

2011 Smart ForTwo Electric Drive

The Smart ForTwo from Daimler is currently sold in 41 markets around the world in gasoline, diesel and hybrid formats. For 2011, a pure electric Smart ForTwo has joined the fleet in 14 of those countries, including the USA.

The electric version, which arrives in October, is powered by a single electric motor that is rated at 20 kilowatts during normal driving, and 30 kilowatts in kickdown mode when called upon by the driver for extra acceleration. Its normal peak torque output is 120 Nm or 88.5 foot-pounds. The battery pack is by Tesla, a lithium ion pack replacing the normal gas tank, rated at 16.5 kilowatt hours, and uses a 3.3 kilowatt charger, which can be fed by either normal 110-volt house current or 220-volt that is normally used for air conditioners, electric ovens and ranges.

Smart engineers say the charging system will give an 80 percent charge in about three and a half hours, and will charge from dead to 100 percent in eight hours. With the three-cylinder gasoline engine and fuel system removed and the electric motor and batteries added in, the Smart ForTwo Electric Drive goes from 1836 to 2100 pounds in weight.

The advantages of an electrically driven small car are many. There is no conventional transmission, so there is no shifting and no clutch pedal to deal with in urban commuting traffic, because the electric motor turns the tires through a single reduction gear. The electric motor and battery pack produce no emissions of any kind and promise near-zero maintenance for the life of the vehicle. Electricity is far cheaper than gasoline or diesel fuel, and Smart's spokesmen say operating expenses can be 15 percent to 25 percent lower than a gasoline version of the same car.

The major disadvantage of an electric vehicle is its range on a single charge. Smart places its range number at 83 miles on a fully charged battery. Stated another way, that would be 4-5 hours of continuous urban operation, or about two full charges per week, on average, for a typical American commuter.

The Smart ForTwo Electric Drive will be used in a test program in 2010-2011 in geographic areas including the New York City, Orlando, Tampa, Portland, Indianapolis and San Jose. Some 250 cars will be leased, 200 to company fleets and only 50 to individual customers, at a monthly lease price of \$599 and a lease term of 48 months, a commitment of \$28,572 (the federal tax rebate of \$7500 and any state benefits go to the car owner, SmartUSA, not the lessor). So, green costs money; how green do you want to be? In 2012, if all goes well, the car will be sold and leased to the American public in limited numbers as a 2013 model.

Smart has produced a \$10 iPhone application called Smart Drive for operators of the Smart ForTwo Electric, an application that docks directly to the car and offers hands-free telephoning, street maps with audio street names, Microsoft Bing, a car finder function for locating your parked Smart, and Internet radio in addition to the charge monitoring power use, range and charging location functions, and will later offer full navigation.

We had an opportunity to drive the Smart ForTwo Electric Drive during an all-day exercise in crazy, crowded Brooklyn, New York, and we loved it. The car is quick, 0-35 mph in only 6.5 seconds, and nearly silent in operation. The kickdown mode worked very well in tricky traffic

situations in unfamiliar territory to swiftly change lanes, and like all other Smarts, it's cute, it's easy to park and can do a U-turn in very tight quarters.

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