



Figure I-2. Parallel hybrid system design PPT 25

❖ General categories of HEV technologies:

- **Strong hybrid system** (e.g. Ford Escape, GM Allison Bus, Honda Accord / Civic / Insight, Toyota Prius plus numerous other manufacturers and models): PPT 26
 - Electric machines typically integral to the transmission/transaxle
 - High voltage battery pack approximately 144 to 600-volts
 - Propulsion assist and full electric drive capability
 - Engine stop/start functionality
 - 25% or greater composite fuel economy increase
 - Significantly lower engine emission levels
- **Mild hybrid system** (e.g. GM Silverado/Sierra and Saturn VUE) PPT 26
 - Flywheel or belt driven design
 - Lower voltage battery pack (≈ 36 -volts)
 - Engine stop/start functionality
 - Minimal or no electric propulsion assist capability
 - 10% - 15% composite fuel economy increase
- **Fuel Cell hybrid system** (fuel cell + battery pack) PPT 59
 - High voltage battery pack (≈ 300 -volts)
 - Used primarily for increasing specific power during acceleration
 - Fuel Cell stack and ancillary battery support system develop vehicle electrical power
 - Electric drive only capability (no internal combustion used in a fuel cell vehicle design)