

CVP PROGRAM CARD

PROJECT:

Class 6 Delivery Truck

Project Information

Make: Lion Electric

Model/Year: Lion 6 / 2021

Use Case: Furniture Delivery

Vehicles: 4

Vehicle Information

Powertrain: Battery-Electric Vehicle

Vehicle Range: 350 km

Battery Capacity: 252 kWh

Weight Rating: 26,000 lbs

Capacity rating: 7,000 lbs

Tracking Information

Project Dates: Nov 2023–Nov 2024

Location: BC Mainland / Southwest

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CleanBC Go Electric



Operation & Performance



95.3 km – Average Daily Distance

79,417 km – Distance Driven

182.1 km – Max Daily Distance

197.6 km – Average Daily Implied Range

(Implied Range is defined on the next page under “What is Implied Range?”)

24.4 km/h – Average Speed

3.1 h – Average Daily Drive Time

0.6% – % full charge days ending with state of charge (SoC) < 10%

Charging & Energy



48.0% – Average End of Day SoC

95.2% – Average Start of Day SoC

3.1 h – Average Daily Charge Time

72 kWh – Average Daily Charged Energy

68.9 kWh/100km – Energy Consumption While Driving

77.3 kWh/100km – Energy Consumption While Driving + Idling

-3°C ... +35°C – Operating Temperature

77 kWh/100 km – Winter Energy Consumption

64 kWh/100 km – Summer Energy Consumption

“If they ever put me back in a gas vehicle, I’ll quit!”

– Driver



Emissions Savings



51,289 kg – Avoided CO₂ – Operational

11 g/km – Average CO₂ Emissions per km while driving

Operations & Reliability

- The battery-electric trucks met typical duty cycle needs.
- Downtime longer than with internal combustion vehicles. Access to local technicians and supply of spare parts still developing.
- Developing and maintaining relationships with original equipment manufacturers recommended for minimizing growing pains and downtime.

People & Training

- Drivers came to prefer the battery-electric trucks and were hesitant to go back to internal combustion engine vehicles.
- Drivers reported improved air quality and reduced vibrations. The battery-electric trucks had a “cool” factor.
- Driver training was required to ensure overnight charging was completed without issue.

Charging & Infrastructure

- The charging was prone to failing but happened less often as the reasons for failure were better understood. These were often 'handshake errors' between the charger and vehicle caused by operator error or software updates being needed or initiated during charging.
- Public faster chargers were not a reliable alternative when experiencing depot charging issues as many are in locations where medium- and heavy-duty vehicles don't fit.
- Overnight charging was sufficient for meeting operational needs.



Transport
Canada

Transports
Canada

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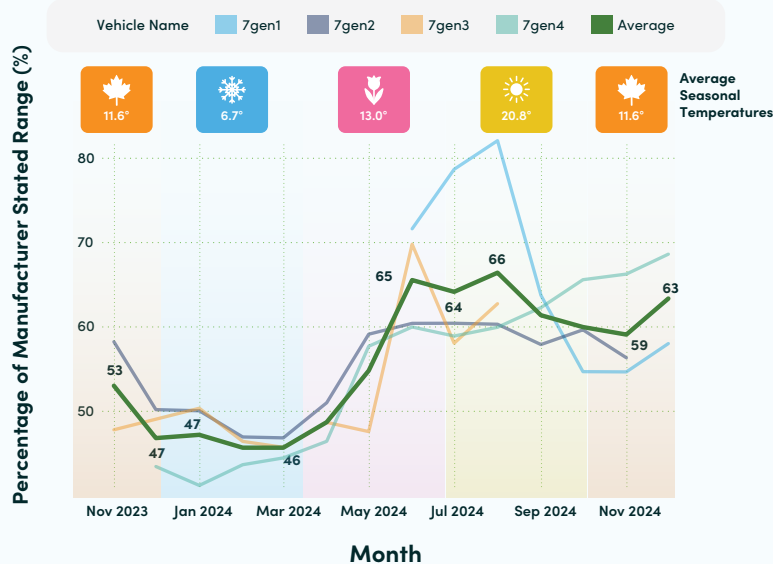
Scan the QR code to access
CVP Program Data Analysis
Dashboard



What is Implied Range?

The implied range is an estimate of the maximum potential distance the vehicle could have traveled on a full charge; this was calculated by taking the actual kilometres traveled on a given day and then dividing it by the percentage of actual charge used.

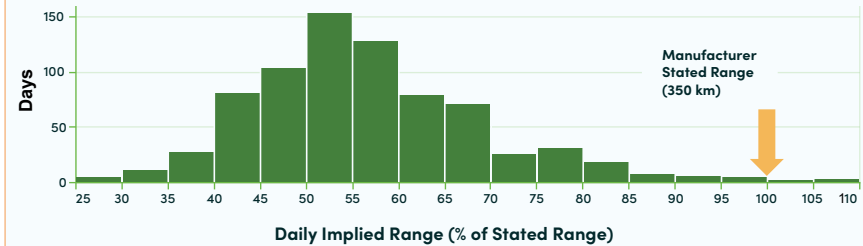
Average Monthly Implied Range Relative To Manufacturer Stated Range*



*Dependent on factors such as terrain, payload, traffic and driving style

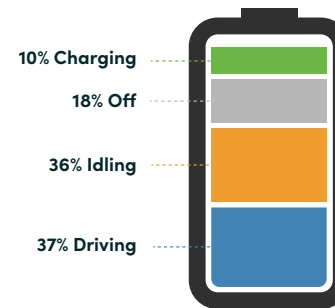
Cold weather increased energy consumption by up to 20% on average, which reduced how far the electric trucks could travel on a single charge during winter months.

Histogram of Daily Implied Range

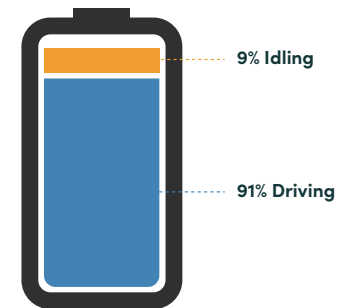


In this project, the implied range mostly fell between 40% and 70%, depending on how the trucks were used and environmental factors. This varied based on season with an average implied range of 165 km in the winter and 222 km the rest of the year.

Time Spent in Operating Modes (7AM - 7PM)



Energy Use Driving and Idling (7AM - 7PM)



Most of the battery's energy use was spent on driving. Even though the battery electric trucks spent 36% of their time idling, this only accounted for 9% of the energy use.