

There can be challenges to starting a green fleet, or converting an existing fleet to the use of alternative fuels. According to some industry experts, a successful plan to reduce fuel consumption and carbon emissions requires a long-term vision, incremental change, support from top management, and flexibility to make changes along the way.

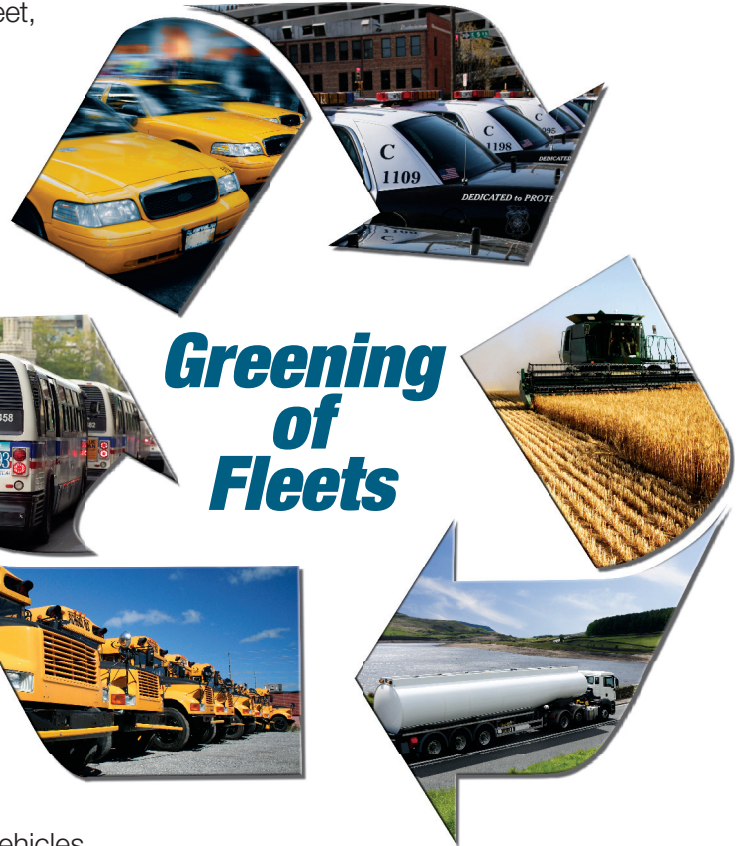
There are compelling reasons *why* fleets should be green and deliberate steps on *how* to implement alternative fuels.

### Why Use Green Fleets?

- **Reduce operating costs** by improving efficiency, reducing life cycle costs, and reducing vulnerability to volatile fuel prices.
- **Reduce greenhouse gas emissions** by implementing the use of electric drive in vehicles, which are the primary source of greenhouse gases and urban air pollution.
- **Improve corporate image** by branding business strategies and appealing to public concerns about energy conservation and ecological sensibilities.

### How to Implement Green Fleets

- **Get buy-in** from all management and staff levels, and be sure to communicate information about the benefits, goals, and targets frequently.
- **Create long-term objectives** and tangible goals based on best practices in the industry (such as baselines, benchmarks, and progress reports).
- **Avoid setting reduction goals in absolute numbers** for growing fleets or fleets just starting because absolute goals can impede growth.
- **Anticipate obstacles**, such as driver resistance, lag time between original equipment manufacturers' technology and market availability, and slower return on investment.
- **Move slowly** and implement change over time.
- **Improve vehicle use** with selection analysis and education of drivers.
- **Track and report progress** and share successes with employees, shareholders, and the public.



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## Electric Drive Basics

Electric drive refers to vehicles that use electricity to either power or improve the efficiency of a vehicle. Electric drive vehicles are available in many forms for both light-duty and heavy-duty applications. Charging stations are available to the public. There are three main options for at-home or at-work charging of fleet vehicles. Electric drive vehicles and their variations have been available for years and the market for such advanced vehicles continues to grow. According to the Alternative Fuels Data Center (AFDC), the electricity that is used to power the vehicle may be provided by the electric power grid and is stored in the vehicle's batteries. However, onboard generation of electricity is common in some electric vehicles (EVs).



### Did You Know?

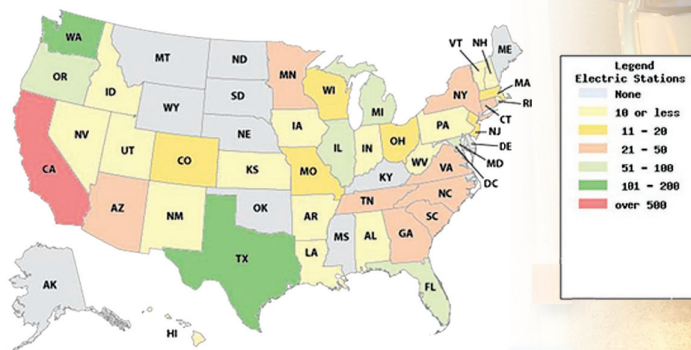
Check out the following link to see what incentives are available for electric drive vehicles.  
<http://www.afdc.energy.gov/afdc/laws/matrix/tech>

- **Three major types of electric vehicles currently available**
  - Hybrid electric vehicle (HEV)
  - Plug-in hybrid electric vehicle (PHEV)
  - Battery electric vehicle (BEV)
- **As hydrogen and fuel cell technology becomes affordable a fourth type will be available**
  - Fuel cell electric vehicle (FCEV)
- **Each type provides for varied fuel economy increases and emissions reductions**

- **HEVs and PHEVs have unlimited range**
  - Most combine the benefits of electric drive with gasoline engines
- **PHEVs and BEVs can be charged using affordable, domestically produced electricity**
- **FCEVs use domestically produced hydrogen**
- **Public, private, at home, or onsite charging options are available**
- **Three charging levels available**

## Incentives

Despite the fluctuating economy and budget woes, there are a record number of grants and incentives for funding alternative fuel vehicles that have been made available. For example, in 2009 the U.S. Department of Energy (DOE) made nearly \$300 million of American Reinvestment and Recovery Act (ARRA) funding available through the Clean Cities program. This single grant funding opportunity is responsible for putting more than 9,000 alternative fuel and energy efficient vehicles on the road and establishing an additional 542 fueling stations across the country.



Electric Drive fueling stations. Source: AFDC.

## Electric Availability

The Alternative Fuels Data Center (AFDC) reports more than 6,800 public charging stations nationwide as of 2012. California leads with more than 1,000 statewide. According to the Clean Fleet Report, use of EVs is expected to reach 3.2 million by 2015, and "more than 4.7 million EV charge points will be installed globally." The above map shows current recharging location counts.

## Electric Drive Cost

A key factor in measuring the price of using electricity to power vehicles is the cost of producing electricity and installation of the charging infrastructure. As the technology for installing electric vehicle supply equipment (EVSE) and storing power in electric vehicles becomes more efficient, the cost at the infrastructure and vehicles level should decrease. The cost of electricity is based on a gasoline gallon equivalent (GGE).

Fuel	Area	2012 Cost	2009 Cost
Gasoline	National Average	\$3.37	\$1.86
Diesel	National Average	\$3.86	\$2.44
Electricity	National Average	\$3.87	\$3.86

Electricity and gasoline and diesel cost comparison, 2009-2012. Source: AFDC.