

One Engine - Two Fuels

Volvo Bi-Fuel

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Volvo Bi-Fuel cars have double fuel systems and tanks - one for gas, and one for the back-up fuel (petrol). The engine always starts on petrol, but will in gas mode shortly after start automatically switch to gas. Should the car run out of gas the engine will automatically switch over to petrol.

The access to gas varies from country to country - and sometimes also in different parts of each country. Therefore Volvo's Bi-Fuel are powered by either:

- Compressed Natural Gas (CNG) - mainly methane, stored at a pressure of 200 Bar, also known as biogas or natural gas or
- Liquefied Petroleum Gas (LPG) - mainly propane and butane, stored at a pressure of about 8 Bar

These two fuels are presently the most commonly used alternative fuels.

The CNG and LPG systems have similar solutions when it comes to:

- Pressure regulators (the LPG version only includes the low pressure part)
- Fuel distributors
- Injector nozzles
- Engine management system (programmed for CNG or LPG)
- The engine is always started on petrol, even if it is set to operate on gas (the switch to gas, if it has been selected, takes place automatically when the cooling water reaches a temperature of approximately 15°C).

The type of nozzle for refuelling LPG can vary from country to country. Two adapters for refuelling accompany every LPG car, to make things easier when travelling abroad.

Bi-Fuel methane

Methane is a combustible fuel that can be obtained in two different ways:

- Extracted from the earth in the form of natural gas
- Produced from organical material in the form of biogas

Apart from being a particularly economical fuel, natural gas produces far lower total emissions of environmentally hazardous and toxic substances compared with petrol and diesel fuel.

Natural gas is available in most European countries, with a total of about 600 refuelling stations - and these are increasing in number all the time.

Biogas is so far produced and distributed on a fairly small scale. However, interest in this clean and high-quality fuel is growing throughout the world - not least because it can be produced locally virtually anywhere, and has no net contribution to the global warming problem caused by greenhouse gases.

Bi-Fuel LPG

Liquefied Petroleum Gas is a mixture of two gases: propane and butane. It is obtained both directly, when oil or gas is pumped out of the ground, and indirectly as a residual product from oil refineries.

LPG offers particularly low running cost - at a saving of about 50% compared with running your car on petrol, or about 20% compared with diesel. And just as with natural gas, LPG is a far cleaner fuel than either petrol or diesel. The result is extremely low emissions of harmful substances. What is more, emissions of carbon dioxide are about 11% lower than those from petrol.

LPG is available from about 10 000 refuelling stations in Europe, with the greatest concentration in the Netherlands, Belgium, France, Italy and Great Britain.