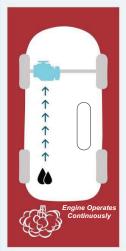


TYPES OF VEHICLE DRIVE SYSTEMS

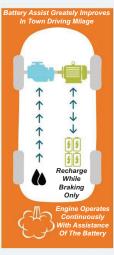
FUEL VEHICLE



Example: Any standard gas powered vehicle

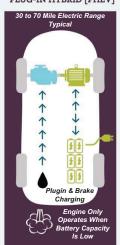
Graphic Courtesy of LeadingTheCharge.org

NON PLUG-IN HYBRID

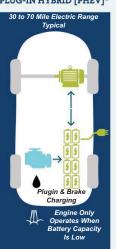


Example: Toyota Prius

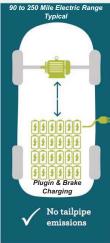
PARALLEL PLUG-IN HYBRID [PHEV] PLUG-IN HYBRID [PHEV]*



Contemporary Plug-in Hybrids Use Combinations Of Series And Parallel Operation Based On Conditions Examples: Chevy Volt & Toyota Prius Prime



BATTERY **ELECTRIC [BEV]**



Example: Chevy Bolt Nissan Leaf and all Tesla vehicles

DC Fast Charging And "Supercharger"

Types of EV Charging Stations

AC Level One



SUPPLY VOLTAGE

120v 1-Phase AC

AMPS

12-16 Amps

CHARGING LOADS

1.4 to 1.9 KW

CHARGE TIME FOR VEHICLE

3-5 Miles of Range Per Hour

AC Level Two



SUPPLY VOLTAGE

208V or 240V 1-Phase AC

12-80 Amps (Typ. 32 Amps)

CHARGING LOADS

2.5 to 19.2 kW (Typ. 7 kW)

CHARGE TIME FOR VEHICLE

10-20 Miles of Range Per Hour

SUPPLY VOLTAGE

208V or 480V 3-Phase AC

<125 Amps (Typ. 60 Amps)

CHARGING LOADS

<90 kW (Typ. 50 kW)

CHARGE TIME FOR VEHICLE

80% Charge in 20-30 Minutes

Graphic Courtesy of North Carolina Electric Cooperative:

Level 1 is the least expensive charging method requiring a standard grounded 120V outlet. Most EV's come equipped with a Level 1 charging cable. Plugin hybrids can successfully use level 1 charging as a nightly charging method.

Level 2 charging requires the use of a level 2 charging unit and 240V outlet, the type commonly used for electric clothes dryers. Installations range from \$500 to over \$1,000 including the charger.

A battery EV (BEV) used as a daily commuter is best served with a level two charger.

DC fast charging is typically found at designated recharging stations along major highway routes throughout the nation. Currently Tesla has the largest national long range recharging network.

BEVs must rely in these networks for long range travel. Plugin hybrids can serve as a transistion vehicle as these networks are being built out.



ource: ChargeHub.com

Public EV Charging Stations





Though the number of public charging stations is growing rapidly the majority of charging is performed at home.



Source: ChargHub.com