



An Australian Government Initiative



**Green**  
Vehicle Guide  
Driving better choices

# HYDROGEN VEHICLE GUIDE

## HYDROGEN VEHICLES ARE IN THE EARLY STAGES OF ROLLOUT IN AUSTRALIA.

Hydrogen vehicles are not yet available for everyday use in Australia. Industry and governments are continuing to invest, with the technology offering fast refuelling, no harmful tailpipe emissions and greater range.

### What is a hydrogen vehicle?

Hydrogen vehicles are a type of fuel cell electric vehicle (FCEVs) which are powered by a hydrogen fuel cell that generates electricity instead of a battery.



They work by converting hydrogen fuel into energy through an electrochemical reaction. The hydrogen in the fuel cell reacts with oxygen to produce electricity, heat and water. The electricity generated powers the car and the only emissions are heat and water.

### Benefits

Compared to electric vehicles, FCEVs have one significant benefit – they are able to be refuelled in a significantly shorter amount of time, typically taking less than 5 minutes. They can also travel a similar distance without refuelling to a comparable petrol vehicle.

Due to this advantage, they are being trialled in Australia for commercial use and long-distance applications, such as fleet and heavy vehicle use.

They also have other benefits including:

- Greater efficiency than standard petrol or diesel cars
- Reduced traffic noise
- Reduced dependence on imported oil
- Better for the environment and air quality, with only water and heat being emitted from the tailpipe.

### What models are there in Australia?

There are currently 2 hydrogen fuel cell vehicle models approved for use in Australia, one from Toyota (Mirai) and another from Hyundai (Nexo). However, these are being trialled for fleet vehicle applications only and are not currently available for everyday sale and use.

### What emissions are produced by hydrogen vehicles?

Hydrogen fuel cell vehicles do not produce any CO<sub>2</sub> emissions, with only water vapour and heat coming out of the tailpipe.



However, emissions may be produced:

- when manufacturing the vehicle and fuel cell
- from tyre, brake and road wear
- during the production of hydrogen fuel, if the hydrogen is made from coal or gas and these gases are not captured and stored.

'Green' hydrogen can be produced by extracting hydrogen from water through a process called electrolysis, using renewable electricity.

Find out more about [lifecycle emissions for vehicles](#).

### Find out more

Learn more about hydrogen energy

- [Australian Renewable Energy Agency](#)
- [Australian Hydrogen Council](#)

See our

- [Electric vehicle guide](#)
- [Hybrid electric vehicle guide](#)

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