



LIGHTNING  
eMOTORS

US DOE H2@ Airports Workshop

November 2020



# What We Do

We provide complete electrification solutions for urban commercial fleets



(Direct Sales)

## COMMERCIAL ZEVs

- Manufacture complete vehicles: Class 3 – 7 trucks & buses
- Offering both Battery (BEV) and Fuel Cell (FCEV)
- Highest up-time backed by supplier parts and service
- We sell powertrains to strategic partner

## ANALYTICS

- Actionable fleet intelligence
- Unique Big Data on drive cycles
- Artificial intelligence optimization



(Energy-as-a-Service)

## CHARGING

- Complete charging solutions
- Patented mobile charging



(EV-as-a-Service)

## FINANCING

- Support financing to overcome higher upfront costs
- Financing partner in place – Generate Capital



GENERATECAPITAL



# FULLY OPERATING PRODUCTION FACILITY

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

# ELECTRIC POWERTRAINS FOR CLASS 3-8 VEHICLES

Repower EXISTING Vehicles

Convert NEW Vehicles

	Class 3	Class 4	Class 5	Class 6	Class 7/8	Class 8
TRUCKS	<p>Ford Transit 350HD</p> 	<p>Ford E-450</p> 	<p>Ford F-59</p>  <p>Ford F-550</p> 	<p>GM 6500XD</p>  	<p>FCEV in partnership with Plug Power</p>	
BUSES	<p>Ford Transit 350HD</p> 	<p>Ford E-450</p> 	<p>Ford F-550</p> 	<p>Transit Bus Repower</p> 	<p>Motor Coach</p> 	



CARB Certified

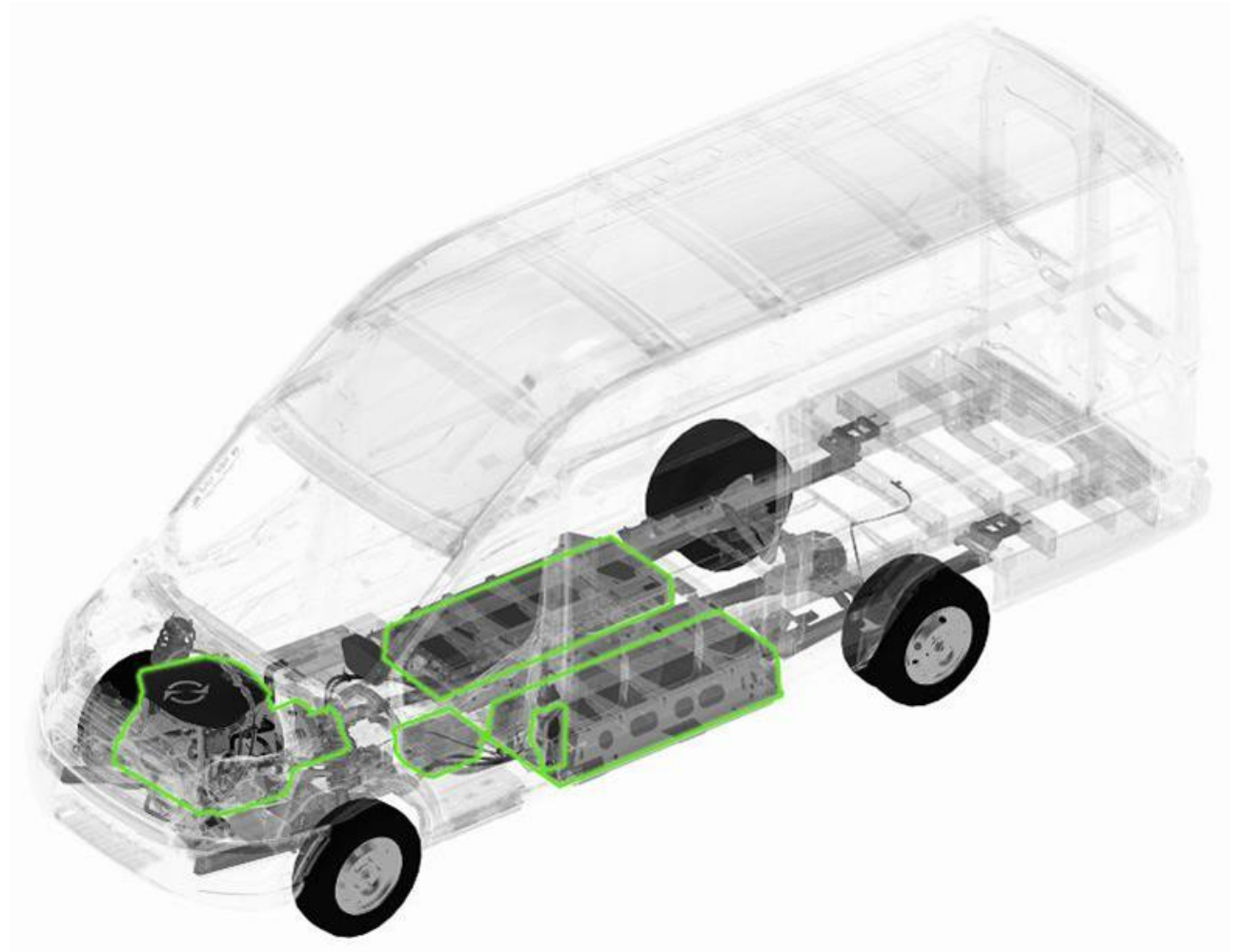
Enabled and supported by



and their dealer networks

# BEV/FCEV Synergies

- Electrified propulsion and accessories already in place
- Traction battery current capacity assists in reducing fuel cell dynamic requirements
- Vehicle level control system enables BEV/FCEV operation
- BEV traction battery commitment facilitates vehicle movement for short distances for fueling or maintenance needs



# Strong Global Secular Trends

## Regulation



- Zero Emission Zones: **30+ cities** worldwide led by London and Santa Monica
- Commercial vehicles in California:
  - By 2023: **100%** zero emissions for new airport shuttle buses
  - By 2029 (staged): **100%** zero emission public transit authorities
  - Advanced Clean Truck Law: **100%** zero emission trucks by 2045

## Corporate Mandates



- Zero emissions targets at **major corporates across industries** including logistics, eCommerce, consumer goods and technology



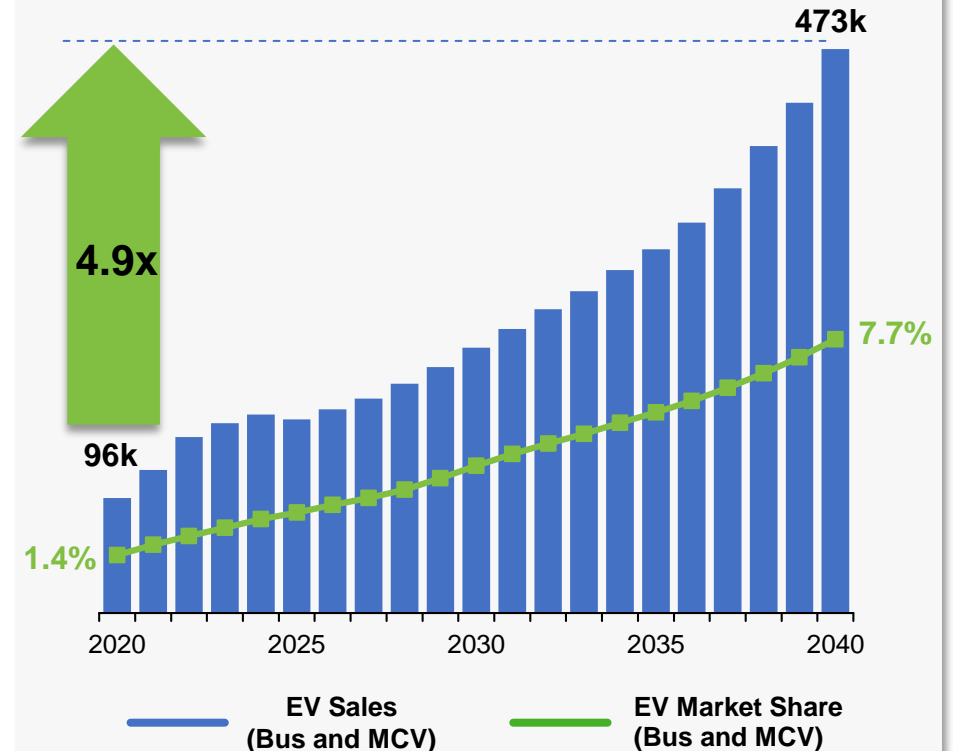
## Grants



- Currently \$1bn** per year in State and Federal grants
- Industry now at the inflection point of reaching **lower TCO than ICE without grants**

## Global Commercial EV Sales (1)

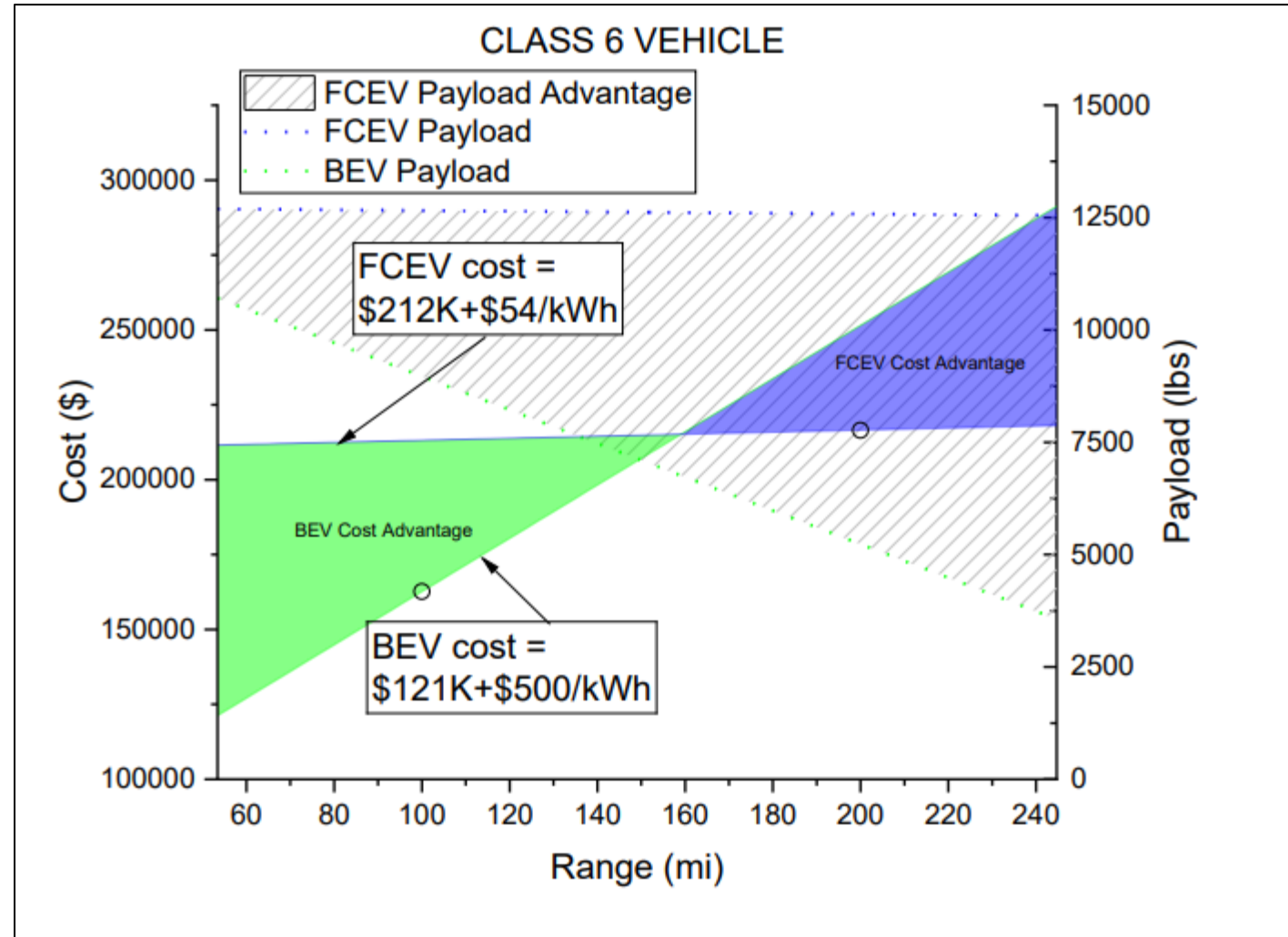
(Units in thousands)



(1) Source: BloombergNEF EVO Report 2020. EV includes BEV (battery electric) and FCV (fuel cell) buses and medium commercial vehicles (MCV).

# FCEV Benefits

- Improved Operating Range
- Improved Payload
- Improved Availability (based on +12 hours of Operation)
- Improved TCO for longer range options



# FCEV Recommendations

- **Increase leverage on the ZEV regulatory front to incent more FCEV applications (currently Class 8 only)**
- **Utilize BEV platforms that are already in production to facilitate/accelerate mobile operations for FCEV**
- **Change ZEV mandates for urban areas and major cities to exclude passenger cars as a means of fulfilling ZEV commitments.**