

# Transport Fuels



## Transport Fuels Used in SA

For many years, petrol and diesel have been the preferred fuels in South Australia. Diesel use has dominated the heavy vehicle fleet, while petrol has been the preferred fuel for light vehicles.

This demarcation is breaking down, however, especially with the increase of diesel-fuelled light vehicle models entering the market. Liquefied Petroleum Gas (LPG) has made significant inroads as an alternative to petrol, with quite widespread availability and acceptance.

In recent years, new transport fuels have emerged. Now there is a greater range of transport fuels available to South Australian motorists than ever before.

Broadly speaking, transport fuels in current use in South Australia include:

- Conventional fuels;
- Gaseous fuels;
- Biofuels and biofuel blends; and
- Electricity.

There are several variants in each category, with the likelihood of further expansion of the variety of fuels available.

### Conventional Fuels

Conventional fuels include the variants of petrol and diesel available on the market.

While relatively low cost, use of these fossil fuels results in significant greenhouse gas emissions and air toxic emissions.

Newer vehicles burn conventional fuels cleaner and use them more efficiently, with considerable improvements in recent years.

### Gaseous Fuels

LPG is a well-established gaseous fuel in South Australia. Natural gas, extensively used for stationary energy purposes, is now also being used as a transport fuel.

#### **LPG**

LPG is widely available, servicing a fleet of dedicated LPG-fuelled vehicles and vehicles converted to use LPG.

LPG is cheaper and cleaner burning than petrol. Using LPG in place of petrol can cut greenhouse gas emissions by over 10%.

#### **Natural Gas**

Natural gas is predominantly used in heavy vehicles, in the form of compressed natural

#### Further information:

Email: [DPTI.LowEmissionVehicles@sa.gov.au](mailto:DPTI.LowEmissionVehicles@sa.gov.au)

Web: [www.lowemissionvehicles.sa.gov.au](http://www.lowemissionvehicles.sa.gov.au)



Government of South Australia

Department of Planning,  
Transport and Infrastructure

gas (CNG) or liquefied natural gas (LNG). It is typically used for depot-based refuelling, where compression or liquefaction facilities can connect to the existing gas distribution network.

### Biofuels and Biofuel Blends

Ethanol and biodiesel are growing in popularity as replacement fuels for petrol and diesel, respectively.

Both ethanol and biodiesel are renewable fuels and have very low full fuel cycle greenhouse gas emissions.

#### **Ethanol**

Ethanol is blended with petrol and sold as E10 (10% ethanol and 90% petrol, by volume) or E85 (85% ethanol and 15% petrol, by volume).

E10 is suitable as a petrol replacement for many vehicles, without any modification.

E85 has quite different characteristics to petrol and, as such, is only suitable for a small range of models (at present).

#### **Biodiesel**

Biodiesel is blended with mineral diesel and sold as B5 (5% biodiesel and 95% mineral diesel, by volume) or B20 (20% biodiesel and 80% mineral diesel, by volume).

Pure biodiesel (B100) is also sold without any mineral diesel content.

B5 must meet the same standards as mineral diesel and, as such, diesel may contain up to 5% biodiesel without labelling.

### Electricity

Mass-produced electric vehicles first entered the South Australian market in 2010. There are now several plug-in electric vehicle variants available.

Electric vehicles are quiet, highly efficient, cheap to run and have no drive-time emissions. Electricity can be generated from a variety of primary energy sources.

The main limitations of using electricity in road vehicles relate to batteries. Electric range is limited, batteries are costly and they typically take hours to recharge.

Several innovative approaches to deal with battery limitations are emerging, making electric vehicles a promising option.

### Emerging Transport Fuels and Energy

**Synthetic fuels** are chemically identical to conventional fuels, however the cost and emissions tend to be higher.

**Hydrogen** is promising, particularly in electrochemical fuel cells for electric vehicles, in place of batteries. Cost, infrastructure and emissions issues exist.

**Compressed air** engines and energy-capture systems are emerging, though the technology is not yet mature.

Many energy sources have, at some stage, been considered for transport applications.

7349334 (5/2/13)

#### See Also:

- [Transport Fuels: Conventional Fuels](#)
- [Transport Fuels: Liquefied Petroleum Gas \(LPG\)](#)
- [Transport Fuels: Natural Gas \(CNG and LNG\)](#)
- [Transport Fuels: Ethanol \(E10 and E85\)](#)
- [Transport Fuels: Biodiesel \(B5, B20 and B100\)](#)
- [Transport Fuels: Electricity](#)
- [Transport Fuels: Emerging and Future Fuels](#)

#### Further information:

Email: [DPTI.LowEmissionVehicles@sa.gov.au](mailto:DPTI.LowEmissionVehicles@sa.gov.au)

Web: [www.lowemissionvehicles.sa.gov.au](http://www.lowemissionvehicles.sa.gov.au)



Government of South Australia

Department of Planning,  
Transport and Infrastructure