

our environment

it's a living thing

NSW GOVERNMENT PROGRAM

Clean cars for NSW



ECO★CAR

NEW SOUTH WALES

Car emissions damage our environment

Motor vehicles are an integral part of the NSW community; they have become an essential component of our transport system. However, along with the significant benefits motor vehicles bring to modern life, there are some costs.

The key by-product of motor vehicle use – vehicle emissions – has impact at both the local and global level. Locally, oxides of nitrogen, fine particles and hydrocarbons pollute the air we breathe, resulting in health problems for many people. On a global scale, burning fuel releases greenhouse gases that will ultimately lead to climate change.

Global impacts

Motor vehicles are a significant source of greenhouse gas emissions. Rising concentrations of greenhouse gases affect the overall heat balance of the atmosphere, leading to changes in climate and weather patterns (more droughts, floods and cyclones) as well as long-term rises in ocean levels.

The transport sector is the third largest contributor to Australia's greenhouse gas emissions. And greenhouse gas emissions from the transport sector are the fastest growing emissions of any sector, increasing 20.3 per cent from 1990 levels across Australia.

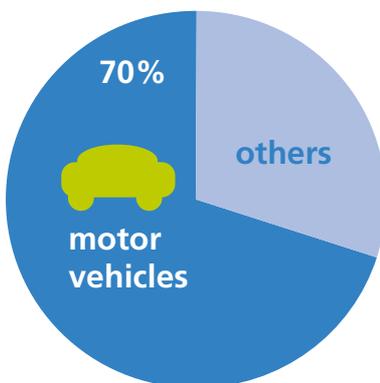
Local impacts

Motor vehicles are the major source of air pollution in urban centres, accounting for

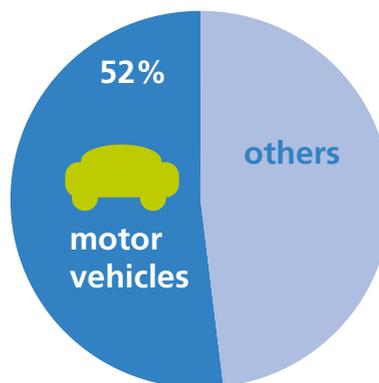
- 70% of oxides of nitrogen (NO_x) emissions,
- 52% of volatile organic compounds (VOC) emissions
- 23% of fine particulate emissions.¹

High levels of these pollutants are associated with a range of adverse health effects such as respiratory disease (including asthma) and heart disease.

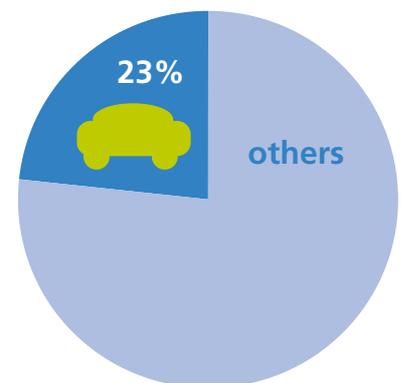
NO_x emission sources



VOC emission sources



Fine particulate emission sources



¹ NSW State of the Environment 2000

We can do more to reduce emissions

Technology is continually being developed that delivers cleaner cars. The sooner low emission cars are used on NSW roads the sooner we will enjoy the benefits.

Improvements in motor vehicle engine technology, such as the introduction of the catalytic converter, have led to significant air quality improvements in the last 20 years. There is considerable potential to make further technological improvements in the emissions and fuel consumption performance of motor vehicles.

There are 12.5 million cars registered in Australia, and about half of new passenger vehicles sold in any one year are still on the road 20 years later. So the vehicle choice made today will have long-term environmental consequences.

Gains from technology are being eroded

Advances in the engine technology used until now in NSW have led to environmental gains, but these gains are being eroded by:

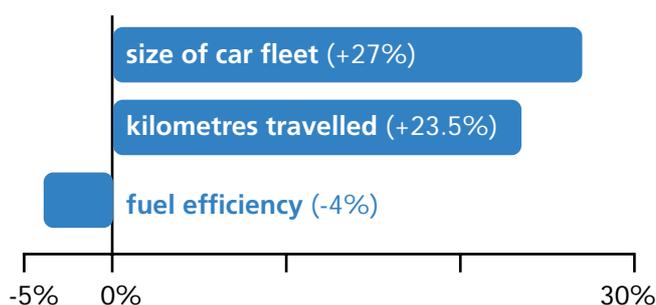
- a consumer trend towards larger, heavier vehicles with poor fuel consumption
- an increase in vehicle kilometres travelled.

Heavier cars require more energy to get them moving and this nearly always means burning more fuel. Features such as air conditioning, power steering and automatic transmission also burn more fuel. The net result is that average fuel efficiency has decreased in the last decade, despite improved engine technology.

Cleaner cars are not the total solution, but they will significantly reduce emissions from the transport sector. A major part of the problem is the increasing use of motor vehicles – there are

other initiatives aimed at reducing our reliance on cars. However, having a greater proportion of cleaner cars on the road will improve air quality and better align NSW with technological advances happening elsewhere in the world.

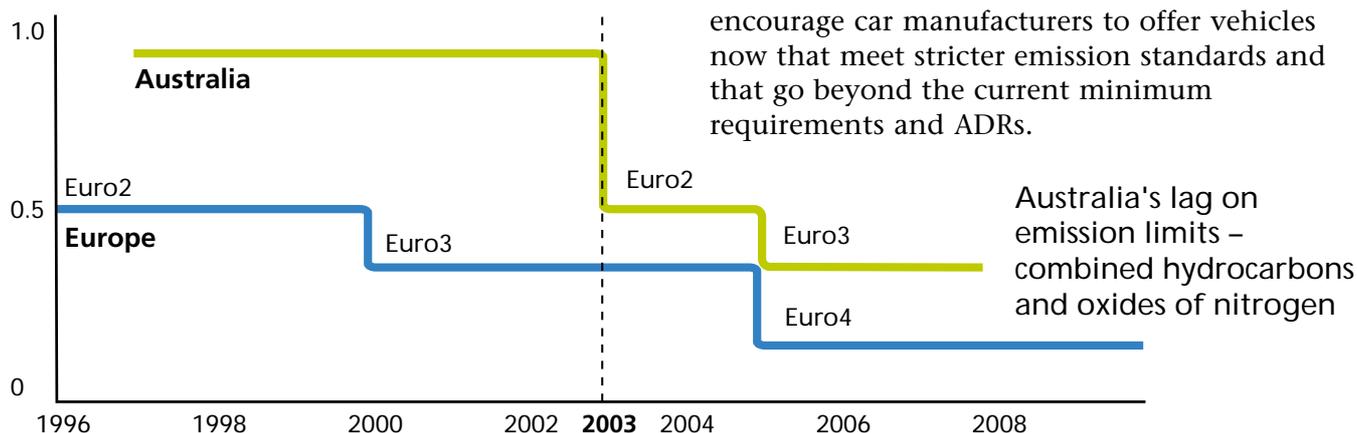
Change in Australian car fleet characteristics 1990-2000



Australian standards are lagging behind the rest of the world

Vehicle emission standards are set by the Commonwealth Government in the Australian Design Rules (ADRs). Compared to other industrialised nations, Australia is lagging behind in regulating emission standards. For example, the Euro 2 standard was implemented in Europe in 1996 but is only now being implemented in Australia in 2003/04 (ADR 79/00). The previous ADR for passenger vehicles (ADR37/01) set the same standards as those introduced in the United States in 1981. These US standards were replaced in 1993, placing Australian standards more than a decade behind the US.

The Commonwealth Government has a program of progressively upgrading the ADRs with the aim of aligning our emission standards with world's best. The NSW Government wants to encourage car manufacturers to offer vehicles now that meet stricter emission standards and that go beyond the current minimum requirements and ADRs.



The *Cleaner Vehicles Action Plan*

Action for Air, the NSW Government's 25-year air quality action plan, identified motor vehicles as our most critical air quality issue. The NSW *Cleaner Vehicles Action Plan* is a package of initiatives to make cars, trucks and buses cleaner. It aims to improve air quality in NSW and reduce fuel consumption, oil dependence and greenhouse gas emissions by developing the market for cleaner new motor vehicles.

The key elements of the Plan are:

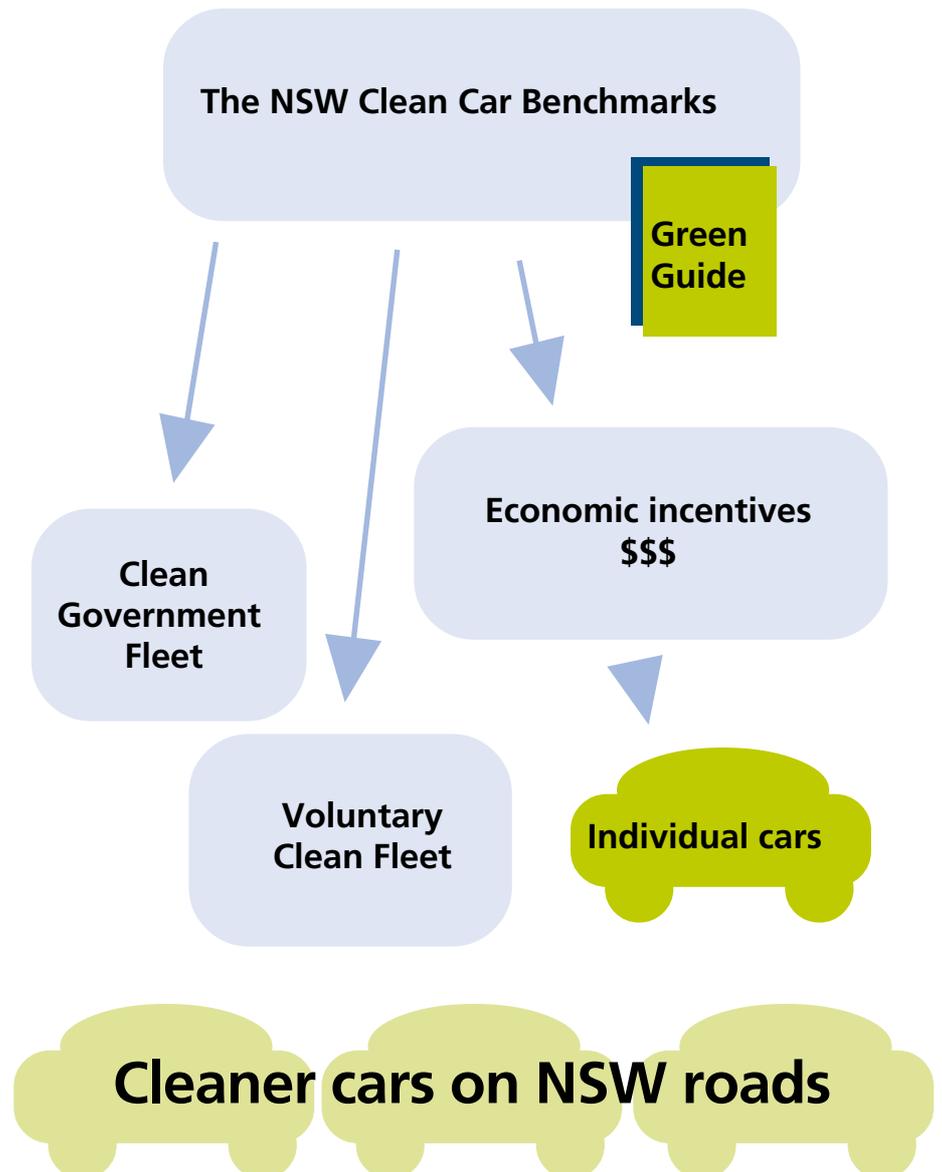
NSW Clean Car Benchmarks – establishing benchmarks for categorising the environmental performance of light vehicles. These benchmarks underpin other parts of the package.

The Green Guide – a consumer guide to the environmental performance of new cars and light trucks – vehicles under 3.5 tonnes gross vehicle mass.

Stamp duty as an economic incentive – cleaner cars will be cheaper to buy. New vehicles will be assessed on their environmental performance and will pay stamp duty accordingly.

Clean NSW Government Fleet – improving the environmental performance of the NSW Government fleet, including purchasing cleaner models as part of the fleet improvement plan.

Voluntary Clean Fleet Program – a proposal to recognise fleet operators for the implementation of environment-friendly practices.



This paper explains

- how the NSW Clean Car Benchmarks have been developed, and
- how they will give consumers better information to help them choose cleaner vehicles.

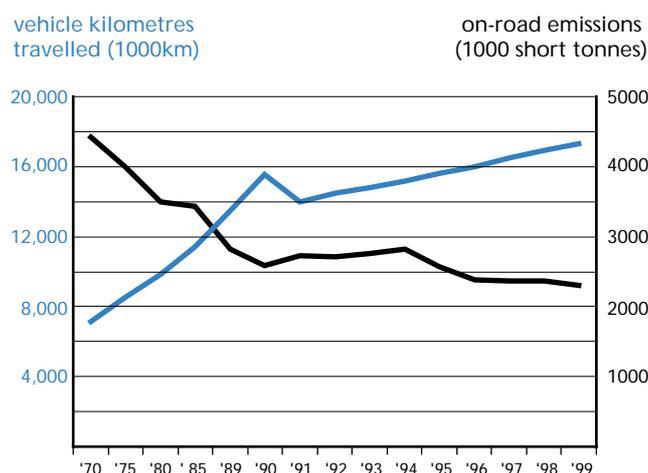
The changes to vehicle stamp duty are still under investigation and development and will be the subject of separate future consultation.

Encouraging consumers to buy cleaner cars

Clean technology can reduce emissions even if car use increases. Cleaner cars will help to offset some of the adverse impacts of increased use. The US experience shows that it is possible to have a reduction in emissions despite an increase in Vehicle Kilometres Travelled (VKT).

The NSW Government aims to increase the proportion of lower emission cars on our roads. That is why it is encouraging the use and development of cars that have better emissions performance than is required by the current Australian Design Rules (ADRs).

US on-road emissions and VKT 1970-2000

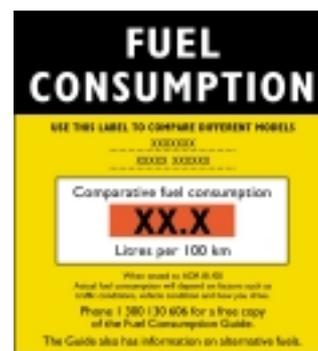


Better information for consumers

Now that we know more about the links between car emissions and environmental damage, it is important that buyers of new cars know the consequences of the choices they make.

When purchasing a new car, consumers take many factors into account – price, safety, features, reliability, warranty, performance, resale value and other factors. A range of information about environmental performance of vehicles will be available so that consumers can make a better-informed buying decision.

Fuel consumption information is now available through the Commonwealth's *Fuel Consumption Guide* and Fuel Consumption Labelling Scheme. From July 2003, the Fuel Consumption Labelling Scheme will be extended to require all new vehicles up to 3.5 tonnes gross vehicle mass to have a fuel consumption label fixed to the windscreen. From that time on, the fuel consumption label will report the vehicle's carbon dioxide (CO₂) emissions as well as its fuel consumption.



The Commonwealth Government¹ is also developing an Internet-based *Green Vehicles Guide*. This Guide will provide comprehensive information on both the greenhouse and the air pollution contributions of each individual vehicle.

The NSW Government will use the information provided for the *Green Vehicles Guide* and the Fuel Consumption Labelling Scheme as the basis of the *NSW Clean Car Benchmarks*.

A 'NSW Clean Car' logo sticker on the windscreen will be made available to readily identify vehicles with 'leading-edge' and significantly above average environmental performance.



Classifying vehicles into environmental performance categories provides important information to consumers about the impact of vehicles on air quality and the greenhouse effect.

¹The *Green Vehicles Guide* is being developed by the Department of Transport and Regional Services, on behalf of the Motor Vehicle Environment Council.

What is a clean car?

Two components of vehicle emissions will be considered when categorising vehicles.

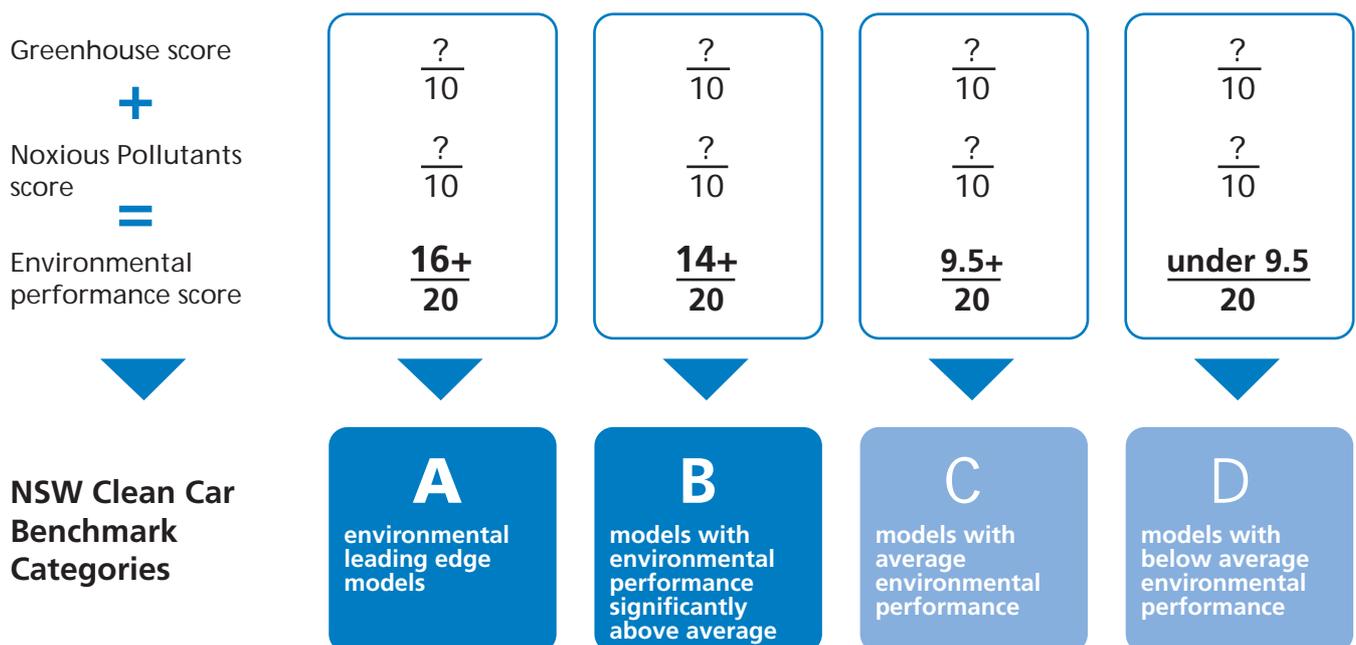
- 1 Greenhouse emissions (carbon dioxide emissions).
- 2 Noxious pollutants – oxides of nitrogen, fine particulates and hydrocarbons.

Each vehicle will be given a Greenhouse score and a Noxious Pollutants score, both out of 10. The total score out of 20 determines the benchmark category the vehicle is placed in.

The Greenhouse score will be based on carbon dioxide (CO₂) per kilometre as determined by fuel consumption. The Noxious Pollutants score will be based on the ADR standard to which the manufacturer certifies the vehicle. The Roads and Traffic Authority will publish a full list of vehicles in each of the four categories, using information provided by the manufacturers to the Commonwealth Government on fuel consumption and ADR Certification.

The EPA will also work with leading insurance, motoring, consumer and vehicle industry bodies to ensure car buyers can readily access the scores.

The NSW Clean Car Benchmarks



How the benchmarks were developed

The benchmark system focuses on the emissions performance of the vehicle rather than being linked with specific fuels or technologies. The benchmark methodology is drawn from the environmental performance criteria used in developing the Commonwealth's *Green Vehicles Guide* and the *Australian Design Rules*.

Aligning these benchmarks with the planned Commonwealth's Green Guide rating scheme minimises the administrative and reporting requirements for the vehicle manufacturing sector.

The Noxious Pollutants score is based on Australian Design Rules rather than actual vehicle emissions.

In principle, it would be better to score a vehicle based on its actual emissions performance so that different models could be more accurately differentiated. However, this data is not currently available as the Australian motor vehicle industry strongly argues that the data should remain confidential for commercial reasons. So, the first round of benchmarks are based on the standards against which vehicles are certified. The Government will consider using actual emissions when the benchmarks are reviewed in 2005.

The Expert Panel

The benchmarks have been established with advice from an Expert Panel, comprising representatives from the:

- Australian Greenhouse Office (AGO)
- Australian Institute of Petroleum
- Australian Liquefied Petroleum Gas Association
- Australasian Natural Gas Vehicle Council
- Commonwealth Department of Transport and Regional Services (DOTARS)
- Federal Chamber of Automotive Industries (FCAI) (represents car makers and importers)
- Nature Conservation Council (NCC)
- NRMA
- NSW Roads and Traffic Authority
- NSW Environment Protection Authority

ADR emissions standards for petrol passenger cars

Standards	Date of implementation in Australia	Limits on emissions (g/km)		
		Carbon monoxide (CO)	Hydrocarbons (HC)	Oxides of nitrogen (NOx)
ADR 37/01	1997–9	2.1	0.26	0.63
Euro 2	2003–04 (ADR 79/00)	2.2	0.5 combined HC and NOx	
Euro 3	2005–6 (ADR 79/01)	2.3	0.2	0.15
Euro 4	Expected to be 2008	1.0	0.1	0.08

Reviewing the benchmarks

The benchmarks will be reviewed in 2005 in conjunction with the introduction of new emission standards in Australia (ADR79/01) and the review of the Commonwealth *Green Vehicles Guide*.

Factors not incorporated in the benchmarks

The benchmarks balance administrative simplicity against covering all potential environmental impacts. They focus only on the most significant emissions from vehicles.

The benchmarks don't take into account 'full fuel cycle emissions'

The current dominance of petroleum-based fuels in Australia, as well as the complexity and gaps in knowledge of fuel cycle emissions, mean it is not currently feasible to include the emissions associated with fuel production and distribution in the scores. This may change in the future as other fuels or electric powered vehicles increase in use.

The benchmarks don't consider other greenhouse pollutants

Other greenhouse pollutants such as nitrous oxide (N₂O) and methane (CH₄) are significantly more potent than CO₂. However, current ADRs do not include measures of these pollutants, and so they are not included in the benchmarks. If they were included they would be unlikely to change a vehicle ranking (that is, its *relative* environmental performance). Including other pollutants, and the use of carbon dioxide equivalents (CO₂-e), will be investigated when the benchmarks are reviewed, especially if fuels other than petrol or diesel become more common.

The benchmarks do not include all air toxins

Air toxins such as benzene, 1,3 butadiene, formaldehyde and acetaldehyde have not been included in the benchmarks at this stage. Current ADRs only require compliance for carbon monoxide (CO), oxides of nitrogen (NO_x), fine particulates (PM₁₀) and hydrocarbons (HC). The full range of air toxins may be included if actual emissions are used for scoring, or if adequate data can otherwise be sourced.

Have your say

The NSW Government is seeking feedback on the benchmarks, and is also seeking partners to ensure extensive use of these benchmarks. On behalf of the NSW Government, the EPA will be coordinating receipt of your comments and your expressions of interest. The EPA will provide copies of submissions to all government agencies who are dealing with the issues raised.

Please send us your comments by 30 June 2003 to the address below.

In preparing your response you might want to consider:

- the adequacy of environmental performance information provided to consumers
- the best way of communicating vehicles' environmental performance to car buyers
- the opportunities for combining the benchmarks with other activities for cleaner vehicles in NSW.

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