



Electric Vehicles

March ParaTAC Meeting

March 2022

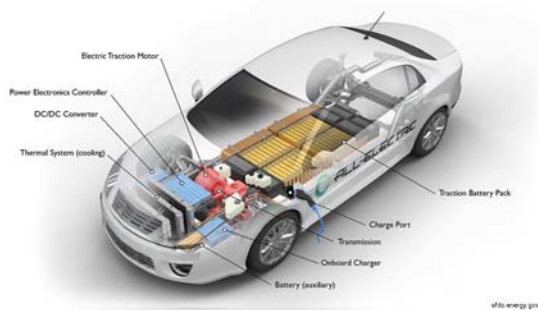


101

What is an Electric Vehicle?

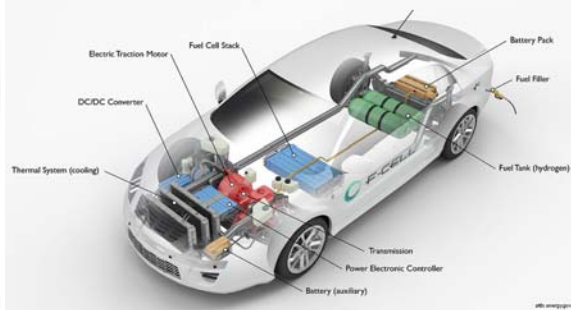
Battery Electric Vehicle

All-Electric Vehicle



Fuel Cell Electric Vehicle

Hydrogen Fuel Cell Vehicle



Types of Electric Transit Vehicles

40-Ft Buses



Proterra Electric Bus

Cutaways and Minibuses



Lion Electric LionM Minibus



Phoenix Motorcars Zeus 400



Micro Bird DS-Series Paratransit

Large Vans



Lightning Electric Ford Transit Passenger Van



Greenpower EV Star ADA

Passenger Vehicles



Nissan Leaf (in King County Metro's Metropool Fleet Share)

3

California Air Resources Board Innovative Clean Transit Regulation

- Requires all public agencies to gradually transition to a 100% zero-emissions bus fleet
 - Includes paratransit and community transit agencies
- Applies to all transit agencies that own, operate, or lease buses with a gross vehicle weighting greater than 14,000 lbs
- Includes cutaway buses
 - Requirements for cutaway buses do not start until 2026
- Exemptions if vehicles are not available
- Agencies with paratransit in their rollout plan: Fresno Area Express, Golden Empire Transit District, Orange County Transportation Authority, Riverside Transit Agency, San Mateo County Transit District, SunLine Transit Agency

4

Community Bridges Lift Line – Watsonville, CA

- Lift Line Paratransit Dial-A-Ride Electric Vehicle Transition Program
- Pilot program supported by CARB
- Pilot runs from 2018 - 2023
- CARB grant of \$508,975
- Replaced two gas-powered shuttles with two EV shuttles
- Adding a third EV ADA shuttle bus



5

Société de transport de Montréal Electric Minibus Demonstration Pilot – Montreal, QC

- STM testing an electric, long-range minibus for paratransit operations
- G5e model from supplier Girardin Blue Bird
- 200 km expected range
- 10-hour recharge time or 3 hours with a DC Fast Charger
- \$390,000 purchase price



6

Míocar - San Joaquin Valley, CA

- Míocar is an electric, rural, affordable carsharing pilot with accompanying charging stations placed near low-income households in the San Joaquin Valley



7

Cost

Vehicle Model	Cost - Electric	Range - Electric
40-Foot Bus	\$750,000 - \$1 Million	92-329 miles*
Cutaways and Small Buses	\$230,000 - \$390,000	75-170 miles
Large Vans	\$170,000	120-190 miles
Passenger Vehicles	\$31,000 - \$40,000	149-259 miles

*Variation comes from various bus models with different engine capacity

Charger	Price	Installation Costs
Depot Bus Charger	\$50,000	\$17,000
Fast Charger - Bus	\$495,000	\$202,000
Level 2 Charger	\$400 - \$6500	\$600 - \$12,000
DC Fast Charger	\$10,000 - \$40,000	\$4,000 - \$50,000

8

Thank you!

Sophia Constantine

sconstantine@nelsonnygaard.com