

Alternative Fuel Vehicles

Overview

Thousands of vehicles powered by alternatives to conventional gasoline and diesel are on America's roads, with more joining them every day. These alternative fuels include: compressed natural gas (CNG), liquified natural gas (LNG), liquid propane gas (LPG), methanol (M85), ethanol (E85), biodiesel, electricity, hydrogen, and fuels derived from biological materials. Why are fleet managers introducing alternative fuel vehicles (AFVs) into their fleet? There are benefits for both the public and fleet operators.

Why You Should Consider AFVs

Consider these facts:

- Most AFVs produce less pollution than petroleum vehicles
- Tax credits and financial incentives help lower the cost of AFVs
- Prices of alternative fuels are more stable and often lower than petroleum fuels
- Use of alternative fuels reduces our dependence on imported oil
- Automakers and engine manufacturers are expanding their lines of AFVs and engine types, and the network of fueling stations is growing.

Benefits of Alternative Fuel Vehicles

Air Quality Benefits. AFVs produce lower emissions and fewer toxic contaminants than gasoline and diesel vehicles. Alternative fuel vehicles have inherently lower harmful emissions, including toxic contaminants, compared to gasoline and diesel vehicles. In particular, evaporative and start emissions are significantly reduced. As a result, alternative fuel vehicles reduce impacts on air quality, global warming, the environment and public health. The fact that the transportation sector is the fastest growing source of harmful emissions makes the use of alternative fuel vehicles all the more critical to South Carolina's environmental and public health.

Economic Benefits. The specific economic benefits of AFVs will depend on the fleet, the type of vehicle contemplated and other site-specific factors. While the capital cost of purchasing or converting vehicles to alternative fuels remains higher than for gasoline or diesel vehicles, the cost of fuel and maintenance may be lower during the lifecycle of the vehicle.

Reduce dependence on imported oil. Alternative fuels can be extracted and produced domestically, reducing our dependence on a finite supply of imported oil which can be subject to fluctuations in price and supply. In addition, the development of domestic fuel sources and the alternative fuels market contributes to domestic economic growth.

Renewable fuel source. Many alternative fuels come from renewable sources of energy, providing greater energy efficiency in the development of fuels and reducing dependence on finite sources of energy. For example, ethanol is created through the fermentation of corn or other high starch content grains or biomass. Biodiesel is the result of processing vegetable oils. In addition, ethanol and biodiesel can be made from recycled products, eliminating waste and using an almost infinite supply of raw materials.

Regulatory Requirements. The National Energy Policy Act requires federal government, state government and alternative fuel supplier fleets to include AFVs in their purchases of new light-duty vehicles. The US Department of Energy (DOE) decided not to mandate AFV purchases for local government and private fleets. The DOE plans to examine options to the private and local rule to include exchanging alternative fuel use for a credit toward an AFV purchase and credits for purchasing medium and heavy-duty AFV's.

Reduced spill hazard. In general, alternative fuels provide safety and environmental benefits when compared to gasoline and diesel fuels. For example, natural gas is lighter than air, which results in the gas dissipating quickly in the unlikely event of a leak. Thus, any potential leaks of natural gas will not contaminate soil and water, unlike spills of gasoline and diesel or leaking underground storage tanks. In addition, the risk of combustion is reduced due to the higher ignition point of natural gas compared to petroleum fuels. Biodiesel (B100) provides another example of reduced spill hazard, as it is biodegradable and nontoxic. If spilled, neat biodiesel (B100) does not pose the soil and water contamination concerns associated with gasoline and diesel fuels.

Being "Green". The good-will benefits should not be underestimated. Alternative fuel vehicles are a publicly visible sign of an organization's commitment to environmental stewardship.

Downsides. The most obvious downside is that vehicles usually cannot be refueled at the corner service station. The fueling infrastructure for many alternative fuels is only now being developed.

That's why using AFVs in fleets rather than individually owned vehicles is being encouraged at this time. Fleet vehicles are good candidates because they return to a specific location to fuel or have routine routes on which the fuel is available. Vehicles that can use either gasoline/diesel or an alternative fuel (bi-fuel vehicles) are a good transitional step. Soon, fleet use should bring enough demand for alternative fuels to make them as readily available as gasoline -- or as close as your home natural gas or electricity supply. By joining the drive to alternative fuels now, you'll be accelerating that process.

Are alternative fuels realistic for your fleet right now? That's obviously a question you will ultimately have to answer for yourself. However, alternative fuel vehicles and their fuels are available now.