

# Reducing Emissions: Vehicle Specification & Selection



## **The vehicle you select has a profound impact on your transport emissions.**

Selecting a low emissions vehicle requires you to first consider the driving task and match the class and size of vehicle to your needs.

You then need to consider the key characteristics of vehicles such as drivetrain, fuel, efficiency and emissions performance. Ancillary equipment, such as air conditioning, also warrants attention.

### **Class, Size and Shape**

All else being equal, bigger vehicles require more energy to move – meaning more fuel consumption, higher costs and more greenhouse gas emissions. Consider:

- How many passengers the vehicle will typically carry;
- What conditions the vehicle will regularly encounter (eg urban, highway or off-road driving; use in depots or warehouses);
- What size load – weight and volume – will be transported or towed, and how often;

- Does any freight need protection from the weather and movement, or is an open carriage acceptable; and
- Freight loading / unloading requirements.

Consider, also, whether you need to specify the vehicle to meet its maximum possible task. It may be more cost-effective to match the vehicle to the typical driving task, and use alternative arrangements as required.

As an example for passenger cars, how often will four adults travel together, and would the savings of a smaller car make up for the occasional taxi fare?

Consider also the shape of the vehicle. Aerodynamics plays a significant role in fuel consumption, especially at higher speeds. For vehicles often driven on freeways and highways, aerodynamics will be critical. Aerodynamic aids are relatively easily to retrofit.

### **Drivetrain and Fuel**

There is an ever-expanding range of fuels and vehicle technologies to choose from, across all vehicle classes.

#### **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)



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When specifying the drivetrain and fuels, consider:

- What length trips are likely;
- Annual distance travelled;
- Whether trips are base-to-base or to a wide range of locations; and
- How many vehicles you operate.

While the internal combustion engine still dominates transport, there is increasing trend to electrification of the drivetrain. Hybrid electric vehicles and purely electric vehicles offer substantial efficiency gains and operating savings, especially in an urban environment. <sup>□</sup>

Alternative fuels, too, can offer emissions reductions and cost savings. Some fuels are 'drop-in' – they can be used in conventional vehicles. Others require you to select a compatible vehicle, or to convert a vehicle so that it is compatible. Some alternative fuels are available from retail locations; others are more suited for base-to-base applications. <sup>□</sup>

Installing your own refuelling facilities may be justified for a larger fleet of vehicles.

Vehicles that run on a range of fuels offer a hedge against relative fuel price movements.

### Efficiency and Emissions Performance

Vehicle efficiency and emissions performance varies considerably, even for the same class and technology.

The Australian Government's *Green Vehicle Guide* (for new light vehicles) and the *Fuel Consumption Guide Database* (for older light vehicles) offer comprehensive comparison. <sup>∞</sup>

For other vehicles, aim to match the transmission and engine power / torque to

the task. Engines tend to operate more efficiently at lower RPM.

For heavy vehicles, see the Australian Government's *Truck Buyers Guide*.<sup>∞</sup>

### Other Considerations

Consider other vehicle features that may support efficiency and emissions reduction:

- GPS and information technology may improve performance monitoring and routing; and
- Consider the energy required for ancillary equipment – air conditioning, refrigeration, cranes and loaders etc.

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### See Also:

- [Toolbox: Vehicle Selection Tool](#)
- [Vehicle Technologies](#)
- [Transport Fuels](#)
- [Reducing Emissions](#)
- [Reducing Emissions: Vehicle Emission Types](#)
- [Reducing Emissions: Why Reduce Emissions?](#)
- [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](#)

### External Links:

- [Green Vehicle Guide](#)
- [Fuel Consumption Database](#)
- [Truck Buyers Guide](#)

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