

Electricity sector in Canada




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2831b

Canada is the world's second-largest producer of hydroelectricity, which accounted for 58% of all electric generation in 2007. Since 1960, large hydroelectric projects, especially in Quebec, British Columbia, Manitoba and Newfoundland and Labrador, have significantly increased the country's generation capacity. Canada is the world's sixth-largest producer of electricity generated by nuclear power, producing 97 billion kWh in 2013. In Ontario, Canadian-designed CANDU nuclear reactors supplied more than half the provincial electricity demand in 2007. In April 2014, Ontario became the first jurisdiction in North America to fully eliminate coal as a source of electricity generation.

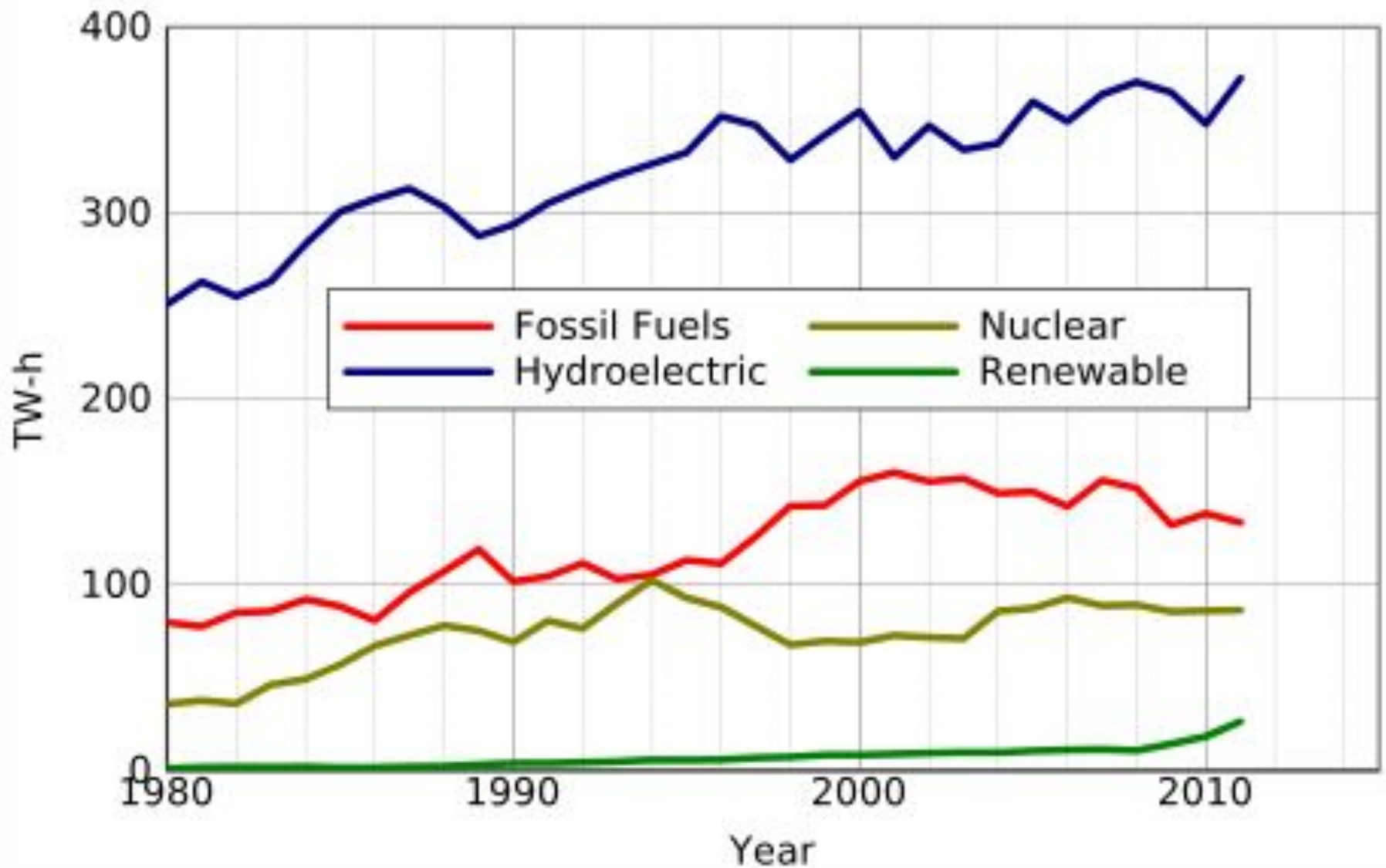
Canadian homes, offices and factories are large users of electricity, or hydro, as it is often called in Canada. In 2007, Canadian per capita power consumption was among the highest in the world, with an average of 16,995 kWh per annum.

A stylized silhouette of a mountain range in shades of teal, located in the bottom right corner of the slide.

In 2010, Canada generated 566.8 terawatt-hours. Approximately 822 generating stations are scattered from the Atlantic to the Pacific, for a nameplate capacity of 130,543 MW. The 100 largest generating stations in Canada have a combined capacity of 100,829 MW. In comparison, the total installed capacity of Canada was 111,000 MW in 2000.

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Electricity Production in Canada



In 2010, the leading type of power generation by utilities in Canada is hydroelectricity, with a share of 63.7%. nuclear (15.0%), Coal (13.1%), natural gas (6.2%), wind (0.6%), fuel oil (0.5%), and wood (0.4%) follow. Other sources, such as petroleum coke make up the remaining 0.5%.




The Canadian transmission networks extend over 160,000 km (99,000 mi). The grids generally follow north-south orientations since most population centers in Canada are concentrated in southern regions along the American border while the largest hydroelectric projects are located in scarcely inhabited areas to the north. This particular situation forced Canadian utilities to innovate. In November 1965, Hydro-Québec commissioned the first 735-kV AC power line linking the Manic-Outardes project to the Lévis substation. In 1972, Manitoba Hydro connected generating stations part of the Nelson River Hydroelectric Project to the Winnipeg area through a high-voltage direct current power line, the Nelson River Bipole



A terminus of the Nelson River HVDC system, now included on the List of IEEE(Institute of Electrical and Electronics Engineers) milestones.

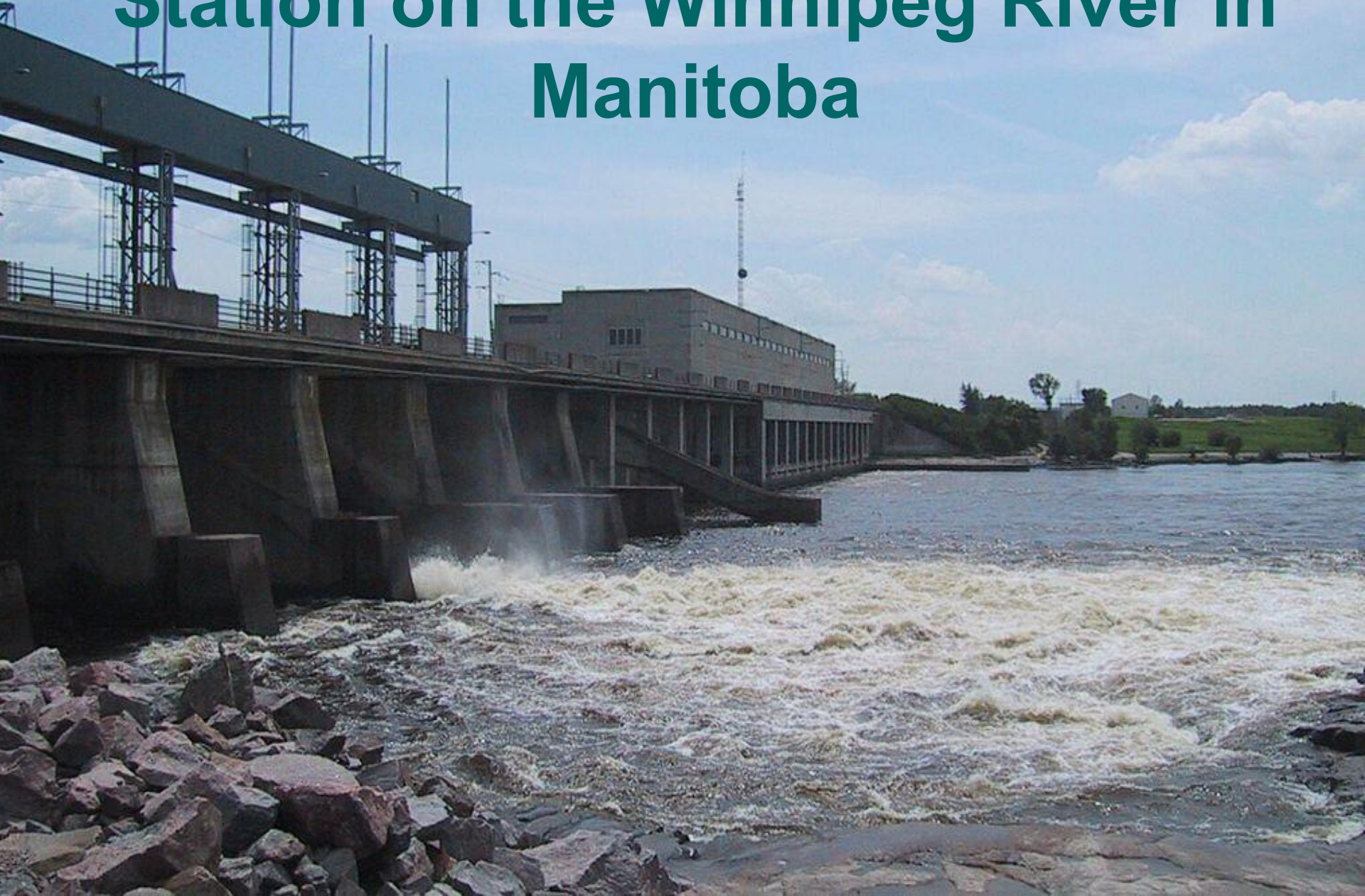
The Canadian transmission networks are largely integrated to the continental power grid. The transmission utilities of provinces sharing a border with the United States are taking part in regional reliability organizations such as the North American Electric Reliability Corporation (NERC); the Maritime provinces, Quebec and Ontario are part of the Northeast Power Coordinating Council (NPCC) with utilities in New England and in New York State, Manitoba participates in the Midwest Reliability Organization (MRO), while Alberta and British Columbia are linked to the Western Electricity Coordinating Council (WECC).

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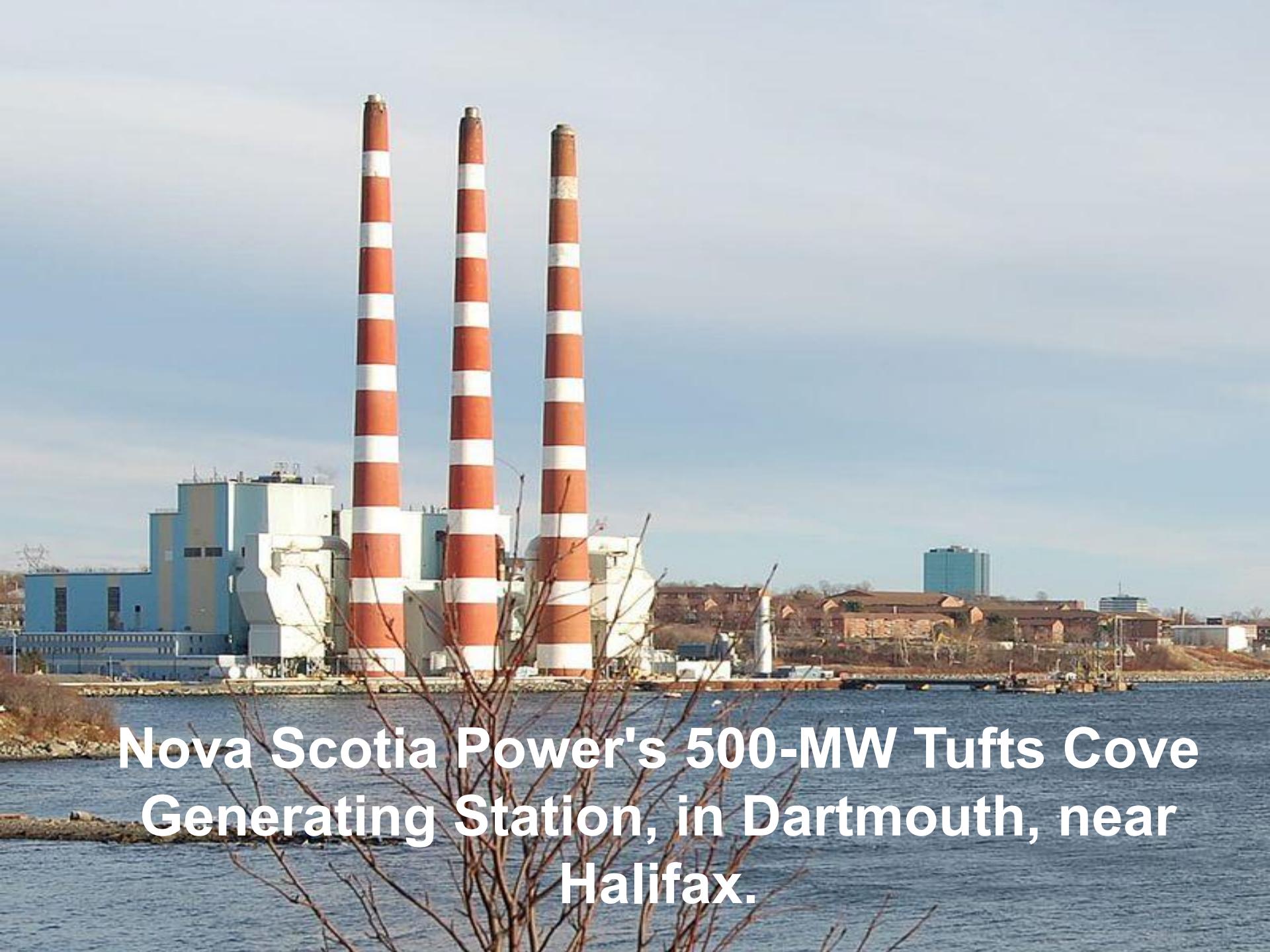
BC Hydro's Revelstoke Dam in British Columbia

The Pine Falls Generating Station on the Winnipeg River in Manitoba



TransAlta's Kent Hills Wind Farm, near Moncton.





**Nova Scotia Power's 500-MW Tufts Cove
Generating Station, in Dartmouth, near
Halifax.**

The Bruce Nuclear Generating Station near Kincardine, is the world's largest nuclear station with an installed capacity of 7,276 MW in Ontario





The Erie Shores Wind Farm, near Port
Burwell in Ontario.



The North Cape wind farm in Prince Edward Island

The image shows a long, brightly lit underground tunnel or hall. On the left, there is a long wall of large, grey metal cabinets or panels. The ceiling is high and features a series of recessed, rectangular light fixtures that create a strong perspective effect. The floor is polished and reflects the overhead lights. In the middle ground, a yellow forklift is parked on the right side. To its left, there are some yellow and black safety barriers. The right wall is made of rough, grey concrete with several arched openings. A yellow cabinet with a dark arched opening is visible in the foreground on the right. The overall atmosphere is industrial and clean.

The underground Robert-Bourassa generating station in Quebec is Canada's largest hydroelectric plant.

Boundary Dam Coal Fired Generating Station in Estevan



Thanks for attention

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A stylized, layered mountain range graphic in shades of teal and blue, positioned at the bottom right of the slide.