Vermont Clean Cities Coalition

Granite State Clean Cities

MAINE CLEAN COMMUNITIES

Clean Cities Northern Tier Team Presents:
Webinar 2 in a series
on medium- & heavy-duty electric vehicles/technology/equipment

Electric Municipal & Commercial Vehicles: What's Here, What's Coming

September 16th | 10:30 am - 11:30 pm

https://vtccc.w3.uvm.edu/

Peggy O'Neill-Vivanco
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https://www.gpcog.org/195/Maine-Clean-Communities

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Greater Portland Council of Government
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National Network of Clean Cities Coalitions

- Nearly 100 Clean Cities coalitions with thousands of stakeholders, representing ~80% of U.S. population
- Three Clean Cities Coalitions in Northern tier of New England: Vermont, Granite State & Maine
- We foster economic, environmental & energy security of the US by working locally to advance affordable, domestic transportation fuels, energy efficient mobility systems, & other fuel-saving technologies and practices

Clean Cities Portfolio

Light-, Medium-, and Heavy-Duty Vehicles

Alternative and Renewable Fuels and Infrastructure

Idle Reduction Measures and Fuel Economy Improvements

New Mobility Choices and Emerging Transportation Technologies

What We Do

- ✓ Alternative Fuels, Vehicles & Equipment
- ✓ Fleet Fuel Efficiency & Emissions Reduction Efforts
- ✓ Connect fleets with fuel providers & industry partners
- ✓ Collect data and track project progress
- ✓ Provide Education & Outreach
- ✓ Identify funding and incentive opportunities
- ✓ Offer technical assistance

Diverse Stakeholders

POLL

1. Which of these medium-duty vehicles exist in your fleet?

- Cargo Vans
- Half-ton Pickup Trucks
- Three-quarter-ton Pickup Trucks
- Pick-up with a plow
- Transit Vans
- Other: (type in chat)

POLL

2. Which of these utility trucks exist in your fleet? (add any other vehicles in the chat)

- Bucket Trucks
- Street Sweeper
- Dump Trucks
- Plow Trucks
- Refuse Trucks
- Yard Trucks

Presenters

- ***Ford Motor Company***

Dan Mazurek, Northeast Government Sales Manager

- ***XL Fleet***

Ben Hartford, Northeast Sales Manager

- ***Lightning Motors***

Marcie Willard, Marketing Coordinator and Grants Specialist

- ***Motiv Power Systems***

Jeremy Hiler, Senior Manager – National Accounts

Ford Motor Company

Dan Mazurek, Northeast Government Sales Manager

Expanding the all-electric line-up to F-Series and Transit Van models!

Dan Mazurek
Ford Motor Company
Government Sales Manager

I call on the large Government Agencies from ME to MD and the dealers who bid on their contracts. I live in Philadelphia, and I have been with Ford for 24 years.

Shaking hands with Toby Keith in 2006

2022MY Advance Product Meeting

Electric Vehicles

Play To
Our Strengths

Build Iconic Brands,
Amplify Attributes

Leverage Scale
and Technology

Targeted BEV Use Cases: Light Duty Delivery, Service & Maintenance

2022MY Update

Van Customer EV Fit

Ideal “Use-Case” Characteristics

Planned and predictable routes

Frequent stops and high idle rates

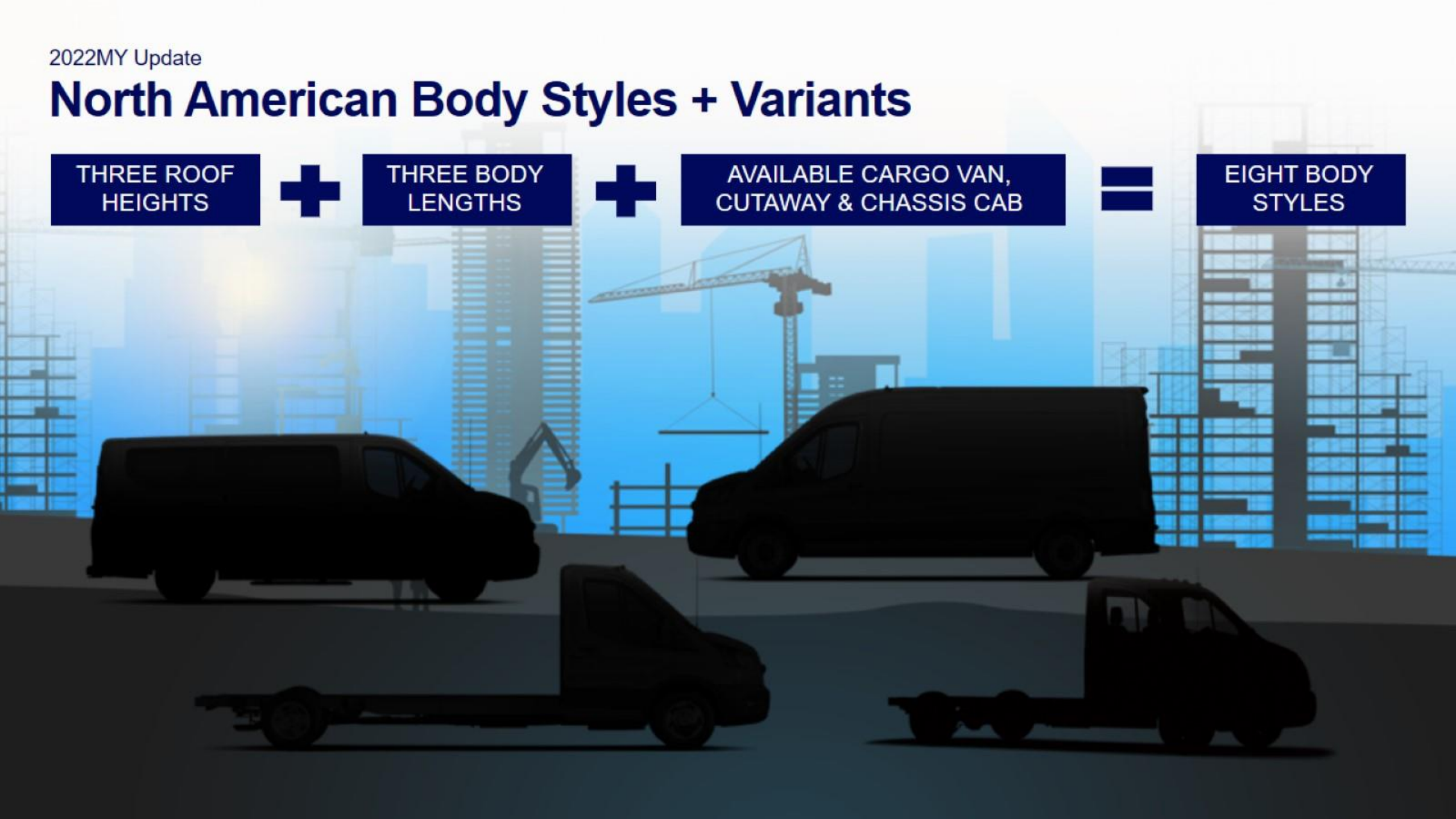
Travels <100 miles

Sufficient downtime (7+ hours) for level 2 charging

2022MY Update

North American Body Styles + Variants

THREE ROOF HEIGHTS + THREE BODY LENGTHS + AVAILABLE CARGO VAN, CUTAWAY & CHASSIS CAB = EIGHT BODY STYLES



2022MY Update

E-Transit Product Why Buys

Versatility

Range of configurations – cargo van, chassis cab or cutaway with three roof heights and three lengths

Purpose-Built Range

The average daily range of a commercial van in U.S. is 74 miles based on Ford telematics data and analysis of 30 million+ driven miles

Serviceability

Ford EV certified dealers - customer ready plus 8-year/100,000 mile for high voltage components on warranty coverage on E-Transit

Connectivity

Smartest Transit -SYNC® 4, connected and embedded navigation, Pre-conditioning, OTAs and 12-inch touch screen

2022MY Update

E-Transit

Purpose-Built Range

126 miles of estimated range

Uncompromised Capacity

Up to 487.3 cu.-ft. of cargo space*

Power to Get the Job Done

266 HP / 198kw of power

317 lb.-ft. of torque

3,800 lbs. max payload

*Inside the high roof, extended wheelbase variant

F-150 Lightning Pro
A Revolutionary Solution

Ford

A Better Truck While Keeping Things the Same Where It Matters

Ford

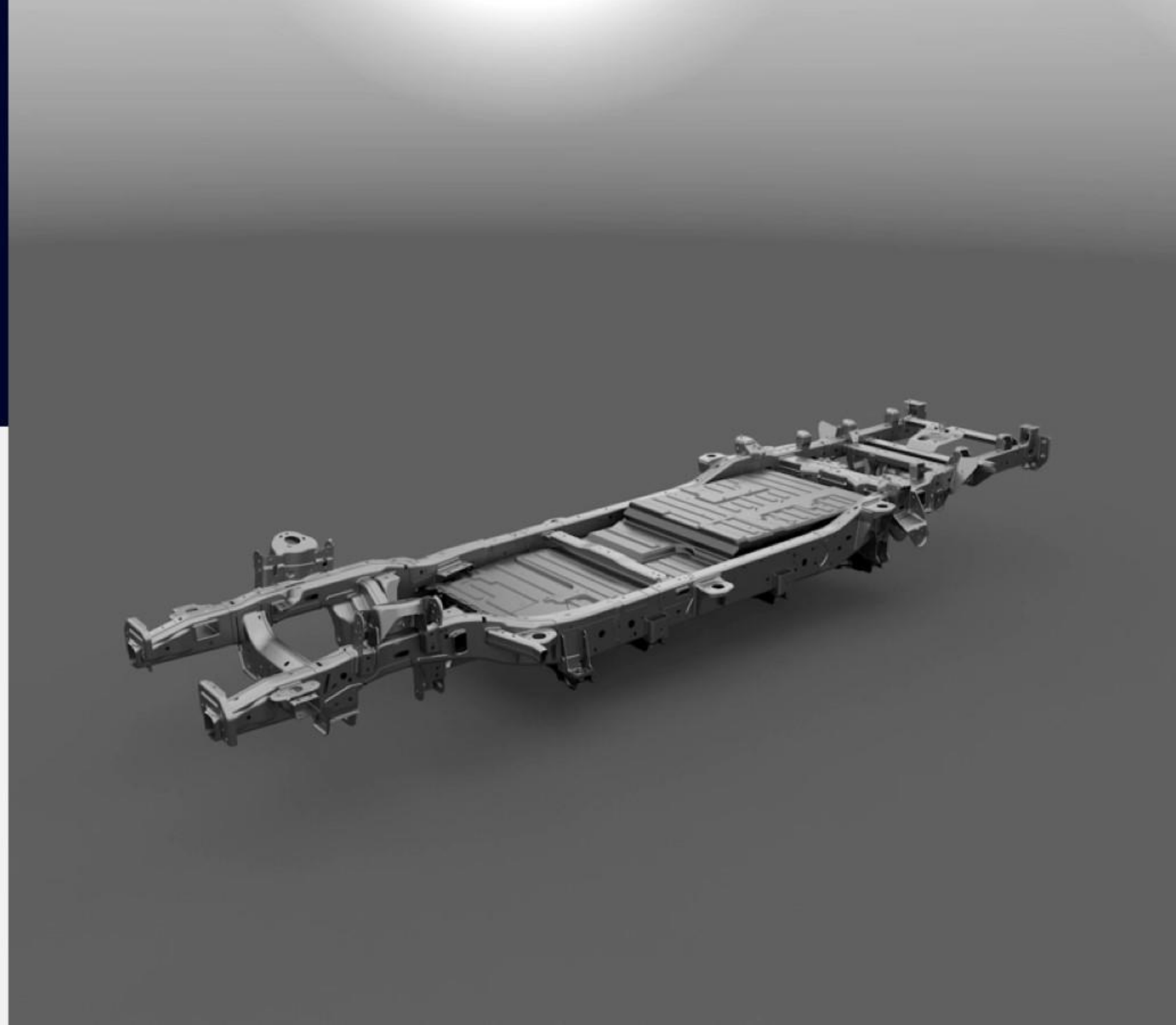
Unchanged Dimension and Mounting Points

Standard 4x4 with dual motors

230 Miles of Range

426 HP and 775 lb.-ft. of Torque

2,000 lbs. of Payload and 5,000 lbs. of Towing



Optional 4x4 Extended Range

300 Miles of Range

563 HP and 775 lb.-ft. of Torque

7,700 or 10,000 lbs. of Towing with Optional Max Trailer Tow Package

Payload 1,800 lbs.

Includes 80-Amp Charger

Power Open/Close Hood

Bumper Height Loading

Four 110V PowerPoints

Pro Power Onboard

2.4kW Standard

9.6kW Available

LEADING

Software Update Capabilities

Including End-to-End Updates That You Can Schedule for the Time That Is Most Convenient

LEADING

Power My Trip

PLANNING THE DAY

Power My Trip calculates the best route for the day based on available battery range, towing, hauling and payload needs.

Payload Expert

Up to 2,000 lbs. Payload Optimized for Both Front and Bed Loads with **NEW** Available Built-In Onboard Scales

E-Transit and F150 Lightning Pro Registration

Government agencies who register at no cost or obligation will be among the first notified and kept up-to-date on the latest product information and news regarding the 2022 Transit E and the F-150 Lightning. You will receive notifications when the order bank opens, making purchasing and leasing planning easier and more efficient.

Ford E Transit

To register and for more product information, please click on the following link: https://www.fleet.ford.com/showroom/commercial-trucks/e-transit/2022/?intcmp=hp-showroom-etransit-2022

Ford F-150 Lightning

To register and for more product information, please click on the following link: https://www.fleet.ford.com/showroom/trucks/f150/f150-lightning/2022/?intcmp=hp-showroom-f150-lightning

FORD F-150 LIGHTNING

CHARGING OPTIONS AND ESTIMATED CHARGE TIMES

Estimated charge times 15% to 100% at 240 volts[1]

Ford Mobile Charger
32-amp

Standard-Range Battery (targeted EPA-estimated range of 230 miles[2])
14 hours*

Extended-Range Battery (targeted EPA-estimated range of 300 miles[2])
19 hours*

32-amp portable AC charger runs on either a 120- or 240-volt AC wall outlet and is included in the purchase or lease of an F-150 Lightning.

*Charge time shown with 240-volt power connection.

Ford Connected Charge Station
48-amp

10 hours

13 hours

48-amp wall mount AC charger runs on a wired 240-volt AC circuit for faster Level 2 home, office or depot charging than the basic 32-amp Ford Mobile Charger.

Ford Charge Station Pro
80-amp

10 hours

8 hours

80-amp wall mount AC charger runs on a wired 240-volt AC circuit for optimal AC charging capability.
On the extended-range F-150 Lightning, it works with the truck's dual on-board chargers for 15% to 100% overnight charging in about 8 hours.

Electrify America DC Fast Charging Station
150-kW (15% to 80% charge)

44 minutes

41 minutes

Up to 150 kW for rapid charging on the road, the F-150 Lightning can access network of DC fast chargers that can add up to 41 miles of range in about 10 minutes on the standard range truck and up to 54 miles of range in about 10 minutes on the extended range truck.[4]

2022MY Update

Home Charging Options

Home charging is a convenient option for many vehicle operators, so Ford charging solutions make it easy to ensure the vehicle is charged and ready for work the next day.

- Mobile Charger **IS INCLUDED** with the E-Transit and compatible with 240V AND 120V Wall Outlets
- Fleet managers will have visibility on fleet home charging usage to enable driver reimbursement
- Fleets can be alerted if a vehicle isn't plugged in to help ensure it is ready for work the next day

Ford Connected Charge Station

~8 hours for full charge (0-100%)

Mobile Charger with 240V Wall Outlet

~11 hours for full charge (0-100%)

Mobile Charger with 120V Wall Outlet

1.7 miles of range per hour

(For limited use if a 240V solution unavailable)

2022MY APM Update

Ford EV Certified Dealer and N.A. Charging Network

16K+ Charging Stations

Including

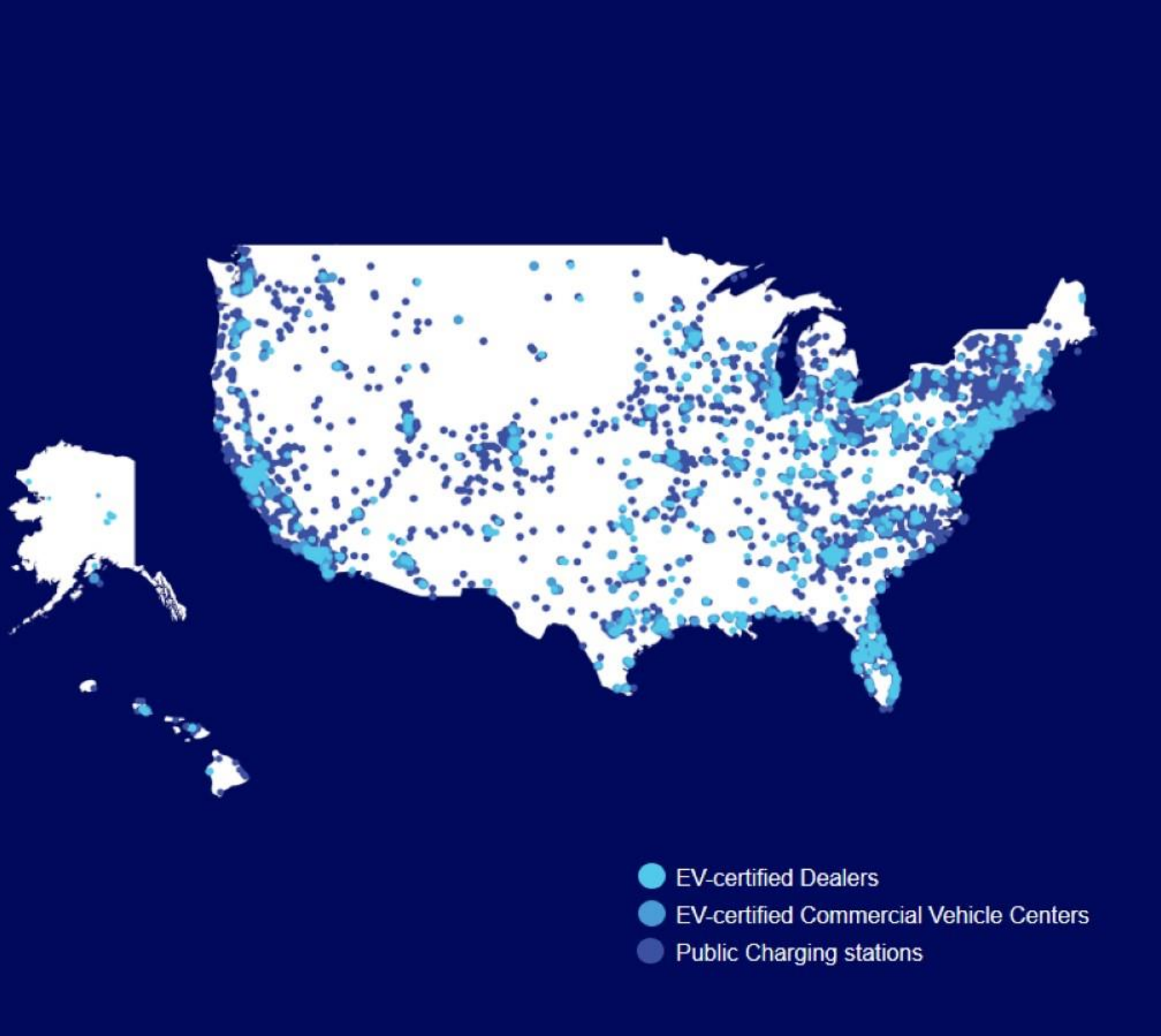
2.5K+ DC Fast Charge Sites

DC Fast Charge: 15-80% in ~34 minutes

Accessible | Convenient | Easy

No need to download multiple apps for different charging providers

Billing handled automatically and centrally for entire vehicle fleet



Minimum TCO

Up To 40% Savings On Scheduled Maintenance*

Minimum Maintenance = Maximum Uptime

Fewer Moving Parts
No Oil Changes or Transmission Flushes

**Average scheduled maintenance cost compared to a gas-powered 2020 Transit over 8 years/100,000 miles (whichever comes first). Scheduled maintenance costs based on recommended service schedule as published in the owner's manual. Analysis reflects Ford Motor Company's standard method for calculating scheduled maintenance cost and reflects data available in 2019 and 2020.*

Up To 50% Savings On Fueling Expenses*

Lower Rates = Higher Margins

On Average It Costs About Half To Fuel An Electric Vehicle vs. A Gas-Powered Vehicle

**SOURCE: US Department of Energy https://www.energy.gov/maps/egallon*

TCO Calculator

Hardware

Ford Mobile Charger

Specs

120V-240V Connector

~11 hours to full charge / 11 miles per hour

Convenient solution for charging anywhere you can access a three-prong wall outlet (120V or 240V)

Includes 20-foot cord

Additional Details

Primary Use Case(s): Overnight charge

Lower cost installations

Designed for portability + easy retrieval

Ford Connected Charge Station

Specs

208V-240V Connector

~8 hours to full charge / 15 miles per hour

Works with all EVs that use US standard charging connectors

Includes 20-foot cord

MSRP $799 | Financing options available

Additional Details

Primary Use Case(s): Mid-Day refill or overnight charge

Works with BEV connected features

WiFi and Bluetooth capable

Backed by 3-Year warranty

Installation by licensed electrician required

Over-The-Air Updates

Continuously Add New Features + Upgrades

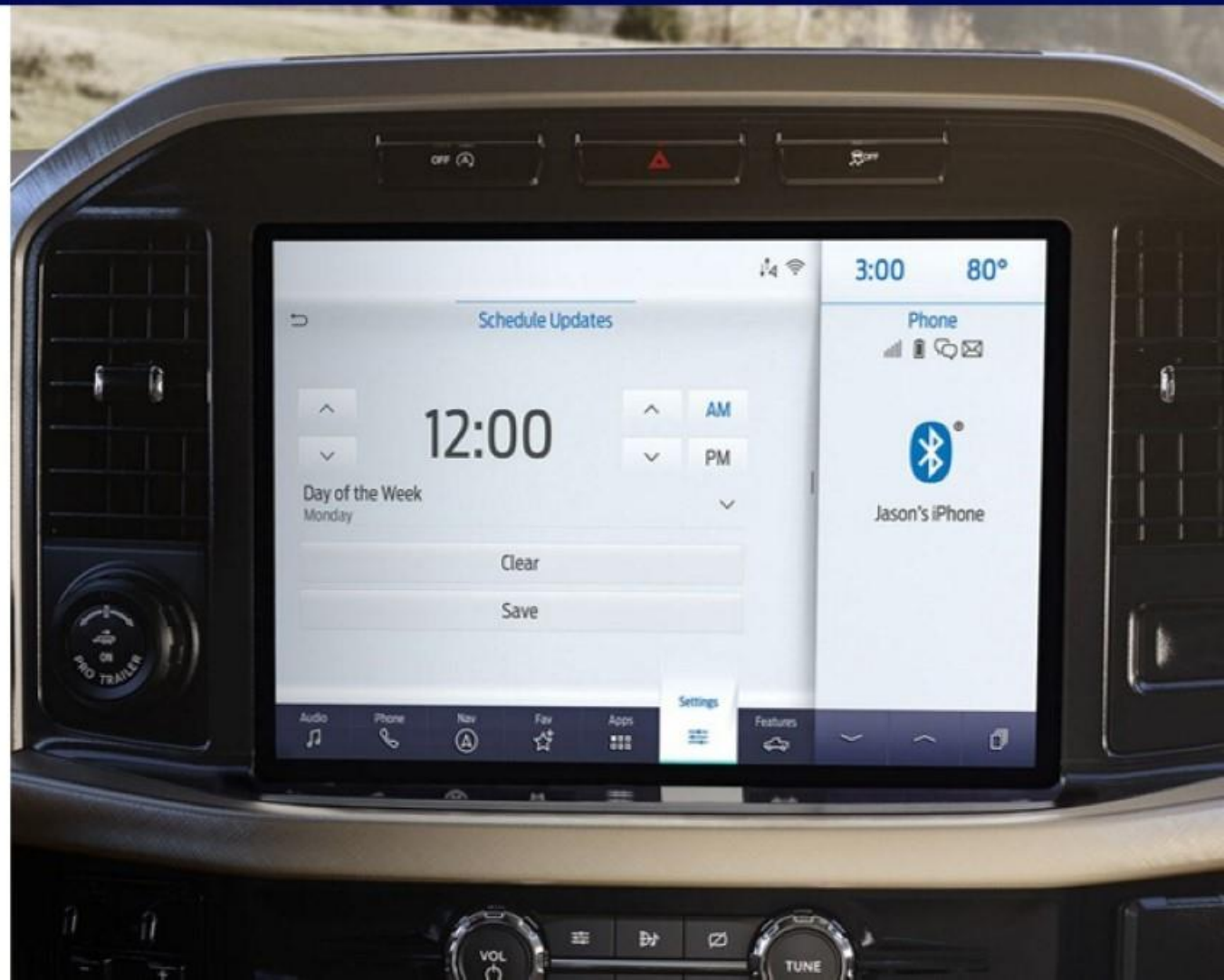
Wirelessly downloaded the latest innovations and software upgrades

Control Install Timing

Ability to schedule updates and make sure any downloads occur during the vehicle's downtime.

Reduce Trips to the Dealership

Reduce repair trips, improve performance and add new features — all without ever visiting the dealership.



Q & A

- Raise your hand to speak and we'll call on you
- Write your question in the chat

XL Fleet

Ben Hartford, Northeast Sales Manager

Fleet electrification solutions for Class 2-6 commercial and municipal vehicles!

Sustainability Starts Here

Introduction to XL Fleet

September 16, 2021

XLFleet™

Presenter

Ben Hartford,
Northeast Sales Manager

Ben Hartford has been at XL Fleet for 2.5 years. Ben has a strong background in sustainable solutions and holds a BA in Environmental Studies and Biology from Colby College. Prior to joining XL Fleet, he worked for Tesla as a Sales Advisor. Ben resides in Quincy, MA.

Fleet Electrification Leader

- Leading provider of vehicle electrification solutions for fleets in North America since 2009
- Publicly traded on NYSE (NYSE: XL)
- Hybrid and plug-in hybrid ship-thru upfits for commercial & municipal fleets
  - Installed by national upfit partners throughout North America
  - Approved by Ford, GM and Isuzu for installation; no impact to OEM factory warranties
- Charging infrastructure, energy storage and power solutions

The Fast Lane to Greener Fleets

- Immediate emissions improvements
  - XLH® 25% increase in MPG* = up to 20% reduction in emissions
  - XLP™ 50% increase in MPG* = up to 33% reduction in emissions
- Electrified trucks have more impact than sedans

Hybrid Truck
100,000 miles
Cuts CO2 by 37 metric tons

Hybrid Sedan
100,000 miles
Cuts CO2 by 16 metric tons

* Actual MPG may vary based on driver behavior, drive cycle and other factors.

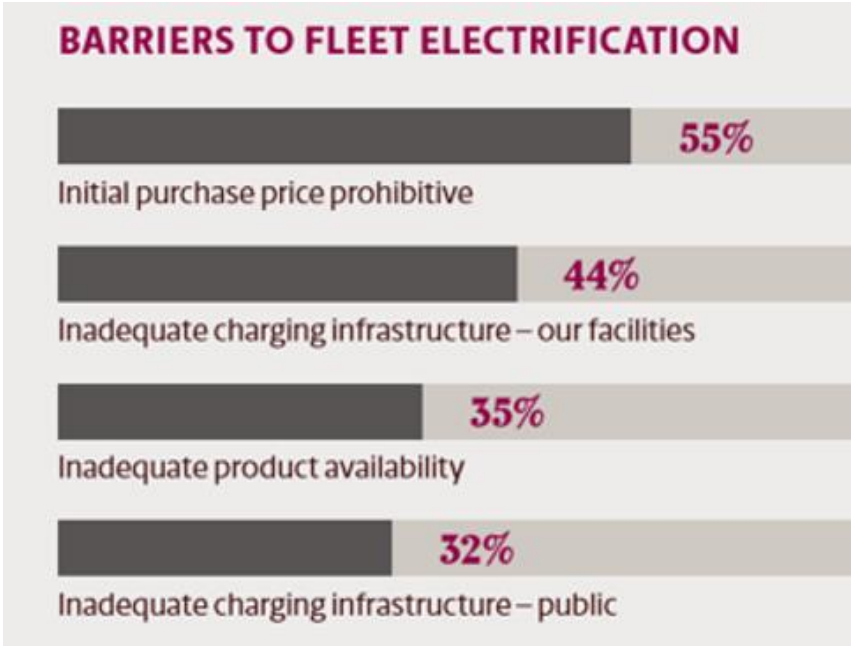
Core Products

Product Platforms	XLhybrid™	XLplug-in™
 **RAM 2500/3500 HD Pickup** (4x2 & 4x4 drivelines)	✓	
  **Ford F-250 Pickup** (4x2 & 4x4 drivelines)	✓	✓
  **Chevy Silverado / GMC Sierra** (2500 / 3500 HD)	✓	✓
 **Ford Transit** (Cargo and Passenger Vans)	✓	
 **Chevy Express / GMC Savana** (Cargo and Passenger Vans)	✓	
 **Ford E-350 / E-450** (Cutaways and Stripped Chassis)	✓	
  **Chevy and GMC 3500/4500** (Cutaways)	✓	✓
 **Ford F-550** (Cab Chassis)	✓	
 **Isuzu NPR-HD Truck**	✓	

*Results may vary

Electrification Without Limits

Sustainability Starts Here



HEV / PHEV Solutions

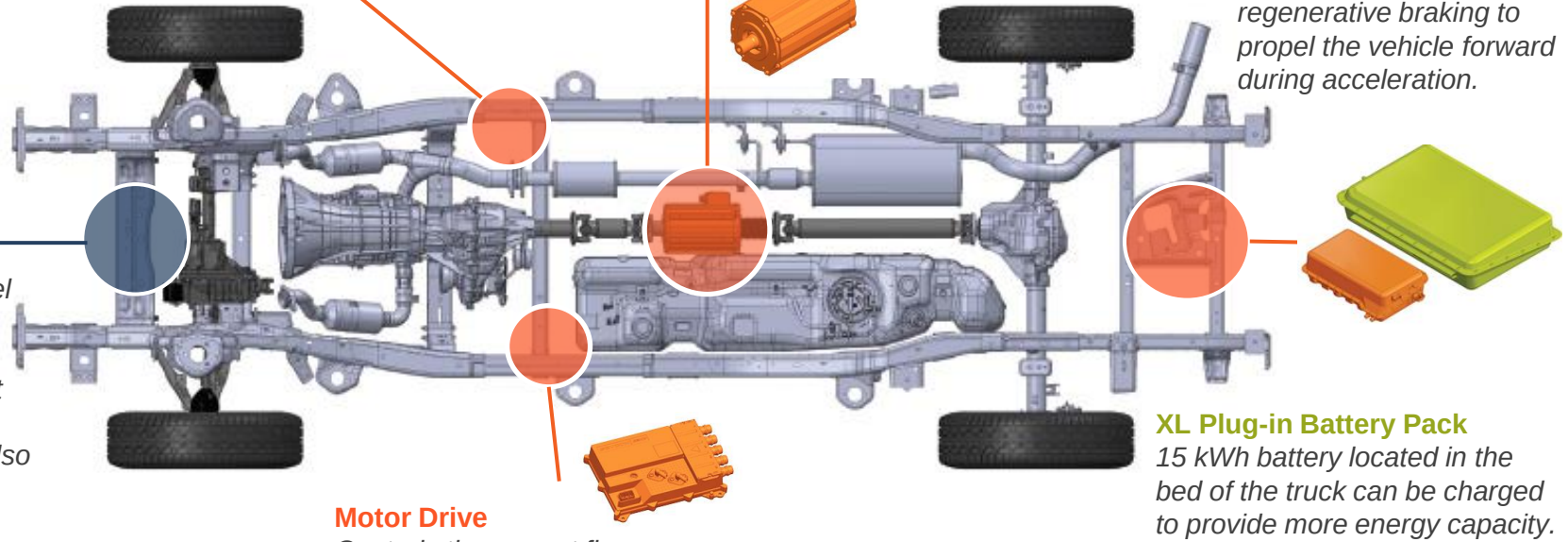
- ✓ ROI without incentives
- ✓ Preferred OEM vehicles
- ✓ Maintain service, delivery and fleet operations
- ✓ Preserve factory OEM warranty
- ✓ Eliminate range, infrastructure, drivability concerns

Simple, Sustainable Technology

XL Link
Data link to each vehicle enables remote commissioning, upgrades and reporting

Traction Motor
Regenerative braking and electrical assist to propel the vehicle and save fuel

XL Hybrid Battery Pack
Located under the body of the vehicle and stores energy captured during regenerative braking to propel the vehicle forward during acceleration.



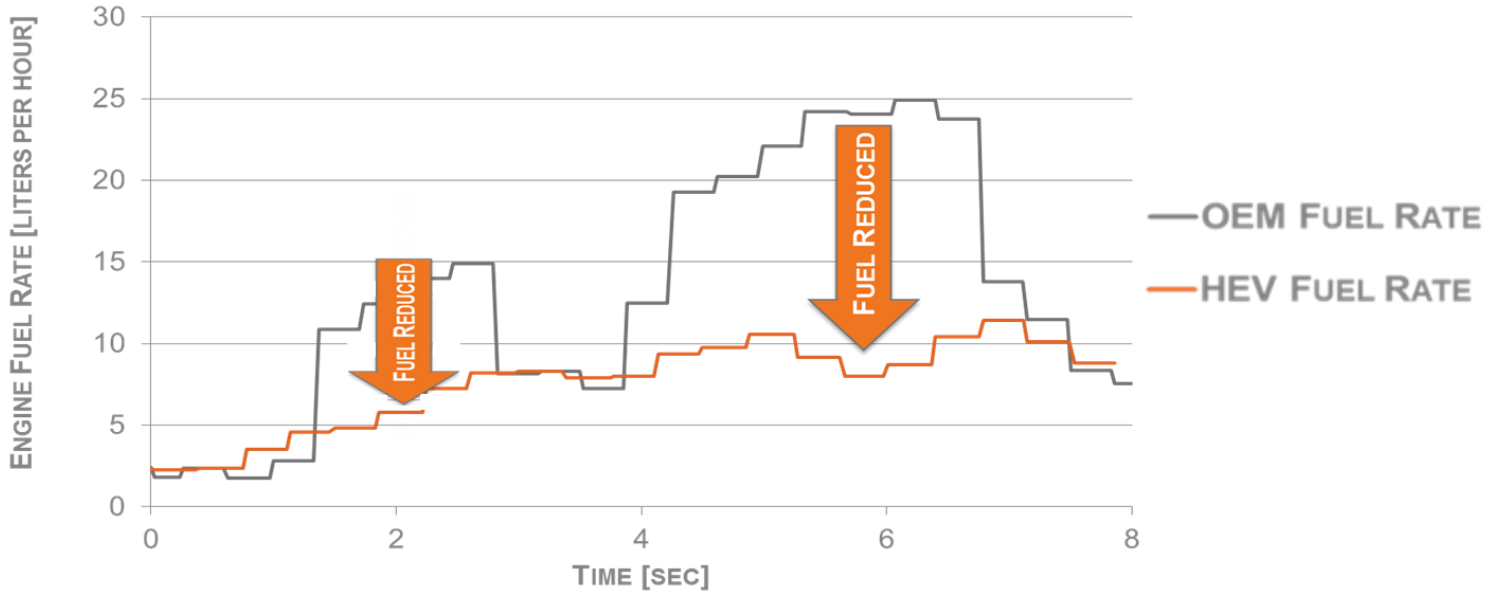
OEM Vehicle
OEM's engine, transmission, fuel and exhaust systems stay completely intact and unmodified. OEM warranty also stays intact

Motor Drive
Controls the current flow between the battery and electric traction motor

XL Plug-in Battery Pack
15 kWh battery located in the bed of the truck can be charged to provide more energy capacity.

Rear Bumper Plug Port

How XL Systems Save Fuel



- Hybrid and plug-in hybrid systems are ideally suited for drive cycles with frequent acceleration and deceleration events.
- During deceleration, XL systems provide regenerative braking, helping to slow the vehicle down while recharging the hybrid battery.
- XL systems reduces fuel consumption during acceleration by supplementing the internal combustion engine with added low-end torque.
- Result: up to *25%-50% MPG increase in miles driven per-gallon*.*

* Actual MPG may vary based on driver behavior, drive cycle and other factors.

Fleet-Ready Electrification

Cut emissions, not performance

- Sustainability value without the limitations (*cost, infrastructure, product availability*)
- Immediate results drive long-term demand
- Strong installation and service capacity
- Greater charging efficiencies; defer costly upgrades

Thank you!

Ben Hartford
Northeast Sales Manager
bhartford@xlfleet.com
(617) 648-8507

Q & A

- Raise your hand to speak and we'll call on you
- Write your question in the chat

POLL

3. Would you be interested in complementary route or data analysis?

- Complementary GPS-based Route Analysis and Data Analysis for Cargo Trucks – Endera
- Complementary Cloud-based Data Analysis for Pickups & Delivery Trucks – XLFleet
- Not interested

Lightning Motors

Marcie Willard, Marketing Coordinator and Grants Specialist

Powering familiar commercial vehicle platforms with their high-tech electric powertrains!

Clean Cities Webinar
September 16, 2021

The Lightning Facility

230,000 Sq Ft of Manufacturing Space

FULLY OPERATING PRODUCTION FACILITY

- In-house wiring and frame fabrication
- Supports Class 3 – Class 7 vehicles, and Mobile Charger production
- Complete Engineering on-site

Product Lineup

Repower **EXISTING** Vehicles

Convert **NEW** Vehicles

	Class 3	Class 4	Class 5	Class 6	Class 7/8	Class 8
TRUCKS	Ford Transit 350HD 	Ford E-450 	Ford F-59  Ford F-550 	GM 6500XD 		
BUSES	Ford Transit 350HD 	Ford E-450 	Ford F-550 		Transit Bus Repower 	Motor Coach 

CARB Certified | Enabled and supported by

Lightning Analytics

Accurate and Actionable Reports delivered by Fleet Experts

INCREASE RANGE

PREVENTATIVE MAINTENANCE

IMPROVE DRIVER BEHAVIOR

DEDICATED FLEET EXPERTS

NO SECURITY RISKS

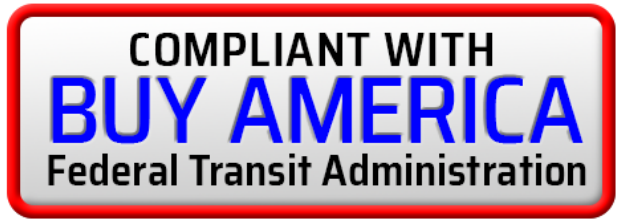
Lightning Energy

Comprehensive Charging solutions for any fleet's needs

- A full range of charging hardware available for purchase or lease
- Charging as a Service (CaaS) for organizations that prefer to outsource all charging infrastructure to support their fleet

Buy America and Buy American Compliant

Federal funding requirements for preferring US-manufactured goods.



This program relates to **federally-funded transit projects**. The requirement is that a minimum of 65% of the components of the product must be produced in the USA. Our analysis for our E-450 conversion shows 83.3% domestic-produced components (by cost).
https://www.transit.dot.gov/buyamerica
https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/Buy_America_Fact_Sheet.pdf

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This program relates to federal funding of **Airport Improvement Programs**. It asserts a preference for 100% American-sourced products; however, there are provisions for waivers if certain requirements are met. We meet the two requirements for one of the waiver provisions:

- At least 60% US-produced components
- Final assembly in the US

https://www.faa.gov/airports/aip/buy_american/

Future Technologies/Advancements

- Mobile Vehicle Charging- second life for batteries
- V2G/V2B/V2X- best case- school buses
- Battery Capacity- lighter weight and more efficient
- Autonomous EV’s
- Mobility on Demand- Community based Lyft type services

Cold Weather Case Study

Colorado Ski Area

- E-450 Passenger Shuttle
- 14 days
- 740 miles driven
- Total elevation gain was 33,039 ft
- Drivers enjoyed driving the shuttle
- Ride was smooth and quiet, good acceleration
- Auxiliary systems like HVAC pull from the battery and decrease overall range, 10-30%
- Range anxiety- would prefer a bigger range of miles

Ski Area Case Study continued

- Even though rear wheel- the weight of the batteries and vehicle helped with vehicle stability, “held to the road,” chains helpful
- Would need regenerative braking to be less aggressive- felt it affected traction
- Passengers loved that it was ZE
- Thermally managed batteries allow for operation in more extreme conditions- no issues with vehicle operation in sub-zero temps
- Need a smaller wheel-base for the routes

Ski Area Case Study continued

- This case study was a Demo- $0 lease
- Vehicles are capable of AC and DC charging but only AC was available through the company, limited the routes/range
- Gas/Diesel comparison- Purchase price is higher in the EV, year 7, cost parity is reached through reduced fuel/maintenance
- Lightning has a Service Network across the country
- Training is included
- Gas/Diesel - AWD and 4WD options
- 80% cost reduction in fuel, 60% maint.

Lightning eMotors- always a Resource for you

- Call: 1-970-730-2022
- Email: Marcie.Willard@lightningemotors.com
- Visit: 815 14th Street SW, Suite A100, Loveland, CO 80537

Q & A

- Raise your hand to speak and we'll call on you
- Write your question in the chat

Motiv Power Systems

Jeremy Hiler, Senior Manager – National Accounts

Manufacturer of all-electric chassis for medium-duty commercial vehicles

CLEAN CITIES WEBINAR:
ELECTRIC MUNICIPAL AND COMMERCIAL VEHICLES: WHAT'S HERE, WHAT'S COMING?

JEREMY HILER

Senior Manager – National Sales
Motiv Power Systems
jeremy.hiler@motivps.com

Jeremy Hiler came to Motiv from a steel processing back ground where he sold to Tier 1 - 3 OEM's, hardware; and service centers. He has been with Motiv for 2.5 years where he has served as Partner Relationship Manager; Eastern Regional Manager; and most currently as the Senior Manager - National Accounts."

MOTIV POWER SYSTEMS

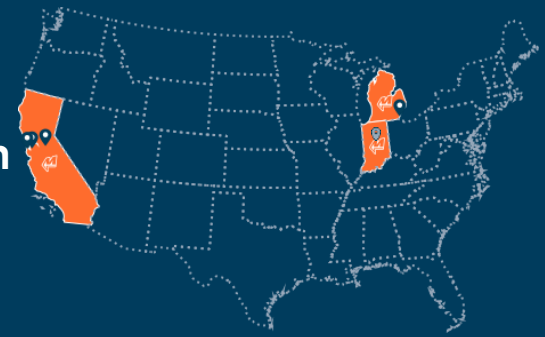
YOUR PATHWAY TO ELECTRIFICATION

COMPLETE ENERGY SOLUTION

Electrification beyond vehicles, helping you build the depot of the future

USA OPERATIONS

Corporate HQ plus 2 locations in California, with chassis electrification in Indiana and Michigan



#1 PARTNERS

Final Stage vehicle manufacturing by US based industry-leading truck & bus builders

5TH GEN TECH

Mature and proven technology featured in >120 vehicles with >1.3 million miles in the USA

MEETING EV NEEDS FOR MEDIUM DUTY TRUCK & BUS FLEETS

PASSENGER CARS
high-volume/model
low configurability

MEDIUM DUTY
low-volume/model
high configurability

CLASS 8 / HEAVY DUTY
medium-volume/model
low configurability

E-450 CHASSIS
(Class 4)

Step Van

Box Truck

Work Truck

Shuttle Bus

Type A
School Bus

F-59 CHASSIS
(Class 5-6)

Step Van

Specialty Vehicle

F-53 CHASSIS
(Class 6)

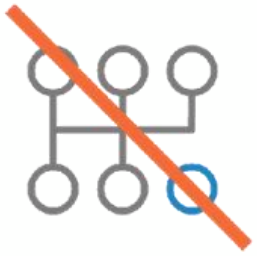
Specialty Vehicle

Trolley

WHY GO ELECTRIC?

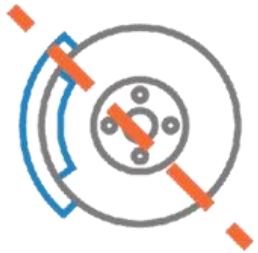
When switching to **ALL-ELECTRIC**, you not only save the environment, but you also save on recurring fuel, maintenance, and operation costs.

ELIMINATE
GASOLINE



ELIMINATE
TRANSMISSION SERVICING

ELIMINATE
OIL CHANGES

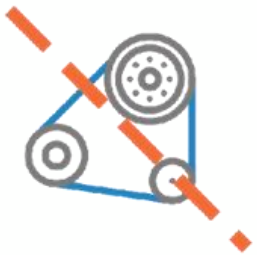


REDUCE
BRAKE WEAR

ELIMINATE
EXHAUST COMPONENTS

ELIMINATE
EMISSIONS TESTING

ELIMINATE
AIR FILTERS



REDUCE
BELTS

ELIMINATE
VACUUM LINES

COMMITTED TO YOUR SUCCESS

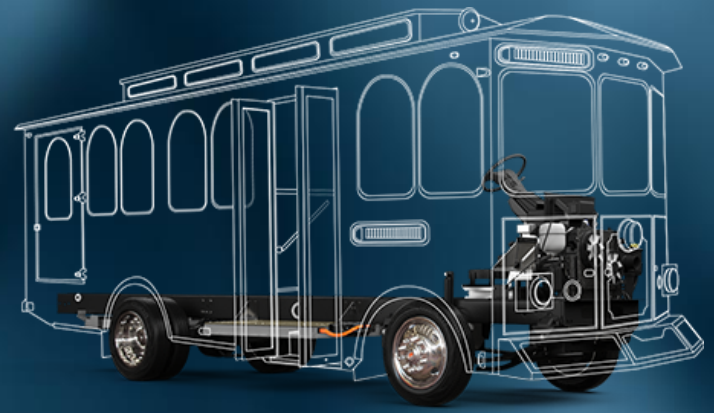
ELECTRIC POWERED INTELLIGENT CHASSIS (EPIC)

EPIC E-450

- 14,500 lbs GVWR
- 127 kWh
- 80 - 120 real-world miles

EPIC F-59

- 22,000 lbs GVWR
- 106 or 127 kWh
- 60 - 120 real-world miles



EPIC F-53

- 26,000 lbs GVWR
- 127 kWh
- 80 - 120 real-world miles

CASE STUDIES

ARAMARK/AMERIPRIDE

- 31 step vans deployed across 5 depots
- > 390,000 miles, > 98% uptime
- 50 additional trucks ordered in 2020

GOOGLE/MOUNTAIN VIEW

- 6 shuttles deployed in 2015-16
- > 515,000 miles, high customer satisfaction even though early generation deployment

TYPE A SCHOOL BUSES

- 22 buses deployed across school districts in CA, CT, AZ, and NY
- > 140,000 miles, > 97% uptime

TYPE C SCHOOL BUSES

- 21 buses deployed across 12 school districts across CA
- > 115,000 miles, > 97% uptime

BIMBO BAKERIES

- 5 step vans deployed in 2019-20
- > 27,000 miles, 100% uptime
- 23 trucks currently in production, and 100 trucks ordered for 2021 deployments

USPS

- 7 step vans deployed in 2019
- > 39,000 miles, > 99% uptime

Case Study

PUROLATOR DELIVERY VANS

CHASSIS

- Built on EPIC F-59 with 127 kWh battery energy capacity

FLEET

- 5 step vans deployed in 2021

PROOF OF PERFORMANCE

- First all-electric courier fleet in Canada
- Recipient of Advanced Clean Transportation Fleet Award in the carrier category, recognizing fleet operators who show leadership in clean transportation to achieve sustainability in their operations
- Featured in NACFE and RMI's Run on Less – Electric
- > 11,000 miles, 98% uptime
- > 10 metric tons of tailpipe emissions reduced

Case Study

BIMBO BAKERIES DELIVERY VANS

CHASSIS

- Built on EPIC F-59 with 106 kWh

FLEET

- 5 step vans deployed in 2019-2020
- 23 trucks in currently in production
- 100 additional trucks ordered for 2021 deployment

PROOF OF PERFORMANCE

- Motiv sourced local electrician to evaluate available facility power, conducted detailed route analysis, and confirmed EV fit
- Fleet able to avoid infrastructure upgrade "right sizing" 12 kW charging
- Positive feedback from drivers, especially enjoying "single pedal driving"
- > 27,000 miles, 100% uptime
- > 24 metric tons of tailpipe emissions reduced

8 KEY CONSIDERATIONS FOR GOING ELECTRIC

PLANNING: CHARGING INFRASTRUCTURE

1. Plan for infrastructure in tandem with your vehicle purchase. Do not wait until there are only weeks before deployment.
2. Talk to your electric vehicle OEM, power utility, and local Clean Cities Coalition about infrastructure funding programs.
3. Learn about electric vehicle charging and infrastructure requirements.

RANGE

Real-world range may be 75 to 125% of Motiv's published range guidelines
Range varies primarily due to the following:

- HVAC usage
- Route profile (stop and go neighborhood routes vs highway)
- Driver behavior (regen, acceleration etc.)

Motiv provides free driver training upon deployment to help maximize range, improve fleet efficiency, and promote driver satisfaction

CHARGING CONNECTORS

- **Level 2 Charging:**
  J1772-2009 (AKA J-plug) connector. Our onboard charger currently accepts and distributes up to **15 kW** input power from charge station.

- **Level 3 (DC Fast) charging:**
  CCS1 "combo" connector and can accept & distribute **50 kW** straight to the vehicle's battery packs!

THANK YOU

JEREMY HILER

Senior Manager – National Sales

Motiv Power Systems

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Q & A

- Raise your hand to speak and we'll call on you
- Write your question in the chat

Poll

4. Which of these medium-duty electric vehicles would you be interested in for your fleet?

- Electric Cargo Vans
- Electric Delivery Trucks
- Electric Ford F-150 Lightning Pickup Trucks
- Electric Ford E-Transit Cargo Vans
- Other: (type in chat)

Poll

5. Which of these Plug-in Hybrid electric vehicles would you be interested in for your fleet?

- Plug-in Hybrid Electric Ford F-150 Pickup Trucks
- Plug-in Hybrid Electric Ford F-250 Pickup Trucks (can add a plow)
- Plug-in Hybrid Electric Chevy Silverado / GMC Sierra 2500/3500 HD (can add a plow)
- Plug-in Hybrid Electric Chevy & GMC 3500/4500 Cutaways
- Other: (type in chat)

Upcoming Webinars and Demonstrations

- **Electric Street Sweeper Demos are in-person and run 11 am – 2 pm:**
  - **Tuesday, September 21St South Burlington DPW, 104 Landfill Road, South Burlington, VT**
  - **Thursday, September 23rd Kittery Community Center, 120 Rogers Road, Kittery, ME**
  - **Monday, September 27th Lebanon City Hall, 52 North Park Street, Lebanon, NH**

- **Webinar #3: Heavy Duty Solutions, September 30th 10:30 – 11:30 am ET**
  - **Lion Electric**
  - **Endera**
  - **Global**
  - **Orange EV**

- **Webinar #4: Electric Transit and School Buses, October 21st 10:30 – 12:00 am ET**

POLL

6. We are developing multiple day demonstration opportunities for the late fall 2021 and early 2022. From the list of potential opportunities, please select the vehicle/equipment that you would be open to testing

- Electric E-Transit Commercial Van - Ford Motor Company
- Electric E-450 Cargo Truck (L Series delivery truck) – Endera
- Electric Transit Cargo Van - Lightning eMotors
- Electric Yard Trucks - Orange EV
- Plug-in Hybrid Electric GMC Sierra 3500 HD (with plow hookup) - XL Fleet

EPA DERA State Grant Programs & VW Funding

https://www.epa.gov/dera/state

Typically opens in the Fall – projects completed in ~ 1 year

New Hampshire State Clean Diesel Grant Program (supplemented with VW funds):

https://www.des.nh.gov/business-and-community/loans-and-grants/dera

Vermont Diesel Emissions Reduction Grants Program:

https://dec.vermont.gov/air-quality/mobile-sources/diesel-emissions/vt-diesel-grant

Maine's Clean Diesel Program: Maine Department of Environmental Protection

https://www1.maine.gov/dep/air/mobile/cleandiesel.html

- Local, State & regional agencies or departments
- Businesses, institutions & nonprofit organizations operating in state

Up to 45% funding for eligible diesel vehicle/equipment replacements with electric!

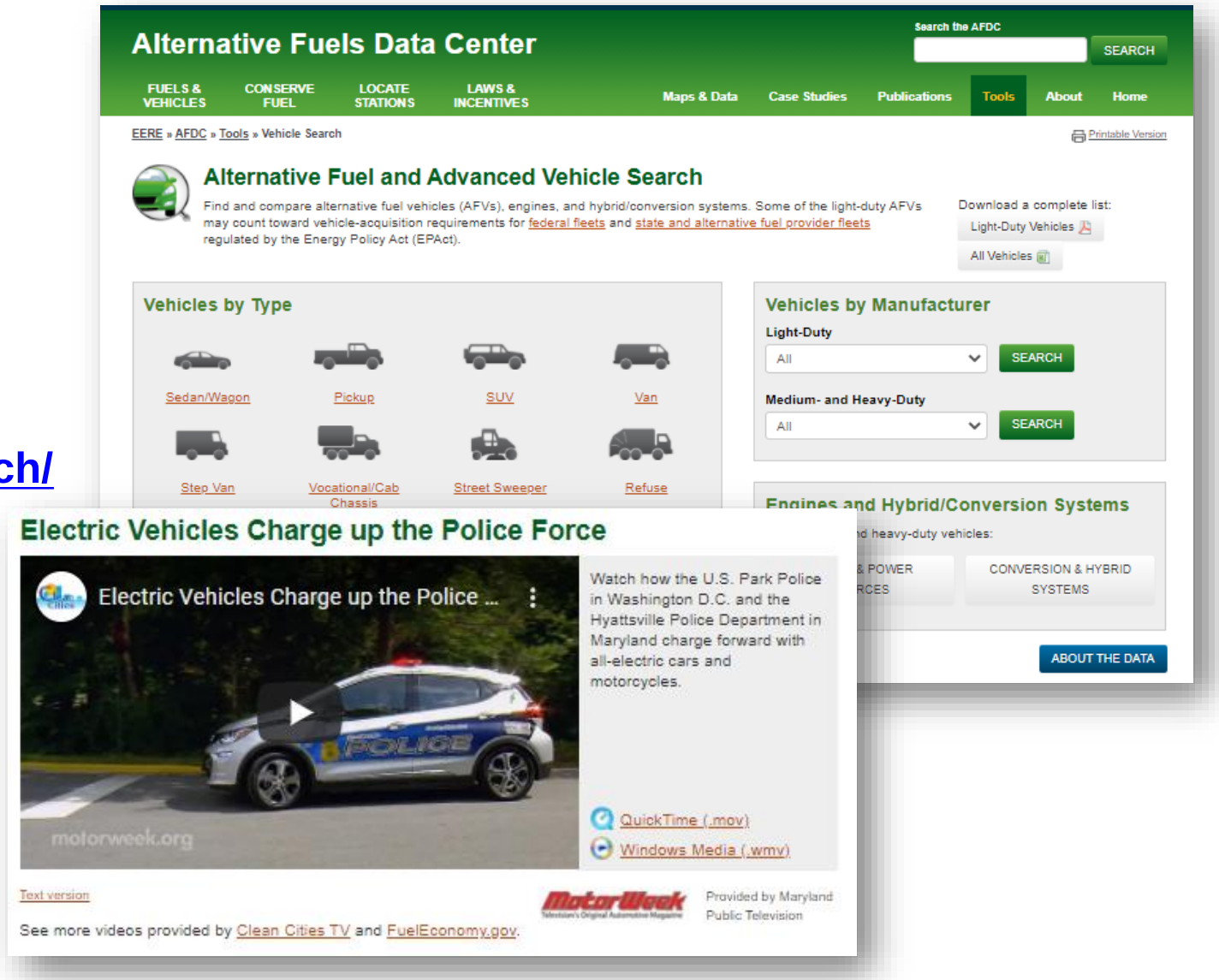
Plus no engine model year restrictions!

Eligible costs for battery electric powered vehicle/engine/equipment replacement projects can include the purchase and installation of one charging unit per vehicle!

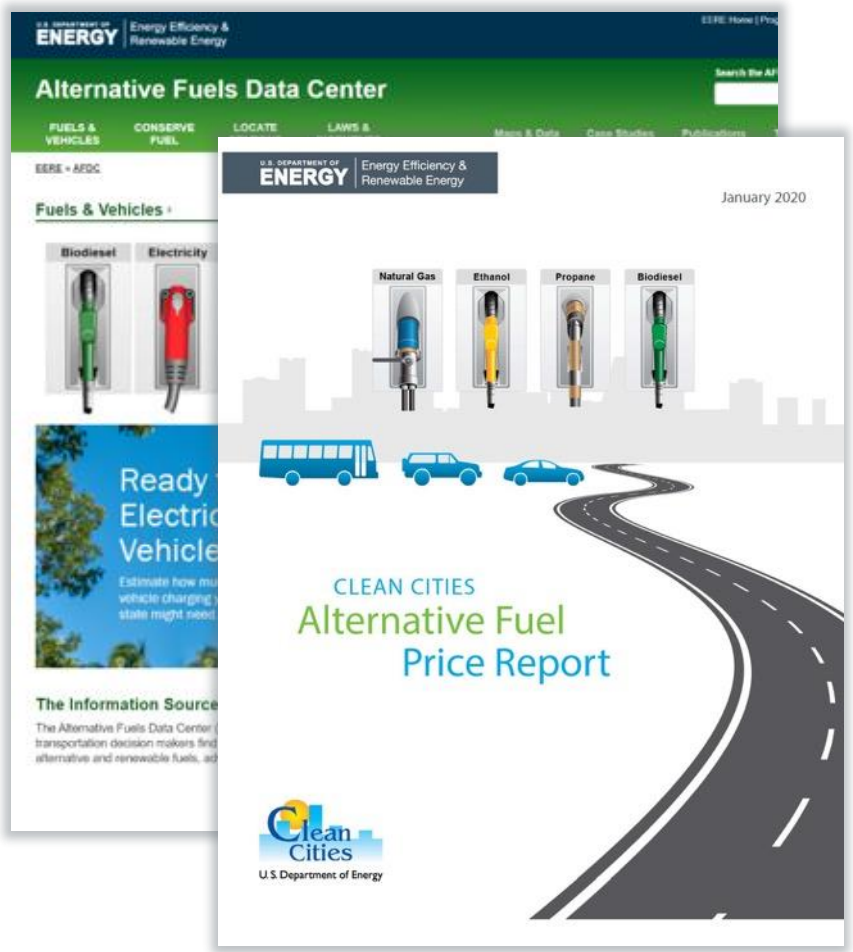
Apply in advance of purchase!

References and Resources

- AFDC Laws & Incentives:
  - https://afdc.energy.gov/
- AFDC Case Studies:
  - https://afdc.energy.gov/case/
- AFDC Vehicle Search Tool:
  - https://afdc.energy.gov/vehicles/search/
- AFLEET – Calculate Cost of Ownership:
  - https://greet.es.anl.gov/afleet



Information & Education:



afdc.energy.gov

Technical Assistance:

TECHNICAL RESPONSE SERVICE

Technical Response Service

- **First-level** resource for stakeholders
- Research and respond to general inquiries
- Help with challenging questions
- Education for legislators and government officials.

Tiger Teams

- **Second-level** resource for coordinators and stakeholders
- Expert technical problem-solving to overcome obstacles
- Assistance on barriers that challenge local resources
- Help at any point in the project/product life cycle (concept, development, execution, operation/maintenance, closure)

Thank you!

Connect with your local Clean Cities Coalition for more information!

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