

Sustainability Spotlight

Electric Vehicles

The world is becoming increasingly aware of the harm fossil fuels have on the environment. The extraction, use, and byproducts of fossil fuels to power our vehicles contribute to significant air pollution and greenhouse gas emissions. Greenhouse gases are gases that are released into the atmosphere that trap heat and cause the Earth's temperature to rise over time.

The increase in the number of Electric Vehicles (EVs) on the road is one way that can help reduce greenhouse gas emissions caused by cars that run on traditional Internal Combustion Engines (ICE). EVs can have minimal to no emissions associated with their use depending on the type of vehicle. There are typically three types of EVs that are recognized in the automotive industry:

- **Hybrid Electric Vehicles (HEVs)** - Powered by an internal combustion engine in combination with one or more electric motors that use energy stored in the battery. High fuel efficiency and low tailpipe emissions are associated with these vehicles. (Examples: Toyota Prius, Honda CR-V)
- **Plug-In Hybrid Electric Vehicles (PHEVs)** - Powered by a combination of battery power and gasoline or diesel engine. Low levels of emissions are produced when compared to traditional vehicles. (Examples: Chevrolet Volt, Ford Escape, Hyundai Tucson)
- **Battery Electric Vehicles (BEVs)** - Powered solely by electric energy stored in the battery and are considered zero-emission vehicles. (Examples: Tesla, Rivian, Ford Mustang Mach-E)

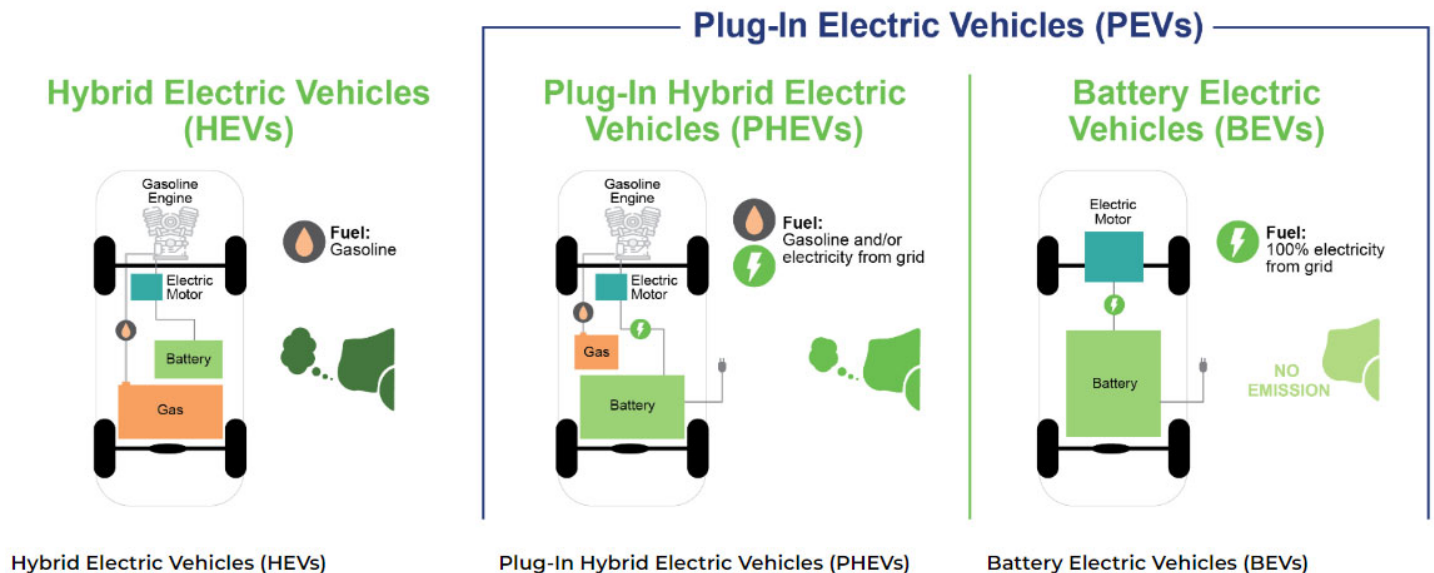
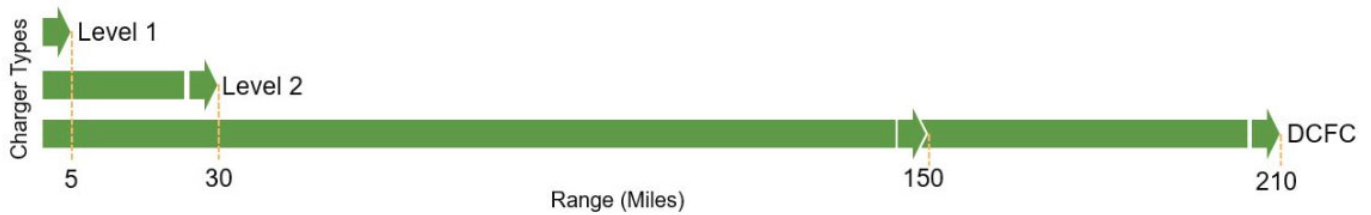


Image Source: SEMCOG

Charging stations are a necessary component of Plug-In Electric Vehicles (PEVs), especially the Battery Electric Vehicles (BEVs) which depend solely on electricity. The three types of chargers currently on the market are:

- Level 1 Chargers – 1 hour of charging provides approximately 5 miles of travel distance.
- Level 2 Chargers – 1 hour of charging provides approximately 30 miles of travel distance.
- DC Fast Chargers - 1 hour of charging provides approximately 150 miles – 210 miles of travel distance.

What **One Hour of Charging** with Different Chargers Look Like?



Gasoline pump adds ~250 miles of range per minute.

Image Source: SEMCOG

If you are thinking about purchasing an EV and/or charging station either for yourself or your business, do your research! Here are some tips to start your electrification journey:

- EV performance varies depending on automotive manufacturing. Select a vehicle that is compatible with your lifestyle and understand its limitations.
- Become familiar with where charging stations are located and map out points of interest you frequently visit. This will help you plan on where and when to charge your car. Keep in mind, many retailers, workplaces, and homes have begun to install EV charging stations due to the increasing number of EV owners.
- Coordinate with your utility company to understand the voltage demands required to power an EV and if any electrical upgrades are needed to the building where an EV charging station will be installed.
- Rebates are offered on specific types of EVs and charging stations. Please visit the [Sustainable Southfield](#) page to learn more about DTE Electric Vehicle Rebates program.



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