

Lion Electric



Task Force on Vehicle Weights and Dimensions Policy



AGENDA

- ❑ **A Few Words on Lion Electric**
- ❑ **Barrier to Electric Trucks Implementation**
- ❑ **Electric Truck Characteristics**
- ❑ **Charging Infrastructures**
- ❑ **Conclusion**

Lion History

2008



Lion was
founded

2011



LION360
Diesel C-Type

2016



LIONC
C-Type 100% Electric

2019



LionM, Lion8, LionA

2020



Lion8 - Refuse

Lion History

2020



Lion6, LionD,

2021



LION8 – Tractor - Arial



Lion5, Lion7, Lion8 – Boom, Ambulance

All-Electric Urban Trucks



LION6

Class 6 Truck

Up to 290 km

Up to 252 kWh



LION8

Class 8 Truck

Up to 240 km

Up to 336 kWh



MODULAR
BATTERY
APPROACH

Tractor Truck



Advantages of Electrification

80%

Energy Costs
Reduction

60%

Reduction in
Maintenance

THE MORE YOU DRIVE, THE MORE YOU SAVE!



Up time



Low operating cost



No Noise



Lowest Maintenance Down Time



Best-in-Class Driving Experience



Safe



Barriers to Electrification

More range
means
heavier
trucks



Initial purchase cost



Charging Infrastructures



Range



Weight / Payload



EUROPEAN WAY

SMALL BATTERIES : FREQUENT CHARGES

Historical reasons

- **PROS**

- ✓ Lower vehicle cost
- ✓ Lighter vehicle

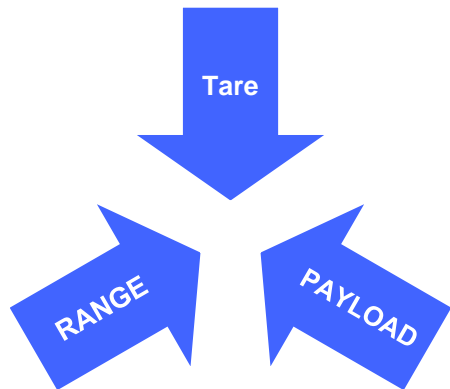


- **CONS**

- ✓ Very expensive infrastructures
- ✓ Little freedom on routes
- ✓ Can't take advantage of low energy rates



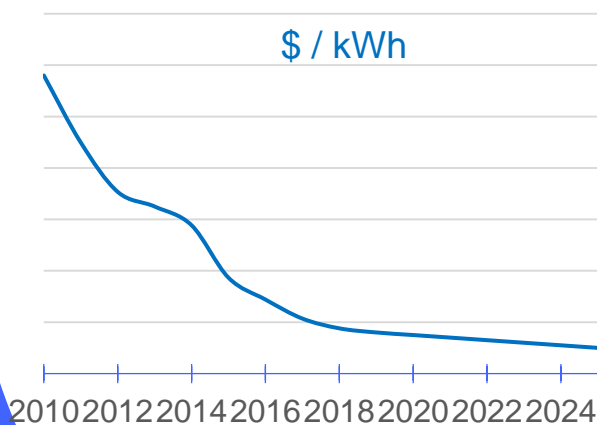
North American Way



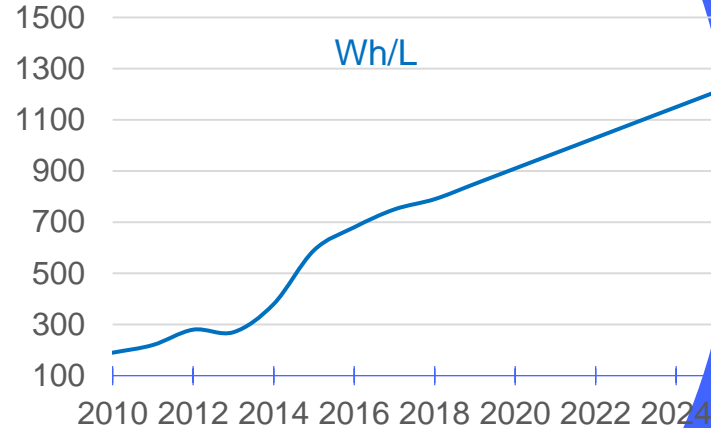
Jurisdictions	Max Onboard kWh	Range (km)	Empty weight (kg)	MAX GCWR (kg)	Legal FAWR (kg)	FA Load vs legal	Legal RAWR (kg)	RA Load vs legal	FW MAX Payload (kg)	Combined MAX Payload (kg)	Combine weight vs Legal
Quebec	640	↑ 460	12 437	↑ 49 500	9 000	96%	18 000	100%	↑ 14 195	↑ 37 063	100%
Ontario	640	↑ 460	12 437	↑ 49 500	7 700	100%	18 000	100%	↔ 13 263	↑ 37 063	100%
USA	640	↘ 370	12 437	↓ 37 195	9 072	85%	16 329	93%	↓ 10 469	↓ 24 757	100%
BC	560	↓ 340	11 579	↘ 40 700	6 000	112%	17 000	100%	↘ 12 134	↘ 29 121	100%
BC+1500kg	640	↔ 390	12 437	↘ 40 700	7 500	100%	17 000	100%	↘ 12 063	↘ 28 263	100%

Battery Evolution

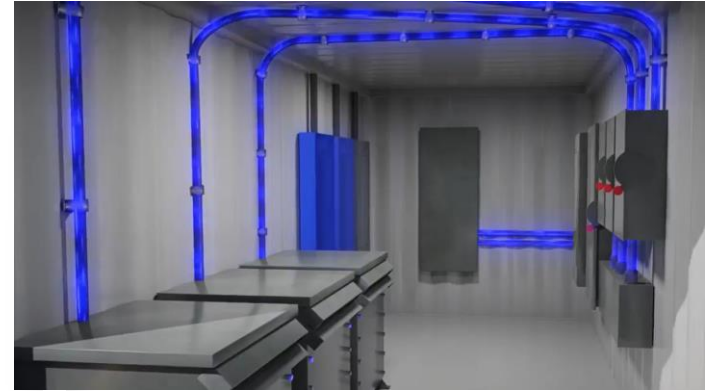
Battery Cost (\$) / kWh



Energy Density



Price is slowly stabilizing and energy density keeps improving



The bright move

CONTACT

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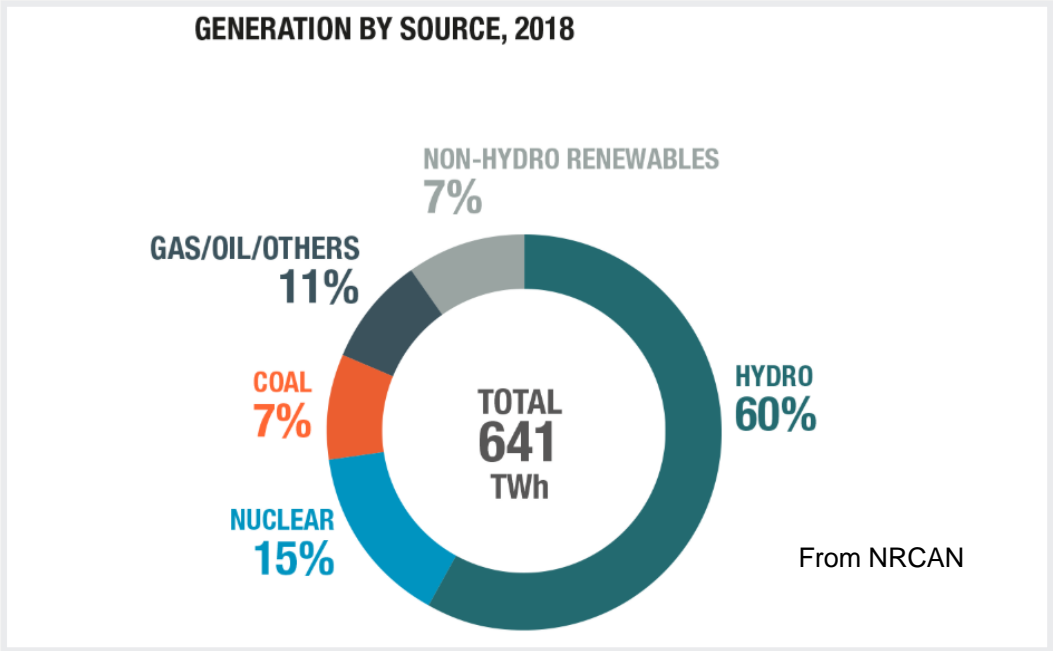
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Question period

How Green is the Canadian Grid?

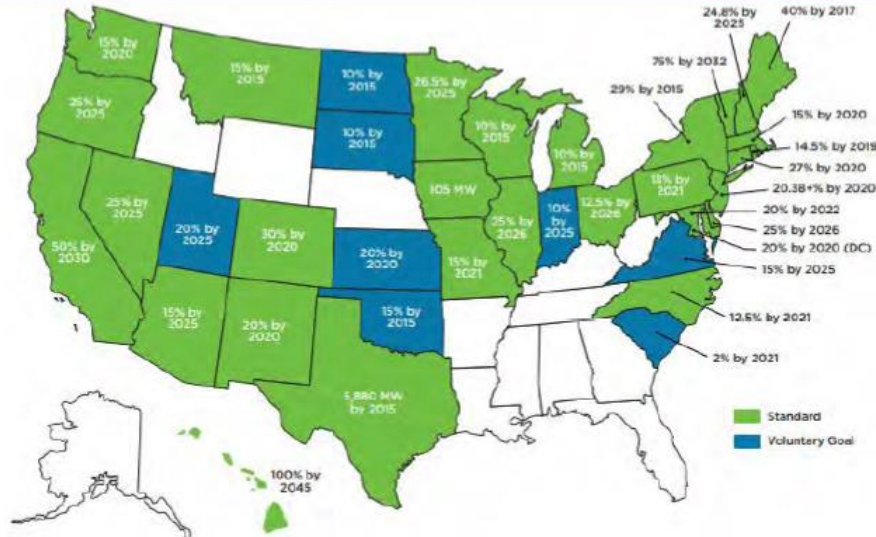
The Canadian energy industry generated 641.1 terawatt-hours (TWh) of electricity in 2018.



Question period

How Green is the American Grid?

Push Towards Renewable Electricity



State governments are committing to significant renewable energy targets.