The All-Electric Refuse Truck

LION ELECTRIC
An all-electric commercial vehicle manufacturer
SAVINGS
Electric vs Hydraulic

50%

Reduction of energy consumption of an electric vs hydraulic on an electric chassis

ADVANTAGES

• 1,000 - 1,200 homes per day
• Integrated solution means less energy used so the truck can complete its route
• No hydraulic fluid or pumps
• All compaction and arm movements are powered by the Lion8 HV batteries that drives the electric motor
• Less weight than a hydraulic body
Who is Lion

- 300+ electric vehicles in operation
- More than 6 million zero-emission miles driven
- Manufacturing capacity of 2,500 electric vehicles per year, battery lab and battery manufacturing operations
- R&D center in Montreal, with a total of 4 to be opened by 2022
- Build a highly-automated US truck factory in 2021 with a total forecasted capacity of 12,250+ trucks
- 450+ employees (up to 500 within 1 year) / 95 R&D / 2,000 indirect jobs
**Best-in-Class Product Line-up Available Today**

### ALL-ELECTRIC MEDIUM AND HEAVY-DUTY URBAN TRUCKS

<table>
<thead>
<tr>
<th>LION6</th>
<th>LION8</th>
<th>LION8</th>
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<td><img src="image" alt="LION6 truck" /></td>
<td><img src="image" alt="LION8 truck" /></td>
<td><img src="image" alt="LION8 refuse truck" /></td>
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- Class 6
- Class 8
- Refuse Class 8

### ALL-ELECTRIC BUSES

<table>
<thead>
<tr>
<th>LIONM</th>
<th>LIONA</th>
<th>LIONC</th>
<th>LIOND</th>
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<td><img src="image" alt="LIONM bus" /></td>
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- Shuttle Bus
- Type A School Bus
- Type C School Bus
- Type D School Bus

Lion has 7 Vehicles Available Today...

...With Purchases by Top Customers

Broadest product line-up of all-electric medium and heavy-duty urban vehicles available for purchase and use today
Lion adapts to its customers’ needs by designing each integrated component from the ground up specifically for EV; involves no retrofitting or third party integrators
Experience / Service Centers

Currently open
- Sacramento, California
- Los Angeles, California
- Seattle, Washington
- Jacksonville, Florida
- Albany, New York
- Phoenix, Arizona
- South Plainfield, New Jersey
- Saint-Jerome, Quebec

At least 6 more openings in 2021
- Minnesota
- British Columbia
- Colorado
- Texas
- Indiana
- Massachusetts
Savings electric vs diesel

- 80% Energy Costs Reduction
- 60% Maintenance Costs Reduction
Why go electric?

-> Zero-emission solution
-> Low maintenance
-> No noise pollution
-> Health Impact
-> GHG reduction
-> Proven safety record

Calculating TCO - Electric will always be cheaper than diesel no matter what
All-Electric Lion8 Refuse Truck

MAXIMUM POWER
Up to 350 kW / 470 HP

MAXIMUM TORQUE
2, 507 ft-lb

BATTERY CAPACITY
Up to 336 kWh

CHARGING TYPE
Standard : Level III (DC) - CCS-COMBO
Optional : Level II (AC) - J1772
Weight & Payload Capacity:

**Current ASL Options:**

- 220” WB w/Tag Axle (8x4)
  - Curb Weight: 37,200
  - Tires: 425/65R22.5
  - Cut Angle: 40 degrees
  - C2C: 34.7
  - W2W: 36.6
  - Body: 30 CY
  - Maximum Payload: 12 tons

- 244” WB (6x4)
  - Curb Weight: 35,300
  - Tires: 315/80R22.5
  - Cut Angle: 40 degrees
  - C2C: 37.6
  - W2W: 39.7
  - Body: 30 CY
  - Maximum Payload: 11 tons

**REL Options: (Final specs will be complete in 2021)**

- 220” WB (6X4)
  - Body: 25 CY Residential
  - Maximum Payload: 11 tons
Range: Stated vs. Actual

**Battery Pack Options:**

Stated Range based on 100% Capacity:
252 kWh = 130 miles
336 kWh = 170 miles

**For a 10 hours day, we estimate the following:**
252 kWh with electric / auxiliary heat = ~75 miles - ~95 miles
336 kWh with electric / auxiliary heat = ~115 miles - ~135 miles
* Lower miles is with electric heat only, higher miles w/auxiliary heat (optional) *

252 kWh with AC = ~85 miles
336 kWh with AC = ~130 miles

** These numbers do not include any regen gained during operation**

**Arm cycles that BEV has tested are as follows: (Will require 45-47 kWh for the below numbers)**
Up to 1,200 in the summer
Up to 1,000 in the winter (Northern climates)
(Arm uses 3 electric motors for all functions with a gear box, which is less efficient in the cold weather months)
Weight & Payload Capacity (Cont.):

Roll-Off Options: (Final specs will be completed 2021)
GVWR: 66,000 (Available now)
GVWR: 75,000 - 80,000 (Available September 2021)
Cable or Hook bodies

FEL Options: (Final specs will be completed in Q1 2022)
The Lion chassis:
a versatile platform with huge potential

Lion vocational trucks are the only heavy electric specialty vehicles perfectly integrated to date. Our chassis and electric powertrain will serve as a platform to accommodate the various applications available.
Operating in cold climates since 2016

Lion Electric vehicles have been tested and proven in all types of warm and cold weather conditions.
Support at every step!

- **LionBeat**: Purpose-designed EV telematic system
- **Lion Grant Team**: Influence, leverage, and secure funding opportunities
- **Bright Squad**: Dedicated local service team
- **Lion Energy**: Complete charging infrastructure turnkey solutions
- **Lion Assistance**: Technical support
- **Lion Academy**: Training programs for mechanics, drivers, and fleet staff
The bright move

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