

Reducing Emissions



Reducing vehicle emissions can be achieved in a variety of ways.

Complementing efforts in urban and transport planning reforms, travel behaviour change and public transport upgrades, *South Australia's Low Emission Vehicle Strategy* aims to reduce the emissions from vehicles on our roads.

Both greenhouse gas emissions and air toxic emissions are considered.

Vehicle emissions reduction strategies can be broadly categorised as:

- Choosing an efficient vehicle;[□]
- Efficiently operating and maintaining the vehicle and, if applicable, the fleet of vehicles;[□]
- Using a low emission fuel;[□] and
- Driving efficiently (ecodriving).[□]

Understanding where the energy in vehicles goes can be a great help in targeting efficiency improvements.

Figure 1 (over the page) shows where the fuel's energy goes in a typical car driven in a flat, urban environment.

While a little is lost to evaporation, the vast majority is lost in the vehicle's engine. Some is required to operate parasitic loads (for example the alternator) and a portion is lost through inefficiencies in the transmission and remainder of the drivetrain.

In the urban environment, a significant amount is lost through idling. Only a small amount translates to power at the wheels.

In a highway context, idling and braking will be minor and aerodynamic drag will become a substantial factor in fuel efficiency.

Choosing an Efficient Vehicle

An efficient vehicle will have reduced losses of fuel energy content through engine and drivetrain inefficiencies.

While the losses in most vehicles are substantial, the opportunities to capture them are fundamentally limited by the nature of internal combustion process – you cannot avoid losing a lot of heat to the environment.

Still, the gap between the best and worst vehicles is significant, and vehicle electrification offers a way to profoundly increase engine efficiency.

Further information:

Email: DPTI.LowEmissionVehicles@sa.gov.au

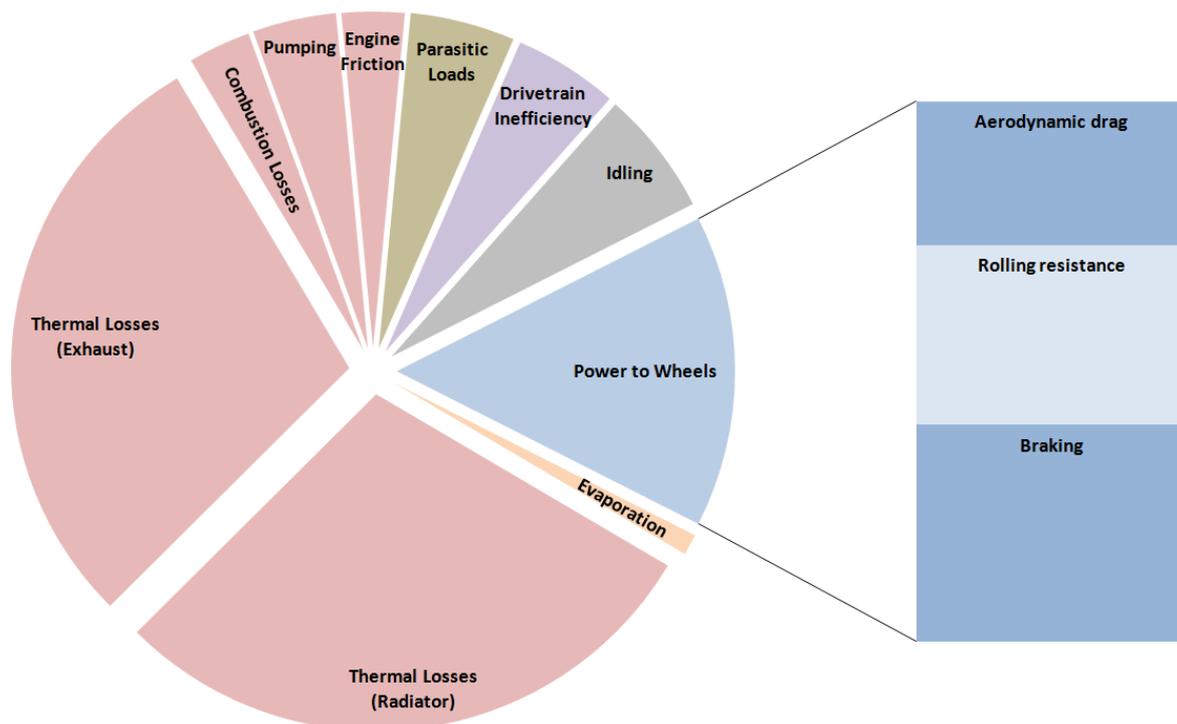
Web: www.lowemissionvehicles.sa.gov.au



Government of South Australia

Department of Planning,
Transport and Infrastructure

Figure 1: Where the Fuel Goes (Car, Urban)



Efficient Operation and Maintenance

Using low friction lubricants and keeping filters clean can help reduce engine friction and parasitic loads.

Tyre selection and proper inflation is critical in minimising rolling resistance.

Using Low Emission Fuels

While low emission fuels don't necessarily offer efficiency improvements, they offer lower emissions for given level of fuel use.

Many vehicles are compatible with lower emission fuels and the network of alternative fuels is expanding.

Efficient Driving

Ecodrivers reduce idling and energy losses to braking, reducing fuel use, costs and emissions by around 5 to 10%¹.

¹ See [Ecodriving Case Studies Fact Sheet](#) 7625489

7372348 (14/8/13)

See Also:

- [Vehicle Technologies](#)
- [Transport Fuels](#)
- [Ecodriving](#)
- [Reducing Emissions: Vehicle Emission Types](#)
- [Reducing Emissions: Why Reduce Emissions?](#)
- [Reducing Emissions: Vehicle Selection](#)
- [Reducing Emissions: Vehicle Use and Operation](#)
- [Reducing Emissions: Refuelling / Recharging](#)
- [Reducing Emissions: Maintenance and Tyres](#)
- [Reducing Emissions: Aerodynamics and Loading](#)
- [Reducing Emissions: Low Emissions at Low Cost](#)
- [Reducing Emissions: Offsetting Emissions](#)

Further information:

Email: DPTI.LowEmissionVehicles@sa.gov.au

Web: www.lowemissionvehicles.sa.gov.au



Government of South Australia

Department of Planning,
Transport and Infrastructure