

Expertise

Projects

Publications

News

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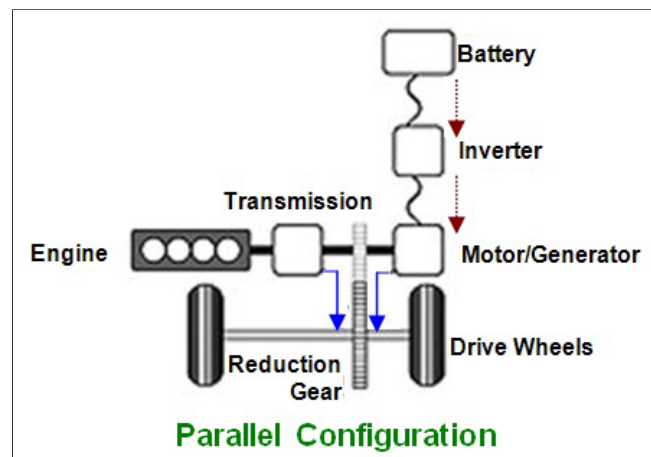
HYBRID ELECTRIC VEHICLES

Parallel Configuration

Parallel hybrids have mechanical connections to the wheels from both the electric machine and the engine. Because the electric machine and the engine are both coupled directly to the wheels, they can share the power during accelerations. Therefore, it is possible to downsize both the engine and the electric machine compared to series hybrids. Since the ICE speed is linked to the vehicle speed, the ICE can operate close to its best efficiency curve only under certain conditions. However, since both mechanical and electrical energies can be used to directly propel the vehicle, the powertrain efficiency is increased compared to series configuration during most operating conditions.

The electric machine can be located anywhere between the output engine shaft and the wheels. Numerous powertrain configurations are considered, including:

- Starter-alternator
- Pre-transmission
- Post-transmission
- Wheel motors



[Next: Power Split Configuration >](#)



HEVs

[Advantages/
Disadvantages](#)

[Series Configuration](#)

[Parallel Configuration](#)

[Power Split
Configuration](#)