



The diesel-fuelled VW Passat Estate 2.0 TDI 170, our Towcar Awards winner for 2011

Choosing between diesel, petrol and other fuels for your towcar

Ten years ago, diesel engines accounted for only 15 per cent of all UK car sales. Now it is more like 50 per cent, and for larger cars nearer 70 per cent. The trend continues, encouraged by the gains in efficiency from the latest designs and despite slightly higher prices for UK diesel fuel. Over the last few years, petrol hybrids have made great strides, diesel hybrids are also on the cards, and bio-diesel now adds a further dimension. Gas-based fuels such as LPG are still popular with a small minority of users due to the far lower pump price, but price structures based only on tax are notoriously volatile. And then there is also hydrogen, fuel cells and other technologies waiting in the wings.

Due to the type of use, for most campers and caravanners the choice will remain with fossil fuels for the medium term at least. So covering around 10,000 miles a year your fuel usage might be as much as 1,800 litres with a cost in the region of £2,500 depending on which fuel and current prices. Most of us would want to reduce this cost if possible, but probably not if it means too many compromises elsewhere.

The choice can be a hard one, so this Data Sheet looks at the various fuels and their different characteristics to help you decide.

Petrol versus diesel

Assuming you have done all the necessary calculations on weight ratios between car and caravan and maximum engine power necessary, what are the factors to consider before making a choice?

- Look at how the engine suits your requirements in its other characteristics. If you use a solo car with camping gear in the back, then you will be looking at the engine's performance and fuel efficiency to give you enough power for the hills without costing the earth in fuel bills.

- If you are towing a caravan or camping trailer, or using a motorhome, your needs will be slightly different. The extra weight will require a good amount of power and torque (pulling power) at a wider range of engine speeds so that pulling away or climbing a long hill is not going to be unnecessarily difficult. Diesels generally have better pulling power at lower engine speeds.

- Petrol is traditionally best for out-and-out power but at the cost of needing higher engine speed and greater fuel consumption compared with diesel.

- Diesel engines are heavier, usually more costly to buy and sometimes noisier, but offer great savings in fuel use – a 30 per cent improvement compared to an equivalent petrol unit in most cases.

- A heavier engine means higher kerbweight, which may allow the 85 per cent ratio for towing to be more easily achieved, but be sure to check the manufacturers' towing limits as they are not always the same as the petrol equivalent and some versions (particularly diesel automatics) can be quite low.

- If you prefer automatic transmission, there is often less of a

choice with diesels, but this is changing with the advent of electronically-managed transmissions such as Volkswagen's DSG system.

■ To assess the most economical choice of fuel you need to undertake some simple calculations on the basis of your annual mileage and anticipated fuel consumption to work out an annual cost and compare this with the extra costs involved in running a diesel-engined vehicle. These may include a higher initial purchase price and more frequent servicing.

■ Whether reduced fuel consumption is worth the extra £1,000 or so on the cost of a diesel car depends on your average annual mileage. However, on the basis of typical fuel consumption figures for 2-litre engines, diesel prices about 5p per litre over petrol and a total annual mileage of about 15,000 miles, the payback period for choosing diesel fuel is about two years. In addition, some of the higher initial cost of a diesel car will be recouped in a higher resale value.

■ Detailed design changes such as turbocharging and common rail injection systems over the years have made modern diesel engines far more pleasant in terms of noise, smoothness, efficiency and reliability.

■ Petrol engines are available with turbo or supercharging, which aids efficiency and power. The best can get to within 10-20 per cent of an equivalent diesel's fuel consumption figures. The penalty is more cost and complication.

■ There is now little to choose between petrol and diesel on emissions – they are different, but both are subject to strict European controls. After some years of charging a premium for the annual car tax (VED) for diesels, the Government later relented and both fuels are taxed the same. The lower CO₂ per km figure for diesel over petrol power means less VED to pay each year. But beware – governments can change their minds.

■ There are different grades of both petrol and diesel, including bio-diesel. Check the handbook to make sure you use the right fuel for your engine.

The lower CO₂ per km figure for diesel engines over petrol currently means less car tax to pay



Basic characteristics: **Diesel engines**

- Cost more initially
- Can be noisier especially on start-up
- More economical in use
- Better pulling power at low revs
- Need smoke test at MOT test
- Longer service life if well maintained
- Less CO₂ per km, therefore cheaper annual road tax in use.

Basic characteristics: **Petrol engines**

- Usually offer more power for a given engine size
- More power means greater acceleration
- Fewer particulate and NOx emissions
- Fuel price varies but petrol price currently lower than diesel in UK
- Lighter than diesel engines
- Cheaper than diesels to buy in new cars
- Quieter on start up.

Key:																	
✓ advantage																	
✗ disadvantage																	
	Purchase price		MPG in use		Mid-range torque		Noise		NOx emissions		CO2 emissions		Service life		Weight of engine		Annual road tax cost
Fuel Type																	
Petrol	✓		✗		✗		✓		✓		✗		✗		✗		✗
Diesel	✗		✓		✓		✗		✗		✓		✓		✓		✓



The Vauxhall Insignia Sports Tourer 1.6T is a good example of a petrol-fuelled towcar

Misfuelling

AA sources state that more than 150,000 cars are filled with the wrong fuel each year and the delicate fuel pump systems now used mean that an expensive repair is often necessary.

Older (pre-1998) diesels could easily tolerate a small addition of petrol, but modern high pressure pumps can be irreparably damaged by the wrong fuel. Particularly vulnerable are those motorists who once used one kind of fuel and have changed to another.

If you do mis-fuel the car, call your rescue service at once, before starting the engine or driving off. They are used to this problem and have specialised equipment on board.

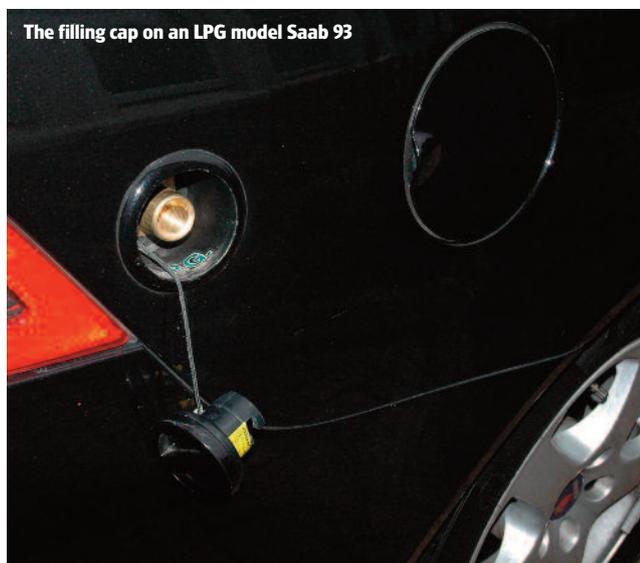
Other fuels

So-called alternative fuelled vehicles (AFVs) looked as if they might make significant inroads to the market but they are still only a tiny proportion of all registrations (under 1 per cent). That still represents 15,000 vehicles, so there must be some advantages.

AFVs include LPG-powered vehicles, which are basically petrol engines but using the same fuel as in gas cylinders; hybrids that use a combination of petrol and electric power; and more futuristic systems including hydrogen, CNG (natural gas such as that used in a domestic boiler) and plug-in electrics. Of these only LPG and hybrids currently offer the power, range and refuelling infrastructure needed for camping and caravanning pursuits.

LPG fuel

- Any good quality petrol engine car can be converted with a typical cost of about £1,600 to £2,000. It will take about three days.
- Running costs are about 20 per cent less than a diesel and 40 per cent less than petrol, because of lower fuel taxes, though this may change if Government policy towards LPG alters in the future. Payback period can be as little as two years, depending on mileage and under current fuel duty conditions.
- An LPG tank is required in addition to the existing petrol tank, which takes up boot room or can be fitted in the spare wheel well or underneath the vehicle.
- There is a small loss of power compared with petrol in the higher revs band. You may also experience a reduction in miles per litre of fuel compared to petrol, but this is minor while LPG costs are so far below petrol costs.
- The driving experience is smooth and quiet.
- There are very low emissions and almost no particulate emissions.
- You won't be allowed in some tunnels (including the Channel Tunnel).
- Insurers must be notified of the alteration – if an 'approved' conversion is done by an LPG Association member, most will not charge any extra premium, but a few may not offer any cover at all.
- Installation certificates have now been superceded by the UK LPG register. More information can be found on its website.
- New car guarantees will be affected, but the LPG converter should offer equivalent terms.
- LPG is now widely available, particularly at BP and motorway service areas. Availability overseas is variable and you are likely to need an adapter for filling up.



The filling cap on an LPG model Saab 93



The Lexus RX 400h hybrid has a good towing limit

Hybrids

- These are normally based on petrol engine cars but carry a greater weight with the batteries for the alternative electric power unit.
- They are more expensive to buy and batteries eventually need replacing.
- Toyota and Honda variants are not authorised for towing trailers.
- Some Lexus models have a good towing limit, but are pricey.
- Hybrids have low emissions and good fuel consumption.
- The actual mpg depends heavily on use pattern – official figures can be optimistic.

Useful contacts

- The Camping and Caravanning Club, 0845 130 7632, 024 7647 5442, thefriendlyclub.co.uk
- UK LPG, uklpg.org
- Drive LPG, drivejpg.co.uk
- BP, 020 7496 4000, bp.com
- Shell, 020 7934 1234, shell.co.uk
- Autogas, 01527 895160, autogas.ltd.uk
- Calor Gas, 0800 626626, calor.co.uk
- Lexus, 0845 129 5484, lexus.co.uk

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