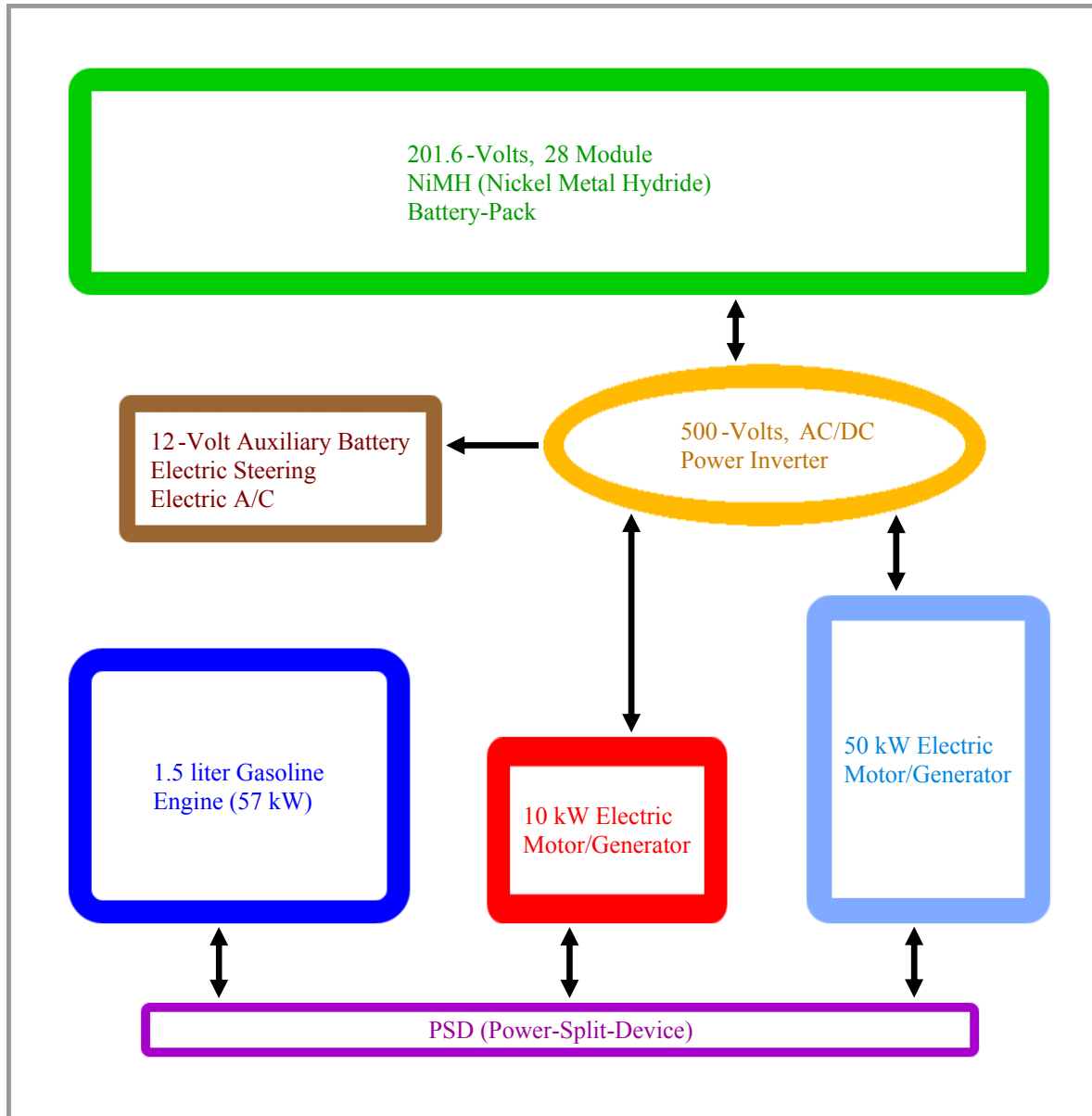


# Toyota Prius: Energy-Flow



The primary source of electricity during regular driving is *not* the **Battery-Pack**. It is actually, the **Small Motor** (10 kW) powered by the **Engine**. When the wheels are provided with thrust from the **Engine**, some is diverted to generate electricity too.

Electricity generated by the **Small Motor** is sent to the **Power Inverter**. This device decides whether the electricity should be used immediately by the **Big Motor** (50 kW) to provide extra thrust for the wheels, passed to the **Battery-Pack** for charging it, or directed to both at the same time. The decision process will commonly occur 10 to 20 times per minute. This “rapid response” nature of the energy flow design allows for efficiency opportunities that would otherwise be lost by less flexible hybrids.

While driving in “Stealth” (electric-only mode), the **Engine** is not running. Electricity is provided by only by the **Battery-Pack**. The flow is low-voltage and in DC form. That energy is then converted to high-voltage and AC by the **Power Inverter** for the **Big Motor** to use.

Braking is the reverse of “Stealth”, energy flows in the opposite direction. This type electricity creation is known as “Regenerating”.

The PSD (Power-Split-Device) allows the **Engine**, **Small Motor**, and **Big Motor** to simultaneously interact with each other.