Canadian Propane Association | Association canadienne du propane

Powering Canada's Digital Future

Canada's competitiveness in AI and the digital economy will depend on access to reliable, affordable and resilient power. Data centres are among the fastest-growing sources of electricity demand, but grid expansion and major generation projects can take years to deliver. Canada cannot afford to wait for the grid to catch up.

Propane can help unlock new data centre investment, particularly for **sub-5 MW power applications** where grid capacity is constrained or unavailable. Canadian-made and available today, propane offers reliable, affordable and lower-emission primary and backup power that can be deployed quickly, providing a practical solution to power data centre growth now.

CPA Policy Recommendation:

Include propane in AI and data-centre infrastructure strategies, particularly where grid capacity is constrained or diesel is currently the alternative.

Saskatchewan

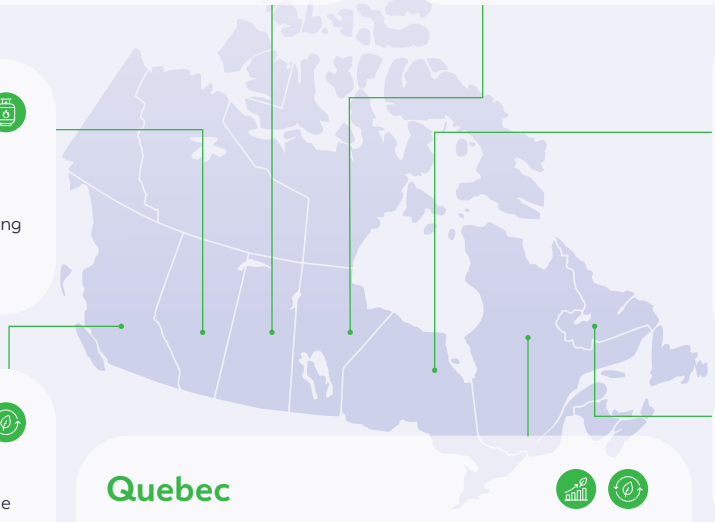
- Provincial focus on attracting large industrial loads in mining, oil and gas, and related sectors.
- Established process for considering new generation projects.

Manitoba

- Government-backed push for sovereign data and AI infrastructure.
- Low-carbon hydroelectric grid with approximately 6 GW of installed capacity, supporting data centre investment and propane backup generation.

Alberta

- Clear policies for on-site power generation.
- Increasing propane production, providing a domestically available and secure source of supply.



Ontario

- Established data centre sector with clear opportunities to replace diesel backup generators.
- Clear policies for on-site electricity generation projects at scale.
- Propane is not constrained by prohibitive electricity generation regulations.

British Columbia

- Increased scrutiny on diesel backup systems creates an opening for propane generation as a lower emission alternative.
- Low-carbon hydroelectric grid creating favourable conditions for data centre investment and propane backup generation.

Quebec

- Propane can be a more competitive backup option than diesel in Hydro-Quebec procurement, given the province's strong emissions standards.
- Rate increases for grid-connected data centres or pushing investment toward onsite generation.

Atlantic Canada

- Shovel-ready industrial lands and streamlined connectivity regulations.

Emerging Market | Mature Market | Propane Production | Renewable-Focused Market

Sub-5 MW power applications *are small and mid-sized data centres requiring less than five megawatts of electricity, where on-site generation can provide primary, supplemental or backup power when grid capacity is constrained, unreliable or unavailable.*

A Ready-Now Energy Solution

Propane meets the needs of data centre developers adopting off-grid, on-site, backup and hybrid power models. Available today, propane can be stored on site, requires no pipeline connection and can be deployed quickly, helping developers avoid costly delays, accelerate project timelines and bring investments online sooner.

Propane combines the reliability data centres require with strong economic and operational performance. Real-world data and system modelling demonstrate lower operating and maintenance costs, along with reduced emissions and environmental risk. Combined with secure fuel supply and rapid deployment, propane offers developers a cost-effective way to secure reliable power where grid capacity is constrained or unavailable.

PARAMETER	DIESEL	vs.	PROPANE	IMPACT
Fuel cost	Higher		Lower	Reduced operating cost
Fuel consumption (volume)	Lower		Higher	Offset by lower fuel price
Maintenance frequency	Higher		Lower	Increased uptime
Particulate emissions	Present		Negligible	Improved local air quality
Carbon intensity	Higher		Lower	Reduced emissions
After-treatment systems	Required		Not required	Reduced operational complexity
Fuel degradation	After ~6 months		None	Greater long-term reliability
Environmental risk	Spill risk (liquid)		Minimal (vaporizes)	Lower liability and contamination risk
Cold weather performance	Medium-Low		Extremely High	Greater reliability in Canadian climates

Source: Borealis Fuels

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Propane's Value Proposition

Fast deployment:
Propane generation can meet growing power demand while grid upgrades are completed.

Flexible and modular:
Ideal for rural data centres and locations where grid or natural gas capacity is constrained.

Reliable storage:
As a liquid energy source, propane is easily transported and stored on site for long periods.

Cost predictability:
On-site supply reduces exposure to grid price volatility and industrial rate increases.

Stable pricing:
Canadian propane prices are relatively insulated from global volatility, supporting predictable lifecycle costs.

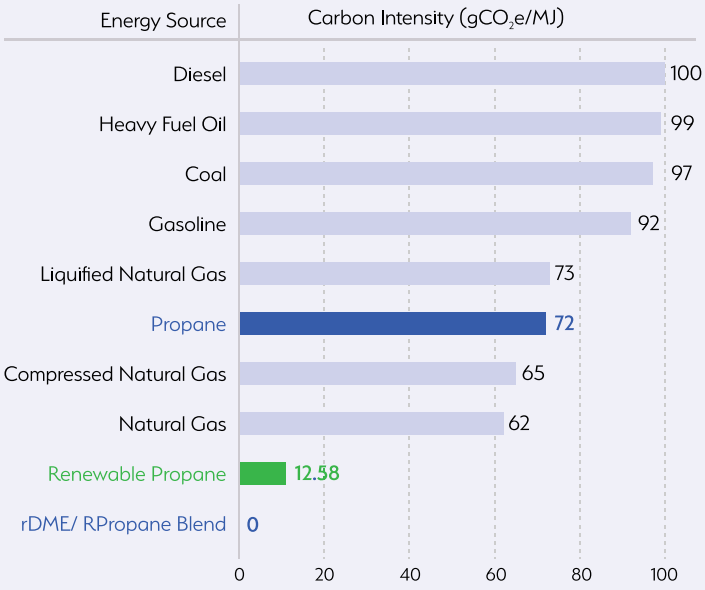
Abundant domestic supply:
Canada produces approximately 337,000 barrels per day, providing ample supply for growing data centre demand.

Lower emissions:
Propane and renewable propane produce low NOx and negligible particulate matter, supporting air-quality compliance.

How Propane Compares

Compared with diesel, propane offers important operational and environmental advantages. It eliminates the spill risk associated with diesel storage, vaporizing when released rather than contaminating soil or groundwater. Propane systems operate more quietly and require less maintenance, and propane remains stable in long-term storage.

Propane also reduces emissions from primary and backup power generation, producing fewer greenhouse gas emissions, NOx and particulate matter than diesel. For data centres seeking reliable onsite power generation, it delivers these benefits without sacrificing reliability. Emerging fuels such as renewable propane and renewable DME can reduce emissions further.



Note: Renewable Propane carbon intensity of 12.58 is an average.

Carbon intensity for propane: S&P Global / IHS Markit. All other values: Environment and Climate Change Canada.

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A Domestic Energy Advantage

Canada has the Propane to Power What's Next

Canada's propane abundance presents a clear opportunity to supply the growing data centre sector. Developers should treat propane as a de-risked energy source with stable domestic pricing, proven logistics and little exposure to international commodity cycles.

219,000 barrels per day exported

Just 0.1% of this volume could power a 5 MW data centre operating continuously

Canadian propane: supply and demand

kb/d - thousand barrels per day

Note: A disparity of 4 kb/d (imports) is not included in the above figures.

Canada does not need to create a new fuel supply chain to unlock this opportunity. The production, transportation, and distribution network already exists.

A Near-Term Market Opportunity

The clearest opportunities are niche markets for propane:

1 Sub-5 MW and local data centres

The report identifies data centres up to 5 MW as a strong fit for propane because it can be storied on site and systems can be scaled and deployed quickly.

2 Replacing diesel backup generation

Every existing diesel backup installation represents a potential propane-conversion opportunity as emissions standards and procurement requirements tighten.

3 Bridge and on-site power

Propane can allow projects to proceed while new grid connections, transmission or generation capacity are being developed.

4 Priority jurisdictions

Alberta presents the strongest immediate opportunity because of abundant propane supply, a deregulated electricity market and policies supportive of bring-your-own-power models. Ontario offers a mature data-centre market and clear diesel-replacement opportunities, while Québec's tighter emissions rules make propane increasingly competitive against diesel.

Propane can help Canada move faster. With secure domestic supply, established infrastructure and proven generation technology, propane can bridge electricity constraints, strengthen resilience and reduce reliance on diesel while Canada builds the grid infrastructure required for the next generation of digital investment.