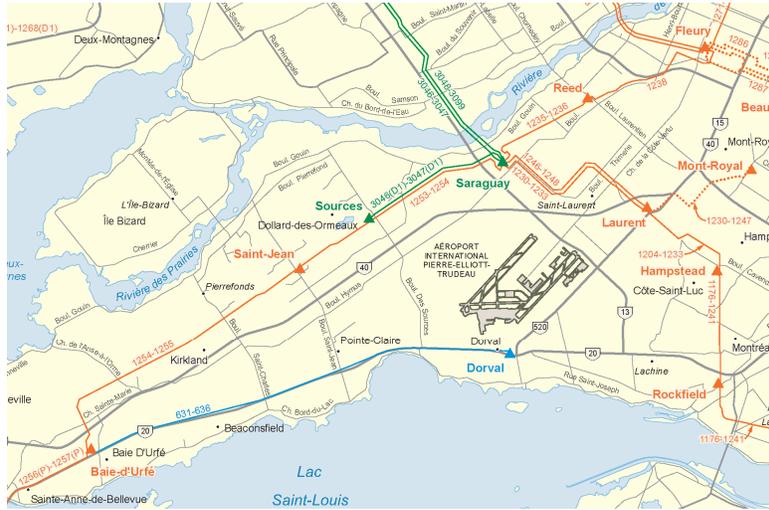
To help meet the increasing demand for electricity

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- Refurbishment of Saint-Jean substation and conversion of voltage to 315/25 kV
- Construction of new 315-kV line in the existing right-of-way between Saint-Jean and Sources substations (less than 3 km)

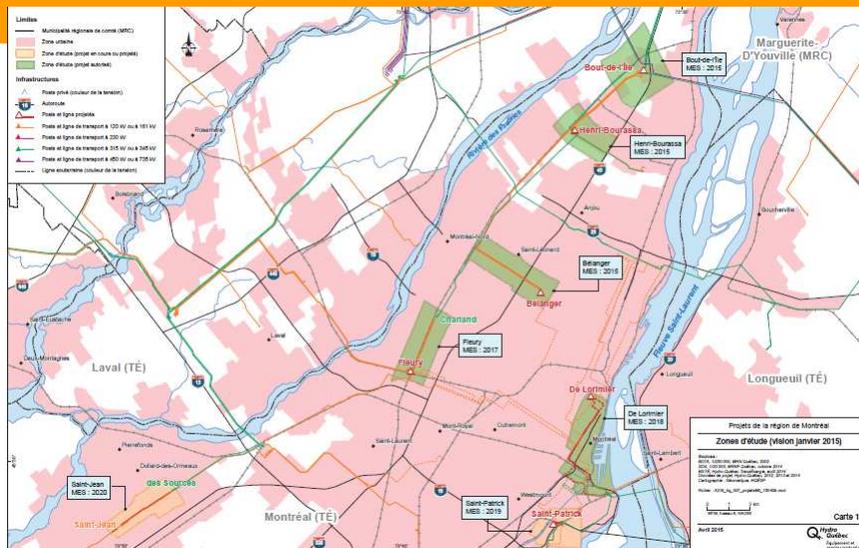
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Current transmission system on Montréal's West Island



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Development of transmission system on the island of Montréal



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Technical aspects of overhead and underground lines

- When does Hydro-Québec opt for underground lines?
 - Where it is impossible to build an overhead line because there is not enough space or because there is an impassable obstacle
 - When undergrounding is the better choice for a project technically, economically, environmentally and socially

Overhead lines	Underground lines
Existing right-of-way and sufficient servitude in DDO	Construction of overhead-underground junction stations
Single route	Two different circuits in separate concrete-encased duct banks (often under different streets)
Useful life: ± 80 years	Useful life: ± 40 years
Short construction period	Longer construction period
Greater transmission capacity	Less transmission capacity

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Summary comparison of options (Saint-Jean project)

Overhead line	Underground line	
Useful life 2020-2100: 80 years	Useful life 2020-2060: 40 years	Useful life 2061-2100: 40 years
Construction cost: roughly \$13 million*	Construction cost: Roughly \$59 million*	

*In constant 2014 dollars, parametric estimates ±30%

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Planned 315-kV line to supply the 315/25-kV Sources substation

- New, reduced-footprint towers.
- HQ intends to create a model right-of-way with the collaboration of the city of DDO (landscaping and recreational facilities):
 - Green space and transmission lines will coexist harmoniously over the long term.
 - Accessibility and recreational use will be maintained and improved.

Current situation (2014) (View of bicycle path near city hall, looking west)



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2014



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**Proposal
(landscaping and recreational facilities)**



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Electromagnetic fields (EMFs)

- An exceptional number of studies conducted on the subject in the last 40 years.
- Hydro-Québec has helped to advance knowledge about EMFs by participating actively in this research.
- Numerous studies on this subject conducted by highly regarded academic research units around the world.
- Results are convincing and reassuring on the absence of harmful health effects:
 - Public health authorities' position on electromagnetic fields emitted by power lines:
 - Ministère de la Santé et des Services sociaux du Québec:
<http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2014/14-208-01W.pdf>

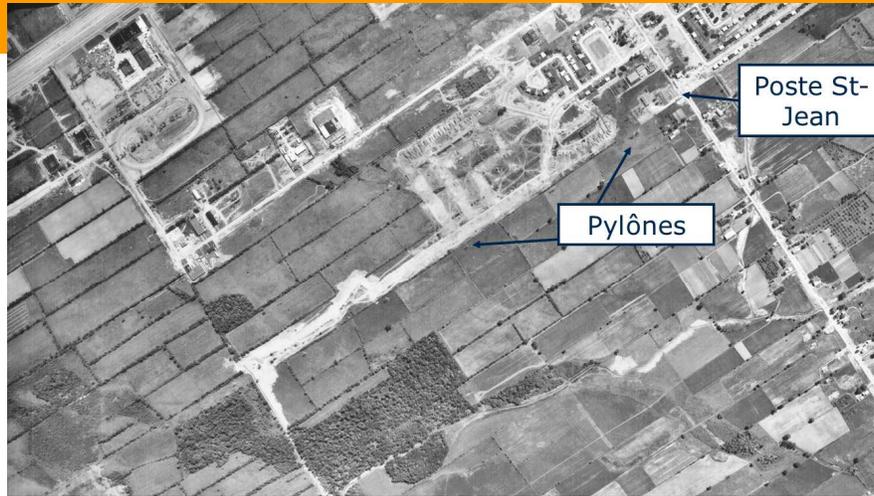
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Noise levels

- Under all conditions, noise levels from the line will be less than ambient noise levels.
- In dry weather, ambient noise levels measured in the neighborhood (on the edge of the closest properties) are 46 decibels (dBA).
 - In dry weather, noise levels from the planned 315-kV line will be below 30 dBA.
- In wet weather, the noise from traffic increases and the minimum level of ambient noise measured also increases to 49 dBA.
 - In wet weather, noise levels from the planned 315-kV line will be below 45 dBA.

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Real-estate and property-value issues



1964

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Real-estate and property-value issues



2014

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Real-estate and property-value issues

- The construction of the planned line will not involve the acquisition of any additional property rights.
- Hydro-Québec believes that, in the residential real-estate market, properties bordering a transmission line right-of-way will always find interested buyers.
 - Real-estate development in DDO, 1964-2014

Schedule (planned)

Project

Filing of the environmental impact statement	Spring 2015
Government approvals	Fall 2016
Construction of the line	Summer to Fall 2017
Refurbishment of the substation and conversion of voltage	Winter of 2016-2017 to Spring 2019
Commissioning of the substation and line	Spring 2019

Discussion and questions

- Thank you for your attention!

