



Unique Electric Solutions



Business Overview | What We Do

Technology Focus

Electric Conversion Kits: Optimized for urban delivery trucks and school buses

Manufacturing all-electric and hybrid electric propulsion systems

Advanced motors, leading edge batteries, innovative controls, power electronics

Market Traction

Engaged with major U.S. fleets on sponsored development and demo programs for
Package Delivery and urban school buses

Supply Chain

Contractual Tier 1 partners and suppliers



Experience | Skills to Succeed

Seasoned Management

Each over 25 years of EV/HEV experience in passenger, truck and bus applications

Drivetrain Productization

Expert design and manufacture of propulsion systems, electrical and thermal
battery management, controls and power electronics

Mechanical Design

Chassis structure, design analysis and manufacturing

Electrical Design LV/HV

Electrical distribution system design, testing and manufacturing (high/low voltage)

Energy Storage Design

Complete battery energy management and storage design, testing and manufacturing

Field Support

Partnering with established major Tier 1 installation and support companies



Product Focus | Conversion Kits

Customer

- UPS - \$1.7M 12 vehicle order in hand

System Capabilities Targeted to Customer Specific Routes

- Baseline *uniqueEV™* kit accepts any energy storage type
 - Short Range "Micro Urban" product – Pb-Acid and Li-Ion options
 - Mid Range "Urban" product - Li-Ion
 - Long Range "Hydrogen range extended" product with Fuel Cell

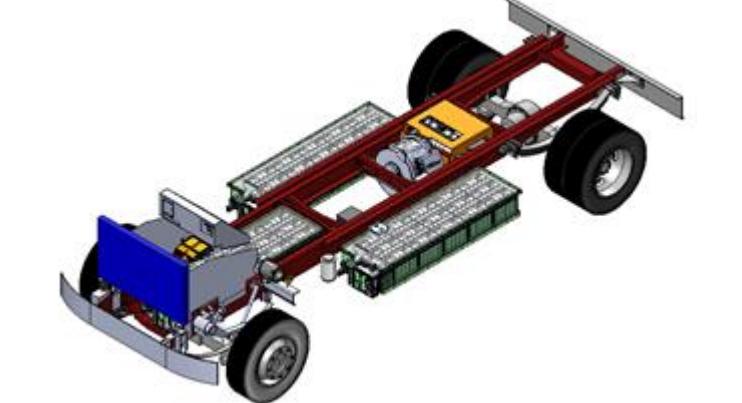
Near-term Deployment

- Battery EV's in NYC in Q2 2019 (Demo in NYC now)
- Fuel Cell HEV in CA starting in Q2 2019 (Demo in TX now)
- Battery EV in CA starting in Q4 2019

Sponsors \$4M total (non-dilutive) 18 additional vehicles

- US Department of Energy (U.S. DOE)
- New York State Energy Research Authority (NYSERDA)
- South Coast Air Quality Management District (SCAQMD)

Design



Manufacture



Test & Deploy



uniqueEV™ Architecture

Base Platform

- Easily adapted to desired new or retrofit vehicles
- Completed “Base EV” Design for Class 5-7 vehicles



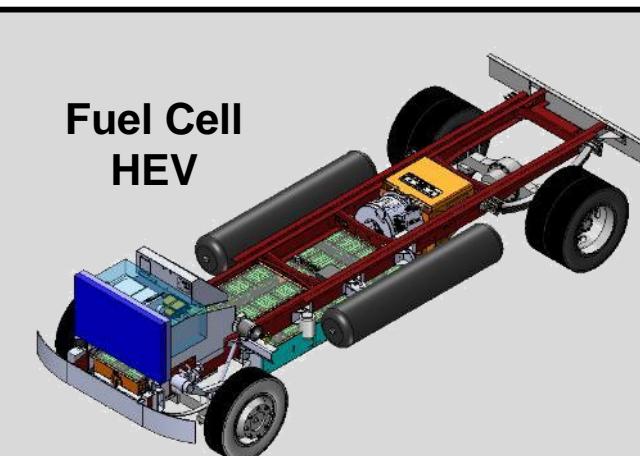
Base Platform Kit

Chassis
Traction Inverter
Traction Motor
Aux Converter
Cooling System



Battery BEV

+Batteries
(Any type,
Scalable to the
desired range)



Fuel Cell HEV

+Fuel Cell System

+H₂ Storage

+DC-DC Converter

+Battery

Benefits

- **Portable** Integrated anywhere in US with local sources of labor and suppliers – brackets, wiring, installation, service
- **Serviceable** Base EV drivetrain can be integrated into existing maintenance programs
- **Open Architecture** use in either all-EV or HEV, using any energy storage type or range extender technology

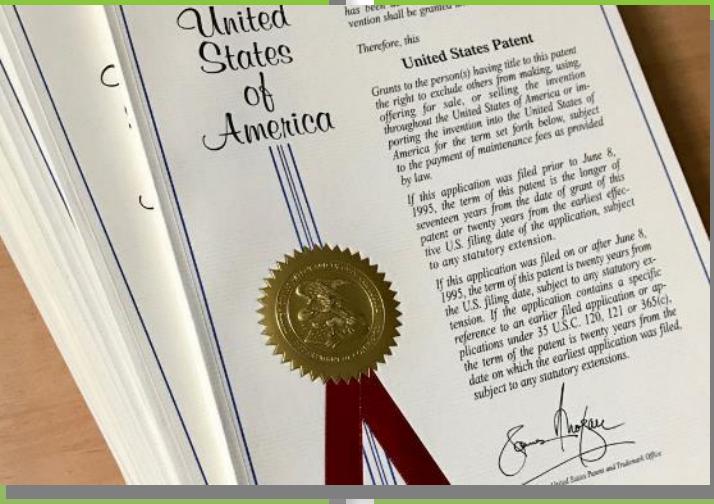


Competitive Advantage | Intellectual Property

Patents:

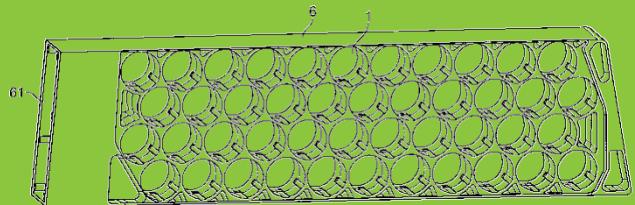
US9731609B2 - Vehicle power sharing and grid connection system for electric motors and drives

- **Maximize vehicle performance** by matching “high power” and “high energy” devices
- **Optimize efficiency / fuel economy** by maximizing regen braking
- **Extend battery life** by limiting degradation effects of high transients



US9843078B2 - Unitized energy storage system enclosure

- Heat is extremely bad for energy storage performance and life
- A monocoque body with compression interference fit boosts heat rejection



Trademarks: *uniqueEV™ uniqueHEV™*

Proprietary Products Trade Secrets:

- State of Charge Algorithms
- Vehicle Master Events Controller (VMEC)
- Battery Management System (BMS)
- Acceleration and Regenerative Braking Algorithms
- High and Low Voltage Distribution Systems
- Customer and User experience optimization



THANK YOU!



Web: www.uesmfg.com

Kevin Morrow – Director
email: kevin.morrow@uesmfg.com
Phone: +1.505.333.0073 x507

