

Why Consider Electric Drive?

Electric drive vehicles produce fewer tailpipe and evaporative emissions that contribute to air pollution and global warming. Any emissions associated with battery electric vehicles (BEVs) are contributed to the facilities that originally produce the electricity. Many of these facilities are fueled by domestic resources. Thus, the use of EVs can help reduce our dependence on foreign oil. EVs are currently being utilized in several different applications outside of the personal transportation sector.

There are over 6,800 electric charging stations in the U.S.

Health Benefits of Electric Drive



- EVs produce fewer emissions than conventional vehicles
- Fewer emissions reduce incidences of respiratory illness which is important in congested urban areas

Environmental Benefits of Electric Drive



- Higher miles per gasoline gallon equivalent (MPGe) rating than conventional vehicles – fewer emissions
- Reduces particulate matter (soot), oxides of nitrogen, smog forming pollutants, and greenhouse gas emissions
- All of these emissions can negatively affect the environment

Economic Benefits of Electric Drive



- According to the Electric Drive Transportation Association (EDTA), EVs are less expensive to operate and maintain than conventional vehicles
- Domestic advanced vehicle sector currently employs more than 155,000 American workers
- Sector also adds more than \$2.3 billion to U.S. gross domestic product (GDP) from manufacturing alone
- Electricity can be produced domestically

Energy Security Benefits of Electric Drive



- According to Electric Drive Transportation Association (EDTA), if 73% of U.S. vehicles were powered by electricity, the nation could offset around 6.2 million barrels of oil per day
- Electricity can be produced domestically; production of electricity will create jobs in the economy

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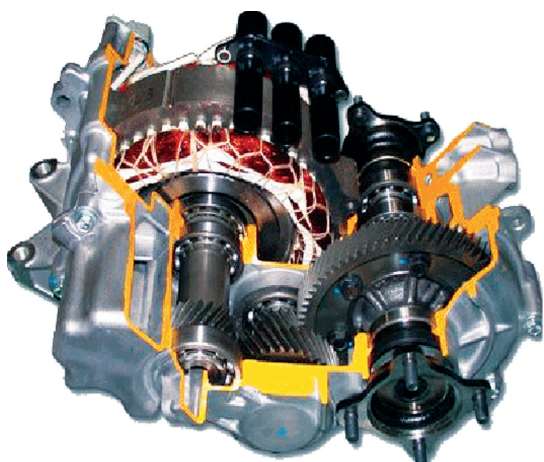
What Is an Electric Drive Vehicle?

Electric vehicles are advanced technology vehicles that utilize electricity as an energy source. There are different types of electric vehicles, but each employ some sort of onboard electricity to help improve overall efficiency.

Types of Electric Drive Vehicles

HEV

Hybrid electric vehicles (HEVs) are the most common electric vehicles. HEVs employ an internal combustion engine (ICE) along with one or more electric motors. These vehicles return better fuel economy than conventional vehicles, but depending upon the system used, may not achieve the economy of other EVs.



HEV motor/generator. Source: Toyota.



HEV (left) and PHEV (right). Source: NAFTC.

PHEV

Plug-in hybrid electric vehicles (PHEVs) are similar to HEVs but have a longer electric-only range. These vehicles have larger battery packs and can charge by plugging in to the electric grid. When the batteries are depleted, an ICE will take over powering the vehicle.

BEV

Battery electric vehicles (BEVs) are the simplest EVs, and the drivetrain primarily consist of batteries and electric motors. These are the least expensive vehicles to operate, but they may have a limited driving range between recharging. BEVs do not utilize an ICE.



Did You Know?

Coal is the most common fuel for generating electricity in the U.S. In 2010, 45% of the country's nearly 4 trillion kilowatt hours of electricity used was generated through the use of coal.