

Electric Vehicle Factsheet

What is an electric vehicle?

An electric vehicle (EV) is any car, truck, bus, or van that is propelled by an electric motor that receives power from onboard batteries. There are two dominant battery types that can be used in EVs. Energy sources for charging the batteries are independent of the vehicle and include solar cells and the utility grid.

What types of electric vehicles are available?

Manufacturers currently offer numerous EVs, including electric cars, light trucks, service vans, and buses. While availability is limited to specific geographic areas, the Electric Vehicle Association of America estimates that over 4,800 electric cars and light trucks have been delivered to consumers over the last four years. In addition, specialty design vehicles, such as buses that operate on a regular route and neighborhood electric vehicles (NEVs) that are designed for short distances, have proven successful. Technology initially developed for electric vehicles is now used in gasoline powered hybrid vehicles that use electric motor assisted propulsion and regenerative braking.

How do electric vehicles perform?

As with conventional vehicles, EVs can be designed to meet a number of performance expectations. They can provide similar performance to a conventional vehicle and can maintain interstate highway speeds, carry cargo, and operate in hot or cold weather. Depending on battery selection and driving style, electric vehicles can typically operate 50 to 130 miles before requiring a recharge. This limited range emphasizes the importance of development of charging infrastructure. Charging time varies due to the size of the battery pack and the type of charger. Some EVs can be recharged in less than 30 minutes with special equipment, but there are also chargers designed to recharge vehicles overnight that can be installed in personal garages.

What are the benefits of using electric vehicles?

EVs produce no tailpipe or evaporative emissions so they do not directly contribute to mobile source air pollution. The electricity to recharge the batteries typically comes from the utility grid, but it can also be provided by renewable, non-polluting sources such as wind power or solar cells. Because more than 95% of the electricity used to recharge EVs is produced from domestic resources, EVs reduce our dependence on foreign oil. Electric vehicles are extremely quiet compared to conventional vehicles, reducing noise pollution and making cities more livable. Much of the maintenance associated with operating a conventional vehicle (e.g., fluid and filter changes) is eliminated with an EV, saving consumers time and money. Another environmental benefit is the lack of coolants, antifreeze and other fluids in the system, which can leak out of conventional systems and contaminate water and land resources. Typical refueling costs for an EV in the Triangle are one-third that of a comparable gasoline vehicle.

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Where can I recharge my electric vehicle?

In the Triangle, there are several publicly accessible charging stations for vehicles that use the GM/Hughes charger. As electric vehicles become more prevalent it is reasonable to assume that more local businesses and government agencies will install additional chargers. In addition most electric vehicle owners purchase their own charger for charging their vehicle at home. This type of charger has the same energy requirements as the typical electric hot water heater. For specific charger locations, contact the Clean Cities Coordinator at tcc@tjcog.org or 919-558-9400.

Resources

National Clean Cities Program

www.eere.energy.gov/cleancities/atv/tech/nev.html

Alternative Fuels Data Center

www.eere.energy.gov/afdc/altfuel/electricity.html

Electric Vehicle Association of America

www.electricdrive.org

Electric Vehicle World

www.evworld.com/index.cfm