Canadian Propane Association
Association canadienne du propane

Powering the Digital Age:

The opportunity for propane in Canada's data-centre market

Katie Kachur

The grid can’t keep pace with data-centre demand

Interconnection delays are becoming a constraint on investment and deployment

POWER AVAILABILITY

THE BOTTLENECK

01 RISING LOAD

AI and cloud demand are adding large, concentrated electricity loads.

02 LONG QUEUES

Projects can be ready before transmission and generation are available.

03 INVESTMENT RISK

Power availability increasingly determines where projects can locate.

The evidence is already visible

Canadian projects are encountering long grid-connection timelines

WHY NOW?

Interconnection Backlog

Site C[15]

BC - dam

Total time
-10 yrs
1 yr late

Capital cost
-$16B
+$7.2B over

1,100 MW

Darlington Build[16]

ON - nuclear

Total time
-12 yrs
2 yrs late

Capital cost
-$14.4B
+$7B over

3,512 MW

Darlington Refurb[17]

ON - on track

Total time
-10 yrs
on time

Capital cost
-$12.8B
under budget

3,512 MW (life ext.)

Muskrat Falls[18]

NL/QC - hydro

Total time
-11 yrs
5 yrs late

Capital cost
-$13B
+$6–7B over

824 MW

E-W Ontario Tie[19]

ON - transmission

Total time
-12 yrs
4 yrs late

Capital cost
-$777M
none reported

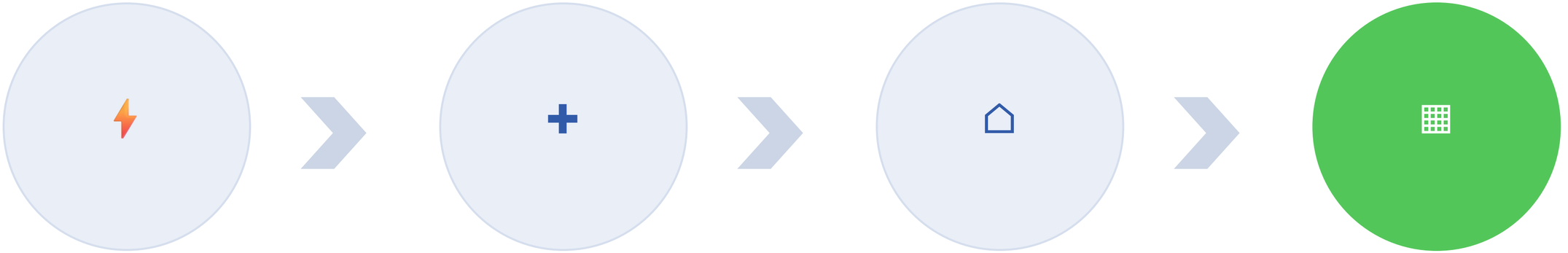
450 km line

Sources: BC Hydro (Site C); Ontario Power Generation (Darlington new build and refurbishment); Muskrat Falls Commission of Inquiry and Nalcor Energy (Muskrat Falls); IESO and Hydro One (East-West Tie). Compiled by Warshield.

The common constraint: grid access

Propane already powers critical infrastructure

Data centres are a new customer — not a new use case



REMOTE POWER
Resource projects

CRITICAL FACILITIES
Hospitals & standby

COMMUNITIES
Rural & remote

DATA CENTRES
Backup • hybrid • primary

The industry partners are new. The use case is the same.

Propane’s sweet spot: up to 5 MW

≤ 5 MW

CLEAR NEAR-TERM OPPORTUNITY

- EDGE
- DISTRIBUTED
- GRID-CONSTRAINED
- REMOTE

100 kW – 5 MW	EDGE	Best fit
5 – 20 MW	ENTERPRISE	Selective
20 – 100 MW	COLOCATION	Less direct
50 – 300 MW	AI / HPC	Specialized

A focused opportunity in distributed, edge and grid-constrained applications

One solution. Three high-value applications

OFF-GRID
Power where grid access is not practical.

BACKUP
Resilience for mission-critical infrastructure.

HYBRID / PRIMARY
Balance duty cycles and keep uptime high.

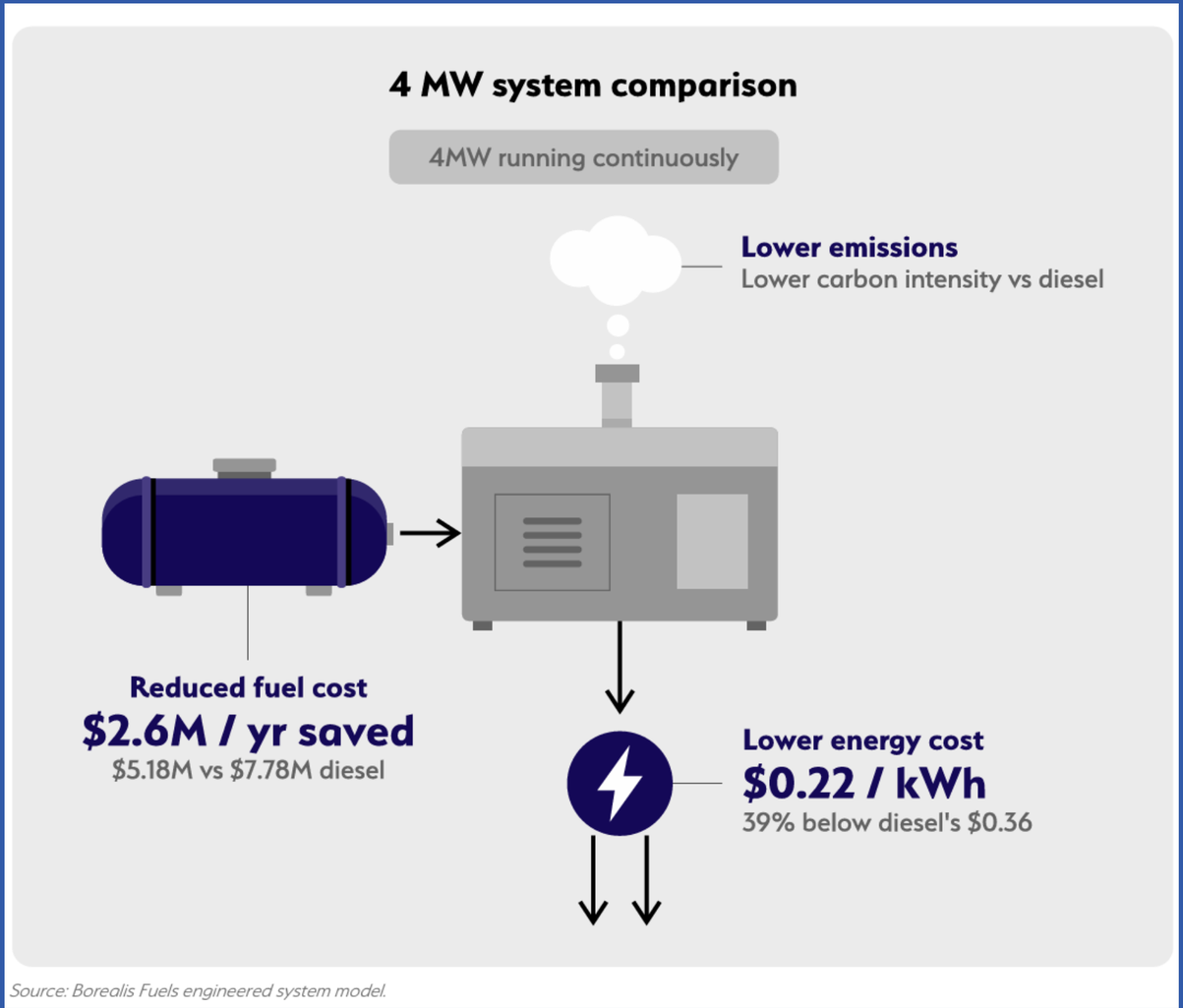
Propane can serve sites where reliable electricity is unavailable, delayed or insufficient

The economics work at distributed scale

A 4 MW continuous-load example illustrates the operating case

$2.6M / YEAR

fuel cost in the example



Source: Borealis Fuels engineered system model.

$0.22 / kWh

illustrative energy cost

Lower-carbon intensity than diesel

Why propane works where the grid can’t

Four attributes matter most for data-centre power

01 FAST TO DEPLOY
On-site generation can be installed without waiting for major transmission expansion.

02 MODULAR
Scale power in increments as the site grows.

03 STORABLE ON-SITE
Fuel inventory supports resilience and continuity.

04 CANADIAN SUPPLY
Domestic production supports a reliable supply chain.

The incumbent is diesel. Propane is the upgrade.

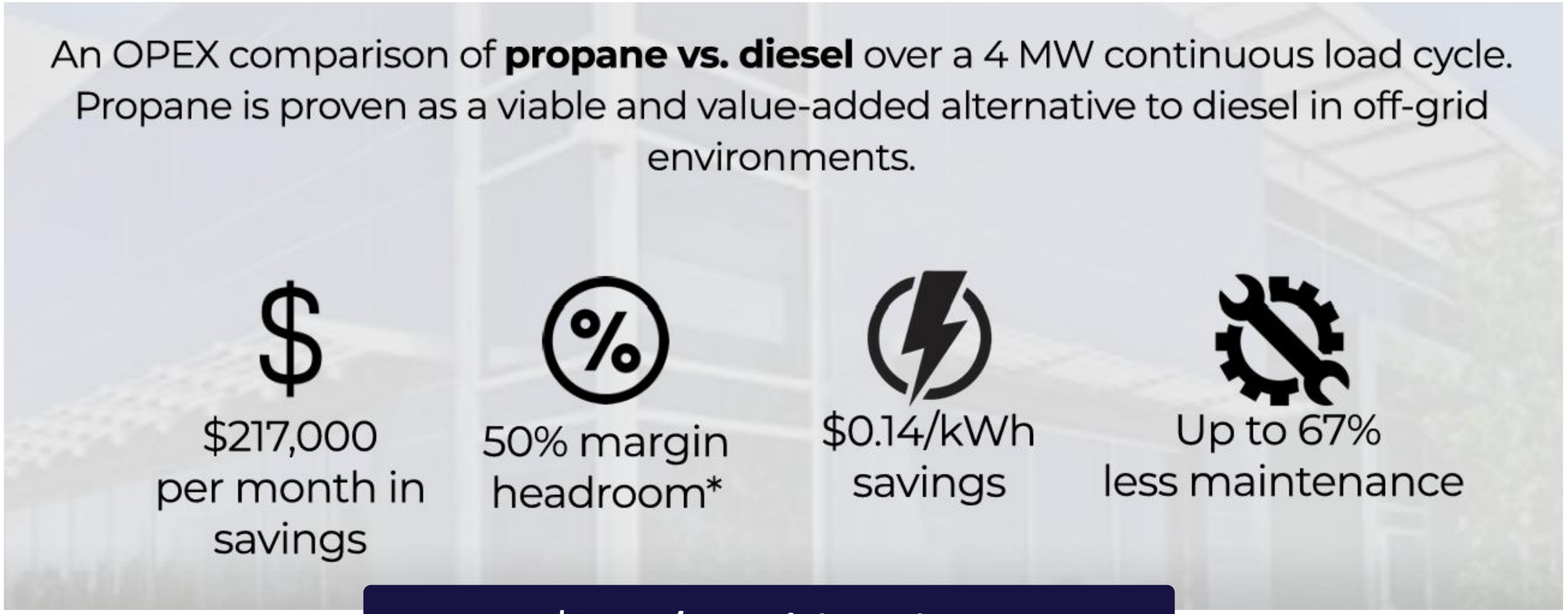
Propane compares favourably across the attributes that matter to operators

	PROPANE	DIESEL
Fuel cost	✓	—
Maintenance	✓	—
Emissions	✓	—
Storage / shelf life	✓	—
Spill risk	✓	—
Noise	✓	—

Lower operating burden • Lower emissions • Resilient storage

The business case is already proven

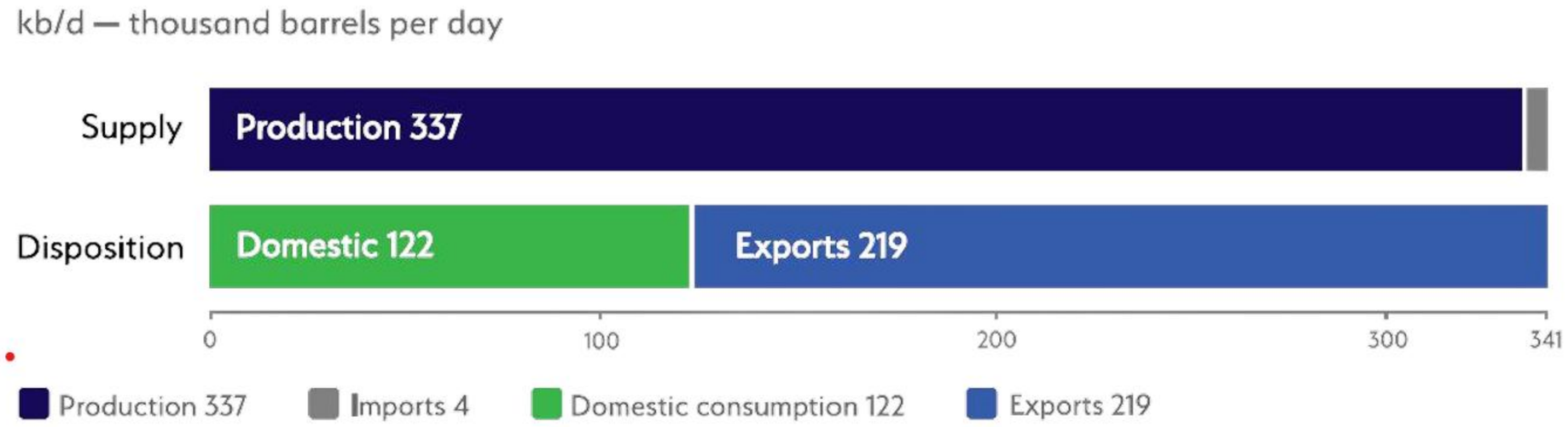
Illustrative real-world OPEX comparison from the source deck



$217K / month in savings

A Made in Canada solution

Canada already produces the propane this market needs



Growing Canadian demand does not require waiting for new fuel supply

Alberta can unlock this opportunity now

Technology-neutral rules can help projects move where grid capacity is constrained

1	**ENABLE ON-SITE GENERATION**	Provide clear rules for behind-the-fence and distributed generation.
2	**REMOVE BARRIERS BELOW 5 MW**	Streamline approvals for smaller projects where grid access is constrained.
3	**KEEP TECHNOLOGY CHOICES OPEN**	Recognize propane for primary, supplemental and backup generation.

The opportunity is not 100 MW tomorrow. It is ≤5 MW today.

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Canada’s digital economy can’t wait for the grid.

Propane can help bridge the gap.

READY NOW

SCALABLE

CANADIAN

LOWER-EMISSION

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