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Chronology | 2 September 2024

# Developments in Australian fuel quality and vehicle emissions standards: an updated chronology

Dr Emily Gibson  
Research Paper Series, 2024–25



**Confidential, Impartial, Timely**

ISSN 2203-5249

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## Introduction

This paper updates an [earlier chronology](#) published in July 2022 and outlines developments in the regulatory framework for fuel quality, noxious (in-service) emissions and vehicle efficiency standards in Australia, principally over the last 2 decades to July 2024.

Prior to the late 1970s, fuel quality was ‘largely unregulated’.<sup>1</sup> Standards Australia had developed [AS 1876–1976 Petrol \(Gasoline\) for motor vehicles](#) and [AS 3570–1988 Automotive diesel fuel](#); however, these standards had no legislative basis and did not address significant emissions management issues. Similarly, Australian Design Rules (ADRs) addressing vehicle emissions were not—at that time—legislative instruments.<sup>2</sup>

### The transport sector’s contribution to greenhouse gas emissions and air pollution

The transport sector contributed 21.2% of Australia’s greenhouse gas (GHG) emissions in the year to September 2023<sup>3</sup>, mostly through road transport.<sup>4</sup> As at 31 January 2023, there were 21.2 million registered motor vehicles in Australia.<sup>5</sup> Emissions from the whole sector have risen by about 50% since 1990, due to factors such as population growth, larger vehicles, increased freight movements, and more flights.<sup>6</sup>

In addition to releasing GHG due to the combustion of fossil fuels, vehicles with internal combustion engines (ICEs) emit other noxious substances that contribute to harmful air pollution. By adopting more stringent vehicle emissions standards, countries could ‘achieve up to a 99 percent reduction’ in the emitted pollutants that can cause ischemic heart

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1. [Revised Explanatory Memorandum](#), Fuel Quality Standards Bill 2000, 7 September 2000.
  2. Legislative Research Service, ‘[Motor Vehicle Standards Bill 1989](#)’, Bills Digest, 51, 1989, (Canberra: Parliamentary Library: 30 May 1989).
  3. Department of Climate Change, Energy, the Environment and Water (DCCEEW), [Quarterly Update of Australia’s National Greenhouse Gas Inventory: September 2023](#), (Canberra: DCCEEW, March 2024), 16; Parliamentary Library calculation using supporting [Data Source](#), Figures 1 and 10. Note that the decline in transport emissions in the year 2020 has been largely attributed to COVID-19 restrictions and emissions are expected to increase (that is, return to their pre-COVID trajectory) in the coming years; Adam Morton, ‘[Recent Australian Emissions Cuts Likely to be Reversed in Recovery From Covid and Drought](#)’, *Guardian*, 23 February 2021.
  4. ‘[Paris Agreement Inventory](#)’, DCCEEW. Parliamentary Library calculation based on emissions from cars, light commercial vehicles and motorcycles by opening ‘Select sectors’, expanding ‘1 Energy’, ‘1.A Fuel Combustion’, ‘1.A.3 Transport’, ‘1.A.3.b Road Transportation’ and selecting ‘1.A.3.b.i Cars’, ‘1.A.3.b.ii Light Commercial Vehicles’ and ‘1.A.3.b.iv Motorcycles’ and the ‘1.A.3 Transport’ checkboxes, and calculating the percentages from the downloaded data.
  5. Bureau of Infrastructure and Transport Research Economics (BITRE), ‘[Road Vehicles Australia, 31 January 2023](#)’, dataset, revised 21 July 2023, (Canberra: Department of Infrastructure, Transport, Regional Development, Communications and the Arts, 28 June 2023). Parliamentary Library calculation from ‘Table 1 Motor vehicles on register, by type of vehicle and state/territory of registration, 2021, 2022 & 2023’. There are also unregistered vehicles used in the agriculture and mining sectors that are not counted in this total.
  6. Emissions from transport comprised 9.97% of Australia’s emissions in 1990: ‘[Paris Agreement Inventory](#)’, DCCEEW. Parliamentary Library calculation by selecting ‘Select sector’, and then ‘1.A.3 Transport’ and ‘1.A.3.b Road Transportation’.

disease, lung cancer, stroke, and asthma.<sup>7</sup> While not all air pollution is attributable to transport, data compiled for the [Global Burden of Disease Study](#) indicated that in 2019 an estimated 1,910 deaths (63% higher than national road deaths) and 41,400 disability-adjusted life-years (DALYs) were attributable to air pollution in Australia.<sup>8</sup> Recent studies have indicated reducing transport sector air pollution could save billions of dollars in avoided health costs.<sup>9</sup>

## Overview of regulatory framework

Australia's regulatory framework for fuel quality and vehicle emissions standards has been in place for several decades. However, Australian standards have consistently trailed behind other advanced economies such as the European Union (EU), Japan, and the United States of America (USA). For example, in 2020 Australia ranked 85th in the 'Top 100' world rankings for petrol quality (based on the mandated standard for sulfur content) and had the second-lowest ranking of all OECD countries, after Colombia.<sup>10</sup> Similarly, while nearly 90% of new light-duty and 80% of new heavy-duty global vehicle sales are covered by vehicle efficiency standards,<sup>11</sup> Australia has not had an equivalent standard.

Three interrelated factors are relevant to the consideration of fuel quality and vehicle emissions standards in Australia.

### Fuel quality standards

Fuel quality standards establish the chemical parameters, such as sulfur and aromatics content, that different types of fuel must meet. Australia has established [quality standards](#) for fuels such as petrol, automotive diesel, biodiesel and Ethanol E85—enabled under the [Fuel Quality Standards Act 2000](#).

Australia's standards for sulfur in petrol and Ethanol E85 have not been aligned with the world's best-practice. For example, the EU has had a maximum sulfur content in petrol of 10 mg/kg since January 2009.<sup>12</sup> Australia's current standard permits a maximum of 150 mg/kg of sulfur in standard unleaded petrol, 50 mg/kg in premium unleaded petrol, and 52 mg/kg in Ethanol E85 fuel.<sup>13</sup> A plan to reduce the maximum content of sulfur in all fuels to 10 mg/kg

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7. International Council on Clean Transportation, [A Technical Summary of Euro 6/VI Vehicle Emission Standards](#), Briefing, (June 2016), 1.

8. Health Effects Institute, '[State of Global Air 2020](#)', interactive database; DALYs are the years of healthy life lost to premature (early) death and disability (illness): '[Glossary](#)', State of Global Air; BITRE, [Road Trauma Australia 2019 Statistical Summary](#), (Canberra: Department of Infrastructure, Transport, Regional Development and Communications (DITRD&C), 2020), iii.

9. For example, DITRD&C, [Light Vehicle Emission Standards for Cleaner Air: Draft Regulation Impact Statement](#), (Canberra: DITRD&C, October 2020), 31.

10. Stratas Advisors, '[15 Countries Move Up in Top 100 Ranking on Gasoline Sulfur Limits](#)', *Insight*, 2 July 2020. The [Organisation for Economic Co-operation and Development](#) (OECD) is an intergovernmental economic organisation with 38 members across the EU, North America, South America and Asia.

11. International Energy Agency, [Energy Efficiency 2021](#), (France: OECD, 2021), 66.

12. '[EU: Fuels: Diesel and Gasoline](#)', TransportPolicy.net.

13. [Fuel Quality Standards \(Petrol\) Determination 2019](#), section 5; [Fuel Quality Standards \(Ethanol E85\) Determination 2019](#), section 5. RON refers to the Research Octane Number; mg/kg means milligrams per kilogram and is equivalent to 'parts per million' or 'ppm' by mass.

in 2024 has been delayed to December 2025 to align with changes to noxious emission standards (see below).<sup>14</sup>

Responsibility for [regulating fuel quality](#) transferred from the Department of the Environment and Energy (DEE) to the Department of Industry, Science, Energy and Resources (DISER) on 1 February 2020 and moved to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) on 1 July 2022.<sup>15</sup>

### Noxious emissions standards

Vehicle tailpipe or noxious emissions standards set the in-service emission control requirements for pollutants such as oxides of nitrogen and particulate emissions. These standards are made under the [Road Vehicle Standards Act 2018](#).

The engine and emissions control technologies that can be fitted to new vehicles for the Australian market are affected by Australia's fuel quality. Some vehicles designed to meet more stringent vehicle emission standards in other jurisdictions are detuned before being imported.<sup>16</sup> Australia's current noxious emissions standards are aligned with Euro 5 and Euro V standards for light and heavy vehicles respectively (referred to collectively as Euro 5/V).<sup>17</sup>

Euro 5 standards became mandatory in the EU from September 2009 for new vehicles and January 2011 for all vehicles, with Euro V mandatory from October 2008. These were replaced by Euro 6 standards for new vehicles from September 2014 and all vehicles from September 2015, with Euro VI mandatory from January 2013.<sup>18</sup> Several components of the Euro 6/VI standards have been progressively strengthened over the following years.<sup>19</sup> Equivalent standards apply in other developed countries such as Japan and the USA.<sup>20</sup> In April 2024, the European Commission approved Regulations to introduce the [more stringent Euro 7 and Euro VII](#) vehicle emission standards. These changes will be [phased in over 30 to 48 months](#), depending on the class of vehicle and systems, components or technical units.

In October 2022, the government announced that Australia's domestic alignment with the Euro VI standards for noxious emissions standards for heavy vehicles would be phased in over 12 months from 1 November 2024.<sup>21</sup> In addition, in December 2023, the government

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14. Scott Morrison (Prime Minister) and Angus Taylor (Minister for Energy and Emissions Reduction), '[Locking in Australia's Fuel Security](#)', media release, 17 May 2021; [Fuel Quality Standards \(Petrol\) Amendment Determination 2022](#), as made on 5 July 2022 and commencing on 19 July 2022; Chris Bowen (Minister for Climate Change and Energy) and Catherine King (Minister for Infrastructure, Transport, Regional Development and Local Government), '[Cleaner Fuel and Cars Leads To Multi-billion Dollar Health and Fuel Savings](#)', media release, 21 December 2023.

15. [Administrative Arrangements Order](#), 1 June 2022, commencing 1 July 2022; [Administrative Arrangements Order](#), 5 December 2019; commencing 1 February 2020.

16. Barry Park, '[Wheels Investigation: Australia's Petrol is One of the Dirtiest in the World](#)', *Wheels*, 26 November 2017.

17. Light vehicles are passenger and commercial road vehicles with a gross vehicle mass of up to 3.5 tonnes, whereas heavy vehicles are commercial road vehicles with a gross vehicle mass of more than 3.5 tonnes. There are some differences in the classification of vehicles between different countries.

18. '[EU: Light-Duty: Emissions](#)', TransportPolicy.net; '[EU: Heavy-Duty: Emissions](#)', TransportPolicy.net.

19. '[EU: Light-Duty: Emissions](#)', TransportPolicy.net; '[EU: Heavy-Duty: Emissions](#)', TransportPolicy.net.

20. DITRD&C, [Light Vehicle Emission Standards for Cleaner Air: Draft Regulation Impact Statement](#), 8.

21. Catherine King and Chris Bowen, '[Cleaner Emissions Standards for Trucks and Buses](#)', media release, 13 October 2022.

announced that Australia would adopt Euro 6 standards for new light vehicles from December 2025 and for existing lines from 1 July 2028.<sup>22</sup>

Responsibility for [regulating vehicle emissions standards](#) commenced with the then Department of Infrastructure and Transport on 1 July 2011 (now the Department of Infrastructure, Transport, Regional Development, Communications and the Arts – DITRDCA).<sup>23</sup>

### Vehicle efficiency standards

Vehicle carbon dioxide (CO<sub>2</sub>) emissions intensity is used as a measure of vehicle efficiency; emissions intensity per kilometre is directly related to vehicle fuel consumption values.<sup>24</sup> Australia has been one of the few major economies without mandatory standards for vehicle efficiency. Instead, it only requires that fuel consumption and CO<sub>2</sub> emissions information be provided to consumers at the point-of-sale.

The EU first introduced CO<sub>2</sub> vehicle fleet emissions targets in 2009, with more stringent targets introduced in 2019.<sup>25</sup> The EU targets are 95 gCO<sub>2</sub>/km (grams of carbon dioxide per kilometre) for cars and 147 gCO<sub>2</sub>/km for light commercial vehicles by 2025.<sup>26</sup> Reporting under the EU regulatory framework, which includes the EU, Iceland and Norway, indicates that average CO<sub>2</sub> emissions from new passenger cars and light commercial vehicles were 106.6 gCO<sub>2</sub>/km and 180.8 gCO<sub>2</sub>/km respectively in 2023.<sup>27</sup> The EU's targets will be progressively reduced in two 5-year blocks (2025 to 2029 and 2030 to 2034), before a target of 0 gCO<sub>2</sub>/km for both cars and light commercial vehicles applies from 2035.<sup>28</sup>

In contrast, the Australian Federal Chamber of Automotive Industries (FAI) introduced a voluntary CO<sub>2</sub> emissions standard in 2020. Its baseline report showed that in 2020, CO<sub>2</sub> emissions from vehicles in Australia were approximately 32% higher than in Europe.<sup>29</sup>

Since July 2022, DITRDCA and DCCEEW (with a broader climate change abatement and adaptation mandate and responsibility for air quality) have worked collaboratively on vehicle emissions standards.

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22. Chris Bowen and Catherine King, '[Cleaner Fuel and Cars Leads to Multi-billion Dollar Health and Fuel Savings](#)'; '[Questions and Answers on the New ADRs for Light Vehicle Noxious Emissions](#)', Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA).

23. Australian Government, [Portfolio Budget Statements 2011–12: Budget Related Paper No. 1.13: Infrastructure and Transport Portfolio](#), 37–38.

24. National Transport Commission (NTC), [Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2018: Information Paper](#), (Melbourne: NTC, June 2019), 9.

25. European Parliament and European Council, [Regulation 2019/631 setting CO<sub>2</sub> emission performance standards for new passenger cars and for new light commercial vehicles](#), 17 April 2019.

26. European Parliament and European Council, [Regulation 2019/631](#), Article 1(2).

27. European Environment Agency, '[New Data: CO<sub>2</sub> Emissions From New Cars and Vans Further Decrease as Electric Vehicle Sales Grow in Europe](#)', media release, 10 June 2024. Note that in 2021, the mandated test procedure changed from the New European Drive Cycle to the Worldwide harmonized Light vehicle Test Procedure, which more accurately measures 'real-world' CO<sub>2</sub> emissions.

28. '[CO<sub>2</sub> Emission Performance Standards for Cars and Vans](#)', European Commission; [Commission Implementing Decision \(EU\) 2023/1623 of 3 August 2023](#), Annex II.

29. Federal Chamber of Automotive Industries (FAI), '[Australian Vehicle Industry Releases First CO<sub>2</sub> Emissions Results](#)', media release, 25 March 2021.

## The broader context: decarbonisation of the transport sector and greater fuel security

As outlined above, the transport sector currently contributes about one-fifth of Australia's total GHG emissions but is predicted to be the largest source of emissions by 2030.<sup>30</sup>

Decarbonising the transport sector, including the light and heavy vehicle sectors, is therefore viewed as important to Australia's overall emissions reduction targets, but also for Australia's fuel security.

Many consumer- and environment-focused stakeholder groups and policy analysts have called for more ambitious and comprehensive actions to decarbonise Australia's economy, including in the transport sector.<sup>31</sup> The lag in Australia's regulated fuel quality and noxious emissions standards, and absence of vehicle efficiency standards, has been viewed as delaying the introduction of 'cleaner' ICE vehicles and a wider range of electric vehicles (EVs).<sup>32</sup> For example, manufacturers are reported to have been directing more efficient ICE vehicles and EVs towards countries with policies supporting ambitious emissions reduction targets. Such policies include:

- more stringent emissions requirements and potential financial penalties for failing to meet them
- phase-outs of the sale of new ICE vehicles
- financial incentives to support the uptake of EVs in some jurisdictions.<sup>33</sup>

Energy and security analysts have also argued that decarbonisation of the transport sector is a national security issue, with Australia increasingly reliant on imported fuels and international conflicts contributing to increases in domestic fuel prices.<sup>34</sup> The number of fuel refineries in Australia has declined from 8 to 2 over the last 2 decades, and Australia has, in the last decade, also fallen short of the International Energy Agency's oil stockholding requirements.<sup>35</sup> Refiners have consistently argued that Australia's fuel standards are designed for 'Australian conditions', noting different market and climatic conditions and differences in permitted fuel additives compared to northern hemisphere jurisdictions.<sup>36</sup>

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30. DITRDCA, [Transport and Infrastructure Net Zero Consultation Roadmap](#), (Canberra: Australian Government, May 2024), 1.

31. Tony Wood, Alison Reeve and James Ha, [Towards Net Zero: Practical Policies to Reduce Transport Emissions](#), (Victoria: Grattan Institute, July 2021); Deloitte Access Economics Pty Ltd, [Local Community Benefits of Zero Emission Vehicles in Australia](#), report prepared for the Australian Conservation Foundation, (Victoria: October 2021); Jake Whitehead, Jessica Whitehead and Kai Li Lim, 'As the World Surges Ahead on Electric Vehicle Policy, the Morrison Government's New Strategy Leaves Australia Idling in the Garage', *The Conversation*, 9 November 2021; Electric Vehicle Council, [State of Electric Vehicles](#), (March 2022); Climate Council, 'Time for Australia to Ditch the Pump: Electric Vehicles and Electric Buses can Keep Australia Moving', *Climate Council News (online)*, 29 March 2022.

32. Jake Evans, 'Australia Becoming a 'Dumping Ground' for Polluting Cars as Government Delays Signing on International Standards', *ABC News*, 14 October 2021; James Purtill, 'Australians Want to Buy Electric Cars, but Car Makers say Government Policy Blocks Supply', *ABC News*, 20 April 2021.

33. Wood et al., [Towards Net Zero](#); Electric Vehicle Council, [State of Electric Vehicles](#).

34. Jake Whitehead et al., [FACTS: Framework for an Australian Clean Transport Sector](#), (2022).

35. Hunter Laidlaw, [Australian Oil Refineries and Fuel Security](#), FlagPost, (Canberra: Parliamentary Library, 17 December 2020).

36. Australian Institute of Petroleum (AIP), [AIP Submission to the Better Fuel for Cleaner Air Discussion Paper](#), April 2017.

However, over the last few years, the federal government has invested significant funds to secure Australia’s remaining refineries, including to assist refiners to transition to revised fuel quality standards, and to address Australia’s stockholding obligations.<sup>37</sup> Energy and security analysts have recommended increasing fuel standards to promote efficiency, alternative fuel development (for example, hydrogen and biofuels), and electrification of the transport sector.<sup>38</sup>

In this context, the government estimates that the new vehicle efficiency standard will deliver 321 million tonnes of cumulative emissions abatement by 2050, as well as improve Australia’s fuel security, including through \$95 billion in fuel savings to 2050.<sup>39</sup>

## Milestones

Milestones	Details	Source
<b>1980s</b>		
<i>March 1983 – Labor Government takes office.</i>		
June–August 1989	<b>National legislative framework for motor vehicle standards established</b>  The <i>Motor Vehicle Standards Act 1989</i> (MVS Act) aims to:  (a) achieve uniform vehicle standards to apply to new vehicles when they begin to be used in transport in Australia and  (b) regulate the first supply to the market of used imported vehicles. <sup>40</sup>  Subsection (b) was added by an amendment in 2001. <sup>41</sup>	<a href="#">Motor Vehicle Standards Act 1989</a>  <a href="#">Motor Vehicle Standards Regulations 1989</a>

37. Scott Morrison (Prime Minister) and Angus Taylor (Minister for Energy and Emissions Reduction), ‘[Locking in Australia’s Fuel Security](#)’, media release, 17 May 2021; ‘[Australia’s Fuel Security](#)’, DCCEEW.

38. Daniel Mercer, ‘[Foreign Oil Dependence a ‘Massive Vulnerability’ as Defence Experts Call For EVs, Green Transport](#)’, *ABC News*, 21 March 2022; Chris Barrie, John Blackburn, Neil Greet, Cheryl Durrant, Michael Thomas and Ian Dunlop, *Missing in Action: Responding to Australia’s Climate & Security Failure*, (Canberra: Australian Security Leaders Climate Group, September 2021); L. Worrall, H. Gamble, J. Spoehr and A. L. Hordacre, *Australian Sovereign Capability and Supply Chain Resilience: Perspectives and Options*, (Adelaide: Australian Industrial Transformation Institute, Flinders University, August 2021); Cameron Butler, Amandine Denis-Ryan, Paul Graham, et al., *Decarbonisation Futures: Solutions, Actions and Benchmarks for a Net Zero Emissions Australia*, (Melbourne: ClimateWorks Australia, March 2020).

39. DITRDCA, *Cleaner, Cheaper to Run Cars: The Australian New Vehicle Efficiency Standard; Impact Analysis*, March 2024, 12.

40. [Motor Vehicle Standards Act 1989](#), section 3.

41. [Motor Vehicle Standards Amendment Act 2001](#), Schedule 1, section 1.

Milestones	Details	Source
<b>1990s</b>		
<i>March 1996 – Liberal-National Coalition Government takes office.</i>		
May 1996	<p><b><i>National in-service emission study released</i></b></p> <p>The study finds that:</p> <ul style="list-style-type: none"> <li>• exhaust pollution levels from cars increase with age and kilometres travelled</li> <li>• modern cars that rely heavily on ‘active’ systems to control pollution levels (catalytic converters, on-board computers and sensors, etc) tend to deteriorate at a greater rate than older pre-catalyst vehicles, whose emissions levels were more dependent on intrinsic design features</li> <li>• evaporative emissions levels were found to be many times the maximum permitted ADR levels in a substantial number of vehicles</li> <li>• substantial reductions in pollution levels can be achieved through good maintenance practice.<sup>42</sup></li> </ul>	<p>Federal Office of Road Safety, <a href="#">Motor Vehicle Pollution in Australia: Report on the National In-service Vehicle Emissions Study</a>, May 1996.</p>
1998	<p><b><i>Worldwide Fuel Charter established</i></b></p> <p>The charter was established to ‘increase understanding of the fuel quality needs of motor vehicle and engine technologies and to promote fuel quality harmonisation worldwide in accordance with those needs’.<sup>43</sup></p> <p>The charter sets out fuel quality standards for unleaded petrol and diesel for different categories, based on emission control and fuel efficiency requirements in different markets.</p>	<p>Worldwide Fuel Charter Committee, <a href="#">Worldwide Fuel Charter</a>, Fifth Edition, September 2013.</p>

42. Orbital Australia Pty Ltd, [Second National In-service Emissions Study \(NISE2\) Light Duty Petrol Vehicle Emissions Testing: Final Report](#), (March 2009), 13.

43. Worldwide Fuel Charter Committee, [Worldwide Fuel Charter](#), Fifth Edition, September 2013, i.

Milestones	Details	Source
	Charter members include vehicle manufacturers and automobile associations.	
May 1999	<p><b><i>Federal Government commits to improving the quality of petrol and diesel fuels in Australia</i></b></p> <p>The commitments, as part of <i>A New Tax System: Measures for a Better Environment</i>, include reducing sulfur content levels in diesel fuel, changes in the sulfur content and octane composition of petrol, and introducing more stringent vehicle emission standards.</p>	<p>John Howard (Prime Minister), ‘<a href="#">Changes to the Goods and Services Tax (GST)</a>’, media release, May 1999.</p> <p><a href="#">Revised Explanatory Memorandum</a>, Fuel Quality Standards Bill 2000, September 2000.</p>

## 2000s

December 2000–January 2002	<p><b><i>Australia’s legislative framework for fuel quality standards established</i></b></p> <p>The <i>Fuel Quality Standards Act 2000</i> (FQS Act) aims to:</p> <ul style="list-style-type: none"> <li>(a) regulate the quality of fuel supplied in Australia in order to:                             <ul style="list-style-type: none"> <li>(i) reduce the level of pollutants and emissions arising from the use of fuel that may cause environmental and health problems; and</li> <li>(ii) facilitate the adoption of better engine technology and emission control technology; and</li> <li>(iii) allow the more effective operation of engines; and</li> </ul> </li> <li>(b) ensure that, where appropriate, information about fuel is provided when the fuel is supplied.<sup>44</sup></li> </ul> <p>Subsection (b) was added by an amendment in 2003.<sup>45</sup></p>	<p><a href="#">Fuel Quality Standards Act 2000</a></p> <p><a href="#">Fuel Quality Standards Regulations 2001</a></p>
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44. [Fuel Quality Standards Act 2000](#), section 3.

45. [Fuel Quality Standards Amendment Act 2003](#), Schedule 1, section 1.

Milestones	Details	Source
December 2001	<b><i>National Environment Protection Measure to reduce diesel exhaust emissions introduced</i></b>	<a href="#">National Environment Protection (Diesel Vehicle Emissions) Measure 2001</a>
August 2001– July 2004	<p><b><i>Initial fuel quality determinations made</i></b></p> <p>The <a href="#">Petrol Determination</a> set the maximum sulfur content as 500 mg/kg for regular unleaded petrol and 150 mg/kg for premium unleaded petrol from commencement, with a maximum sulfur content of 150 mg/kg for all grades from 1 January 2005. An <a href="#">amendment in July 2004</a> reduced the maximum sulfur content for premium unleaded fuel from 150 mg/kg to 50 mg/kg from 1 January 2008.</p> <p>The <a href="#">Automotive Diesel Determination</a> set the maximum sulfur content as 500 mg/kg from commencement, with a reduction to 50 mg/kg from 1 January 2006. An <a href="#">amendment</a> in July 2004 required a further reduction to 10 mg/kg from 1 January 2009.</p> <p>The <a href="#">Biodiesel Determination</a> set the maximum sulfur content as 50 mg/kg from commencement, with a reduction to 10 mg/kg from 1 February 2006.</p>	<p><a href="#">Fuel Standard (Petrol) Determination 2001</a></p> <p><a href="#">Fuel Standard (Automotive Diesel) Determination 2001</a></p> <p><a href="#">Fuel Standard (Biodiesel) Determination 2003</a></p> <p><a href="#">Fuel Standard (Autogas) Determination 2003</a></p> <p><a href="#">Fuel Quality Standards Amendment Determination 2004 (No. 1)</a></p>
April 2005	<p><b><i>First statutory review of the FQS Act released</i></b></p> <p>The review finds ‘the legislative scheme is appropriately framed, enabling an effective and efficient means for meeting the objects of the Act’.<sup>46</sup></p>	<p>Fuel Quality Standards Act Review Panel, Economic Associates (Australia) Pty Ltd and SWB Consulting Pty Ltd, <a href="#">Independent Statutory Review of the Fuel Quality Standards Act 2000</a>, April 2005.</p>
<i>December 2007 – Labor Government takes office.</i>		
July 2008	<p><b><i>Review of Australia’s automotive industry released</i></b></p> <p>The review recommends the inclusion of road transport in the (then proposed) emissions trading scheme, or a ‘second best’ policy of introducing mandatory</p>	<p>Steve Bracks, <a href="#">Review of Australia’s Automotive Industry Final Report</a>, July 2008.</p>

46. Fuel Quality Standards Act Review Panel, Economic Associates (Australia) Pty Ltd and SWB Consulting Pty Ltd, [Independent Statutory Review of the Fuel Quality Standards Act 2000](#), report prepared for the Minister for the Environment and Heritage, (Canberra: April 2005), vii.

Milestones	Details	Source
	<p>greenhouse gas emissions targets for new vehicles.</p> <p>The review also recommends the government support industry to develop and commercialise technologies aimed at improving vehicle fuel efficiency and emissions.</p>	
<p>March 2009</p>	<p><b><i>Second national in-service emissions study released</i></b></p> <p>The study highlights that a large proportion of emissions are generated by a small proportion of the vehicle fleet (larger SUVs and light commercial vehicles).</p>	<p>Orbital Australia Pty Ltd, <a href="#">Second National In-service Emissions Study (NISE2) Light Duty Petrol Vehicle Emissions Testing: Final Report</a>, 2009.</p>
<p>March 2009</p>	<p><b><i>Report finds prima facie case for introducing mandatory CO<sub>2</sub> emissions standards</i></b></p> <p>The report prepared by the Australian Transport Council (ATC) and Environment Protection and Heritage Council (EPHC) also finds ‘there is merit in examining the use of fiscal and purchasing measures to encourage demand for low emission vehicles’.<sup>47</sup></p>	<p>Australian Transport Council and the Environment Protection and Heritage Council, <a href="#">Vehicle Fuel Efficiency Working Group: Final Report</a>, March 2009 (amended April 2009).</p>
<p>July 2009</p>	<p><b><i>National Strategy on Energy Efficiency released</i></b></p> <p>The Council of Australian Governments incorporates agreed measures from the ATC/EPHC <a href="#">Vehicle Fuel Efficiency Working Group Final Report</a>.</p> <p>Agreed measures include:</p> <ul style="list-style-type: none"> <li>• undertaking a regulatory impact analysis for introducing CO<sub>2</sub> emission standards for light vehicles</li> <li>• including fuel consumption and CO<sub>2</sub> data in vehicle advertising (Code of Practice or through mandatory provisions)</li> <li>• the Green Car Innovation Fund to support investment in environmentally friendly</li> </ul>	<p>Council of Australian Governments, <a href="#">National Strategy on Energy Efficiency</a>, July 2009.</p>

47. Australian Transport Council and the Environment Protection and Heritage Council, [Vehicle Fuel Efficiency Working Group Final Report](#), (March 2009, amended April 2009), 6.

Milestones	Details	Source
	<p>and technology-neutral automotive technologies</p> <ul style="list-style-type: none"> <li>voluntary environmental performance benchmarking programs for heavy vehicle and passenger fleets.</li> </ul> <p>The National Strategy is supported by the <a href="#">National Partnership Agreement on Energy Efficiency</a>.</p>	
November 2009	<p><b>Report provides a benchmark for CO<sub>2</sub> emissions for new passenger and light vehicles</b></p> <p>The National Transport Commission report finds:</p> <ul style="list-style-type: none"> <li>in 2008, the national average of carbon emissions from new passenger and light commercial vehicles was 222 g/km</li> <li>if Australians purchased new vehicles with best-in-class emissions during 2008, the national average would be 34% lower (146 g/km)</li> <li>in 2007, Australia’s carbon emissions from new passenger vehicles and light commercial vehicles were 41% and 27% higher respectively than the EU’s.<sup>48</sup></li> </ul>	<p>National Transport Commission (NTC), <a href="#">Carbon Emissions from New Australian Vehicles: Information Paper</a>, November 2009.</p>
<b>2010s</b>		
July 2010	<p><b>Government commits to introduction of new mandatory CO<sub>2</sub> emission standards for all new light vehicles from 2015</b></p> <p>The government proposes introducing a mandatory standard with a national fleet-wide target of average CO<sub>2</sub> emissions and with each motor vehicle company contributing to this target.</p>	<p>Julia Gillard (Prime Minister), ‘<a href="#">Emission Standards for Cars</a>’, media release, 24 July 2010.</p>
November 2010	<p><b>Regulation impact statement for light vehicle emissions standards released</b></p> <p>The regulation impact statement (RIS) recommends that:</p>	<p>Department of Infrastructure and Transport (DIT), <a href="#">Final Regulation Impact Statement for Review of Euro 5/6 Light Vehicle</a></p>

48. NTC, [Carbon Emissions from New Australian Vehicles: Information Paper](#), (NTC, November 2009), i (Executive Summary).

Milestones	Details	Source
	<ul style="list-style-type: none"> <li>• Euro 5 vehicle emissions standards be phased in from mid-2013, with full compliance by mid-2015</li> <li>• Euro 6 vehicle emissions standards be adopted via a similar phased approach, to cover new models from mid-2017 and all models by mid-2018.<sup>49</sup></li> </ul>	<a href="#">Emissions Standards</a> , November 2010.
2011	<p><b><i>Discussion paper on light vehicle CO<sub>2</sub> emission standards released</i></b></p> <p>The discussion paper presents possible approaches for establishing the emissions target(s) and the most appropriate regulatory framework for implementing the standards.</p> <p>The paper notes a large body of evidence that improvements in light vehicle fuel efficiency ‘can be made at low overall cost or net financial benefit to motorists (from lower fuel costs) and society, even before the value of emissions reductions is taken into account’.<sup>50</sup></p>	DIT, <a href="#">Light Vehicle CO<sub>2</sub> Emission Standards for Australia: Key Issues: Discussion Paper</a> , 2011.
16 August 2012	<p><b><i>New Fuel Quality Determination and Information Standard for Ethanol E85 made</i></b></p> <p>Commencing on 1 November 2012, the Fuel Quality Standard sets out the parameters for Ethanol E85 fuel, while the Information Standard sets out the information requirements that must be displayed at service stations and other places of supply.</p>	<a href="#">Fuel Quality Standard (Ethanol E85) Determination 2012</a> <a href="#">Fuel Quality Information Standard (Ethanol E85) Determination 2012</a>
June 2013	<p><b><i>Orbital review of sulfur limits in petrol released</i></b></p> <p>The review questions whether reducing fuel sulfur could yield significant improvements in the operability of existing and new Euro 5/6 engines or vehicles but notes that ‘to facilitate the adoption of a wider choice of emerging emission control technologies, a</p>	Orbital Australia Pty Ltd, <a href="#">Review of Sulphur Limits in Petrol</a> , June 2013.

49. Department of Infrastructure and Transport (DIT), [Final Regulation Impact Statement for Review of Euro 5/6 Light Vehicle Emissions Standards](#), (Canberra: DIT, November 2010), 72–73.

50. DIT, [Light Vehicle CO<sub>2</sub> Emission Standards for Australia: Key Issues: Discussion Paper](#), (Canberra: DIT, 2011), 3.

Milestones	Details	Source
	reduction in fuel [sulphur] levels to 10 ppm would be required'. <sup>51</sup>	
	<i>September 2013 – Liberal-National Coalition Government takes office.</i>	
March 2014	<p><b>Productivity Commission recommends accelerating efforts to harmonise vehicle standards</b></p> <p>A Productivity Commission report recommends accelerated harmonisation of the Australian Design Rules with the United Nations Economic Commission for Europe Regulations and the mutual recognition of other appropriate vehicle standards.</p> <p>See recommendation 5.5.</p>	Productivity Commission, <a href="#">Australia's Automotive Manufacturing Industry</a> , March 2014.
June 2014	<p><b>Climate Change Authority recommends introducing an emissions intensity standard</b></p> <p>The authority proposes:</p> <ul style="list-style-type: none"> <li>• a target to reduce the emissions intensity of the Australian light vehicle fleet from its 2013 level of 192 gCO<sub>2</sub>/km to 105 gCO<sub>2</sub>/km by 2025</li> <li>• requiring suppliers of new light vehicles to provide more efficient vehicles to the Australian market over time.<sup>52</sup></li> </ul>	Climate Change Authority, <a href="#">Light Vehicle Emissions Standards for Australia: Research Report</a> , June 2014.
August 2014	<p><b>Government response to Productivity Commission report supports accelerated harmonisation</b></p> <p>The government's response states that it supports the recommendation, that harmonisation was being accelerated and that 'Australian specific content in the Australian Design Rules will be removed where it cannot be justified'.<sup>53</sup></p>	Australian Government, <a href="#">Government's Response to the Recommendations Contained in the Productivity Commission's Report 'Australia's Automotive Manufacturing Industry'</a> , August 2014.

51. Orbital Australia Pty Ltd, [Review of Sulphur Limits in Petrol](#), report prepared for Fuel Policy Section, Department of Sustainability, Environment, Water, Population and Communities, (10 June 2013), 22.

52. Climate Change Authority, [Light Vehicle Emissions Standards for Australia: Research Report](#), (Melbourne: June 2014), 5.

53. Australian Government, [Government's Response to the Recommendations Contained in the Productivity Commission's Report 'Australia's Automotive Manufacturing Industry'](#), August 2014, 3.

Milestones	Details	Source
September 2014	<p><b><i>Options discussion paper in relation to review of MVS Act released</i></b></p> <p>The paper points to the need for the Act to ‘support the Government’s policy of international and domestic harmonisation of standards’ and ‘take account of wider community costs’ (including environmental performance).<sup>54</sup> The paper outlines 8 reform options, and briefly discusses different approaches to harmonisation.</p>	Department of Infrastructure and Regional Development (DIRD), <a href="#">2014 Review of the Motor Vehicle Standards Act 1989</a> , September 2014.
October 2014	<p><b><i>Review of fuel quality standards released (Hart Review)</i></b></p> <p>The Hart Review provides a comparative assessment of Australian fuel quality standards (at that time) with standards for the same fuels in the EU, USA, Japan and South Korea, and makes recommendations to align key parameters, including:</p> <ul style="list-style-type: none"> <li>• petrol (sulfur (10 ppm max), aromatics (35 vol% max))</li> <li>• E85 (sulfur (10 ppm max)).</li> </ul> <p>See Tables VII.1 to VII.9 in the report.</p>	Hart Energy, <a href="#">International Fuel Quality Standards and Their Implications for Australian Standards: Final Report</a> , (Hart Review), 27 October 2014.
June 2015	<p><b><i>Issues paper in relation to review of FQS Act released</i></b></p> <p>The paper states ‘the overarching feature is that emissions standards around the world are becoming more stringent, which generally means higher quality fuel is needed for the emissions standards to be met’.<sup>55</sup></p> <p>The paper states that the increasing demand for petrol and diesel was being met through imported fuels and outlined 7 reform options.</p>	Marsden Jacob Associates and Pacific Environment Limited, <a href="#">Independent Review of the Fuel Quality Standards Act 2000: Issues Paper</a> , June 2015.
October 2015	<p><b><i>Ministerial Forum on Vehicle Emissions formed</i></b></p>	‘ <a href="#">Ministerial Forum on Vehicle Emissions</a> ’, Department of Infrastructure, Transport, Regional Development and

54. Department of Infrastructure and Regional Development (DIRD), [2014 Review of the Motor Vehicle Standards Act 1989](#), (September 2014), 20–21.

55. Marsden Jacob Associates and Pacific Environment Limited, [Independent Review of the Fuel Quality Standards Act 2000: Issues Paper](#), (June 2015), 8.

Milestones	Details	Source
	<p>The forum is established to ‘coordinate a whole-of-government approach to addressing emissions from road vehicles’.<sup>56</sup></p>	<p>Communication (DITRD&amp;C), archived 16 August 2022.</p> <p>Paul Fletcher (Minister for Territories, Local Government and Major Projects), Greg Hunt (Minister for the Environment), Josh Frydenberg (Minister for Resources, Energy and Northern Australia), ‘<a href="#">Turnbull Government to Review Approach to Vehicle Emissions</a>’, media release, 31 October 2015; includes the terms of reference.</p>
<p>December 2015</p>	<p><b><i>National Clean Air Agreement established</i></b></p> <p>The National Clean Air Agreement:</p> <p>... sets a framework to help governments identify and prioritise actions to address air quality issues that would benefit from national collaboration and that deliver health, environmental and economic outcomes for Australians.<sup>57</sup></p> <p>Priority areas listed in the <a href="#">2015 to 2017</a> and <a href="#">2018 to 2020</a> Work Plans include the review of the FQS Act, and management of non-road diesel engine emissions.</p>	<p>‘<a href="#">National Clean Air Agreement</a>’, DCCEEW.</p>
<p>December 2015</p>	<p><b><i>Senate Economics References Committee report mentions age of trucking fleet</i></b></p> <p>The report briefly touches on emissions issues associated with trucks, with a submission by the Truck Industry Council highlighting that:</p> <p>Around 30% of the truck fleet, or some 175,000 trucks were manufactured before 1996 and, as a result, predate any Australian exhaust emission laws or regulations.<sup>58</sup></p>	<p>Senate Economics References Committee, <a href="#">Report on the Future of Australia’s Automotive Industry</a>, December 2015.</p> <p>Truck Industry Council, <a href="#">Submission</a> to Senate Economics References Committee, <i>Inquiry into the Future of Australia’s</i></p>

56. ‘[Ministerial Forum on Vehicle Emissions](#)’, DITRD&C.

57. ‘[National Clean Air Agreement](#)’, DCCEEW, archived 15 December 2023.

58. Senate Economics References Committee, [Senate Economics References Committee Report on the Future of Australia’s automotive industry](#), (Canberra: The Senate, December 2015), 47.

Milestones	Details	Source
February 2016	<p><b><i>Draft report of the review of the FQS Act released</i></b></p> <p>The report considers 4 regulatory options, along with 4 fuel quality scenarios, and finds that ‘the historical health benefits appear to substantially exceed the costs that resulted from the introduction of the Act’.<sup>59</sup></p> <p>However, the report recommends (recommendation 6) that:</p> <p style="padding-left: 40px;">Given uncertainties regarding the costs and benefits of harmonising fuel quality standards in Australia with international best practice, <i>no decision should be made</i> to harmonise standards including in particular the sulfur content of unleaded petrol and premium unleaded petrol, <i>until further investigation has been undertaken into the costs and benefits of improving the quality of these fuels and the fuel security implications of doing so</i>.<sup>60</sup> [emphasis added]</p>	<p><i>Automotive Industry</i>, 11 May 2015.</p> <p>Marsden Jacob Associates and Pacific Environment Limited, <a href="#">Review of the Fuel Quality Standards Act 2000: Draft Report</a>, February 2016.</p>
11 February 2016	<p><b><i>Vehicle emissions discussion paper released</i></b></p> <p>The paper summarises key issues associated with light and heavy vehicle emissions, the need for more stringent standards for noxious air pollutant emissions (the ‘Euro’ standards), a standards regime for fuel efficiency (CO<sub>2</sub>) and fuel quality standards.</p> <p>The paper seeks feedback on measures that could be adopted to reduce the impacts of emissions from road vehicles. Eighty submissions are received, with ‘submissions reflect[ing] strong community support for taking action on vehicle emissions’.<sup>61</sup></p>	<p>DIRD, <a href="#">Vehicle Emissions Discussion Paper</a>, February 2016.</p> <p>Paul Fletcher and Greg Hunt, ‘<a href="#">Vehicle Emissions Discussion Paper</a>’, media release, 11 February 2016.</p>

59. Marsden Jacob Associates and Pacific Environment Limited, [Review of the Fuel Quality Standards Act 2000: Draft Report](#), report prepared for the Department of the Environment, (February 2016), iv.

60. Marsden Jacob Associates and Pacific Environment Limited, [Review of the Fuel Quality Standards Act 2000: Draft Report](#), ix.

61. DITRD&C, [Heavy Vehicle Emission Standards for Clearer Air: Draft Regulation Impact Statement](#), (Canberra: DITRD&C, October 2020), 31.

Milestones	Details	Source
April 2016	<p><b><i>Final report of the review of the FQS Act released</i></b></p> <p>The report finds that ‘fuel quality regulation appears to be best served through government regulation’ and recommends implementation of Option 2, which involved retention of the FQS Act with amendments to the Act and Regulations.<sup>62</sup></p> <p>The recommendations include amending section 21 to facilitate greater coordination of fuel quality standards and vehicle emissions standards.<sup>63</sup></p> <p>The report retains the recommendation from the earlier draft report to postpone a decision on harmonisation of fuel quality standards.<sup>64</sup></p>	<p>Marsden Jacob Associates and Pacific Environment Limited, <a href="#">Review of the Fuel Quality Standards Act 2000: Final Report</a>, April 2016.</p>
December 2016	<p><b><i>Draft RIS on vehicle emissions released</i></b></p> <p>The draft RIS considers a number of reform options, including:</p> <ol style="list-style-type: none"> <li>1. business as usual</li> <li>2. fleet purchasing policies</li> <li>3. voluntary standards</li> <li>4-6. (individually and in combination) mandating Euro 6 for light vehicles and Euro VI for heavy vehicles under the MVS Act.<sup>65</sup></li> </ol> <p>The draft RIS finds that the greatest net benefit over the period 2016 to 2040 is provided by Option 6—mandating Euro 6/VI for both light and heavy vehicles under the MVS Act, with a phase-in period of 2019–20, allowing for the updating of Australian Design Rules.</p>	<p>DIRD, <a href="#">Vehicle Emissions Standards for Cleaner Air: Draft Regulation Impact Statement</a>, December 2016.</p>
December 2016	<p><b><i>Draft RIS on improving efficiency of light vehicles released</i></b></p>	<p>Ministerial Forum on Vehicle Emissions and the DIRD, <a href="#">Improving the Efficiency of New Light Vehicles: Draft</a></p>

62. Marsden Jacob Associates and Pacific Environment Limited, [Review of the Fuel Quality Standards Act 2000: Final Report](#), report prepared for the Department of the Environment, (April 2016), iv–vi.

63. Marsden Jacob Associates and Pacific Environment Limited, [Review of the Fuel Quality Standards Act 2000: Final Report](#), 40.

64. Marsden Jacob Associates and Pacific Environment Limited, xi (recommendation 7).

65. Options 2 and 3 were not pursued.

Milestones	Details	Source
	<p>The draft RIS considers a number of reform options, including:</p> <ol style="list-style-type: none"> <li>1. business as usual</li> <li>2. fleet purchasing requirements</li> <li>3. a voluntary standard</li> <li>4. a legislated standard.</li> </ol> <p>The draft RIS finds Options 1 and 2 were unlikely to deliver significant improvements in fuel efficiency, above and beyond business as usual, while Option 3 was similarly unlikely to be effective.</p> <p>The draft RIS examines 3 different fleet average efficiency targets for the year 2025, with a phase-in from 2020, and finds that the introduction of an efficiency target would result in a reduction in fuel costs to the economy of \$10.8–27.5 billion, and result in a cumulative reduction in greenhouse gas emissions of 25–65 million tonnes by 2030. The draft RIS finds that additional production costs of supplying vehicles incorporating emission control technologies would be more than offset by fuel savings.</p>	<p><a href="#">Regulation Impact Statement</a>, December 2016.</p> <p>Josh Frydenberg and Paul Fletcher, ‘<a href="#">Consultation Begins on Fuel Emissions</a>’, media release, 20 December 2016.</p>
December 2016	<p><b><i>Fuel quality discussion paper released</i></b></p> <p>The paper proposes 5 policy options for updating existing fuel quality standards:</p> <ol style="list-style-type: none"> <li>A. business as usual</li> <li>B. revision of standards in line with the Hart Review and to harmonise with EU standards</li> <li>C. as per B, with retention of unleaded petrol (91 RON) with a lower sulfur level</li> <li>D. more stringent revision of standards to harmonise with the Worldwide Fuel Charter</li> <li>E. staged introduction of world standards from 2020, with retention of unleaded petrol (91 RON), a lower sulfur standard and a new octane standard for premium unleaded (98 RON). Other parameters as per Option B.</li> </ol>	<p>Ministerial Forum on Vehicle Emissions and the Department of the Environment and Energy (DEE), <a href="#">Better Fuel for Cleaner Air: Discussion Paper</a>, December 2016.</p>

Milestones	Details	Source
	Over 70 submissions are received. <sup>66</sup>	
October 2017	<p><b><i>Domestic manufacturing of light passenger vehicles ceases</i></b></p> <p>Major car manufacturers Toyota and Holden follow Ford in ceasing light passenger vehicle manufacturing in Australia.</p>	<p>Department of Industry Innovation and Science, <a href="#">Australian Automotive Industry: Transition Following the End of Australian Motor Vehicle Production</a>, January 2020.</p>
January 2018	<p><b><i>Draft RIS for fuel quality standards released</i></b></p> <p>The ‘early assessment’ draft RIS considers Options A, B and C (as per the December 2016 fuel quality discussion paper) and Option F, which was put forward by the <a href="#">Australian Institute of Petroleum (AIP)</a>, the peak body for Australia’s downstream petroleum industry, during consultations.</p> <p>The AIP, on behalf of its members, made an in-principle offer to supply petrol with reduced sulfur content (10 mg/kg), consistent with EU standards, by 2027.</p>	<p>Ministerial Forum on Vehicle Emissions and the DEE, <a href="#">Better Fuel for Cleaner Air: Draft Regulation Impact Statement</a>, January 2018.</p>
January 2018	<p><b><i>RIS for review of the MVS Act released</i></b></p> <p>The RIS considers 3 options:</p> <ol style="list-style-type: none"> <li>1. maintain the status quo</li> <li>2. repeal the MVS Act</li> <li>3. reform the MVS Act.</li> </ol> <p>Option 3 is identified as the preferred option, providing ‘a balance between reducing regulatory intervention and meeting the public policy objectives of community safety and consumer protection’ and the ‘most effective means to continue the promotion of technologies that will benefit the Australian community’.<sup>67</sup></p> <p>The RIS also recommends accelerating the harmonisation of vehicle emission standards with international standards and streamlining certification requirements.</p>	<p>DIRD, <a href="#">Regulation Impact Statement: Review of the Motor Vehicle Standards Act 1989</a>, January 2018.</p>

66. Ministerial Forum on Vehicle Emissions and DEE, [Better Fuel For Cleaner Air: Draft Regulation Impact Statement](#), (Canberra: DEE, January 2018), 4.

67. DIRD, [Regulation Impact Statement: Review of the Motor Vehicle Standards Act 1989](#), (January 2018), 7.

Milestones	Details	Source
7 February 2018	<p><b>Road Vehicle Standards Bill 2018 introduced</b></p> <p>The Bill seeks to establish a new legislative framework to regulate the importation and supply to market of road vehicles and the provision of some road vehicle components.</p>	<p>Australian Parliament, <a href="#">Road Vehicle Standards Bill 2018</a> homepage.</p> <p>Emily Hanna, ‘<a href="#">Road Vehicle Standards Bill 2018 [and associated Bills]</a>’, <i>Bills Digest</i>, 108, 2017–18, (Canberra, Parliamentary Library, 2018).</p>
August 2018	<p><b>RIS for fuel quality standards released</b></p> <p>The RIS recommends a combination of Options C and F, that is to:</p> <ul style="list-style-type: none"> <li>• reduce sulfur in petrol to 10 ppm from 1 July 2027</li> <li>• retain regular unleaded petrol</li> <li>• reduce the pool average of aromatics in petrol from 42% to 35% v/v from 1 January 2022</li> <li>• review the aromatics limit in petrol by 2022 to set a reduced limit by 2027, or establish an alternative solution</li> <li>• consult further with industry on the remaining parameters in the fuel standards covered by the RIS, to finalise these prior to 1 October 2019.<sup>68</sup></li> </ul>	<p>DEE, <a href="#">Better Fuel for Cleaner Air: Regulation Impact Statement</a>, August 2018.</p>
December 2018	<p><b>A new Road Vehicle Standards Act enacted</b></p> <p>The Act progressively replaces the MVS Act, with full effect from 1 July 2021.<sup>69</sup></p>	<p><a href="#">Road Vehicle Standards Act 2018</a></p>
10 February 2019	<p><b>New Fuel Quality Standards (Petrol) Determination made, with low-sulfur petrol to be mandatory from 1 July 2027</b></p>	<p><a href="#">Fuel Quality Standards (Petrol) Determination 2019</a></p>

68. DEE, [Better Fuel For Cleaner Air—Regulation Impact Statement](#), (Canberra: DEE, August 2018), xi. Notes: (i) the ‘pool average’ refers to the average amount of aromatics in all batches of petrol across all grades manufactured in Australia, or imported, by a supplier in each 12 months starting on 1 January; (ii) % v/v means per cent volume by volume and is equivalent to ‘volume %’ and ‘% vol’: [Fuel Quality Standards \(Petrol\) Determination 2019](#), section 4.

69. Existing Australian Design Rules (ADRs) made under the MVS Act are taken to have been made under the *Road Vehicle Standards Act: Road Vehicle Standards (Consequential and Transitional Provisions) Act 2018*, Schedule 2, section 2.

Milestones	Details	Source
	<p>The new determination replaces the sunseting <a href="#">Fuel Standard (Petrol) Determination 2001</a> and introduces:</p> <ul style="list-style-type: none"> <li>• a reduction in the maximum pool average for aromatics, being 45% v/v max with a 42% v/v max pool average from commencement and then 45% v/v max with a 35% v/v max pool average from 1 January 2022</li> <li>• a reduction in the maximum amount of sulfur, being 150 mg/kg for 91 RON grade petrol and 50 mg/kg for 95 RON grade petrol from commencement and then 10 mg/kg for all grades from 1 July 2027.</li> </ul>	
18 March 2019	<p><b><i>New Fuel Quality Standards (Automotive Diesel) Determination made</i></b></p> <p>Replacing the sunseting <a href="#">Fuel Standard (Automotive) Diesel Determination 2001</a>, the new standard sets out the specifications for chemical and physical parameters of fuel supplied as automotive diesel, including renewable and synthetic diesel.</p>	<p><a href="#">Fuel Quality Standards (Automotive Diesel) Determination 2019</a></p>
June 2019	<p><b><i>Emissions intensity of Australian passenger vehicles found to be 45% higher than equivalent European vehicles</i></b></p> <p>A study by the National Transport Commission (NTC) finds that ‘the national average carbon dioxide emissions intensity from new passenger and light commercial vehicles was 180.9 g/km<sup>70</sup>. Further, government buyers purchased vehicles with higher average emissions intensity than business and private buyers.</p> <p>The study finds the emissions intensity of Australian passenger vehicles has declined by 28% since 2002.<sup>71</sup></p> <p>The report identifies the following barriers to reducing emissions intensity:</p>	<p>NTC, <a href="#">Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2018: Information Paper</a>, June 2019.</p>

70. NTC, [Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2018: Information Paper](#), 2.

71. NTC, [Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2018: Information Paper](#), 11.

Milestones	Details	Source
	<ul style="list-style-type: none"> <li>• consumer preferences for heavier vehicles with larger and more powerful engines</li> <li>• lack of government incentives for lower emissions vehicles</li> <li>• low fuel prices.</li> </ul>	
18 September 2019	<p><b><i>A further suite of revised fuel quality standards made</i></b></p> <p>The standards replace sunseting determinations or information standards and make minor amendments to specifications for the chemical and physical parameters of supplied fuel.</p> <p>The determination for Ethanol E85 introduces a reduction in maximum sulfur content from 52 mg/kg on commencement to 10 mg/kg from 1 July 2027.</p> <p>All commence on 1 October 2019.</p>	<p><a href="#">Fuel Quality Standards (Autogas) Determination 2019</a></p> <p><a href="#">Fuel Quality Standards (Biodiesel) Determination 2019</a></p> <p><a href="#">Fuel Quality Standards (Ethanol E85) Determination 2019</a></p> <p><a href="#">Fuel Quality Information Standard (Ethanol E85) 2019</a></p>
October 2019	<p><b><i>New Fuel Quality Standards Regulations introduced</i></b></p> <p>The Regulations revoke and replace the sunseting Regulations with minor differences to update the language, simplify administrative arrangements and remove redundant provisions.</p>	<p><a href="#">Fuel Quality Standards Regulations 2019</a></p>
28 October 2019	<p><b><i>Sixth edition of the Worldwide Fuel Charter released</i></b></p> <p>The sixth edition adds a new ‘category 6’ for unleaded petrol in markets with stringent emission control and fuel efficiency targets, consistent with CO<sub>2</sub> emission reduction targets announced in markets such as the EU, USA and China.</p>	<p>Worldwide Fuel Charter Committee, <a href="#">Worldwide Fuel Charter</a>, Sixth Edition, 28 October 2019.</p>
<b>2020s</b>		
June 2020	<p><b><i>NTC report on CO<sub>2</sub> emissions intensity of light vehicles released</i></b></p> <p>The NTC’s report finds that ‘if people who purchased new vehicles in 2019 had chosen the best-in-class for emissions performance, Australia’s average carbon</p>	<p>National Transport Commission, <a href="#">Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2019</a>, June 2020.</p>

Milestones	Details	Source
	<p>emissions intensity would have dropped 63% to 67 g/km'.<sup>72</sup></p> <p>The report compares the emissions intensity of Australian new passenger vehicles with other countries using data for 2017:</p> <ul style="list-style-type: none"> <li>• Australia: 169.8 g/km</li> <li>• Europe (provisional): 120.4 g/km</li> <li>• Japan: 114.6 g/km</li> <li>• United States of America: 145.8 g/km.<sup>73</sup></li> </ul>	
<p>July 2020</p>	<p><b><i>Industry-led voluntary vehicle CO<sub>2</sub> emissions reduction standard announced</i></b></p> <p>The <a href="#">Federal Chamber of Automotive Industries</a> (FCAI), the peak body for the automotive industry, <a href="#">announces the voluntary standard</a>.</p> <p>Under the standard, CO<sub>2</sub> brand targets and assessment of performance are calculated on a sales-weighted average mass per unit basis (where a unit is one vehicle sold), with results also divided into 2 vehicle categories: MA (passenger cars and light SUVs) and MC+NA (heavy SUVs and light commercial vehicles).</p> <p>The standard sets a 10-year industry target of reducing emissions from:</p> <ul style="list-style-type: none"> <li>• MA category vehicles by an average of 4.0% per annum</li> <li>• MC+NA category vehicles by an average of 3.0% per annum.</li> </ul> <p>This is expected to mean that, on average, MA vehicles will have CO<sub>2</sub> emissions under 100 g/km and MC+NA vehicles will have CO<sub>2</sub> emissions under 145 g/km by 2030.</p> <p>The standard provides for CO<sub>2</sub> emissions to be reported in line with existing manufacturer reporting requirements in the EU and allows the carry-forward of credits (2020 to 2030) and debits (from 2024 only).</p>	<p>FCAI, '<a href="#">Federal Chamber of Automotive Industries Announces Voluntary CO<sub>2</sub> Emissions Standard</a>', media release, 24 July 2020.</p> <p>FCAI, <a href="#">CO<sub>2</sub> Standard: Rules for Calculating Brand Targets and Assessing Brand Compliance</a>, 12 March 2020.</p> <p>FCAI, <a href="#">CO<sub>2</sub> Standard: Rules for Reporting Brand Targets and Brand Achievement</a>, 19 June 2020.</p>

72. NTC, [Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2019](#), (Melbourne: NTC, June 2020), 2.

73. NTC, [Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2019](#), 25.

Milestones	Details	Source
October 2020	<p><b><i>Draft RIS for heavy vehicle emissions standards concludes significant health benefits would outweigh the capital costs of adopting more stringent Euro VI noxious emissions standards</i></b></p> <p>The draft RIS proposes that the new standard be applied to all newly approved heavy vehicle models manufactured from 1 July 2027 and all new heavy vehicles manufactured from 1 July 2028. The draft RIS seeks information as to whether stakeholders consider an earlier introduction possible.</p>	<p>DITRD&amp;C, <a href="#">Heavy Vehicle Emission Standards for Cleaner Air: Draft Regulation Impact Statement</a>, October 2020.</p>
October 2020	<p><b><i>Draft RIS for light vehicle emissions standards concludes there would be significant benefits from mandating more stringent Euro 6 noxious emission standards</i></b></p> <p>The draft RIS proposes to implement the new standard at Euro 6d (skipping through the initial transitional and first mandatory stage (Euro 6b) to the second mandatory stage (Euro 6d) that applies in the EU), with the standard applying to new light vehicle models from 1 July 2027 and all new light vehicles from 1 July 2028—aligning the change with the new fuel quality standards.<sup>74</sup> The draft RIS seeks feedback on possible earlier adoption of Euro 6d.</p>	<p>DITRD&amp;C, <a href="#">Light Vehicle Emission Standards for Cleaner Air: Draft Regulation Impact Statement</a>, October 2020.</p>
5 February 2021	<p><b><i>Future fuels strategy discussion paper released</i></b></p> <p>The paper ‘sets out the Australian Government’s direction and practical actions that will enable the private sector to commercially deploy low emissions road transport technologies at scale’.<sup>75</sup></p> <p>Priority areas include supporting EV charging and hydrogen refuelling infrastructure and</p>	<p>Department of Industry, Science, Energy and Resources (DISER), <a href="#">Future Fuels Strategy: Discussion Paper</a>, February 2021.</p> <p>Michael McCormack (Deputy Prime Minister) and Angus Taylor (Minister for Energy and Emissions)</p>

74. The second mandatory stage of Euro 6, known as Euro 6b, commenced in 2017 and introduced a tighter particle limit for direct petrol vehicles and even tighter monitoring thresholds for on-board diagnostics. Euro 6d also adopts a number of measures to improve the integrity of emissions testing, including the Worldwide harmonised Light vehicle Test Procedure and a new on-road Real Driving Emissions test: DITRD&C, [Light Vehicle Emission Standards for Cleaner Air: Draft Regulation Impact Statement](#), 27.

75. DISER, [Future Fuels Strategy: Discussion Paper](#), February 2021, 3.

Milestones	Details	Source
	<p>integrating battery electric vehicles into the electricity grid.</p>	<p>Reduction), <a href="#">‘Supporting Future Fuel Technologies and Consumer Choice’</a>, media release, 5 February 2021.</p>
<p>March 2021</p>	<p><b><i>Baseline report under voluntary CO<sub>2</sub> emissions standard shows Australian vehicles emit significantly more CO<sub>2</sub> than European vehicles</i></b></p> <p>The report states:</p> <p style="padding-left: 40px;">The MA [passenger vehicles and light commercial vehicles] outcome for 2020 was 150 gCO<sub>2</sub>/km and MC+NA [heavy SUVs and light commercial vehicles] outcome for 2020 was 218 gCO<sub>2</sub>/km.<sup>76</sup></p> <p>Three challenges for reducing CO<sub>2</sub> emissions from the Australian passenger and light commercial vehicle fleet are identified:</p> <ul style="list-style-type: none"> <li>• the composition of the fleet, with consumers favouring heavier SUVs and light commercial vehicles</li> <li>• the 5–10 year model development cycle, meaning that reduction in emissions will take time</li> <li>• poor quality fuel, which limits the introduction of more advanced fuel-efficient vehicle technologies.</li> </ul>	<p>FCAI, <a href="#">‘Australian Vehicle Industry Releases First CO<sub>2</sub> Emissions Results’</a>, media release, 25 March 2021.</p>
<p>17 May 2021</p>	<p><b><i>Government announces grants for fuel refineries to bring forward introduction of ultra-low sulfur fuel to 2024</i></b></p> <p>As part of the 2021–22 Budget, the government announced it would provide ‘up to \$302 million in support for major refinery infrastructure upgrades to help refiners bring forward the production of better-quality fuels from 2027 to 2024’.<sup>77</sup></p> <p>The government’s announcement states:</p> <p style="padding-left: 40px;">The Government will also accelerate the industry-wide review of the petrol and diesel standard to 2021, including a</p>	<p>Scott Morrison (Prime Minister) and Angus Taylor, <a href="#">‘Locking in Australia’s Fuel Security’</a>, media release, 17 May 2021.</p> <p>Australian Government, <a href="#">Budget Measures: Budget Paper No. 2: 2021–22</a>, ‘Oil Stocks and Refining Capacity in Australia’, 141.</p> <p>Angela Macdonald Smith, <a href="#">‘Investors Cheer the Government Package to End</a></p>

76. FCAI, [‘Australian Vehicle Industry Releases First CO<sub>2</sub> Emissions Results’](#), media release, 25 March 2021.

77. Scott Morrison and Angus Taylor, [‘Locking in Australia’s Fuel Security’](#), 2.

Milestones	Details	Source
	<p>consideration of aromatics levels. This aims to create a Euro-6 equivalent petrol and diesel standard that are appropriate for Australia.</p> <p>The measure is part of a package aimed principally at securing domestic refining capacity.</p> <p>The funding was made available by the <a href="#">Industry Research and Development (Refinery Upgrades Program) Instrument 2021</a>, with <a href="#">Grant Guidelines</a> indicating the funding will be made available in 2 phases (p. 5).</p>	<p><a href="#">Refining Losses</a>’, <i>Australian Financial Review</i>, 17 May 2021.</p>
<p>August 2021</p>	<p><b><i>NTC’s annual report on CO<sub>2</sub> emissions intensity reports on plug-in hybrid electric vehicles for the first time</i></b></p> <p>The report states that the 2020 average emissions intensity for:</p> <ul style="list-style-type: none"> <li>passenger cars and light SUVs was 149.5 g/km</li> <li>heavy SUVs and light commercial vehicles was 216.7 g/km.</li> </ul> <p>In contrast, the average emissions intensity for plug-in hybrid electric vehicles was 51 g/km.</p>	<p>NTC, <a href="#">Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2020</a>, August 2021.</p> <p><i>Note: this report applies a new methodology in accordance with data collected by FCAI under the voluntary industry standard.</i></p>
<p>26 October 2021</p>	<p><b><i>Australia’s Long-Term Emissions Reduction Plan released</i></b></p> <p>The plan, announced on the eve of the 26th United Nations Climate Change Conference of the Parties (COP26), sets out how Australia will achieve net zero emissions by 2050. The plan documents existing or proposed strategies, including the (at that time) forthcoming Future Fuels Strategy.</p> <p>Modelling underpinning the plan predicts the share of vehicles with zero direct emissions will grow from less than 1% to around 90%, ‘resulting in road transport emissions falling by more than 70% by 2050 as the number of</p>	<p>DISER, <a href="#">Australia’s Long-Term Emissions Reduction Plan: A Whole-of-economy Plan to Achieve Net Zero Emissions by 2050</a>, October 2021.</p> <p>DISER, <a href="#">Australia’s Long-Term Emissions Reduction Plan: Modelling and Analysis</a>, November 2021.</p> <p>Angus Taylor, <a href="#">‘Modelling and Analysis for Long-Term Emissions Reduction Plan’</a>, media release, 12 November 2021.</p>

Milestones	Details	Source
	<p>vehicles and total passenger kilometres grows'.<sup>78</sup></p> <p>The plan does not mention fuel quality or vehicle emissions standards.</p>	
<p>2 November 2021</p>	<p><b><i>Australia endorses <a href="#">The Breakthrough Agenda at COP26 World Leaders Summit</a></i></b></p> <p>The Glasgow Breakthroughs, the first set of common targets under a global policy framework, includes the aim to make ‘zero emission vehicles the new normal – accessible, affordable and sustainable in all regions by 2030’.</p> <p>Progress towards the targets will be monitored via an ongoing annual Global Checkpoint Process.</p>	<p>Marise Payne (Foreign Minister) and Angus Taylor, ‘<a href="#">Australia Welcomes Positive Outcomes at COP26</a>’, media release, 14 November 2021. ‘<a href="#">Glasgow Breakthroughs</a>’, United Nations Framework Convention on Climate Change.</p>
<p>9 November 2021</p>	<p><b><i>Future Fuels and Vehicles Strategy: Powering Choice released</i></b></p> <p>Initiatives under the strategy are predicted to result in a reduction in emissions by over 8 Mt CO<sub>2</sub>e by 2035 and create the environment for there to be 1.7 million electric vehicles on the road by 2030.<sup>79</sup></p> <p>A section titled ‘Other Australian Government activities’ refers to bringing forward improvements to fuel quality (sulfur) from 2027 to 2024, and ongoing consideration of whether the government should mandate the Euro 6/VI noxious emissions standards.<sup>80</sup></p>	<p>DISER, <a href="#">Future Fuels and Vehicle Strategy: Powering Choice</a>, November 2021.</p>
<p><i>May 2022 – Labor Government takes office.</i></p>		
<p>16 June 2022</p>	<p><b><i>Albanese Government submits updated Nationally Determined Contribution under the Climate Change Convention</i></b></p> <p>The communication states that the ‘government is implementing a substantial and rigorous suite of new policies across the economy to drive the transition to net zero’, including ‘Australia’s first National Electric</p>	<p>Australian Government, <a href="#">Australia’s Nationally Determined Contribution Communication 2022</a>, (Canberra: Australian Government, 2022).</p> <p>Anthony Albanese (Prime Minister) and Chris Bowen</p>

78. DISER, [Australia’s Long-Term Emissions Reduction Plan: Modelling and Analysis](#), (November 2021), 37.

79. DISER, [Future Fuels and Vehicle Strategy: Powering Choice](#), (November 2021), 5.

80. DISER, [Future Fuels and Vehicle Strategy](#), 25.

Milestones	Details	Source
	<p>Vehicle Strategy, to reduce emissions and accelerate the uptake of electric vehicles’ (p. 3).</p>	<p>(Minister for Climate Change and Energy), <a href="#">Letter to Executive Secretary: United Nations Framework Convention on Climate Change</a>, 16 June 2022.</p>
<p>5 July 2022</p>	<p><b><i>Fuel quality standards amended to bring forward introduction of ultra-low sulfur fuels</i></b></p> <p>The Minister for Climate Change and Energy, Chris Bowen, amended 2 legislative instruments bringing forward the requirement for all grades of petrol and Ethanol E85 to have a maximum sulfur content of 10 mg/kg by 15 December 2024, instead of 1 July 2027.</p>	<p><a href="#">Fuel Quality Standards (Petrol) Amendment Determination 2022</a></p> <p><a href="#">Fuel Quality Standards (Ethanol E85) Determination 2022</a></p>
<p>13 October 2022</p>	<p><b><i>Adoption of Euro VI standards for heavy vehicles announced</i></b></p> <p>The ministers announced that the new standards would be phased in over 12 months from 1 November 2024.</p> <p>The new standards are given effect via the <a href="#">Vehicle Standard (Australian Design Rule 80/04 – Emission Control for Heavy Vehicles) 2023</a>, which commences on 21 February 2023.</p>	<p>Catherine King (Minister for Transport and Infrastructure) and Chris Bowen, ‘<a href="#">Cleaner Emissions Standards for Trucks and Buses</a>’, media release, 13 October 2022.</p>
<p>18 November 2022</p>	<p><b><i>Draft RIS for fuel quality standards released</i></b></p> <p>The draft RIS identifies the government’s preferred option as the introduction of a 35% aromatics limit for 95 RON petrol. This would:</p> <ul style="list-style-type: none"> <li>• maintain access to all petrol and diesel vehicles, and enable the sale of the cleanest engines and newest technology in Australia</li> <li>• have no cost impacts for anyone who currently uses 91 RON or 98 RON petrol or diesel</li> <li>• mitigate risks of vehicle operability issues for more than 99% of new vehicles through aligning the 95 RON grade with international best practice</li> </ul>	<p>DCCEEW, <a href="#">Better Fuel for Cleaner Vehicles: Draft Regulation Impact Statement for Consultation</a>, November 2022.</p> <p>Chris Bowen and Catherine King, ‘<a href="#">Consultation Opens for Fuel Quality Standards</a>’, media release, 18 November 2022.</p>

Milestones	Details	Source
	<ul style="list-style-type: none"> <li>enable an NPV [net present value] of up to \$4.9 billion to 2050 by reducing health costs through introducing Euro 6d standards.<sup>81</sup></li> </ul>	
<p>19 April 2023</p>	<p><b><i>National Electric Vehicle Strategy released</i></b></p> <p>The introduction of a new vehicle efficiency standard is at the core of the strategy, with other new initiatives focused on increasing the uptake of EVs by addressing barriers to uptake and developing a circular economy for EV batteries.</p>	<p>DCCEEW, <a href="#">National Electric Vehicle Strategy</a>, (DCCEEW: Canberra, 2023).</p> <p>Chris Bowen and Catherine King, ‘<a href="#">Australia’s First National Electric Vehicle Strategy to Drive Cleaner, Cheaper-to-run Vehicles</a>’, media release, 19 April 2023.</p>
<p>24 November 2023</p>	<p><b><i>Consultation on renewable diesel standard</i></b></p> <p>The consultation paper indicates that renewable (paraffinic) diesel offers the opportunity to significantly reduce lifecycle GHG emissions compared to the combustion of mineral diesel fuel.</p> <p>The paper explains that since 2022, four approvals have been granted to vary the automotive diesel standard to allow the supply of renewable diesel. It seeks feedback on the benefits and impacts of establishing a specific standard, as well as a range of technical considerations. The paper includes indicative standards.</p>	<p>DCCEEW, <a href="#">Enabling Supply of Renewable Diesel in Australia: A Consultation Paper on Establishing a Paraffinic Diesel Fuel Standard for Australia</a>, November 2023.</p>
<p>21 December 2023</p>	<p><b><i>Government announces changes to fuel quality standards and noxious emissions standards</i></b></p> <p>Ministers Bowen and King announce changes to the existing standards ‘to bring Australia in line with 80 per cent of the global car market’.</p> <p>The changes will involve:</p> <ul style="list-style-type: none"> <li>a reduction in the amount of aromatic hydrocarbons in 95 RON petrol from December 2025, with existing 91 RON and 98 RON grades to be unaffected</li> </ul>	<p>Chris Bowen and Catherine King, ‘<a href="#">Cleaner Fuel and Cars Leads to Multi-billion Dollar Health and Fuel Savings</a>’, media release, 21 December 2023.</p>

81. DCCEEW, [Better Fuel for Cleaner Vehicles: Draft Regulation Impact Statement for Consultation](#), (November 2022), 4.

Milestones	Details	Source
	<ul style="list-style-type: none"> <li>the planned reduction in the maximum sulfur limit will be delayed by 12 months to align with the change in aromatic hydrocarbons</li> <li>new versions of new passenger and light commercial vehicles sold from December 2025, and new passenger and light commercial vehicles from existing lines from 1 July 2028, will need to comply with Euro 6d noxious emissions standards</li> <li>a new laboratory test for fuel consumption and CO<sub>2</sub> emissions will be mandated and there will be new requirements for fuel consumption labelling.<sup>82</sup></li> </ul>	
<p>1 January 2024</p>	<p><b><i>Final impact analysis of changes to fuel quality standards and noxious emissions standards published</i></b></p> <p>The final impact analysis provides detailed information on the costs and benefits of the combined options of proposed changes to fuel quality standards and noxious emissions standards, as well as impacts on different actors in the fuel supply chain.</p> <p>The report states:</p> <p style="padding-left: 40px;">If [our preferred option] Package 2 (35% limit on aromatics for 95 RON petrol from 2025 to enable Euro 6d standards for newly approved models manufactured from 1 July 2025 and for all new light vehicles manufactured from 1 July 2028) was adopted, it would result in avoided health, fuel and GHG costs of \$6,353 million by 2040. These savings outweigh any increased costs of \$1,844 million over the period to 2040. The net present value over this period was estimated to be \$4,508 million, with a BCR [benefit-cost ratio] of 3.44.<sup>83</sup></p>	<p>DCCEEW and Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA), <a href="#">Improving Australia’s Fuel and Vehicle Emissions Standards: Final Impact Analysis</a>, May 2023.</p> <p>DCCEEW, <a href="#">Better Fuel for Clearer Air: Regulation Impact Statement: Addendum on Implementation of Ultra-low Sulfur Petrol</a>, 21 December 2023.</p>

82. ‘Regulating Australian Fuel Quality’, DCCEEW; ‘Questions and Answers on the New ADRs for Light Vehicle Noxious Emissions’, DITRDCA.

83. DCCEEW and DITRDCA, [Improving Australia’s Fuel and Vehicle Emissions Standards: Final Impact Analysis](#), (May 2023), 53.

Milestones	Details	Source
4 February 2024	<p><b>Further consultation on details of a new vehicle efficiency standard</b></p> <p>The consultation impact analysis outlines 3 options for the introduction of a new vehicle efficiency standard (NVES), with the government’s preferred Option B estimated to save \$107.6 billion in fuel costs out to 2050 (p. 45).</p> <p>Option B involves ‘a strong, ambitious and achievable NVES’ that would see the efficiency of Australian light passenger cars aligned with USA standards by around 2028, fleet-wide targets for individual manufacturers, no super or off-cycle credits, and a penalty of \$100 for each gram per kilometres of CO<sub>2</sub> that exceed the manufacturer’s target.</p>	<p>DITRDCA, <a href="#">Cleaner, Cheaper to Run Cars: The Australian New Vehicle Efficiency Standard; Consultation Impact Analysis</a>, February 2024.</p> <p>Catherine King and Chris Bowen, ‘<a href="#">Delivering Australians More Choice of Cars to Save on Fuel</a>’, media release, 4 February 2024.</p>
26 March 2024	<p><b>Ministers jointly announced refinements to proposed new vehicle efficiency standard</b></p> <p>In the company of key industry representatives and electric vehicle advocates, the ministers jointly announced the finalised parameters of the NVES.</p> <p>The finalised scheme has 4 key adjustments:</p> <ul style="list-style-type: none"> <li>• recategorizing a limited number of large 4WDs from passenger vehicles to light commercial vehicles</li> <li>• smoothing the emissions trajectory for light commercial vehicles</li> <li>• adjusting the weight-based relative emissions limits (referred to as ‘break points’)</li> <li>• staging implementation to enable preparation and testing of essential data reporting capabilities.</li> </ul>	<p>Catherine King and Chris Bowen, ‘<a href="#">New Vehicle Efficiency Standards</a>’, transcript of press conference, Parliament House: Canberra, 26 March 2024.</p> <p>Catherine King and Chris Bowen, ‘<a href="#">A New Vehicle Efficiency Standard Tailored for Australia</a>’, media release, 26 March 2024.</p>
27 March 2024	<p><b>New Vehicle Efficiency Standard Bill 2024 introduced</b></p> <p>The standard is intended to commence on 1 January 2025, with compliance requirements commencing on 1 July 2025.</p>	<p>Australian Parliament, <a href="#">New Vehicle Efficiency Standard Bill 2024</a> homepage.</p> <p>Australian Parliament, <a href="#">New Vehicle Efficiency Standard</a></p>

Milestones	Details	Source
		<a href="#">(Consequential Provisions) Bill 2024</a> homepage.
27 March 2024	<p><b>Revised impact analysis released</b></p> <p>The revised impact analysis now includes a ‘Best Option’ reflecting the adjustments announced on 26 March 2024. The analysis states:</p> <p style="padding-left: 40px;">This option is estimated to deliver abatement of 20Mt to 2030, 80 Mt to 2035, and 321 million tonnes of CO2 by 2050. Our modelling shows that Australians will accrue around \$86.04 billion in net benefits out to 2050, including over \$95 billion in fuel savings to 2050 for everyday Australians.</p>	DITRDCA, <a href="#">Cleaner, Cheaper to Run Cars: The Australian New Vehicle Efficiency Standard; Impact Analysis</a> , March 2024.
April 2024	<p><b>New national road vehicle standards registered</b></p> <p>The standards:</p> <ul style="list-style-type: none"> <li>• require passenger and light commercial vehicles to meet Euro 6d noxious emissions standards, with application to new models from 1 December 2025 and all vehicles from 1 July 2028</li> <li>• mandate the use of the Worldwide harmonised Light vehicle Test Procedure for noxious emissions and fuel economy testing, with application to new models from 1 December 2025 and all vehicles from 1 July 2028.</li> </ul>	<p><a href="#">Vehicle Standard (Australian Design Rule 79/04 – Emission Control for Light Vehicles) 2011 Amendment 3</a></p> <p><a href="#">Vehicle Standard (Australian Design Rule 79/05 – Emission Control for Light Vehicles) 2024</a></p> <p><a href="#">Vehicle Standard (Australian Design Rule 111/00 – Advanced Emission Control for Light Vehicles) 2024</a></p> <p><a href="#">Vehicle Standard (Australian Design Rule 112/00 – Control of Real Driving Emissions for Light Vehicles) 2024</a></p>
April 2024	<p><b>New fuel quality determinations for petrol and ethanol E85 registered</b></p> <p>Implementing the changes announced in December 2023, the new determinations:</p> <ul style="list-style-type: none"> <li>• set the aromatics limit for petrol with a RON of between 95 and 97.9 (the 95 RON grade) as 35% from 15 December 2025</li> <li>• set the commencement date for ultra-low sulfur petrol (10 ppm) (for all grades of petrol) as 15 December 2025</li> </ul>	<p><a href="#">Fuel Quality Standards (Petrol) Determination 2024</a></p> <p><a href="#">Fuel Quality Standards (Ethanol E85) Determination 2024</a></p>

Milestones	Details	Source
	<ul style="list-style-type: none"> <li>set the commencement date for ultra-low sulfur Ethanol E85 as 15 December 2025.</li> </ul>	
16 May 2024	<p><b><i>Parliament passed Bills to establish New Vehicle Efficiency Standard</i></b></p> <p>The Bills <a href="#">passed both Houses</a> without substantial debate.</p> <p>The ministers described the passage of the Bills as ‘a monumental milestone for Australians’ that ‘will benefit Australians for decades’.</p> <p>The 2024–25 Budget, released on 14 May 2024, provides:</p> <p style="padding-left: 40px;">\$84.5 million over 5 years (and \$12.6 million per year ongoing) to establish a regulator to administer the Standard, including to capture emissions data, establish a credit trading platform and undertake monitoring and compliance activities, and to undertake further work to bring Australian vehicle standards into line with those of our peers.</p> <p>Rules and determinations will need to be made to support the commencement of the standard on 1 January 2025.</p>	<p>Catherine King and Chris Bowen, ‘<a href="#">An Australia-Made New Vehicle Efficiency Standard</a>’, media release, 17 May 2024.</p> <p>Australian Government, <a href="#">Budget Measures: Budget Paper No. 2: 2024–25</a>, 149.</p>
22 May 2024	<p><b><i>Consultation on Transport and Infrastructure Net Zero Roadmap begins</i></b></p> <p>Consultations closed on 26 July 2024.</p>	<p>‘<a href="#">Transport and Infrastructure Net Zero Consultation Roadmap</a>’, DCCEEW.</p>

## Glossary

**Aromatics:** aromatics include benzene and its derivatives. ‘A high content of aromatic substances can form combustion chamber deposits in engines and increase particulate matter and other carcinogenic emissions from vehicles. Lowering aromatics would improve engine operability, reduce noxious exhaust emissions, and improve health outcomes’.<sup>84</sup>

**Particulate matter (PM):** in the context of air pollution, PM refers to solid and liquid particles suspended in the air. ‘PM can enter the human respiratory system and cause or exacerbate respiratory, cardiovascular, and allergic disease. PM is often chemically active in the environment and in humans, can be transported long distances in the atmosphere, and can influence weather and climate’.<sup>85</sup> PM is classified by molecule size: coarse PM<sub>10–2.5</sub> ( $10\mu\text{m} \leq 2.5\mu\text{m}$ ), fine PM<sub>2.5</sub> ( $2.5\mu\text{m} \leq 0.1\mu\text{m}$ ) and ultrafine PM<sub>0.1</sub> ( $\geq 0.1\mu\text{m}$ ). Smaller particles are able to penetrate deeper into the respiratory system. Motor vehicles are a large source of PM—especially in urban areas, due to emissions from ICEs, and from road dust and tyre and brake wear.<sup>86</sup> Changes in fuel type (for example, a shift from diesel to ethanol blend petrol) and the introduction of emission reduction technologies can reduce PM in tailpipe emissions.

**Sulfur (sulphur):** a natural component in crude oil, ‘sulfur contaminates vehicles’ catalytic converters (catalysts), limiting their ability to convert noxious emissions into less harmful substances’.<sup>87</sup>

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84. DEE, [Better Fuel for Cleaner Air: Regulation Impact Statement](#), 7.

85. CSIRO, [Submission](#) to Senate Standing Committee on Community Affairs, Inquiry into the Impacts on Health of Air Quality in Australia, March 2013, 7.

86. CSIRO, [Submission](#), 10.

87. DEE, [Better Fuel for Cleaner Air: Regulation Impact Statement](#), 7.

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ISSN 2203-5249