



# All-New Ford Focus Electric

The all-new Focus Electric, which debuts in the U.S. in late 2011 and in Europe in 2012, is one of five new electric vehicles Ford will deliver over the next two years. Below are the components that will make up the zero-emissions, gas-free Focus Electric.

## 1 MOTOR CONTROLLER

Monitors the motor's state and uses this information along with driver pedal demand to manage the electric signals that drive the motor.

## 2 HIGH-VOLTAGE ELECTRIC HVAC COMPRESSOR

Is specifically designed for electric vehicle applications, drawing energy directly from the main battery pack.

## 3 ELECTRIC WATER PUMPS

Circulates coolant for the motor, inverters, battery and climate control system.

## 4 TRACTION MOTOR

Performs the conversion between electrical and mechanical power. Electric motors have efficiencies three times higher than that of a standard gasoline engine. Minimizing energy loss and heat generation.

## 5 ELECTRIC POWER STEERING

Is tuned to deliver the same driving dynamics as the gasoline-powered Focus.

## 6 TRANSMISSION

Has the identical role as in a gasoline vehicle; however, it has different design considerations due to the higher rpm range available from the electric motor and increased emphasis on efficient and silent operation. The transmission is a single-speed unit.

## 7 MODULAR POWERTRAIN CRADLE

Enables quiet operation by holding the entire propulsion system within the engine compartment, isolated from the vehicle body.

## 8 ELECTRIC VACUUM PUMP

Provides energy-efficient power-assisted braking.

## 9 HIGH-VOLTAGE ELECTRIC COOLANT HEATER AND CONTROLLER

Specifically designed for electric vehicle applications, using energy-efficient technology to heat and circulate coolant. Heat also may be circulated to the battery to optimize performance.

## 10 VEHICLE CONTROL UNIT

Monitors and controls each vehicle system, and manages energy and mechanical power being delivered to the wheels to maximize range.

## 11 BATTERY PACK

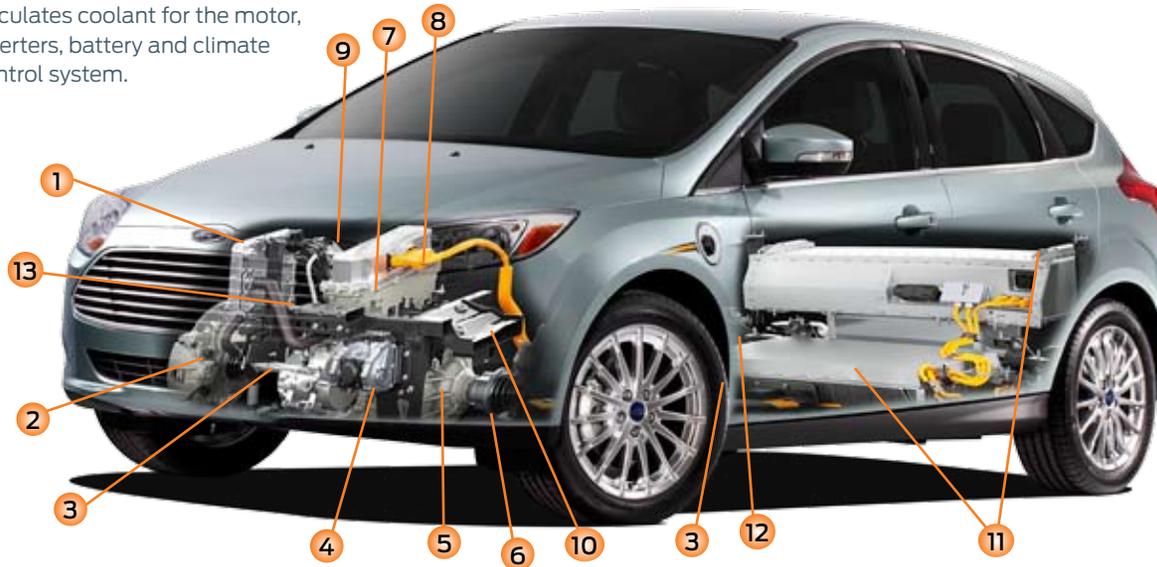
Total energy capacity of 23 kWh with liquid coolant for thermal management; includes control module that manages temperature and state of charge.

## 12 AC CHARGER

Converts the AC electricity from the power grid to DC voltage required by the battery. A full battery charge can be completed in a matter of hours and the vehicle will accommodate both 120V and 240V power sources.

## 13 DC-DC CONVERTER

Allows the vehicle's main battery pack to charge the onboard 12V battery to power various vehicle accessories (headlights, etc.).



### FOCUS ELECTRIC FACTS

**Final assembly location:** Michigan Assembly Plant, Wyane, Mich.

**Battery cell manufacturer:** Compact Power Inc., Holland, Mich.

**Battery system:** Lithium-ion, liquid-cooled/heated, recyclable

**Total battery capacity:** 23 kWh

**Estimated cost to fully charge vehicle:** \$2 to \$3 (based on nationwide average cost of \$0.10 per kWh)

**Wheel size:** 17-inch

