

# Air Quality

## Vehicle emissions

### Conventional fuels

Each year, everyday petrol and diesel (conventional) fuels and vehicle engines are getting cleaner as vehicle technology improves to meet strict European standards.

**Ultra low sulphur diesel** has significantly lower carbon dioxide (CO<sub>2</sub>) emissions compared to petrol. However diesel might emit higher levels of nitrogen oxides (NO<sub>x</sub>) and particles than new petrol vehicles. Emissions of local air pollutants from diesel vehicles are worse than petrol.

**Ultra low sulphur petrol** is better than diesel for health because of lower NO<sub>x</sub> and particle emissions.

### Alternative fuels

There have been advances in the development of 'alternative' or 'greener' fuels, which are even cleaner than conventional fuels. These are not as readily available as petrol or diesel, but are becoming more widespread with the help of grants from the Energy Saving Trust [www.transportenergy.org.uk](http://www.transportenergy.org.uk) <<http://www.transportenergy.org.uk/>>, as well as cheaper fuel and congestion charge discounts.

**Liquified Petroleum Gas (LPG)** cars produce similar levels of CO<sub>2</sub> to newer petrol engines, but more than diesels. They offer greater benefits to local air quality, as the fuel releases practically no particles.

LPG cars can be bought new as dual fuel (where they run on either petrol or gas) or petrol cars can be converted to run entirely on LPG. As well as air quality benefits, LPG cars offer savings through cheaper fuel and a 100% congestion charge discount in London. By April 2004 there were over 25 LPG filling stations in London and 1,400 in the UK.

**CNG (compressed natural gas)** offers even lower CO<sub>2</sub> emissions than LPG and low particulate emissions. CNG engines are also much quieter. New CNG cars are not yet available on the UK market as this fuel is more suitable for larger vehicles such as lorries and refuse trucks.

**Hybrid vehicles** have lower fuel consumption, CO<sub>2</sub>, NO<sub>x</sub> and particulate emissions. Hybrids have both a conventional internal combustion engine with an electric motor and battery. The car runs off the battery at slow driving speeds - which is suitable for polluted urban areas. The number of hybrid cars on the market is increasing and grants are available.

**Electric Vehicles (EVs)** are very cheap to run and have no emissions at the point of use. There are few electric vehicles available in the UK as EVs have a limited range - typically 50 miles before the battery needs charging and a top

speed of around 50 mph. However, they are worth considering as a cheap urban run-around for short journeys.

**Biodiesel** can be run on a diesel engine and is normally mixed with conventional diesel fuel to give reductions in emissions, especially CO<sub>2</sub> and hydrocarbons. However, there are few cars that run on biodiesel in the UK as it can cause problems with the engines without modification. The government has recently provided fuel tax incentives and biodiesel is becoming more widespread.

Biodiesel is made from vegetable oils or animal fats and has been used in engines since 19th century. As it is not a fossil fuel, it could be a good way to promote a sustainable future of vehicles and recycle carbon in the atmosphere.

**Water diesel emulsion or WDE** is not available at filling stations, but is currently being tested across the country. We have recently completed an emission testing programme on our fleet. The fuel system has a certain mix of pure water and diesel and effectively reduces emissions of nitrogen dioxide and particles. However, fuel tax incentives similar to biodiesel and gaseous fuels are required before it can be seriously considered as a feasible fuel.

**Hydrogen fuel cell** is the latest development in alternative fuel technology for the future and would offer the cleanest emissions compared to other fuels when available. However, vehicles are still at prototype stage and a great deal more research is needed in the next 10-20 years before they can be produced at a reasonable cost to the public.

### **Engine technology**

Vehicle emissions can also be reduced by fitting units such as particle traps or catalysts to the engine. Vehicles with such technologies may often meet a higher Euro emission standard and qualify for a reduced pollution certificate (RPC), for which they can get lower tax levels. This type of technology is most commonly fitted to vans and lorries to reduce particle and gaseous emissions.

Smoke and dust

We deal with statutory nuisances that relate to air and odour pollution under Section 80 of the Environmental Protection Act (EPA) 1990.

To make a complaint please contact the environmental health team <[http://www.hounslow.gov.uk/pollution\\_az](http://www.hounslow.gov.uk/pollution_az)>