Ontario Waterpower Association

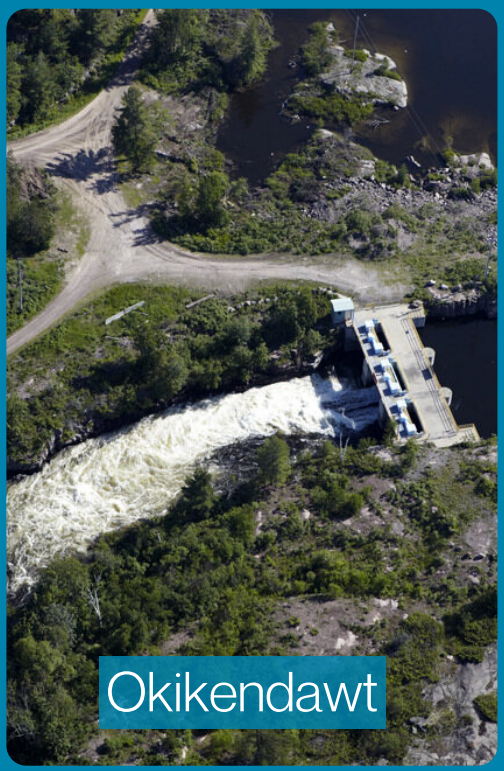
Building on our Strengths

Made-in-Ontario Waterpower

Photo Credit: Trent Rapids Power Corporation

Building on our Strengths

Ontario's electricity system is undergoing a generational shift to meet decarbonization, electrification and economic development objectives. By some estimates, the province will have to double its installed capacity of 40,000 MW of electricity generation by 2050 – the equivalent of building as much generation and transmission in the next three (3) decades as has been built in the last century. In addition, with the exception of waterpower, assets which last virtually forever, almost all of Ontario's existing generation facilities will need to be rebuilt or replaced within the same timeframe.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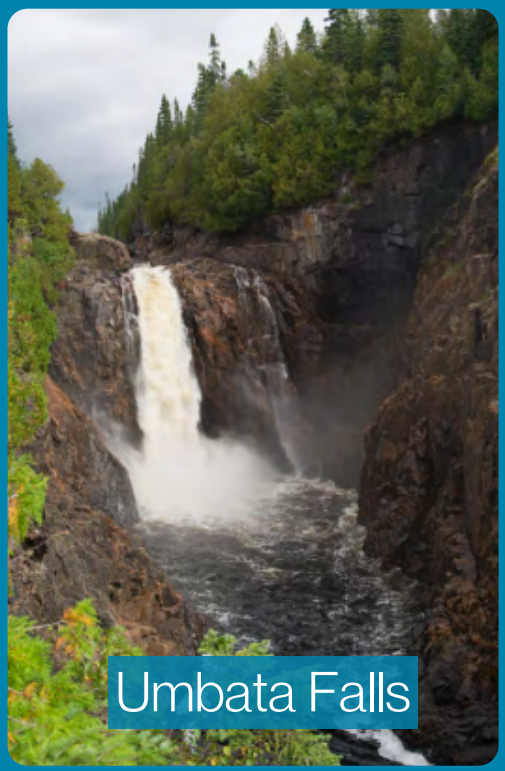

Umbata Falls

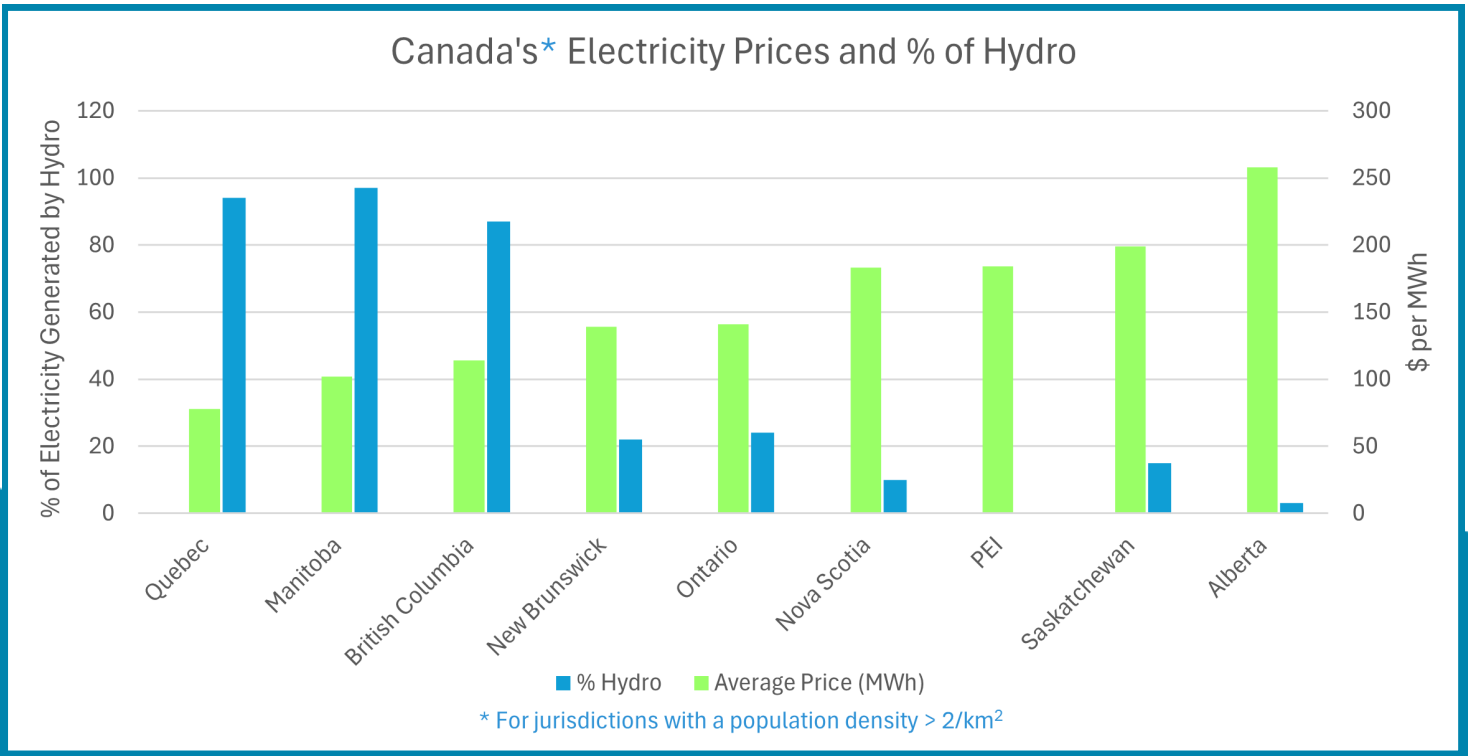
As early as 2030 and growing through 2050, Ontario faces an electricity shortage and must act now to procure new generation to meet this emergent and enduring challenge. Today, the IESO is planning to procure an additional 5,000 MW (5TWh) of new non-emitting generation (waterpower, wind, solar) through a series of cadenced Requests for Proposals in 2025, 2027 and 2029. With 4,000-5,000 MW of untapped potential, new made-in-Ontario waterpower can and should make a significant contribution to meeting our electricity needs and economic objectives. In fact, as outlined in this publication, waterpower has unique attributes in our diversified electricity mix and its expansion is essential to sustaining an affordable and reliable provincial network.

Ontario's electricity system and initial economic prosperity was founded on waterpower. It is embedded in the very fabric and identity of dozens of communities across the province. So as we prepare to tackle this generational challenge, we do so from a position of strength – building on a successful history to seize the opportunities of the future.

1. Waterpower Moderates Prices for Consumers

Why it Matters

A greater penetration of waterpower contributes to a lower average residential price for electricity.



Data Source: EnergyHub.com

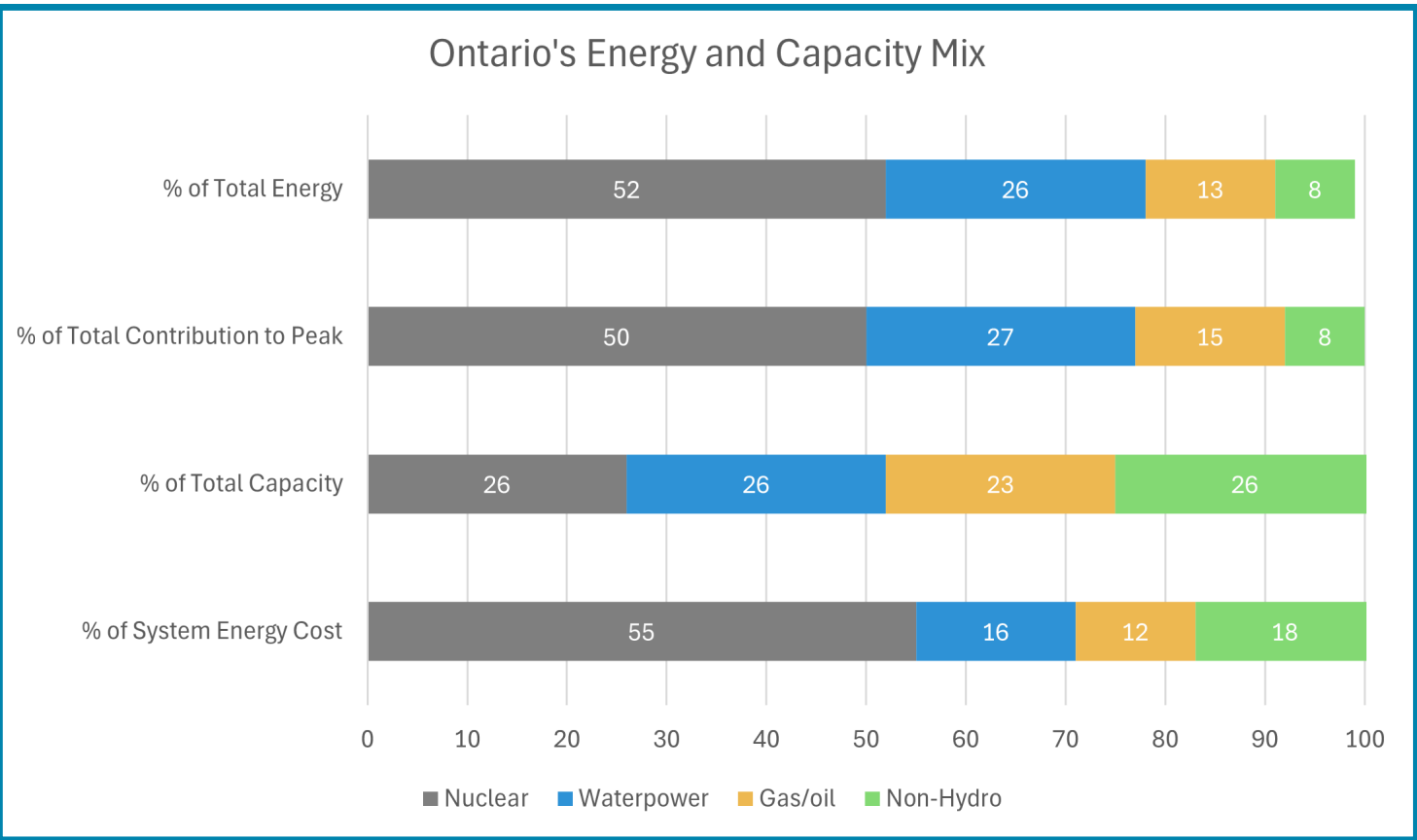
Fast Fact

With sustained investment, waterpower facilities are perpetual assets. Dozens of facilities in Ontario have been in service for more than a century.

2. Waterpower Has More "Bang for the Buck"

Why it Matters

Waterpower is a full-service technology - contributing capacity, energy and to meeting peak electricity demands.



Data Sources: IESO's Ontario's Energy and Capacity Mix and Powering Ontario's Growth

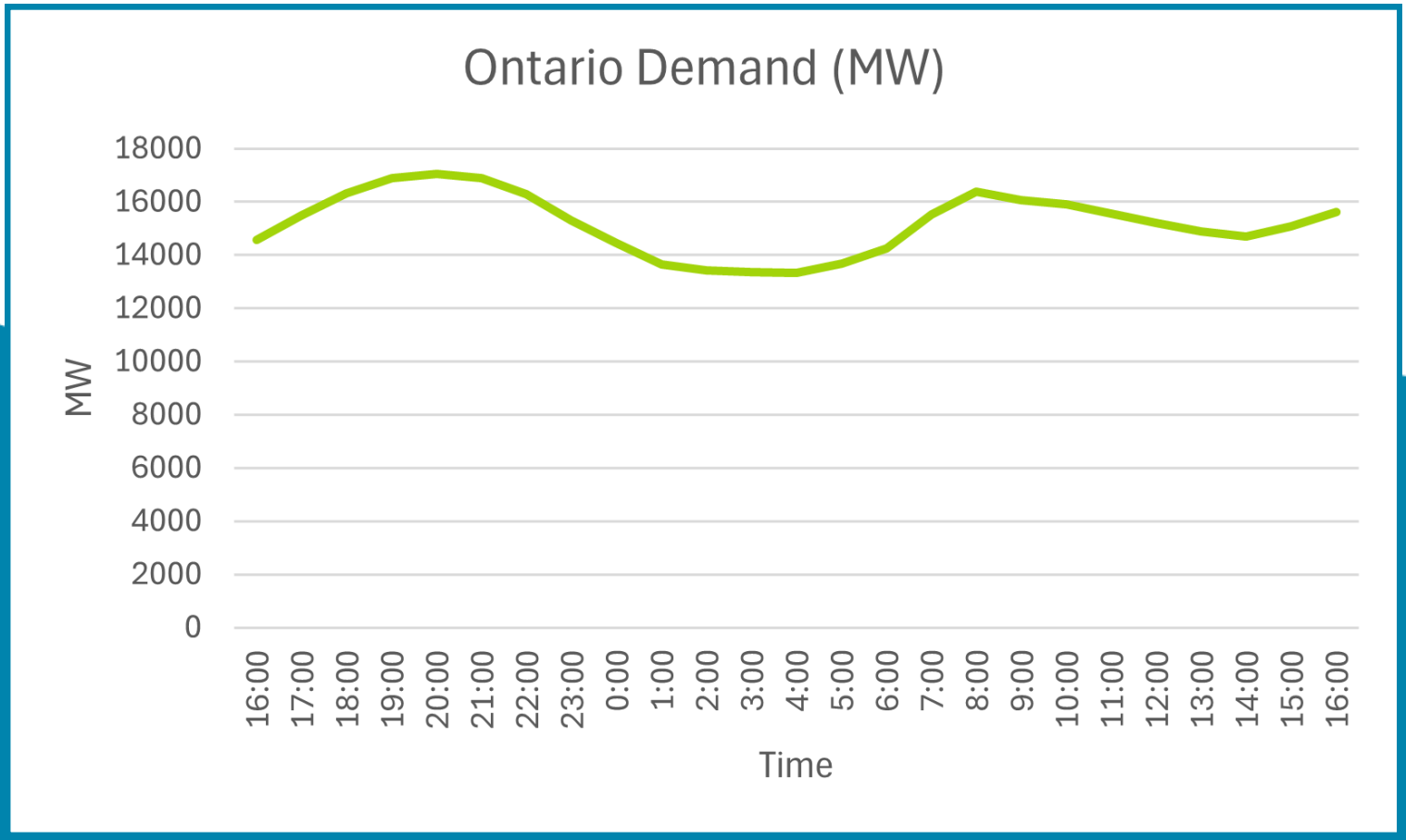
Fast Fact

Ontario has a diverse portfolio of more than 200 waterpower facilities located across the province – an energy security advantage.

3. Waterpower is Predictable...

Why it Matters

As decarbonization and electrification increase, flexible waterpower will play an even more important role in integrating intermittent renewable resources.

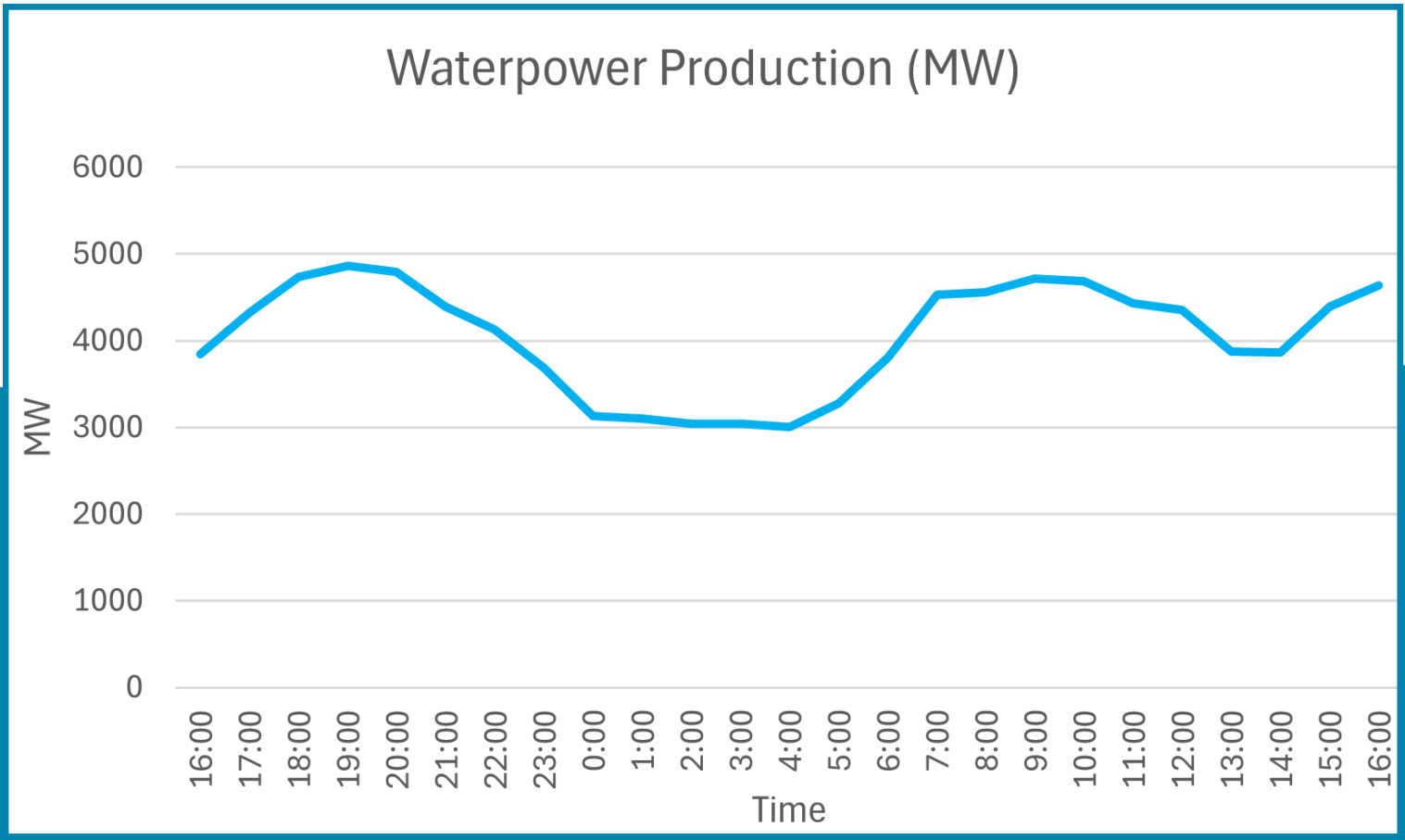


Data Source: IESO's Supply Data

...and Flexible

Fast Fact

Most of Ontario's waterpower facilities can follow changes in demand and supply by storing energy (i.e. water) and shifting production to meet system needs.



Data Source: IESO's Supply Data

4. Waterpower Keeps the Lights On

Why it Matters

Only waterpower provides all essential reliability services to the electricity system, the importance and value of which will significantly increase with decarbonization.

Resource Type (● = Exhibits Attribute, ◐ = Partially Exhibits Attribute, ○ = Does Not Exhibit Attribute)	ESSENTIAL RELIABILITY SERVICES					FLEXIBILITY			OTHER
			Ramp						
	Frequency Response (Inertia & Primary)	Voltage Control	Regulation	Contingency Response	Load Following	Cycle	Short Min. Run Time (<2 hrs.) / Multiple Starts Per Day	Startup/Notification Time <30 Minutes	Black Start Capable
Waterpower	●	●	●	●	●	●	●	●	●
Gas	●	●	◐	●	◐	●	●	●	●
Nuclear	◐	●	○	○	◐	○	○	○	○
Battery Storage	◐	◐	●	●	○	●	●	●	◐
Demand Response	○	○	◐	◐	◐	●	●	◐	○
Solar	◐	◐	○	○	◐	●	●	●	○
Wind	◐	◐	○	○	◐	●	●	●	○

Data Source: Adapted from Waterpower Canada and Power Advisory's Hydropower's Value to a Net-Zero Electricity Grid Report

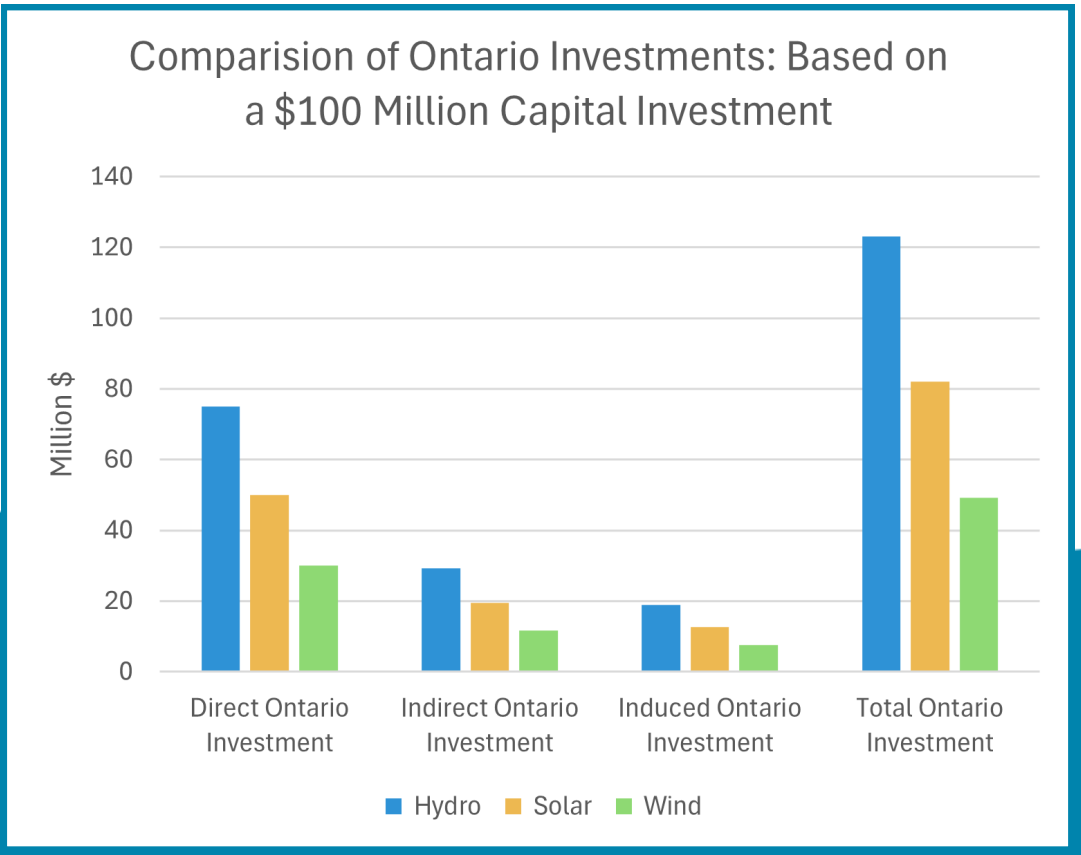
Fast Fact

Waterpower was responsible for leading Ontario's recovery from the 2003 blackout and supporting local reliability.

5. Waterpower Investment Stays in Ontario

Why it Matters

Seventy-five percent (75%) of new waterpower development investment and ninety percent (90%) of sustaining investment stays in Ontario.



Data Source: OPG's Northern Hydro Opportunities Report and Statistics Canada Indirect and Induced Economic Multipliers for Electricity

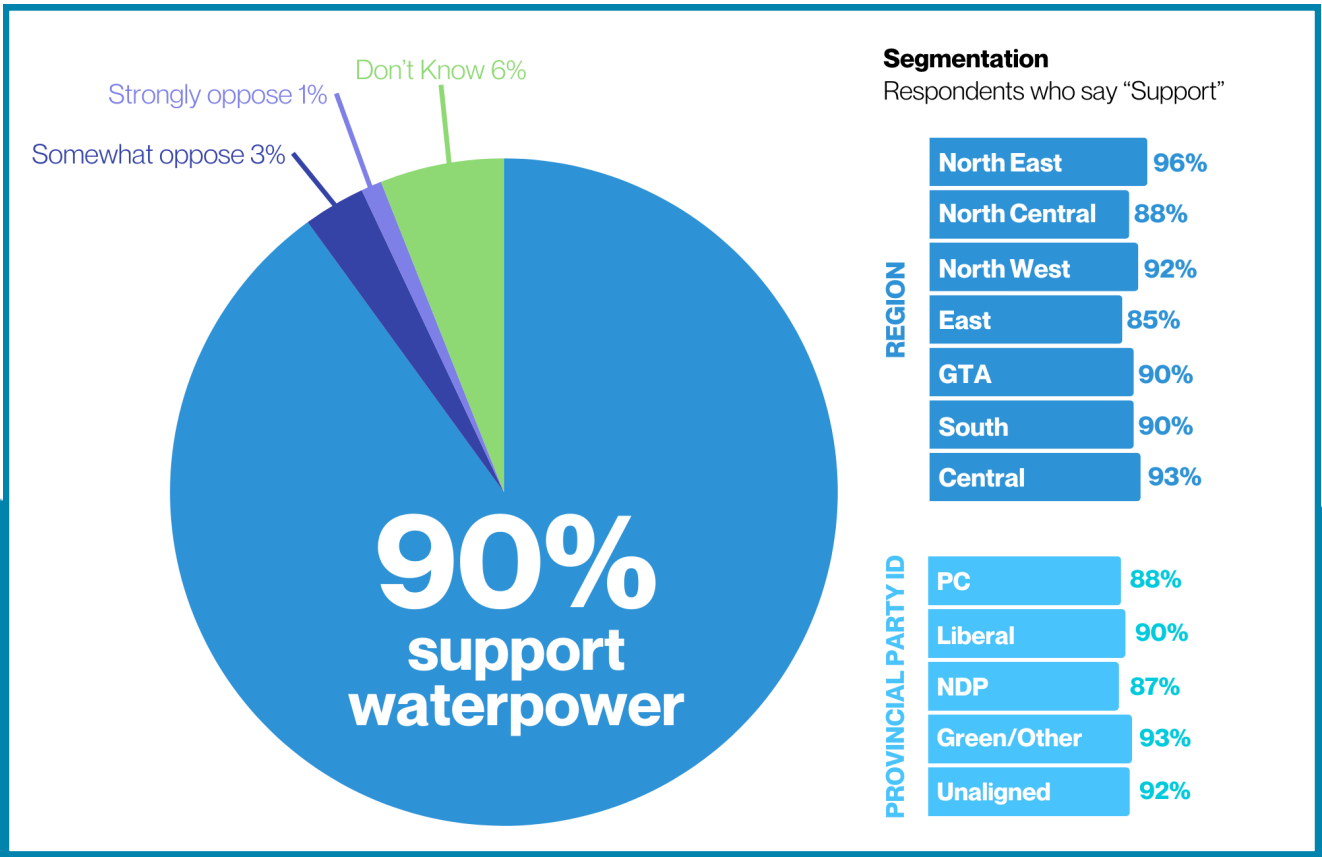
Fast Fact

Ongoing investments in existing waterpower facilities is contributing $2.7 Billion to Ontario's GDP over five (5) years and supports 5,000 jobs annually.

6. Waterpower Has Strong Public Support

Why it Matters

Building any new electricity in Ontario will require the support of local municipalities and the participation of Indigenous communities.



Data Source: Ontario Waterpower Association's 2022 Public Opinion Polling Results

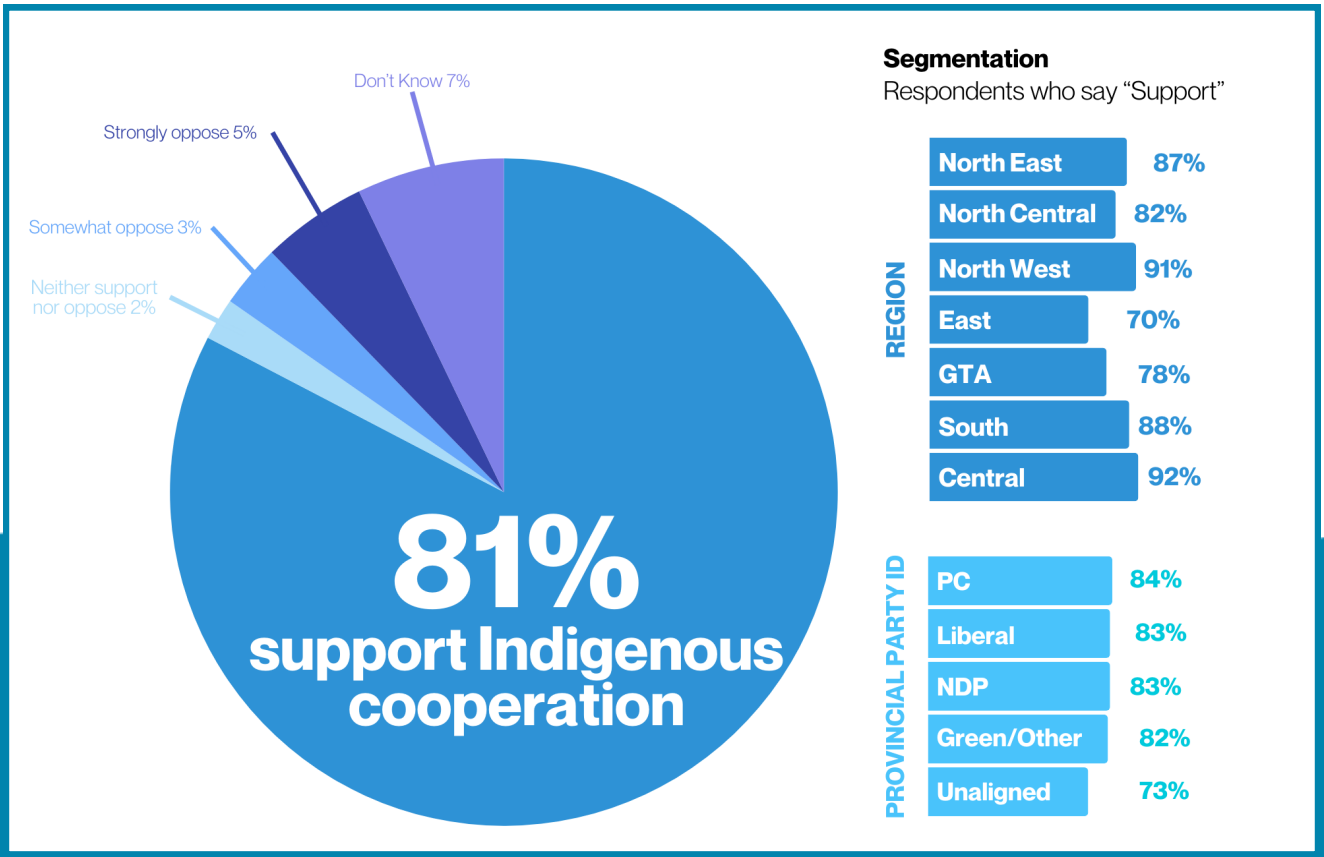
Fast Fact

Waterpower has the support of several municipalities and organizations and there are already more than a dozen successful developments involving Indigenous equity partnerships.

Ontarians Support Indigenous Cooperation

Fast Fact

A large majority of Ontarians support developing waterpower projects in cooperation with local Indigenous communities



Data Source: Ontario Waterpower Association's 2022 Public Opinion Polling Results

about us

our organization

The Ontario Waterpower Association (OWA) is a not-for-profit, member-based organization promoting the sustainable development of waterpower resources in Ontario. Since 2001, the OWA has been representing the common and collective interests of the waterpower industry.

our goals

To sustain and enhance the significant contributions of Ontario's existing waterpower assets.

To provide new opportunities for waterpower development and industry growth across the province.

Ontario Waterpower Association

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