

## **ELECTRIC CAR EXAMPLES**

The federal government as well as all states have strict rule for motor vehicles manufacturers. Almost all states have special provisions for electric cars. Further, most states allow human powered vehicles with power assists to operate on local roads without having to be registered. Further, some states have special regulations that are easier to conform to for slow moving vehicles or specialty vehicles such as snow mobiles, or all terrain vehicles. These provisions may be useful to know when designing the vehicle.

### **Didik.com EV plan:**

**MATERIALS:** The basic materials needed to build a steel framed, electric vehicle with a body includes:

Steel tubing. I prefer to use basic 1/2" to 1" EMT electrical tubes. They are light weight, easy to cut, easy to handle and are very inexpensive. For example, a 3/4" x 10 foot EMT tube at Home Depot costs about \$2.50 in New York City. If you prefer, you can also purchase standard square steel tubes from steel distributors such as Eastern Steel in New York City for very low prices. The standard length of steel tubes from distributors is 20 feet or 24 feet.

Electric Motor. Though some people have used ac motors, I much prefer to use DC motors. One to three HP DC motors can be purchased in scrap yards (not to be confused with auto junk yards) for under \$100. They can also be purchased from a variety of surplus outlets throughout the country.

Drive. You can use a number of systems to couple the electric motor to the wheels including sprocket gear and chain, pulley and belt or similar. The pulley and belt system is probably the easiest system to use.

Body. There are several ways to shape the body. One way is to use a very large styrofoam block that can be sanded using an electric sander to the correct shape and then covered first with Elmers type white glue and then covered with fiberglass. Another, cheaper and less messy way is to use chicken wire mesh to shape the body over a basic metal frame.

You can then cover the wire mesh with fiberglass sheets, though I usually cover the mesh first with very thin layer of plaster and fabric strips to give the mould strength and then cover it with the fiberglass. The finish can be made perfect with the help of an auto body expert who will smooth out imperfections and then paint the resulting vehicle to high standards.

Windshield. The windshield should be made out of a substance with safety in mind. While conventional car windshields are useful, I have found them to be generally too heavy for my vehicles. Instead, I prefer to use "unbreakable" Lexan type plastic. I normally use the 1/16" thick lexan and for strength, design the windscreen so that it is curved. It is also possible to mould the windscreen using either a vacuum or compression system, though this requires a rather high degree of construction skill

### **Another Car Design Site**

[http://www.att-info.org/ElectricVeh/electric\\_veh.html](http://www.att-info.org/ElectricVeh/electric_veh.html) "Excellent information"