

WEBINAR

ALTERNATIVE FUEL & SUSTAINABLE FLEETS

Revolutionize Your Fleet
with Autogas

PRESENTERS: HUGH SUTHERLAND
SUPERIOR PROPANE

BASIL MARCUS
FOSS NATIONAL LEASING
LEASEPLAN CANADA



Agenda

1. Fleet Manager Pressures & Future of Gasoline
2. What is Autogas / Auto Propane?
3. Auto Propane Fuel Costs
4. Fleet Vehicles Types Using Propane
5. Fleet Conversions & Cost
6. Fleet Integration & Fuel Management
7. Advanced Propane Fueling Technology
8. Success Stories



Meet Your Presenters



Hugh Sutherland

Director, Auto Propane
Superior Propane

A veteran of the propane industry, Hugh is known for his vision and dedication in the autogas sector. He helped build and run his family-owned propane company for 19 years until its acquisition by Superior Propane in 2016. As the Director of Auto Propane, Hugh and his team consult with fleet managers on how to equip their fleets to benefit from propane. Hugh is a recognized expert, educator and advocate for auto propane and is a regular presenter at industry summits.

Meet Your Presenters



Basil Marcus

Director, Business Development & Marketing
Foss National Leasing / LeasePlan Canada

As the Director of Business Development and Marketing at Foss National Leasing / LeasePlan Canada, Basil is passionate about changing the way we look at fleet management, mobility, green initiatives and automotive trends. With a background of 10+ years in senior management roles in North America and internationally, Basil brings Foss National Leasing / LeasePlan Canada to a world of forward-thinking and creative vision in order to pave paths to new programs and approaches.

Fleet Manager Pressures



**Rising Gasoline
Prices**

**Shrinkage &
Idling Times**

**Diesel DPF / DEF
Issues in Colder
Environments**

**Maintenance Costs
Downtime**

**Environmental
Sustainability**

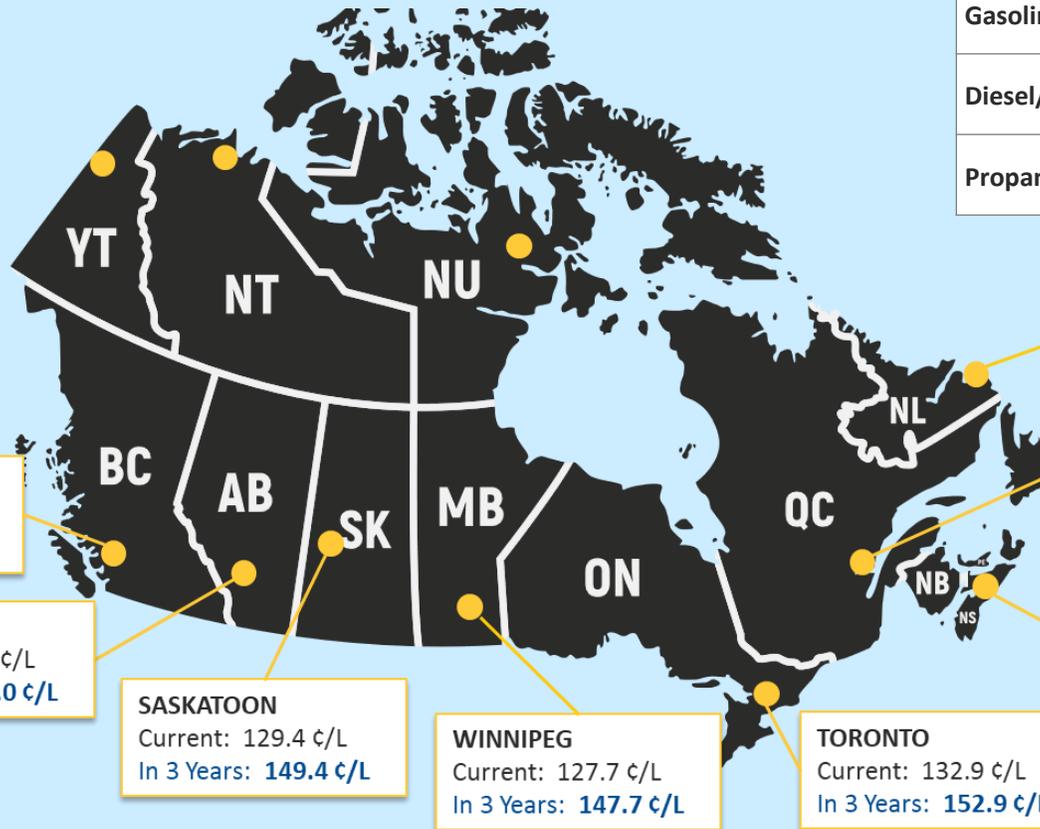


² <https://globalnews.ca/video/5177163/higher-gas-prices-in-metro-vancouver-not-linked-to-jason-kenney-win>

Future of Gasoline and Diesel

Federal Carbon Tax Increases 2018 to 2022

LIQUID FUEL	UNIT	2018 (\$10/TONNE)	2019 (\$20/TONNE)	2020 (\$30/TONNE)	2021 (\$40/TONNE)	2022 (\$50/TONNE)
Gasoline	¢ / L	2.33	4.65	6.98	9.3	11.63
Diesel/Light Fuel Oil	¢ / L	2.74	5.48	8.21	10.95	13.69
Propane	¢ / L	1.55	3.1	4.64	6.19	7.74



VANCOUVER
Current: 171.9 ¢/L
In 3 Years: **191.9 ¢/L**

CALGARY
Current: 124.0 ¢/L
In 3 Years: **144.0 ¢/L**

SASKATOON
Current: 129.4 ¢/L
In 3 Years: **149.4 ¢/L**

WINNIPEG
Current: 127.7 ¢/L
In 3 Years: **147.7 ¢/L**

TORONTO
Current: 132.9 ¢/L
In 3 Years: **152.9 ¢/L**

Current: 141.4 ¢/L
In 3 Years: **161.4 ¢/L**

QUÉBEC
Current: 140.1 ¢/L
In 3 Years: **160.1 ¢/L**

HALIFAX
Current: 132.1 ¢/L
In 3 Years: **152.1 ¢/L**

¹ Government of Canada & Climate Change Canada. "Technical Paper on the Federal Carbon Pricing Backstop"

What is Autogas / Auto Propane?

AUTOGAS IS



USED AS A **ROAD TRANSPORT FUEL**
ALSO CALLED LPG, OR PROPANE

LPG IS EASILY

TRANSPORTED
AS LIQUID



BUT HAS ALL
THE BENEFITS
OF A GAS



LPG IS A CO-PRODUCT OF



**NATURAL
GAS**

OR



**OIL
PRODUCTION**

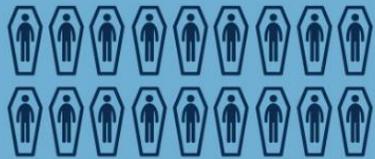


60% OF ALL LPG
PRODUCED ACTUALLY
DERIVES FROM NATURAL
GAS EXTRACTION

Clean Transport, Today



IN 2015,
PM2.5 EXPOSURE
CAUSED



3 MILLION DEATHS



92% OF THE
WORLD POPULATION
LIVES IN PLACES WHERE
AIR QUALITY LEVELS
EXCEED
WORLD HEALTH
ORGANIZATION LIMITS

ON AVERAGE, COMPARED TO PETROL,
DRIVING ON AUTOGAS EMITS



CALCULATED ON A WELL-TO-WHEEL BASIS

ON AVERAGE, COMPARED TO DIESEL,
DRIVING ON AUTOGAS EMITS



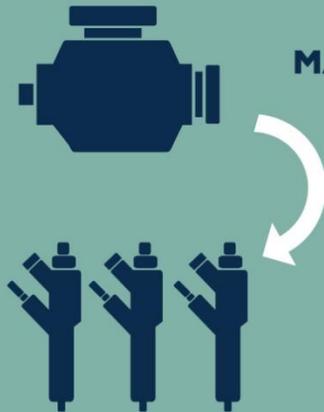
Ready for Tomorrow

AUTOGAS IS CONTINUOUSLY
EVOLVING

AND ENGINES ARE BECOMING EVEN



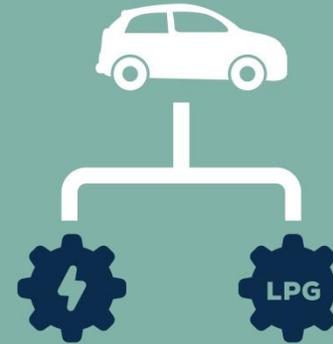
MORE EFFICIENT



MANUFACTURERS ARE
SWITCHING TO DIRECT INJECTION ENGINE

THAT PRODUCES
SUBSTANTIALLY
LOWER EMISSIONS

AUTOGAS IS INCREASINGLY



USED IN COMBINATION WITH AN ELECTRIC MOTOR IN HYBRIDS THAT OFFER THE BEST OF BOTH WORLDS



BIO LPG

PRODUCED PRIMARILY FROM
WASTE & RESIDUES
IS BECOMING AVAILABLE

LOWERING
BY UP TO
80%



Auto Propane Today

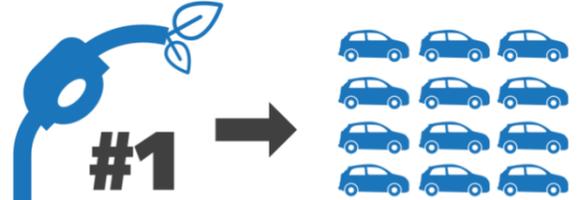
8 OF THE **10**
LARGEST CAR
MANUFACTURERS
PRODUCE
LPG CARS



27
MILLION
AUTOGAS
VEHICLES
IN USE AROUND THE GLOBE



#1
AUTOGAS POWERS
THE LARGEST NUMBER OF
VEHICLES RUNNING
ON ALTERNATIVE FUELS

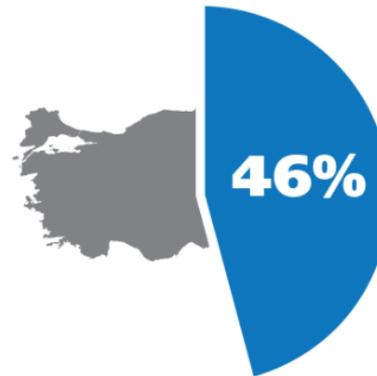


GLOBAL CONSUMPTION OF
AUTOGAS HAS RISEN BY

LPG 40%
IN THE PAST
10 YEARS



IN **TURKEY**,
MORE THAN 46%
OF PRIVATE CARS
NOW RUN ON
AUTOGAS*



THE FUTURE OF TRANSPORT
STARTS NOW.
AUTOGAS CAN DELIVER THIS FUTURE
TODAY!

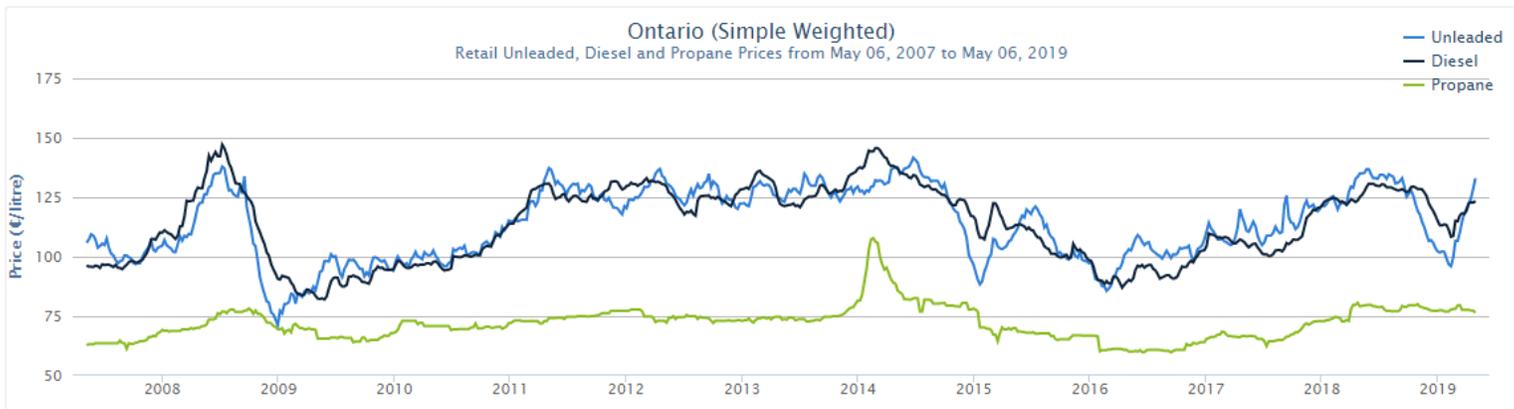


POLL QUESTION #1

Lower Costs than Gasoline



Unleaded: **171.9 ¢ / litre**
Diesel: **142.2 ¢ / litre**
Propane: **90.3 ¢ / litre**
24/7 SP Card : 75.0 ¢ / litre



Unleaded: **133 ¢ / litre**
Diesel: **123.4 ¢ / litre**
Propane: **76.5 ¢ / litre**
24/7 SP Card: 60.7 ¢ / litre

No Fuel is the Silver Bullet

SWEET SPOT



Propane is the solution for the work horse vehicle

- Propane conversion can be retrofitted on all gasoline work vehicles
- Propane conversions do not void vehicle warranty
- Ford Motor Company offers LP prepped engines F Series and E Series vehicles
- Propane autogas kits, installations are approved by CSA for safety
- Tanks are design, installed and approved by Transport Canada



2019 F-150
COMMERCIAL



2019 TRANSIT
CONNECT



2019 STRIPPED
CHASSIS



2019 ECONOLINE
CUTAWAY



2019 TRANSIT
CC/CA



2019 TRANSIT
COMMERCIAL



2019 SUPER
DUTY
COMMERCIAL



2019 CHASSIS
CAB



2019 F-650-750

Propane performs above the rest for medium sized vehicles

- Removes the challenges of DPF and Def fluids
- OEM engines designed to run on propane
- Reduces NO_x levels by 96%
- Mono-Fuel, no need to plug in -48C starts, lower maintenance





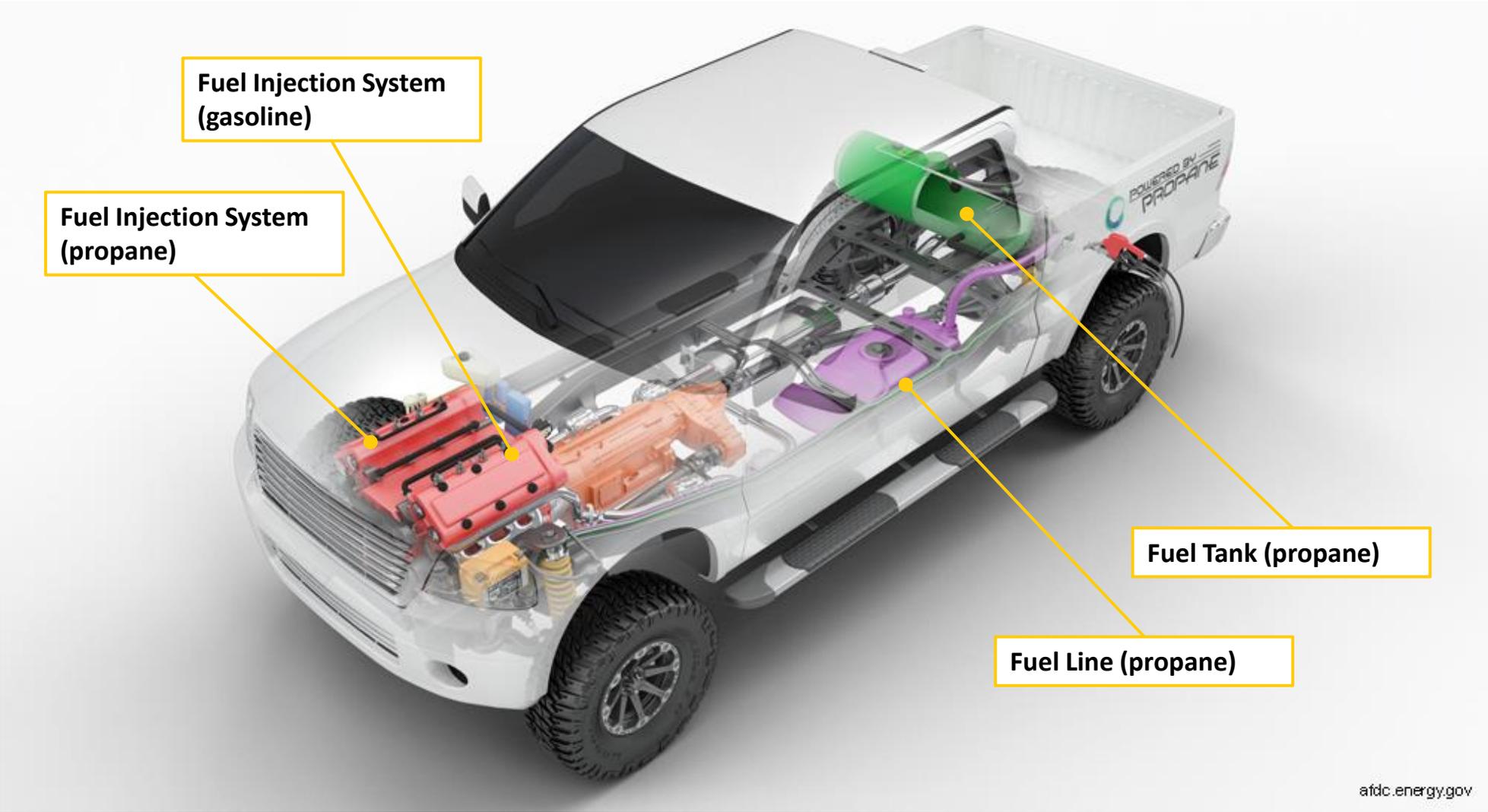
POLL QUESTION #2

Bi-Fuel Propane Vehicle

TANK

CONV.
KIT

LABOUR



Source: Alternative Fuels Data Center – How Do Bi-fuel Propane Vehicles Work

Fleet Vehicle Analysis

Savings Calculator

2018 Ford F-150 – Direct Injection

Capital Costs	Gasoline (V8 5.0L)	Propane (V8 5.0L)	Savings (Costs)
Base Ford Vehicle Purchase Price	\$30,199.00	\$30,599.00	
Prins Propane Conversion	\$0.00	\$6,800.00	
State or Federal Incentive (if applicable)	\$0.00	\$0.00	
Total Capital Savings (or Investment)	\$30,199.00	\$37,399.00	(\$7,200.00)
Operating Costs	Gasoline (6.2L V8)	Propane (6.2L V8)	Savings (Costs)
Total Vehicle Life (km)	250,000	250,000	35,714 km/yr
Average L/100km*	12.20	13.42	10% more lpg use*
Litres of Fuel Over Lifetime	30,500.00	33,550.00	
Fuel Price (per litre)**	\$1.33	\$0.60	
Total Fuel Savings (or Costs)	\$40,565.00	\$20,130.00	\$20,435.00
Miscellaneous Costs	Gasoline (6.2L V8)	Propane (6.2L V8)	Savings (Costs)
Maintenance Rate (per km)***	\$0.048	\$0.024	
Maintenance Costs	\$12,000.00	\$6,000.00	
Fuel Loss From Pilferage / Theft	\$0.00	\$0.00	
Total Misc. Savings (or Costs)	\$12,000.00	\$6,000.00	\$6,000.00
Total Carbon Emissions CO2e (tonnes)	92.66	58.24	34.42
Gross Vehicle Lifetime Savings			\$26,435.00
Net Vehicle Lifetime Savings			\$19,235.00

How many years will the vehicle be used?
7

Number of years to break even:
1.9

Fleet Vehicle Analysis

Gasoline Spend Propane Spend Cumulative Savings



	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Vehicles Converted	0	17	0	0	0	0	0	0
Conversion Costs	\$0	\$115,600	\$0	\$0	\$0	\$0	\$0	\$0



Implementation



Fueling Options



RETAIL FUELING
PETRO/ESSO/HUSKY/CTC



ON-SITE REFUELING
RETURN-TO-BASE



CARDLOCK
24/7 ACCESS

Superior Propane

For Home **For Business** About Us FR

Industries Solutions Customers Contact Log in to mySUPERIOR

AUTO PROPANE LOCATIONS

LOCATION NAME	ADDRESS	CITY	PROVINCE
Pilot Flying J	11511 40TH Street	Calgary	AB
Grande Prairie SPI Hwy 2	Mile West of Airport	Grande Prairie	AB
Cariboo Supply and Marine	880 Alpine	100 Mile House	BC
Sumas Husky	15 2047 Sumas Way	Abbotsford	BC
Abbotsford Esso	2335 Clearbrook Road	Abbotsford	BC
Abbotsford Esso	5332 Clearbrook Road	Abbotsford	BC
Abbotsford Esso	15042 20th St	Abbotsford	BC
Abbotsford Esso	880 Alpine	100 Mile House	BC
Abbotsford Esso	15042 20th St	Abbotsford	BC

Data Integration

Fuel Management:

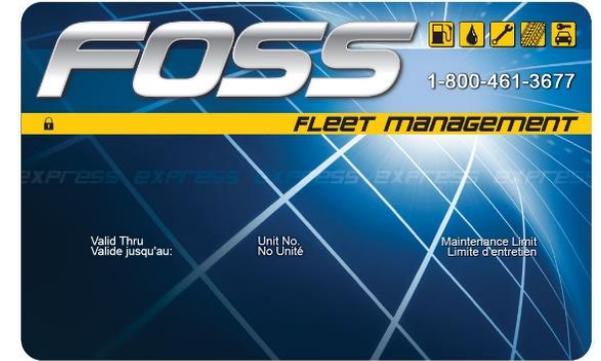
- ✓ Fuel management included
- ✓ Mobile connectivity
- ✓ Web-based
- ✓ Real time transactions
- ✓ Key fob or fueling card access



Data Integration

One-card Solution for Fuel & Maintenance Expenses

- ✓ Fuel Reporting
- ✓ Custom Maintenance Parameters
- ✓ Consolidated Billing
- ✓ Nationwide Fuel & Maintenance Network
- ✓ Canadian-based Vehicle Maintenance Technicians
- ✓ Measured on cost savings & getting drivers back on the road



Operational Training



Standard ACME 1-3/4"

- ✓ Many styles offered, but threaded fitting is universal
- ✓ Traditionally made with a 90 degree on/off valve
- ✓ More contemporary design mirrors gasoline nozzle
- ✓ Course: ROT – Valid 3 Years



Euro-style Quick Connect

- ✓ Gloves and protective eyewear are not required
- ✓ Low weight, effortless single-handed operation
- ✓ Low hold-open force required
- ✓ Course: Awareness & Practical

Moving the Needle – Maximizing Auto Propane



Test Drive a Vehicle!

To test drive a vehicle,
call Superior Propane at
1-855-655-3438



Case Study #1



British Columbia franchise tested LP on 5 Isuzu LP ready trucks. Success led to roll out of 14 more trucks in 2019.



Case Study #2



FLEET SIZE
60
Vehicles on Propane

VEHICLE TYPES
9
Street Sweeper,
Dump Trucks
F250, 350, 450 etc.

LOWER EMISSIONS
30%
Reduction in CO₂

CARBON SAVINGS
2,100
Tonnes Per Year

ANNUAL FLEET SAVINGS
\$325,000



QUESTIONS?



THANK YOU!

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BASIL MARCUS
FOSS NATIONAL LEASING / LEASEPLAN CANADA
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Summary

- ✓ LP is abundant due to shale gas discoveries
- ✓ LP pricing is more stable than petrol or diesel
- ✓ LP offers significantly lower GHG emissions
- ✓ Eliminates DEF issues - Diesel carbon buildup
- ✓ LP conversion technology evolves with vehicle technology
- ✓ Refueling equipment has advanced includes fleet management
- ✓ OEM vehicles ready for LP

ADDITIONAL RESOURCES

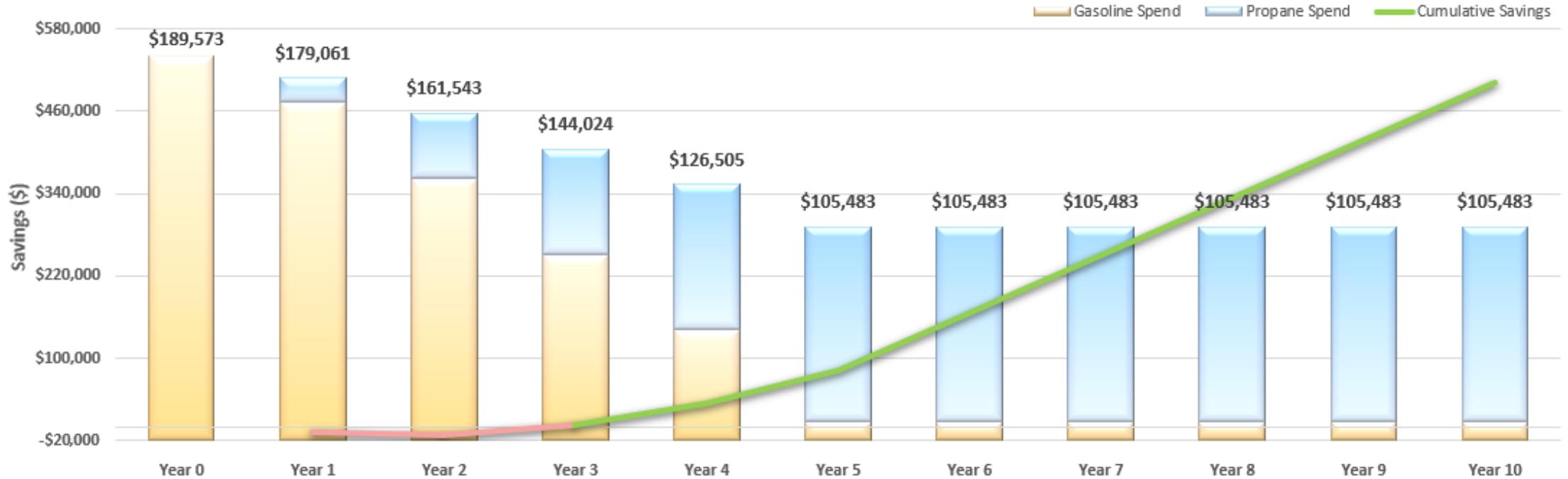
Case Study #3

ALL-LIFT LTD.
Since 1976
TORONTO'S FOREMOST MATERIAL
HANDLING EXPERTS

Started with 3 vans on propane.
Current fleet: 24 vehicles now
on propane.

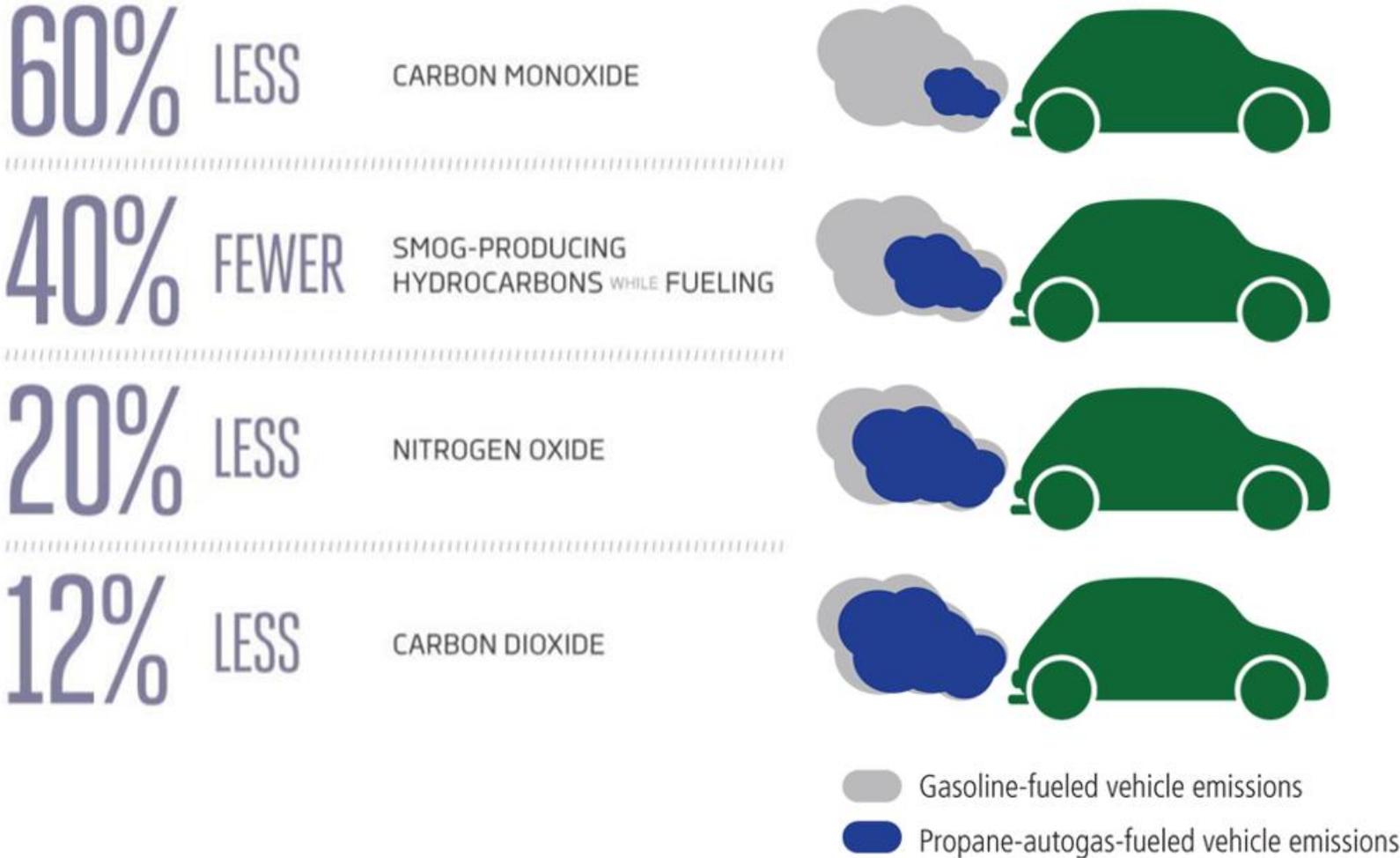


All-Lift Propane Conversion Implementation



	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Vehicles Converted	0	3	5	5	5	6	0	0	0	0	0
Conversion Costs	\$0	\$18,750	\$31,250	\$31,250	\$31,250	\$37,500	\$0	\$0	\$0	\$0	\$0

Lower Emissions vs Gasoline



LP Videos

World LP

- [Autogas Video Final 2015](#)

Propane Educational Research Council

- [Light-Duty Vehicles](#)

White board Autogas

- [ACT Expo](#)

UPS

- [PERC Straight Talk: 1,000 for UPS](#)

Roush CleanTec

- [Propane-Autogas-Powered Vehicles by Roush CleanTech](#)

Fleet Management

Reports > Tickets by Account (Driver)

Report Date Range: September 1, 2018 to September 18, 2018

All accounts for the owner: Red Car

Driver	Card	Vehicle	Mileage	Date / Time	Net	Facility	Pump
<input type="checkbox"/> Red Car - 100 Tickets(s)							
<input type="checkbox"/> Jeff McMillan							
Jeff McMillan	2295	#69 Ford Transit 201	75,971.00	09/01/2018 10:48	56.58	Red Car Service	Red Car
Jeff McMillan	2295	#68 Ford Transit 201	1,560,357.00	09/03/2018 02:07	68.09	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	77,000.00	09/03/2018 16:11	65.79	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	1,234.00	09/05/2018 00:05	65.15	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	77,239.00	09/05/2018 09:54	58.12	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	78,195.00	09/05/2018 19:33	48.77	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	78,541.00	09/06/2018 06:07	64.61	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	78,745.00	09/06/2018 10:19	33.30	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	78,162.00	09/06/2018 15:38	33.76	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	79,359.00	09/07/2018 01:51	65.40	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	79,725.00	09/07/2018 18:35	64.74	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	76,456.00	09/08/2018 03:57	28.01	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	80,200.00	09/08/2018 11:56	54.98	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	80,888.00	09/09/2018 15:19	68.21	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	81,019.00	09/09/2018 21:06	31.58	Red Car Service	Red Car
Jeff McMillan	2295	#69 Ford Transit 201	81,456.00	09/10/2018 15:19	0.89	Red Car Service	Red Car

National Distribution Network



800+
DELIVERY &
SERVICE VEHICLES



150+
DISTRIBUTION
POINTS



1.2 B
LITRES DELIVERED
ANNUALLY



150,000
CUSTOMER
LOCATIONS



Where you need it. **When you need it.**



Canada's Propane Provider

EXPERT

- 65+ years solving complex energy challenges

RELIABLE

- Secure and diverse supply network

NATIONAL

- Coast-to-coast distribution network

CUSTOMER-FOCUSED

- 1,200+ employees with a shared commitment to safety excellence and innovative solutions for our customers

CANADIAN-OWNED

- Headquartered in Mississauga, Ontario

