



Alternative Fuel School Buses in the United States

- 480,000 school buses move 26MM students each school day
 - 55% of kids ride school buses 260MM miles/day (52MM x 5 mi avg)
 - School bus fleet size is 2.5 times transit, coach, air, rail combined
 - On school days, school buses carry twice as many passengers as all transit services combined, subway, rail, transit, paratransit
- All US airlines together flew 895,000,000 passengers in 2015
 - That's about 2.45MM per day, less than 10% of all school buses.
- About 93% of school buses are diesel nationwide- 491,000
 - 37,000 are alt fuel- Propane, Gas, CNG, or Electric
 - 30,833 are Blue Bird School Buses
- V2G
 - Blue Bird has \$4.4MM DOE Grant to develop V2G for school buses
 - Export parameter was 200kWh

Battery System



- They are referred to as Li-NMC-G batteries, which is Lithium-Nickel Manganese Cobalt- Gell
- The CV and RE will use 14 batteries separated into two groups of seven. Each group of seven is called a string.
- Wired together in series these batteries provide 600v of electricity to power the components of the bus. $88 \text{ Volts per battery} \times 7 = 616\text{V}$, actual up to 700V.
- Each battery is water cooled and that is controlled by the thermal management system.
- Total battery capacity is 160Kwh. Up to 120 miles of range.

CV Chassis Electrical Components

