

# Heavy-Duty Zero Emission Vehicles Webinar Part 2

Clean Fuels and Energy Team | 3.26.2025



Dallas-Fort Worth  
CLEAN CITIES

# Clean Fuels and Energy Team

*Hosted within the North Central Texas Council of Governments (NCTCOG) Transportation Department*



Clean Vehicle Initiatives



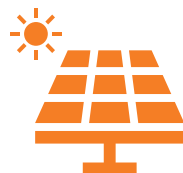
Funding Support



Technical Assistance



Planning the Future



Energy Integration & Community  
Readiness



Raising Awareness

# Agenda

15 Minutes

## DFWCC

- Battery Electric Vehicle (BEV) and Hydrogen Vehicle 101
- Investments in Zero-Emission Vehicles (ZEV)
- Funding Opportunities
- Key Resources

## Speakers

15 Minutes

## Southwest International Trucks

- EMV
- ERH

15 Minutes

## Mack Trucks

- MD Electric
- LR Electric

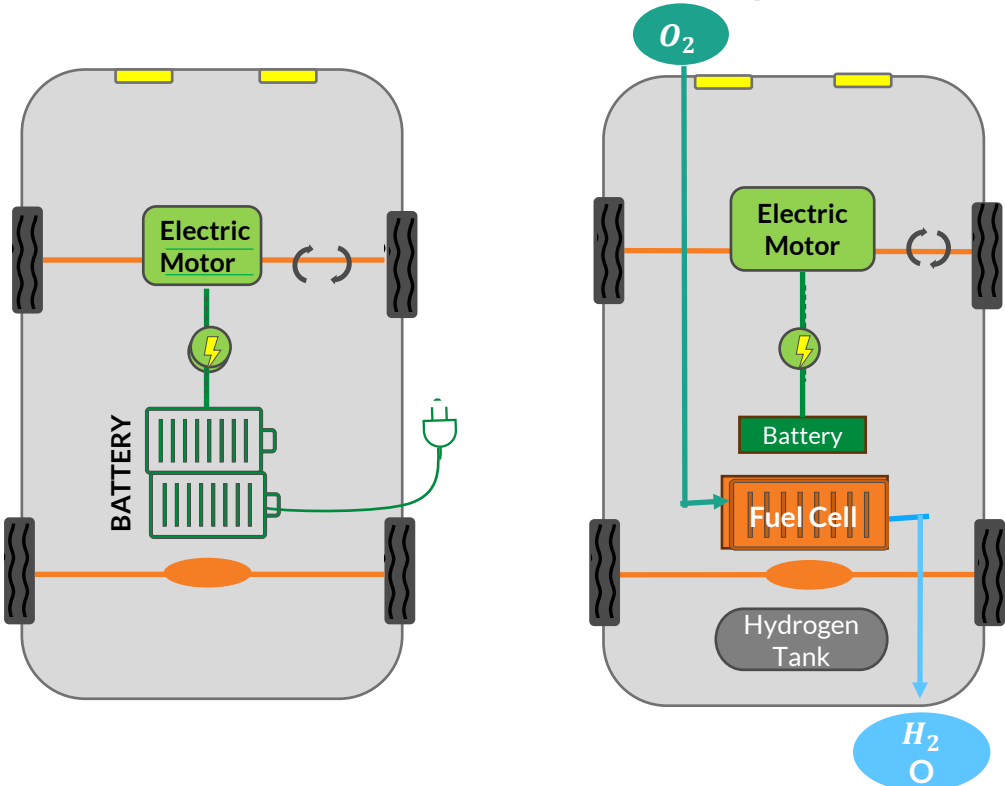
15 Minutes

## Open Discussion

# Battery-Electric vs Hydrogen Vehicles

Battery- Electric Vehicle

Hydrogen Vehicle

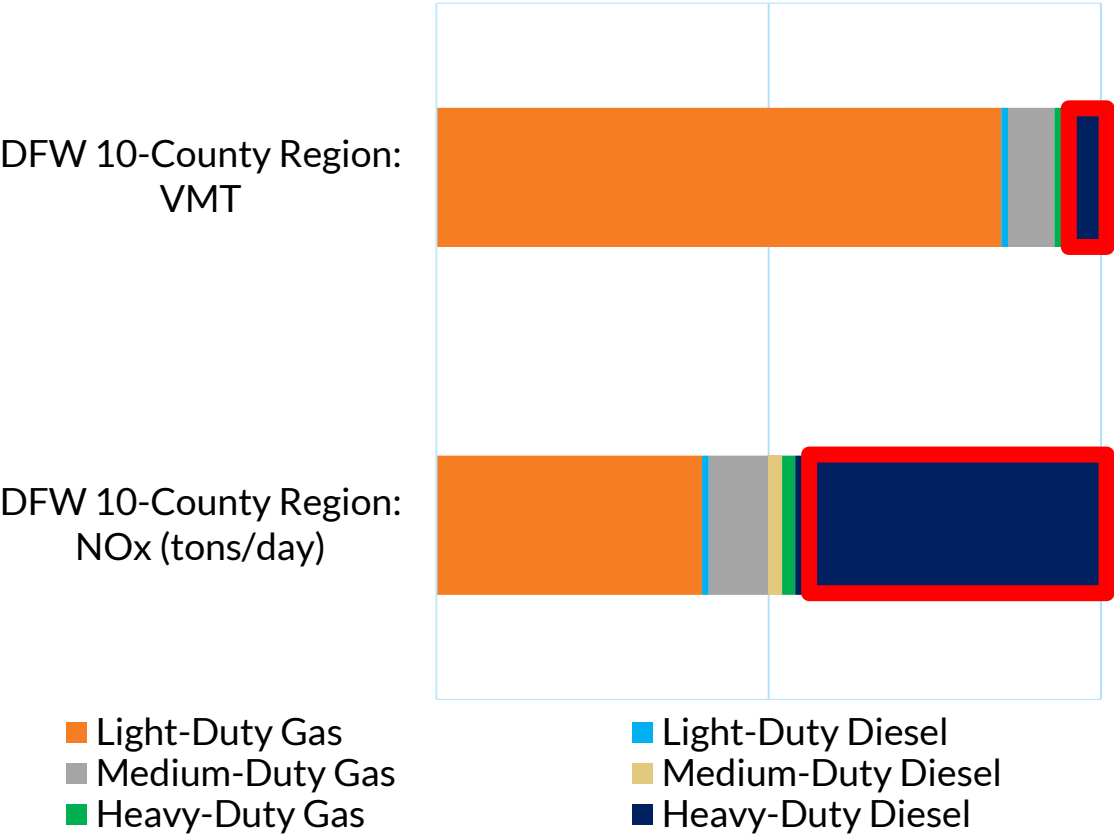


Ideal Duty Cycles for Heavy-Duty (HD)Vehicles\*

|                             | Hydrogen Fuel Cell | Battery Electric |
|-----------------------------|--------------------|------------------|
| Ideal Range (miles)         | ≤ 650              | ≤ 250            |
| Ideal Freight Payload (lbs) | ≤ 48,000           | ≤ 43,000         |

Current Ozone design value of 78 ppb continues to exceed the EPA standard

Vehicle Miles Traveled Versus Nitrogen Oxides Contribution by On-Road Vehicle Type in Dallas-Fort Worth



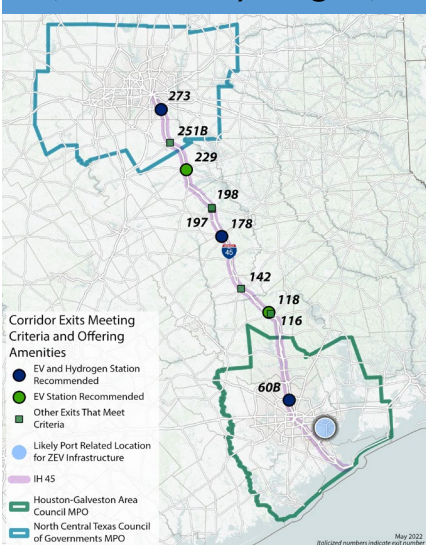
\*Source: North American Council for Freight Efficiency  
NACFE | Hydrogen Trucks: Long-Haul’s Future?

# Developing ZEV Infrastructure

## H2LA Plan (Hydrogen)



## IH-45 ZEV Plan (BEV and Hydrogen)



## Texas Department of Transportation's Rider 48 Report (BEV Only)

### Evaluation of Medium- Duty and Heavy-Duty Vehicle Charging Infrastructure and Capacity

## Texas Policy Development Opportunities

### Texas Hydrogen Alliance

## Texas Hydrogen Production Policy Council (TxH2 Council)

Heavy-Duty Zero Emission Vehicles



## Texas Hydrogen and Electric Freight Infrastructure Project(Tx- HEFTI):\$70M for 5 hydrogen stations



### Other Investments:

**FHWA Reducing Truck Emissions at Port Facilities Program:** \$150M to Port of Houston; Includes hydrogen fuel cell vehicles/mobile infrastructure

**Gulf Coast Hydrogen Hub:** \$1.2B to GTI Energy for Clean Hydrogen Hub

**Gage Zero and Hillwood Builds EV Fleet Charging Hub at [AllianceTexas](#)**

**Texas Electric Vehicle Charging Plan:** Up to \$60 million for DFW Region; Can include Medium and HD Depot EV Charging

**EPA Clean Ports:** \$105M Project to Port of Corpus Christi; Includes EV Charging

# Heavy-Duty All-Electric Vehicles

## Available HD Hydrogen Vehicles

### Street Sweeper –

Global Environmental Products:  
[M4HSD](#)

### Tractor –

ZM Trucks: [ZM8 FC](#)  
Nikola: [Tre FCEV](#)  
Peterbilt: [579HFC](#)  
Accelera by Cummins

### Transit-

ENC: [AXESS EVO-FC](#)  
New Flyer: [Xcelsior Charge FC](#)

### Step Van-

Unique Electric Solutions

## Available Battery-Electric HD Vehicles

### 15 Original Equipment Manufacturers (OEM) Offering HD BEVs:

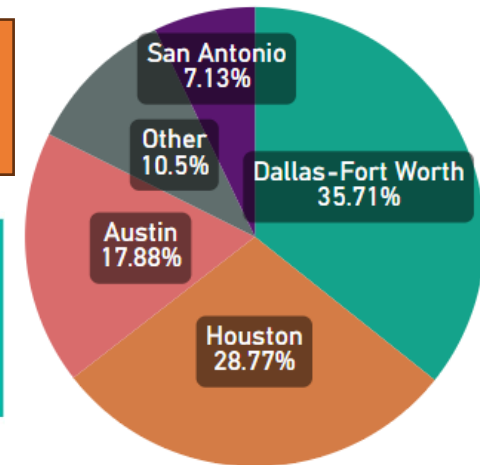
|             |                                |
|-------------|--------------------------------|
| BYD         | Freightliner                   |
| HINO Trucks | International Southwest Trucks |
| Kenworth    | Lion                           |
| Mack Trucks | Motiv                          |
| Peterbilt   | Unique Electric Solutions      |
| Workhorse   | XL Fleet & Curbtender, Inc.    |
| XOS         | Zeus Electric Chassis          |
| ZM Trucks   |                                |

## All-Electric Medium and HD Electric Vehicles in Texas

Class 2B-6 EV:  
18,187  
Class 7-8 EV: 148

**18,335 EVs**

EV's in Texas as of March  
18, 2025



### Electric School Buses:

Bluff Dale ISD, Carrollton-Farmers Branch ISD, Cedar Hill ISD, Dallas ISD, Fort Worth ISD, Plano ISD, Princeton ISD

**Electric Fire Truck:** City of Denton, DFWIA

**Electric Semi:** Truck Kings LLC

**Electric Refuse Trucks:** City of Plano, City of Dallas

*No hydrogen vehicles are operating in Texas, but the first hydrogen vehicles have been funded through state funding*

For information on available EVs and resources to help deployment visit:  
[www.afdc.energy.gov](http://www.afdc.energy.gov)



Heavy-Duty Zero Emission Vehicles

Data Source: [EVs in Texas](#) | [DFWCC](#) 6

# Other Ways to Improve Air Quality

## Request ZEV in Contract Specifications for Fleets

### Examples:

[NCTCOG Clean Construction](#)

[NCTCOG Waste to Fuel Study](#)

City of Fort Worth Request for Proposals for Natural Gas Refuse Haulers

ZEV in Contract Specifications included in [NCTCOG Clean Fleet Policy](#)

## Use Renewable or Lower-Emitting Electricity or Clean Hydrogen

### Renewable or Lower-Emitting Electricity

In 2024, 40% of the net electricity generation was from a zero-emission source\*

100% renewable or zero-emission electricity can be purchased

### Clean Hydrogen

#### [Hydrogen and Fuel Cell Technologies Office](#)

- Determines eligibility for [Clean Hydrogen Production Tax Credit](#), which provides up to \$3/kg to producers

*Note: Producers cannot receive credit if hydrogen produces more than 4kg of CO<sub>2e</sub>/kg of hydrogen*

### Hydrogen Shot

- Goal to reduce cost of clean hydrogen by 80% (\$1 per 1kg in 1 decade)

## Use On-Site Power Generation and Other Resilience Strategies

Smart Charging Management



Energy Storage Systems (batteries or hydrogen fuel cell)



Generators



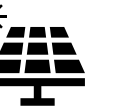
Mobile Charging



Bidirectional Charging (i.e. Vehicle to Grid)



Microgrids



### Read More:

[Planning for Resilient EV Charging Infrastructure](#)

Developed by NCTCOG through funding from the Texas State Energy Conservation Office (SECO)



Heavy-Duty Zero Emission Vehicles

\*Source: EIA: Electricity data browser - Net generation for all sectors

# North Texas Zero-Emission Vehicle Project (NTx-ZEV)

| Vehicle & Infrastructure ~\$58 million |                                                                                                                                                                                                                                        | ZEV Workforce Development ~\$1.2M                                                                                                                   |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Eligible Projects                      | Any battery-electric or hydrogen fuel cell Class 6 or 7 vocational vehicle and infrastructure replacing a non-zero emission (gasoline, diesel, propane, natural gas) Class 6 or 7 vehicle<br><br>Public and private entities eligible* | Fund workforce development projects, such as:<br>- First responder training<br>- Mechanic training for vehicles/infrastructure<br>- Driver training |
| Project Selection                      | Call for Projects – <u>Expected to open Spring 2025</u><br>Priority given to operations in 10 county nonattainment area**;<br>but all 16 counties are eligible                                                                         | Strategic Selection or Other Selection Process                                                                                                      |
| Funding Level                          | Maximum federal share allowed by EPA<br>33% to 65% per battery-electric vehicle<br>60% to 80% per hydrogen fuel cell vehicle                                                                                                           | Workforce costs not subject to maximum federal share                                                                                                |

## NTX-ZEV provides new opportunities for the region, including:

- Increased funding levels for hydrogen fuel cell vehicles and electric vehicles
- Replacement of non-diesel (gasoline, compressed natural gas, propane) vehicles
- Flexible scrappage alternatives
- Funding for infrastructure, renewable power generation systems, and workforce activities

\*Must adopt Clean Fleet Policy  
 \*\*Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise

Go to [www.nctcog.org/NTxZEV](http://www.nctcog.org/NTxZEV) for more information



Heavy-Duty Zero Emission Vehicles

# Funding for Heavy-Duty ZEV

| Looking for?                                                                                             | Programs                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heavy-Duty Diesel On-Road Vehicle Replacement with Lower-Emitting Versions                               | <a href="#">North Texas Diesel Emissions Reduction Project</a> – Open through June 13, 2025<br><a href="#">Rebate Grants</a> - Expected to open Summer 2026                                                                                                                                 |
| Replace Off-Road Diesel Equipment/Drayage with Lower-Emitting Versions                                   | <a href="#">Seaport and Rail Yard Areas Emissions Reduction Program</a> - Expected to open Spring 2027<br><a href="#">Emissions Reduction Incentive Grants (ERIG)</a> – Expected Spring 2027<br><a href="#">North Texas Diesel Emissions Reduction Project</a> – Open through June 13, 2025 |
| Light-Duty Gasoline or Diesel Vehicle Replacement with Alternative Fuel, Electric, or Hybrid Vehicles    | <a href="#">Governmental Alternative Fuel Fleet Grant Program</a> – Expected to open Spring 2027<br><a href="#">Texas Clean Fleet Program (TCFP)</a> - Expected to open Spring 2027                                                                                                         |
| Replacement of Heavy-Duty EV or Hydrogen Only                                                            | <a href="#">Texas Hydrogen Infrastructure, Vehicles, and Equipment (THIVE)</a> – Expected to open Fall 2025<br><a href="#">Texas Volkswagen Environmental Mitigation Program – All-Electric Grant Round</a> – Open through August 31, 2025                                                  |
| Alternative Fuel Infrastructure or EV Charging                                                           | <a href="#">Alternative Fueling Facilities Program (AFFP)</a> – Expected to Open in 2026<br>Sometimes included in other grant programs for vehicles                                                                                                                                         |
| Replacement of Diesel School Buses with Lower-Emitting Versions                                          | <a href="#">Texas Clean School Bus Program (TCSB)</a> - Expected to open Spring 2026                                                                                                                                                                                                        |
| Light-Duty or Heavy-Duty Alternative Fuel or Electric Vehicle Expansion (i.e. no scrappage requirements) | <a href="#">Governmental Alternative Fuel Fleet Grant Program</a> – Expected to open Spring 2027<br><a href="#">Commercial Clean Vehicle Tax Credit</a> – Open Now<br><a href="#">Rebate Grants</a> - Expected to open Summer 2026                                                          |



# Upcoming Involvement Opportunities

Contact us at [cleancities@nctcog.org](mailto:cleancities@nctcog.org) for any questions on fleet electrification, funding opportunities, or other inquiries

Upcoming webinars and events posted regularly at [dfwcleancities.org/events](https://dfwcleancities.org/events)

- March 25-27 : Heavy-Duty Zero-Emission Vehicle Webinar Series

Complete the **DFWCC Annual Survey** NOW, to report your fleets efforts to improve air quality help measure regional efforts to reduce emissions at [www.dfwcleancities.org/annualreport](https://www.dfwcleancities.org/annualreport)

Sign up for DFWCC weekly email list and follow DFWCC LinkedIn at: [dfwcleancities.org/getinvolved](https://dfwcleancities.org/getinvolved)



North Central Texas  
Council of Governments



Dallas-Fort Worth  
CLEAN CITIES



Heavy-Duty Zero Emission Vehicles



# ACCELERATE THE IMPACT OF SUSTAINABLE MOBILITY



# WITH TRATON'S BACKING, NAVISTAR IS COMMITTED TO LEAD IN BEV ADOPTION

GOAL OF 50% EV SALES BY 2030 BACKED BY GLOBAL NETWORK INVESTMENT AND STRATEGIC POSITIONING

## GLOBAL NETWORK INVESTMENT

TRATON

**\$2.8 billion** in electric mobility research and development by 2026



## PRODUCT DEVELOPMENT LEADERSHIP

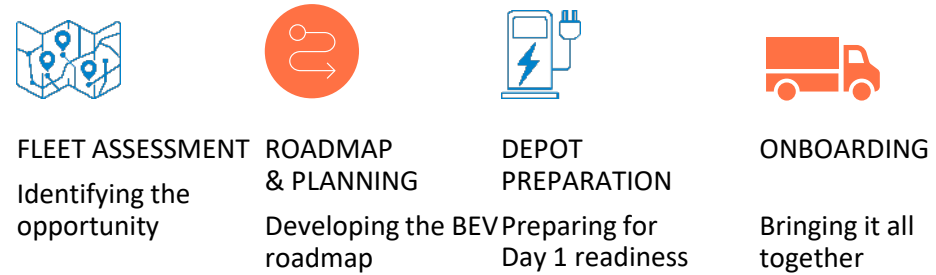


## STRATEGIC RELATIONSHIPS FOR SCALE

Infrastructure/Installation ➔ Hardware/Software/O&M ➔



## STRUCTURED TO SUPPORT OUR NETWORK



More to come...

# WHY WE BELIEVE BEVS ARE THE FUTURE OF COMMERCIAL FLEET TRANSPORTATION (GROUND)



## Efficiencies

### Batteries are 70%-80% efficient

That means about three quarters of the electricity generated by the grid is applied to propulsion



## Costs

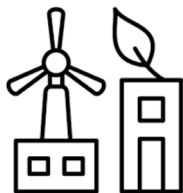
As batteries continue to drop in price, the next logical move would be into HD vehicles

Producing Green Hydrogen is inherently inefficient and costly... and it will come too late



## Range

Battery technology will soon be able to match the range of fuel-cells models and lower overall ownership costs



## Infrastructure

Vast, nationwide electrical system already exists

Government incentives are helping deploy public DCFC (DC-fast charging) network for BEVs

# OUR EV ROADMAP

## A PATH FOR A SEAMLESS TRANSITION

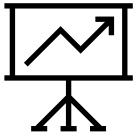


Our dealers and zero emissions trusted advisors are always available to help customers move forward with electrification.  
All it takes is three easy steps:

Step 1

### Consulting

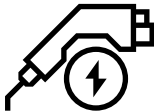
Our discovery workshops dive into your fleet’s electrification needs and concerns, building a customized EV roadmap for success.



Step 2

### Charging

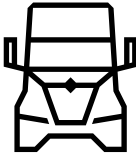
We assess the placement of hardware and infrastructure, finding the best ways to support your vehicle charging and uptime.

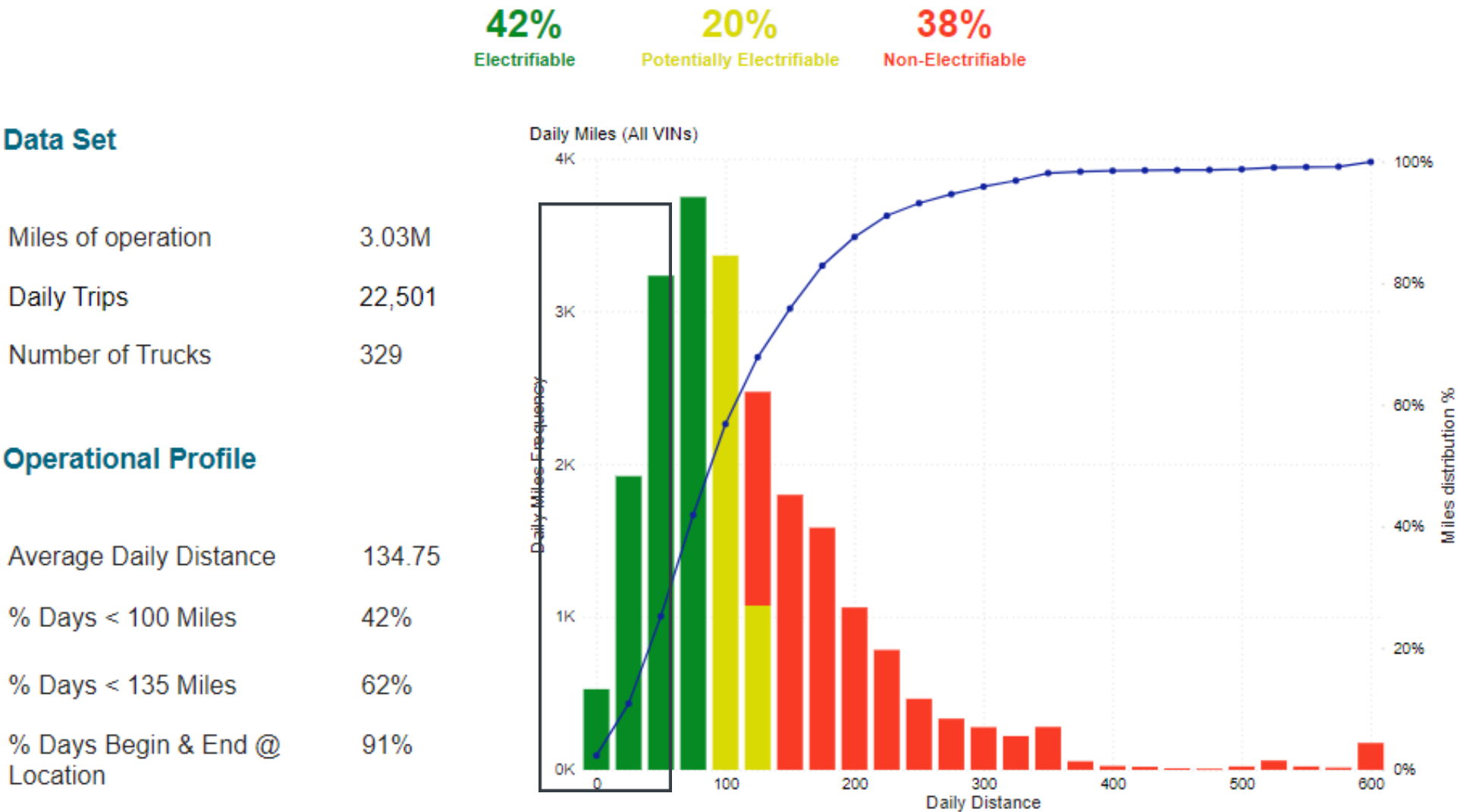


Step 3

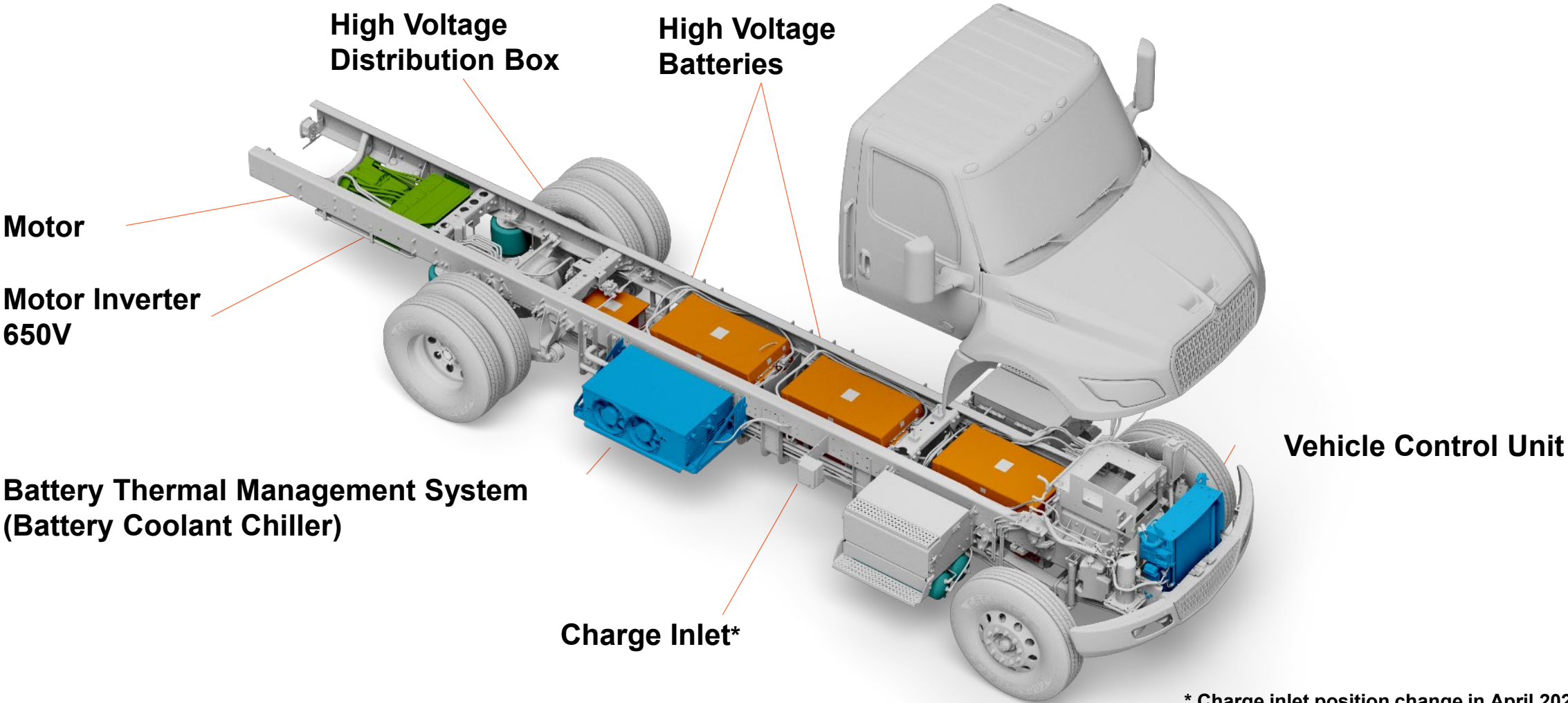
### Customer onboarding

We ensure your charging locations, staff, and remote diagnostics are prepared for your electric fleet to hit the road.



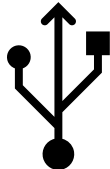
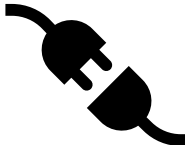


# INTERNATIONAL TRUCK EMV SERIES®



\* Charge inlet position change in April 2023

## INTERNATIONAL EMV SERIES APPLICATIONS

| DRY VAN                                                                           | SERVICE BODY                                                                       | STAKE BED                                                                           | DUMP BODY                                                                           | UTILITY                                                                             |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |
|  |   |  |  |  |
| <b>Peak Power</b><br>335 HP (250 KW)                                              | <b>Continuous Power</b><br>215 HP (160 KW)                                         | <b>Charge Time</b><br>1-2 hours<br>125kW Charger<br>20%-80% SOC                     | <b>Battery Capacity</b><br>135 miles*<br>*210kWh 1-2 Hr. Charge                     | <b>ePower</b><br><b>ePTO</b>                                                        |



4X2



|                                                  |                                     |
|--------------------------------------------------|-------------------------------------|
| Cab                                              | Day Cab                             |
| Vehicle Type                                     | Class 8 Tractor                     |
| Applications                                     | Pickup, Delivery, and Regional Haul |
| GCWR (lbs.)                                      | 68,000 *                            |
| Std. Range @ GCW (miles) / Curb Weight ** (lbs.) | 180 / 17K                           |
| Mid Range @ GCW (miles) / Curb Weight ** (lbs.)  | 240 / 19K                           |
| Ext. Range @ GCW (miles) / Curb Weight ** (lbs.) | 320 / 21K                           |
| Wheelbase (in.)                                  | 160                                 |
| Drivetrain                                       | 3-Speed eAxle (s)                   |
| HV Batteries kWh Total                           | 375 / 500 / 625                     |
| Collision Mitigation System                      | Standard                            |

6X4



|                                                  |                                     |
|--------------------------------------------------|-------------------------------------|
| Cab                                              | Day Cab                             |
| Vehicle Type                                     | Class 8 Tractor                     |
| Applications                                     | Pickup, Delivery, and Regional Haul |
| GCWR (lbs.)                                      | 82,000 *                            |
| Std. Range @ GCW (miles) / Curb Weight ** (lbs.) | N/A                                 |
| Mid Range @ GCW (miles) / Curb Weight ** (lbs.)  | 225 / 22K                           |
| Ext. Range @ GCW (miles) / Curb Weight ** (lbs.) | 300 / 24K                           |
| Wheelbase (in.)                                  | 181                                 |
| Drivetrain                                       | 3-Speed eAxle (s)                   |
| HV Batteries kWh Total                           | 500 / 625                           |
| Collision Mitigation System                      | Standard                            |

\* Additional 2000 lbs. allowance in permissible states  
\*\* Approximate and estimated range

SMART.  
ADAPTABLE.  
REVOLUTIONARY.



Drive confidently with Navistar's InternationaleMV solution. Our comprehensive offering goes beyond the vehicle, delivering unparalleled service that ensures peace of mind so that you can prioritize your business without distraction.

## COMPREHENSIVE REPAIR & MAINTENANCE CONTRACT SOLUTION

○ Included with vehicle



### Repair Contracts

- **Battery Coverage** - High voltage battery protection to 70% SoH<sup>1</sup>
- **ePowertrain Coverage** - All high voltage powertrain components
- **Chassis Coverage** - Chassis ESC, same areas of coverage as diesel MV, including chassis high voltage components
- **Towing (\$1,100 per incident)** - Coverage for all warrantable failures



### Preventative Maintenance & Wear items

- **High Voltage System Preventive Maintenance**
- **Chassis Components Preventive Maintenance**
- **Wear Items** - Quantity of services depends on length of contract
- **Annual Multipoint Inspections**



### Digital & Connected Solutions

- **OnCommand Connection** - Standard with full repair and maintenance contract
- **Battery Monitoring** - Tracking of both SoH<sup>1</sup> and gross discharge throughput
- **Uptime Advocate** - Repair orchestration and updates
- **Premium EV Features** - EV specific reports and other connected solutions

CONFIDENTIAL AND PROPRIETARY TO INTERNATIONAL

1. State of Health

YOUR DEALER AND  
NAVISTAR GOING  
“BEYOND THE VEHICLE”  
TO PARTNER WITH YOUR  
COMPANY TO ENSURE  
SUCCESSFUL BEV  
ADOPTION





# A TEAM COMMITTED TO CUSTOMER SUCCESS – LEARNING BY DOING



600+ Customer  
Consultations



\$220M Awards Won



Over 5 Million Miles



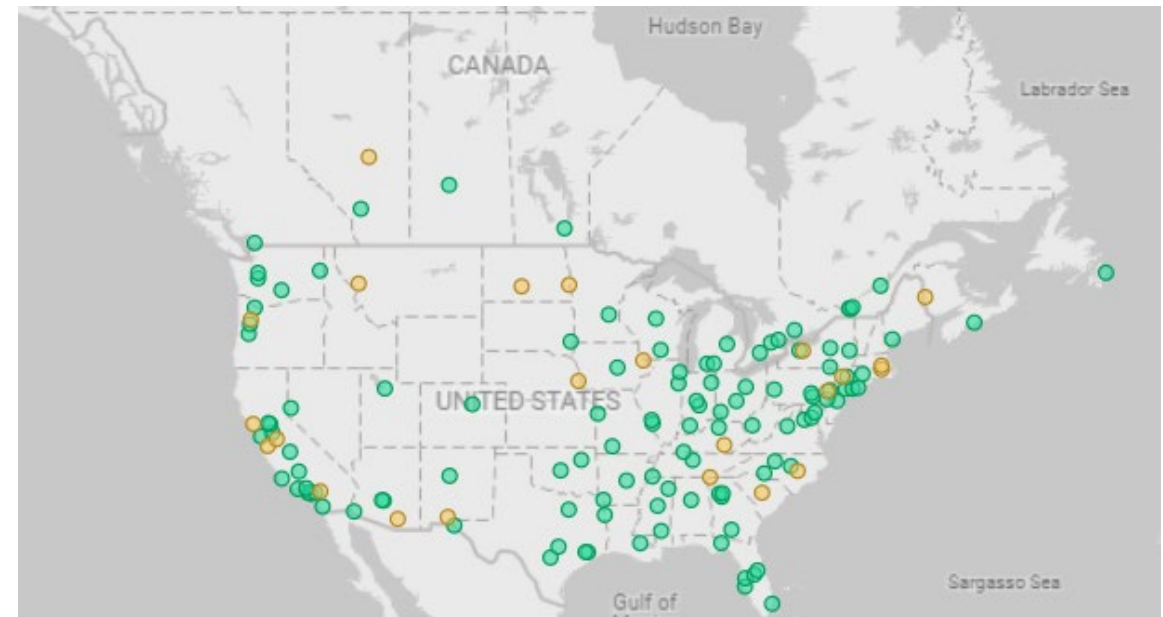
900+ Deliveries

**#1**

Electric Bus Market  
Share

- Largest OEM Network of BEV Service Ready Dealers

● BEV Service Ready ● In Progress



CONFIDENTIAL AND PROPRIETARY TO INTERNATIONAL



# INTERNATIONAL Southwest Trucks

**Leading Dealership:** Top Dealer Award 2024,  
in addition to numerous other industry awards

**Locations:**

Dallas

Fort Worth

Arlington

McKinney

Waco

**Employee Base:** Over 400 employees



# Southwest Trucks: Driving the Future with Zero-Emission Solutions

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## Who We Are

- International Dealer of North Texas - locations including Dallas, Fort Worth, Arlington, McKinney & Waco, delivering expert solutions for fleets of all sizes.
- Decades of experience in sales, service, and fleet support with several lifetime industry employees.

## EV Commitment

- Supporting businesses in transitioning to electric vehicles (EVs).
- Offering all International EV, zero-emission truck models

## EV-Ready Inventory

- Currently have a 2023 eMV 26' Box Truck in inventory



**INTERNATIONAL**  
Southwest Trucks

# Comprehensive EV Support for Your Fleet

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## **Certified EV Service Centers**

- Factory-trained technicians specializing in electric vehicle maintenance and repairs.
- Advanced diagnostic tools and software updates for optimal EV performance.

## **Charging Infrastructure Support**

- 120Kw Dual Charging system (CCS1 Charging Port) at Dallas Location
- Consultation on EV charging solutions, including depot and on-site charging setups.

## **EV Parts & Upgrades**

- Stocking critical EV components, including high-voltage batteries and drive systems.
- Retrofit solutions to enhance existing fleet performance.

## **Fleet Transition Consultation**

- Guidance on TCO analysis & available grants.
- Customized solutions for businesses adopting zero-emission vehicles.



**INTERNATIONAL**  
Southwest Trucks



# COMMITTED TO THE ROAD AHEAD

With more than a million of our trucks and buses on the move across North America today, the commercial vehicles and services we offer drive life forward for many. From feeding the planet and powering industry to delivering vital medical goods and ensuring children get to school safely, our innovations and dedication have driven progress on a massive scale. And we're not done yet.

By developing new electric solutions and high-efficiency engines and powertrains, we're working closely with our partners, dealers and customers to close the gap between today and the cleaner, safer world we all deserve.

THANK YOU

E-MOBILITY

# Zero Emission Powertrains, The Pathway Forward

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**Tyler Ohlmansiek**  
**Mack Trucks, Inc.**  
**Director of E-Mobility Sales**



# Our Mack Purpose:

*To move and build a better world*



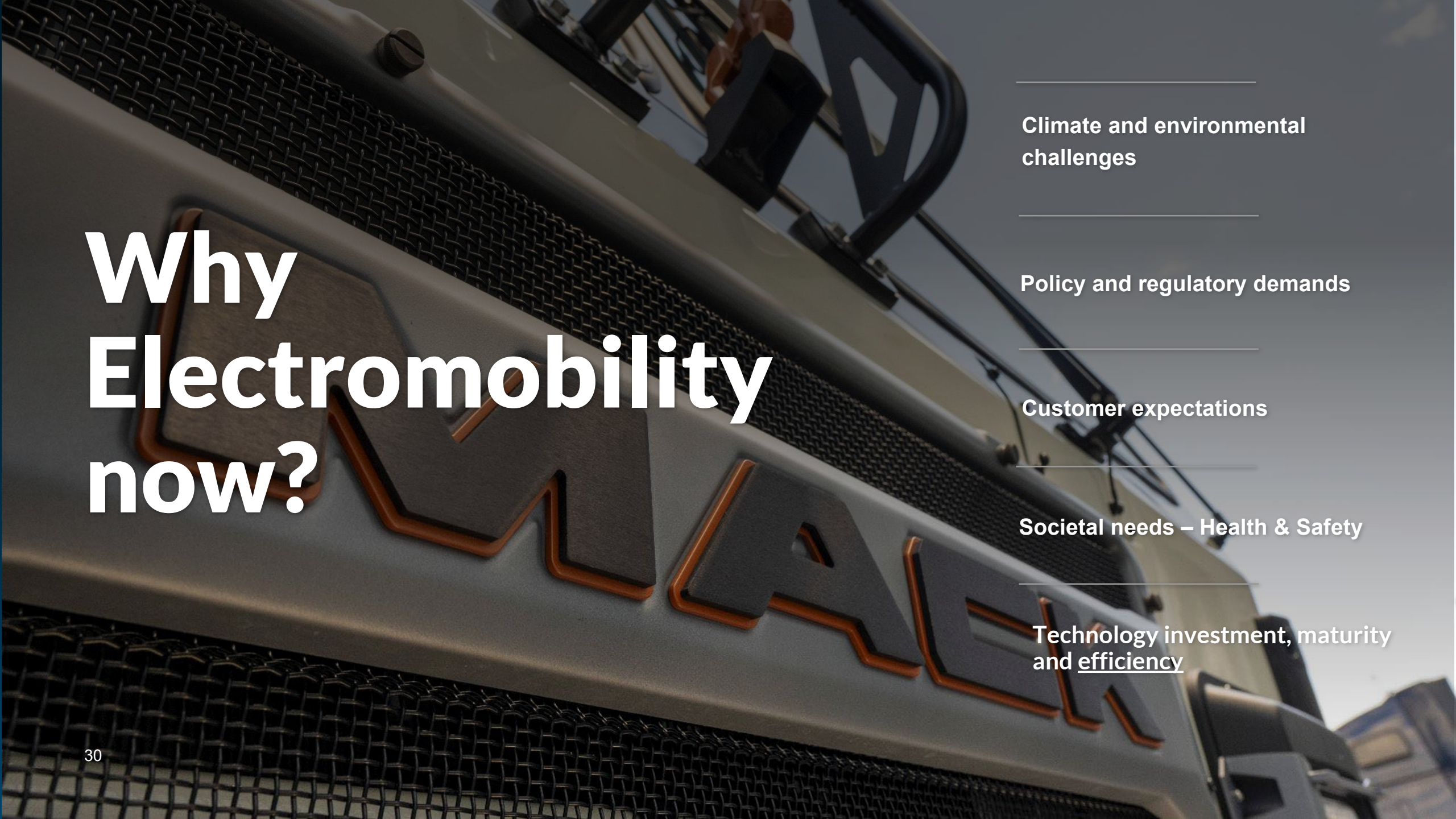
# LONG-TERM AMBITIONS

100%

Safe

Fossil free

More productive



# Why Electromobility now?

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Climate and environmental  
challenges

---

Policy and regulatory demands

---

Customer expectations

---

Societal needs – Health & Safety

---

Technology investment, maturity  
and efficiency

E-MOBILITY

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# Product Overview

# Mack MD Electric

Horsepower:  
260 Peak HP

Torque:  
1,850 lbs.-ft. Peak

Battery Capacity:  
150kWh (2 batteries)  
240kWh (3 batteries)

Max Payload:  
19,400 lbs

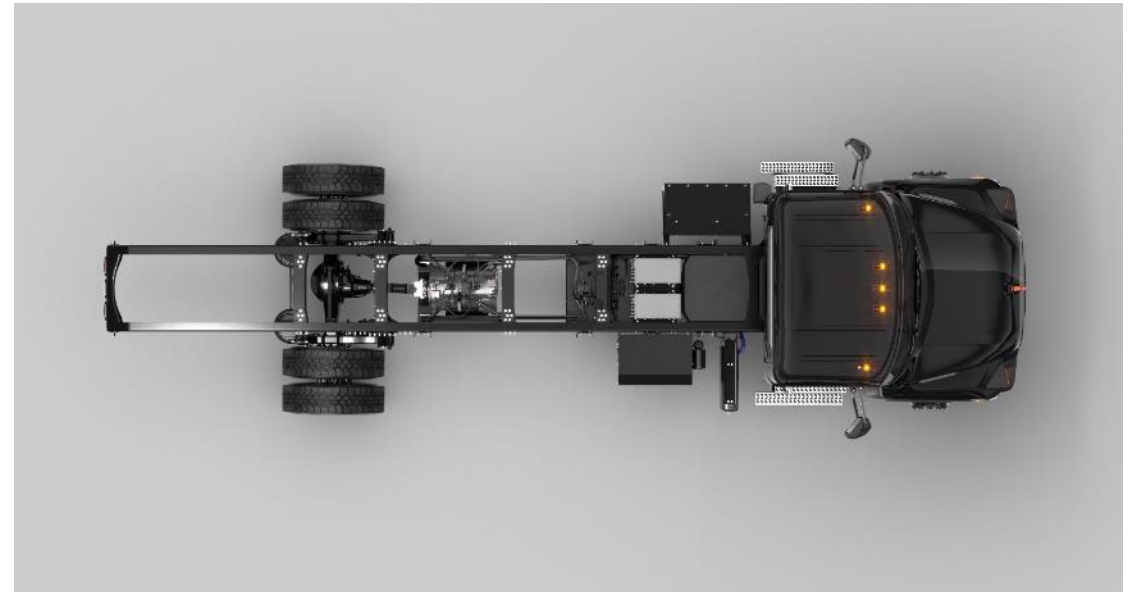
AC & DC Charging



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# General Specs

- Class 6 (26K GVWR) and Class 7 (33K GVWR)
- Class 7 Weight 13,600 lbs (Large Battery)
  - ~ 3,000 lbs heavier than diesel MD7
- Meritor Axles
  - 12K MFS+ Front Axle
  - 21K MS-21-13X Rear Axle, 5.57 Ratio
- Standard 10.25" x 2.75" Frame
  - Wheelbases: 206", 221", 236", 251", 274"
- Standard Air Ride Cab
- 5 or 6 Year Ultra Service Contract



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# Typical Applications



**Van/Refrigerated**



**Dump**



**Stake/Flatbed**

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# MD Electric – Utility Aerial Lift

- **Mack MD Electric Class 7**
  - 240kW Battery packs inside rail
  - Up to 200 miles of range on single charge
  - Level 2 or DC Fast charging option (80kW)
- **Terex Optima HR55 Boom**
  - Working Height of 60 feet
  - Max Side Reach of 48 feet
  - Material Handling Capacity of 2,000 lbs.
  - Side-mounted two person 24"x 48" fiberglass platform with 700 lbs. of capacity
  - 28.8 kWh SmartPTO by Viatec



# MD Electric – Attenuator Body



## Mack MD Electric Class 6 or 7

- 240kW Battery packs inside rail
- Up to 200 miles of range on single charge
- Level 2 or DC Fast charging option (80kW)

## Scorpion II (MASH) Attenuator

- 18' steel TMA body with integrated ballast chambers
- One-touch TMA/arrow board deployment
- 15-lamp LED solar powered arrow board
- 11-gauge solid steel bulkhead integrated with body
- 36"H powder coated racks
- 60"W lighted work buckets with latching swing gates and adjustable safety hoop

# MD Electric – Off Grid Charging

- Growing demand for alternative charging solutions to support various customer challenges
- Power units are available in both mobile and stationary configurations
- Off-grid Charging:
  - Powered by propane or CNG
  - Ideal for site resiliency
  - Serves as a bridge solution while traditional infrastructure is being completed



A white Mack LR Electric garbage truck is shown from a front-three-quarter view, driving on a paved residential street. The truck has a large white body with a rear-mounted compactor. The word "MACK" is prominently displayed on the front grille, and "MACK ELECTRIC" is visible on the side of the body. The background features suburban houses with tiled roofs and green lawns under a clear blue sky.

# Mack LR Electric

**Horsepower:**  
**536 Peak HP**

**Torque:**  
**4,051 lbs.-ft. Peak**

**Battery Capacity:**  
**376kWh (4 batteries)**

**Max Payload:**  
**25,000 lbs**

---

# LR Electric

## Specifications

- Dual steering positions
- GVWR limit of 66,000 lbs. (optional 72,000 lbs)
- 2 AC motors with 448HP/334kW continuous power
- 2-speed Mack Powershift; 4,051 lb.-ft. torque
- PreView collision warning technology available
- Standard 376kWh battery capacity
- 25,000 payload ability @ 66,000 GVWR
- Up to 100 on the job miles
- Charging: 150kW (~120min for a full charge)





## Mack LR Electric Rearloader

- Wide variety of rearloader applications available today
- 25CY – 32CY size
- Ability to add snowplows to a fully BEV for Municipal customers



## Mack LR Electric Sideloaders

- Fully electric body compatibility with more kilowatts on-board than any other refuse BEV in North America
- 26CY – 35CY (single compartment or split body)
- Largest sideloader body combinations available on BEV chassis

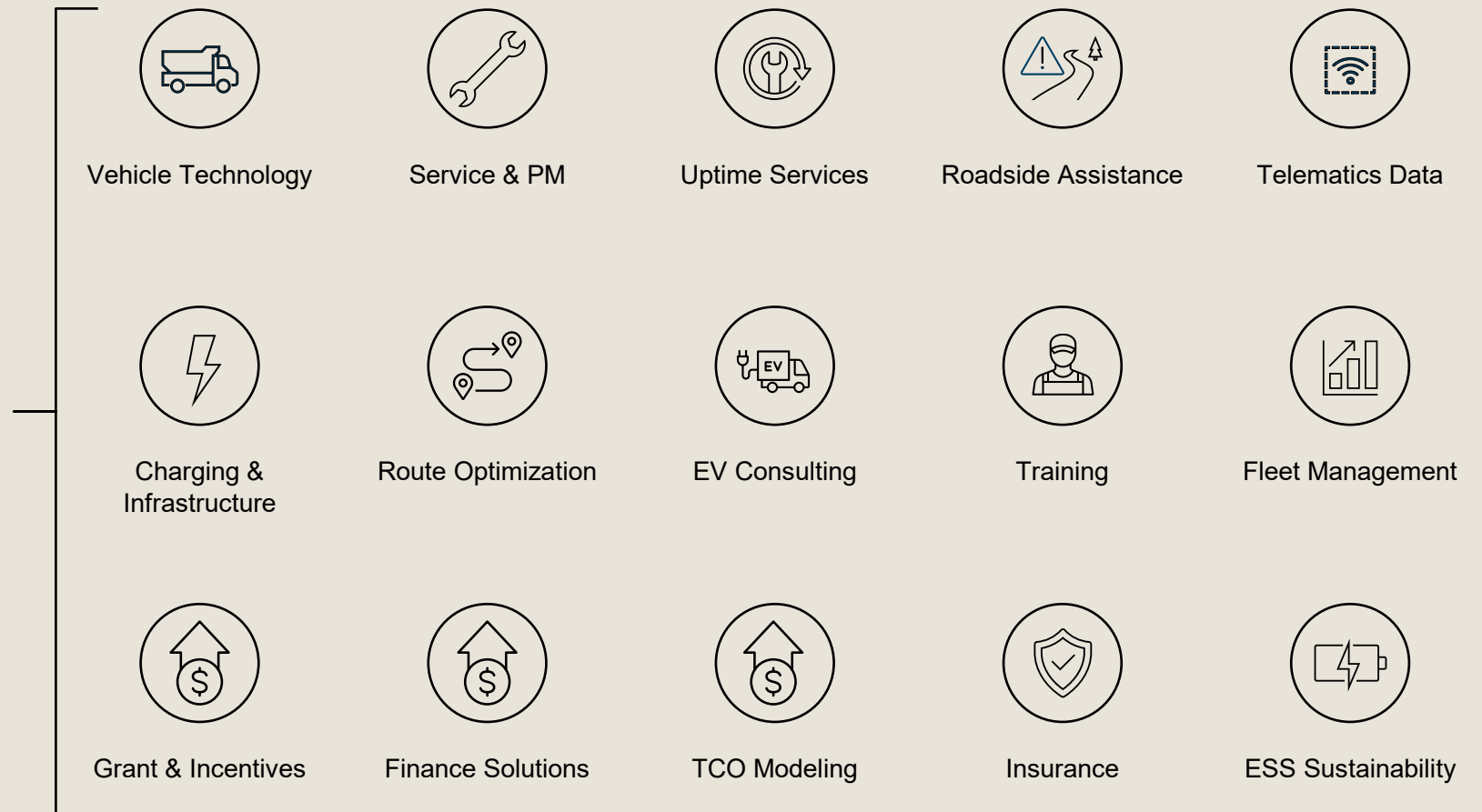
# Mack's E-Mobility Ecosystem

## We Can:

- ✓ Do it for you
- ✓ Do it with you

## Or we can guide you to:

- ✓ Do it on your own



# Energy Solutions Portfolio

Customized offering to provide Mack customers with a total solution for electrification:



# EV Charger Recommendations

| Equipment Description    | LR Electric | MD Electric |
|--------------------------|-------------|-------------|
| AC CHARGER               |             |             |
| ABB Terra AC Wallbox 80A |             | X           |
| Blink / Sema Connect 80A |             | X           |
| Clipper Creek CS-100     |             | X           |
| EVlink Pro AC 22kW       |             | X           |
| Garo* GLB+ 22kW          |             | X           |
| InCharge™ ICE 80A        |             | X           |
| IoTecha CCS-C80C         |             | X           |
| Siemens VersiCharge 80A  |             | X           |
| WattZilla® 80A Chargers  |             | X           |

- New charging options are continuously being evaluated
- Recommended list will be updated regularly

| Equipment Description      | LR Electric | MD Electric |
|----------------------------|-------------|-------------|
| DC CHARGER                 |             |             |
| ABB HVC 150C               | X           |             |
| ABB Terra 54-184           | X           | X           |
| ABB Terra DC Wallbox 24kW  |             | X           |
| ABB Terra HP 350           | X           |             |
| BTC Power 100–350kW        | X           | X           |
| ChargePoint® CPE250        | X           | X           |
| Delta HP350                | X           | X           |
| Freewire Boost Charger     | X           |             |
| Heliox 50kW Mobile         | X           | X           |
| Heliox Flex 180            | X           |             |
| InCharge™ ICE 60–180kW     | X           |             |
| Kempower 50kW Mobile       | X           |             |
| Power Electronics NB120    | X           |             |
| Rhombus DCVC 60kW & 125kW* | X           |             |
| Tellus TP5 60–360kW        | X           |             |
| Tritium™ RT175-S           | X           |             |
| Tritium™ RTM75             | X           | X           |
| Zerova DD 360kW            | X           |             |
| Zerova DS 90–180kW         | X           |             |

\*Uni-directional charging capabilities only at this time.

# Peace of mind. Backed by the Mack Ultra Service Contract.

Every Mack Electric Truck purchase or lease is accompanied by our most comprehensive 5- or 6-year, bumper-to-bumper protection plan to ensure your vision for E-Mobility is covered for the future.

## The Mack Ultra Service Contract includes:

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GuardDog® Connect, Mack's advanced uptime, telematics and connectivity services

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Coverage for all electrical control systems, powertrain, chassis, suspension, cab, steering systems and more

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Battery performance guarantee (80% state of health)

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All scheduled maintenance

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All preventative maintenance

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All repairs (excluding accident)

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24/7 roadside assistance

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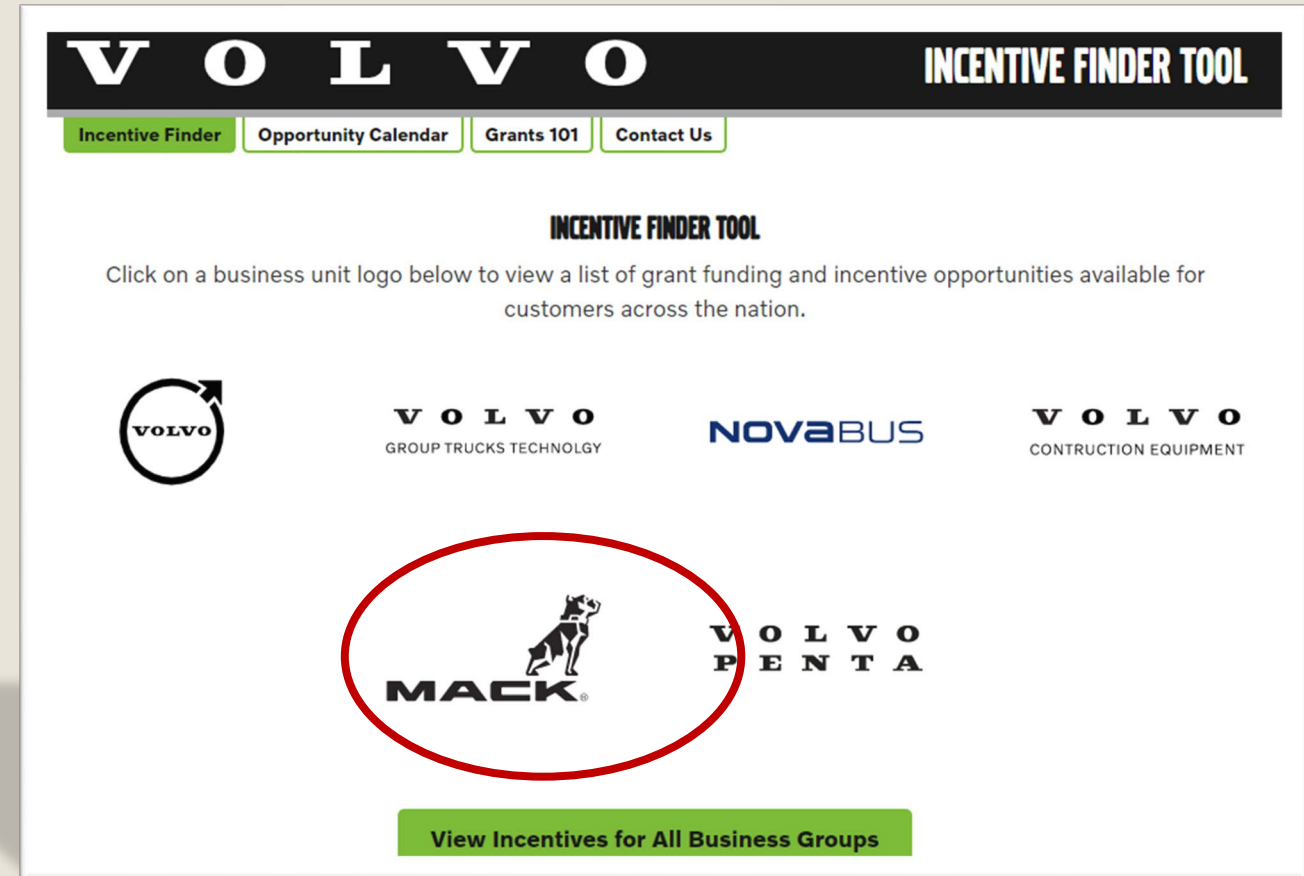
Service from Mack EV Certified Dealers

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# Incentive Finder Tool

- US funding opportunities + Canada
- Comprehensive data on each prospect including but not limited to
  - Amount of funding available
  - Program requirements
- Opportunity Calendars for quick view of programs
  - Closing in 30/60 days
  - Opening in 30 days

Incentive Finder Tool – Volvo Incentive Finder Tool (volvogroup.us)



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# Mack Financial Services for electric vehicles

## Mack ElectriFi

ElectriFi  
Loan/Lease

ElectriFi  
Infrastructure

ElectriFi  
Subscription  
(MDe)

# MACK



MACK.

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