California Transit Association Conference

GP GreenPower Bus
The Future of Public Transportation

GREENPOWER: AN INTRODUCTION

- Electric vehicle manufacturer and automotive company
- Operating out of Porterville, California
- Clean-sheet, purpose-built design
- Holistic approach to the EV market
- Comprehensive product suite


CALIFORNIA
Death Valley National Park
Visalia
Porterville
Sequoia National Forest
San Luis Obispo
Bakersfield
5
Santa Maria
Los Padres National Forest
Santa Barbara
Los Angeles
10
Riverside
Anaheim
Long Beach
15
405

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GREENPOWER: AN INTRODUCTION

Clean-Sheet Design

- GreenPower buses are EV from conception to creation
- Design starts with battery placement
- Maximize space
- Improves handling and performance characteristics
- Safer
- Lower costs

COMPREHENSIVE PRODUCT SUITE

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GreenPower Transit Line: EV250 & EV350

EV250

EV350

MODEL	EV250	EV350
Length	30ft	40ft
Seating	25+Standees	40+Standees
Battery Size	210 kWh	320 kWh
Range	>175 Miles (280)	>175 Miles (280)

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GreenPower Transit Line: EV250 & EV350

EV250

EV350

- Current Deployments: City of Porterville (2017)
- Ten 40’ GreenPower EV350 Buses
- Possibly the first fully-electrified public transit fleet in North America

CITY OF PORTERVILLE
CALIFORNIA

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EV550 Double Decker

2-to-5 Hours
Charge Time

220-Mile Range

Same costs as diesel counterpart, 24% more seats

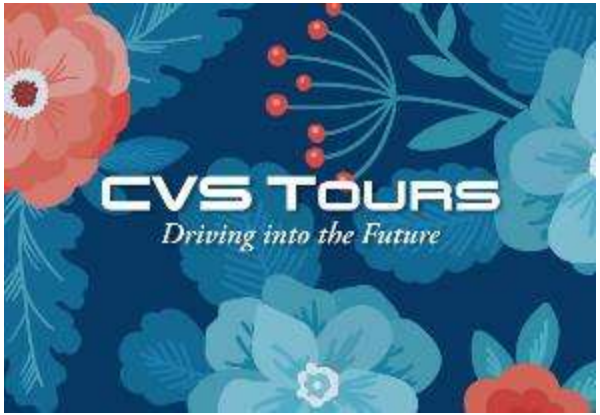
100 Seated Passengers

Lowest per-seat cost of **any** transit product

EV550 Double Decker

Current Deployments:

- CVS Tours – Victoria, B.C. (2016)
- Driven the same as diesels on a single charge
- Quietly drives through residential districts



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GreenPower Synapse School and Shuttle Bus

Synapse 72 (36.5 feet)

Synapse Shuttle (36.5 feet)

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GreenPower Synapse School and Shuttle Bus

Deployments:

- Calaveras Unified School District (2018)
- LA Unified School District (2018)
- Further commitments from districts in the SCAQMD pending HVIP funding

LOS ANGELES UNIFIED SCHOOL DISTRICT
BOARD OF EDUCATION

Growing together in one direction...
CUSD
Calaveras Unified School District

GreenPower Bus
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GreenPower Shuttle Bus

Battery size from 100-200 kWh

Seats up to 48 passengers and ADA capable

Range: 75-140 miles

Lowest per-seat cost of our HDV-8a vehicles

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GreenPower EV Star Min-eBus

125-200 miles
on a single charge

Seats 19
passengers

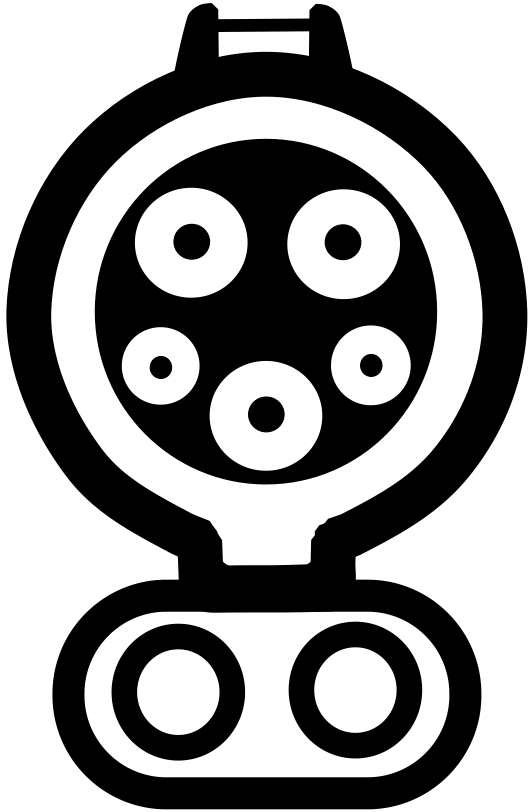
Ideal for private fleet operators
and low capacity shuttle services

Length: 24.5 ft..
Width: 80.3 in.
Height: 106 in.

Lowest per-seat cost
of **any** GreenPower
product

EV CHARGING

- GP delivering buses w/ CCS (aka SAE Combo)
- Follows J1772 charging standards, SAE protocol standards
- Today, with liquid-cooled charge couplers, we can charge at higher rates (300kWh) with light-weight easy-to-handle connections to vehicles; deliveries in progress

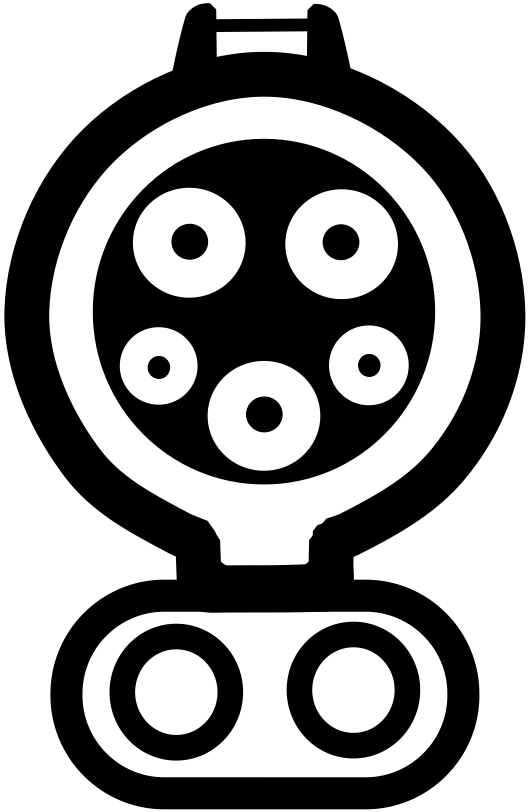


Courtesy of Wikipedia

EV CHARGING

What this means:

- One type of charger for an entire fleet; Cars, Trucks, Buses
- Not beholden to vehicle mfr. for specific charging infrastructure
- Take advantage of mass production levels (lower prices and higher quality)



Courtesy of Wikipedia

EV CHARGING

- If utilities want to own charging infrastructure, GP buses present low risk- universal charging standard
- Upgrade to higher rate chargers while still utilizing the replaced units
- Effective for field retrievals

ENERGY DENSITY

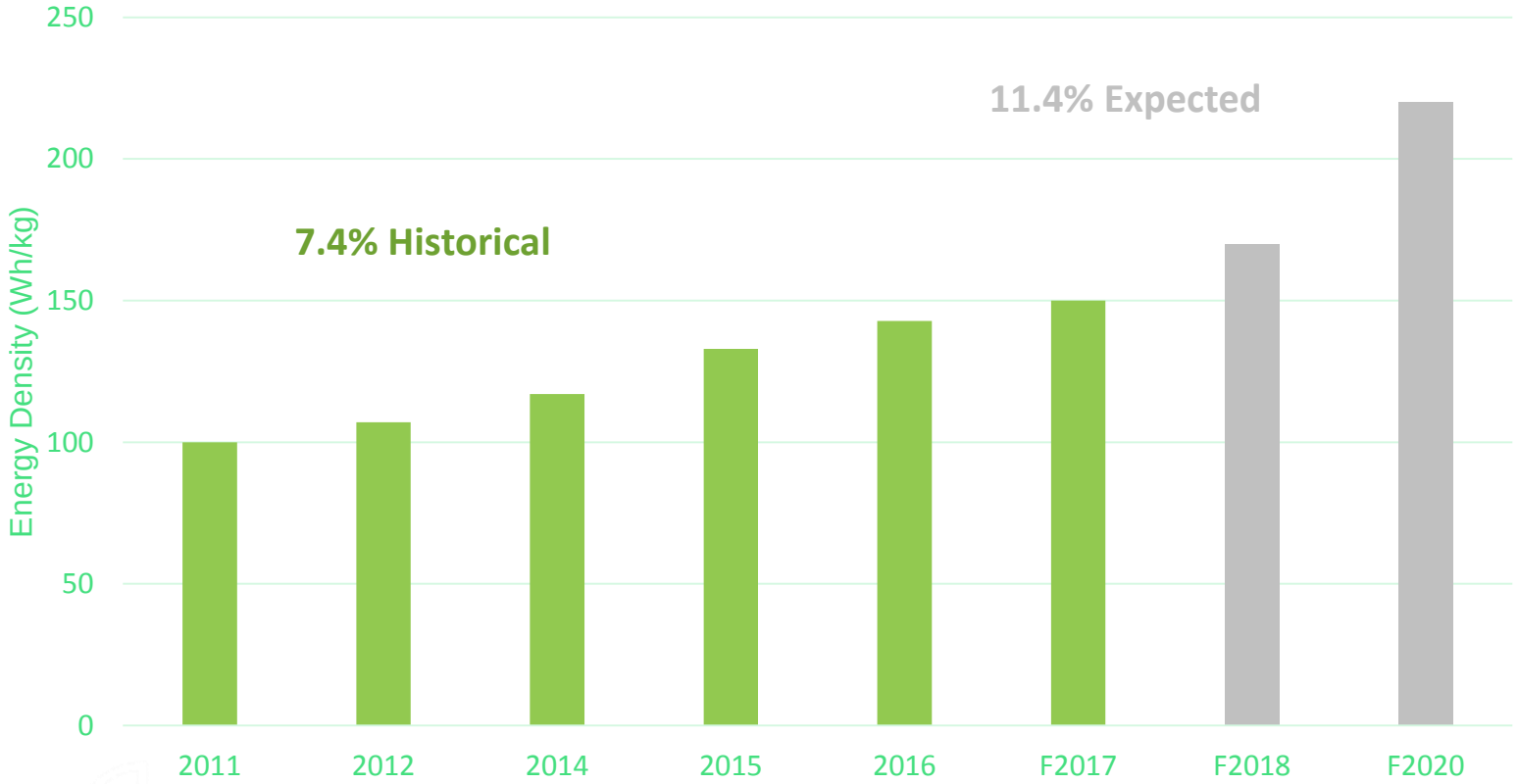
2011 cell **2020 cell**

10Ah cell **20Ah cell**

These two cells look and weigh the same

- Energy density is essentially how much energy you can chemically store in a battery.
- When we talk about increases, we are normally comparing essentially the same weight and appearance cell.

$LiFePo_4$ Gravimetric Energy Density Trend



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BATTERY TECHNOLOGY

In the Future:

- **More efficient, cheaper and lighter batteries**
- **Currently: Advances in $LiFePO_4$ - energy density improving quickly**
- **NMC batteries now ready for integration into Heavy duty vehicles as soon as 2018**
- **Solid state batteries close to commercialization**
- **Thin Film batteries also attractive possibility**

BATTERY TECHNOLOGY

What does this mean?:

- **EV buses could cost less than ICE in less than 6 years**
- **Ranges for buses like GP EV550 should be 500 miles on one charge**
- **Today, Iron phosphate is the safe answer**
- **To remain competitive, migration to more energy dense chemistries will be necessary**

THANK YOU!

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For additional information on GreenPower, go to our website at www.GreenPowerBus.com
For company filings go to www.sedar.com