

Fuel Quality Standards Act 2000 Independent Review

Prepared for the Department of Climate
Change, Energy, the Environment and Water
5 May 2023

Release notice

Ernst & Young ("EY") was engaged on the instructions of the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEE) ("Client") to perform a review of the Fuel Quality Standards Act 2000 in accordance with the Work Order under the Energy Business and Technical Services Panel (CON005289), dated 17 May 2022, including the General Terms and Conditions ("the Engagement Agreement").

The results of Ernst & Young's work, including the assumptions and qualifications made in preparing the report, are set out in Ernst & Young's Report dated 05 May 2023 ("Report"). The Report should be read in its entirety including the transmittal letter, the applicable scope of the work and any limitations. A reference to the Report includes any part of the Report.

Ernst & Young has prepared the Report for the benefit of the Client and has considered only the interests of the Client in accordance with the scope of work outlined in Order CON005289 including the Terms of Reference referred to therein which provide for the Report to be provided to the Minister and subsequently tabled in Parliament. Ernst & Young has not been engaged to act, and has not acted, as advisor to any other party. Accordingly, Ernst & Young makes no representations as to the appropriateness, accuracy or completeness of the Report for any other party's purposes, other than the purposes outlined in the scope of work.

Our work commenced on 17 May 2022 and was completed on 05 May 2023. No further work has been undertaken by EY since the date of the Report to update it, and EY has no responsibility to update the Report to take account of events or circumstances arising after that date. Therefore, our Report does not take account of events or circumstances arising after 05 May 2023.

No reliance may be placed upon the Report or any of its contents by any party for a purpose other than the purposes outlined in the scope of work ("Third Parties"). Any Third Party receiving a copy of the Report must make and rely on their own enquiries in relation to the issues to which the Report relates, the contents of the Report and all matters arising from or relating to or in any way connected with the Report or its contents.

Ernst & Young disclaims all responsibility to any Third Parties for any loss or liability that the Third Parties may suffer or incur arising from or relating to or in any way connected with the contents of the Report, the provision of the Report to the Third Parties or the reliance upon the Report by the Third Parties.

No claim or demand or any actions or proceedings may be brought against Ernst & Young arising from or connected with the contents of the Report or the provision of the Report to the Third Parties. Ernst & Young will be released and forever discharged from any such claims, demands, actions or proceedings.

In preparing this Report Ernst & Young has considered and relied upon information from a range of sources believed to be reliable and accurate. We have not been informed that any information supplied to it, or obtained from public sources, was false or that any material information has been withheld from it. Neither Ernst & Young nor any member or employee thereof undertakes responsibility in any way whatsoever to any person in respect of errors in this Report arising from incorrect information provided to EY.

Ernst & Young acknowledges that in accordance with the requirements of section 72 of the Fuel Quality Standards Act 2000, the Report will be delivered to the Minister to be tabled to Parliament as anticipated in the scope of work outlined in Order CON005289 and published electronically on the Australian Parliament House (APH) website such that the report will be publicly available. The material contained in the Report, including the Ernst & Young logo, is copyright. The copyright in the material contained in the Report itself, excluding Ernst & Young logo, vests in the Client. The Report, including the Ernst & Young logo, cannot be altered without prior written permission from Ernst & Young.

Ernst & Young's liability is limited by a scheme approved under Professional Standards Legislation.

Table of Contents

Table of Acronyms	4
Executive Summary	5
Review scope and stakeholder consultation	5
Findings and recommendations	7
1. Introduction.....	13
1.1 <i>The Fuel Quality Standards Act 2000</i> (Cth).....	13
1.2 Previous reviews of the FQS Act.....	13
1.3 Marsden Jacob Associates (MJA) 2016 Independent Review	13
1.4 <i>Better fuel for cleaner air</i> RIS 2018	14
1.5 <i>Better fuel for cleaner vehicles</i> draft RIS 2022	14
1.6 EY Review of the FQS Act.....	14
1.7 EY Review approach	15
2. Review Context and Scope.....	16
2.1 Background into liquid fuels sector	16
2.2 Fuel regulation in Australia	17
2.3 Regulation of fuel under the FQS Act.....	19
2.4 Recommendations from the 2016 Marsden Jacob Associates Review	20
2.5 Topics in scope of this review.....	22
3. Review Focus I: Coverage of Fuels	23
3.1 Aviation fuel	23
3.2 Automotive diesel and non-road diesel usage.....	24
3.3 Racing fuels	29
3.4 Renewable diesel	32
3.5 Hydrogen as a transport fuel	33
4. Review Focus II: Processes, Clauses and Definitions.....	38
4.1 Fuel Standards Consultative Committee (FSCC).....	38
4.2 The section 13 exemption process.....	39
4.3 Terminology and definitions.....	41
4.3.1 Terminology and definitions – Stakeholder engagement	41
4.3.2 Terminology and definitions – Policy discussion	41
4.3.3 Terminology and definitions – Finding and recommendation.....	42
4.4 Register of Prohibited Additives	42
4.5 Fuel labelling.....	43
5. Review Focus III: Compliance, Disclosure & Testing	45
5.1 Infringement notices and penalties	45
5.2 Emergency law exemptions.....	46
5.3 Fuel sampling consent.....	47
5.4 Data publishing provisions.....	47
5.5 Annual statements under the FQS Act	48
5.6 Consumer complaints	50
5.7 Independent review interval.....	52
6. Summary	54
Is the Act operating effectively and have the FQS Act's objectives been achieved?.....	54
Appendices	55

Appendix A: List of stakeholder interview questions	55
Appendix B: Independent Review Terms of Reference	58

Table of Acronyms

Abbreviation	Complete term
ACCC	Australian Competition and Consumer Commission
ACL	Australian Consumer Law
FQS Act	<i>Fuel Quality Standards Act 2000</i>
ASTM	American Society for Testing and Materials
DCCEEW	Department of Climate Change, Energy, the Environment and Water
FIA	Fédération Internationale de l'Automobile
FS Act	<i>Fuel Security Act 2021</i>
FSCC	Fuel Standards Consultative Committee
FSSP	Fuel Security Services Payment
MJA	Marsden Jacob Associates
MSO	Minimum Stockholding Obligation
MTBE	Methyl tert-butyl ether
POFR Act	<i>Petroleum and Other Fuels Reporting Act 2017</i>
RIS	Regulation Impact Statement
RON	Research Octane Number
SAF	Sustainable Aviation Fuel

Executive Summary

Review scope and stakeholder consultation

EY was engaged to conduct a review of the *Fuel Quality Standards Act 2000* (Cth) (FQS Act) by the Australian Government Department of Climate Change, Energy, the Environment and Water (the department)¹. The scope of this review was confined to specific aspects of the FQS Act, which were identified through discussions with the department on the areas of most importance and avoiding overlap with parallel workstreams. This review relied on legal and policy analysis of information provided by stakeholders during consultation. The analysis was centred around an assessment of a) whether it meets the underlying policy objectives and b) whether any changes to improve its functioning would deliver benefits that outweigh costs. This has been presented in the report for each issue that has been assessed, in addition to a summary of the intuition for arriving at the finding and recommendation.

The FQS Act provides a framework to regulate fuel quality in Australia and provides a platform for establishing fuel quality standards and fuel quality information standards. The policy objectives of the FQS Act include:

- reducing the level of pollutants and emissions which cause environmental and health problems
- facilitating the adoption of better engine and emission control technology
- allowing for more efficient operation of engines
- ensuring that appropriate information about fuel is provided to consumers when supplied.

To focus on the key issues currently relevant to the FQS Act and ensure alignment with parallel areas of review, the following items were deemed to be out of scope:

- the environmental impact of changing fuel standards or the chemical composition of fuel
- the potential for biofuel mandates at a national level
- vehicle emissions standards and the operability of vehicles
- the contents of any new fuel standard.

The review conducted a wide-ranging stakeholder consultation as its primary source of information on how the FQS Act was functioning. Stakeholders were selected based on advice from the department, and were asked a range of questions relating to the effectiveness of the FQS Act in addition to an open question of any other concerns that could be addressed through legislative amendment.²

Table 1 below provides a list of agencies and industry groups that were consulted, while Table 2 below provides a list of issues that were discussed with respondents.

¹ This review was conducted in conjunction with the review of the Petroleum and other Fuels Reporting Act 2017 (POFR Act) and the Competition and Consumer (Industry Codes—Oil) Regulations 2017 (Oil Code).

² Stakeholders were advised that their responses will not be individually identifiable, but will feed into the findings of the report, which will be made public.

Table 1: List of stakeholders

Stakeholder Type	Organisations
Federal Government Agency	<ul style="list-style-type: none"> • Department of Climate Change, Energy, the Environment and Water • Department of Infrastructure, Transport, Regional Development, Communications and the Arts – Civil Aviation Safety Authority
State/Territory Government Agency	<ul style="list-style-type: none"> • Northern Territory Environment Protection Authority • South Australia Environment Protection Authority • Victoria Environment Protection Authority • Western Australia Environmental Protection Authority
Industry Body	<ul style="list-style-type: none"> • Australasian Convenience and Petroleum Marketers Association • Australian Automobile Association • Federal Chamber of Automotive Industries • Truck Industry Council • Motorsport Australia • Australia National Drag Racing Association • Australian Institute of Petroleum • Bioenergy Australia • Australian Hydrogen Council • Minerals Council of Australia
Company	<ul style="list-style-type: none"> • Ampol • BP

Table 2: Focus topics for consultation

Topic Area	Sub-topics
1. Coverage of Fuels	<ul style="list-style-type: none"> • Aviation Fuel • Non-road Diesel Usage • Racing Fuels • Emerging Fuels (Renewable Diesel)

	<ul style="list-style-type: none"> • Hydrogen as a Transport Fuel
2. Processes, Definitions & Clauses	<ul style="list-style-type: none"> • Fuel Standards Consultative Committee • The Section 13 Exemption Process • Terminology and Definitions • Register of Prohibited Additives • Fuel Labelling
3. Compliance, Disclosure and Testing	<ul style="list-style-type: none"> • Infringement Notices and Penalties • Emergency Law Exemptions • Fuel Sampling Consent • Data Publishing Provisions • Annual Statement • Consumer Complaints • Independent Review Interval

Findings and recommendations

Overall, this review finds that the FQS Act is relevant and fit for purpose in achieving its policy objectives. However, it also identifies several areas of improvement where it recommends consideration of amendments to improve the FQS Act. A summary of these findings and recommendations are included below. In reaching these findings and recommendations, stakeholder feedback was an important source of information on the topics in scope. Following the consultation process, extensive analysis was completed to arrive at the conclusions listed below.

Overall evaluation of the FQS Act

Finding: The FQS Act has met its stated objectives. Feedback from stakeholders and qualitative analysis has confirmed that the FQS Act has catered for changes in the liquid fuels market since the last review. This has allowed the FQS Act to meet its policy objectives and it will likely continue to do so in the foreseeable future.

Recommendation: Given that the FQS Act remains relevant, it should continue to be enforced in Australia. Consideration should be given to subsequent recommendations for amendments that can improve its functioning.

Review Focus I:

Aviation Fuel

Finding: Aviation fuel is regulated by the international aviation industry. Any domestic regulation would cause inconsistencies with international standards and would be complex to enforce under the FQS Act or other legislation.

Recommendation: No changes are recommended to include aviation fuel within the FQS Act.

Automotive diesel and non-road diesel usage

Finding: Stakeholders communicated that most diesel used for non-road purposes is likely to comply with the Automotive Diesel Standard, but not all diesel supplied for use in non-road vehicles is regulated by the FQS Act. As there is little information available on the quality of diesel that is used for non-road purposes, it is unclear what the impact would be on industry and consumers from expanding the scope of the FQS Act to cover non-road diesel usage.

Recommendation: It is recommended to retain the status quo but give consideration to improving Government visibility of non-road diesel usage. This allows the department to start collecting information on the overall impact of extending the scope of the definition and standard for all uses of diesel.

Racing fuels

Finding: Since the last review conducted by MJA in 2016, the racing industry has been more supportive of regulation for racing fuels and the section 13 exemption process. Although there are some opportunities for improvements, section 13 exemptions are the optimal way to allow for the supply of specialist racing fuels in Australia.

Recommendation: Based on stakeholder feedback, the section 13 exemption process should be maintained to regulate the supply of racing fuels. Consideration of ways to improve the section 13 exemption process is outlined in Review Focus II, Recommendation 4.2.3.

Renewable diesel

Finding: Research and development into renewable diesel has resulted in the initial trials of supply through section 13 exemptions in Australia. Due to lower density limits mandated by the Automotive Diesel Standard, most renewable diesel products will require a section 13 exemption for domestic supply. This may hinder the investment into renewable diesel production in Australia.

Recommendation: On the basis of engagements with industry, but without the necessary analysis to confirm the full implications of regulatory changes, we recommend further investigation be done into the following:

- Assessing whether the definition of renewable diesel is fit for purpose and does not restrict supply or technical innovation. Consideration could be given to the merits of having a more technologically neutral definition.
- Determining the costs and benefits of altering the density measures in the Automotive Diesel Standard to cater for renewable diesel products not requiring a section 13 exemption.
- Developing a bespoke renewable diesel standard to cover the supply of renewable diesel.

More information on these topics can help inform a policy approach that encourages domestic investment into renewable diesel, while also ensuring the smooth and safe adoption of emerging fuels into the market.

Hydrogen as a transport fuel

Finding: This report finds that the landscape for regulating hydrogen fuel quality is complex and must account for multiple use cases. As the market continues to develop, maintaining alignment with international best practice is critical while technical standards continue to be developed in other nations. The FQS Act is one option to regulate hydrogen fuel quality, with the other approach being to develop consistent national regulations or practices specific to hydrogen. This review finds that both policy approaches have varying levels of support from stakeholders.

Recommendation: Due to other parallel reviews conducted by Government, this review does not make any recommendation on regulating hydrogen fuel quality and defers to the Government's parallel review on this issue. We encourage policy makers to consider and make use of this review's stakeholder feedback and policy analysis on regulating hydrogen fuel quality.

Review Focus II: Processes, definitions & clauses

Fuel Standards Consultative Committee (FSCC)

Finding: The FSCC effectively performs its legislative role to inform the Minister and Minister's delegate. However, stakeholder feedback noted that some aspects of the FSCC could be changed to improve its function as an advisory body that informs decision making related to the FQS Act. This feedback has been considered in formulating the recommendation for this issue.

Recommendation: To further improve the effectiveness of the FSCC, we recommend that the FSCC takes a more collaborative approach towards complex issues such as proposed changes to standards. This could be achieved through two changes:

- The reintroduction of regular meetings to create a more collaborative process that ensures the group's expertise are not underutilised on important topics.
- A review of the membership of the FSCC to ensure collaborative discussions on key issues both in terms of breadth and depth for key issues.

These changes will work to improve confidence in the FSCC's decision making and ensure that it is an influential committee on important subject matter related to the FQS Act.

The section 13 exemption process

Finding: In 2022, the department made considerable progress to improve the section 13 exemption process for emerging fuels in terms of application timeframes and transparency in requirements.

Going forward, the ad-hoc use of the section 13 exemption process enables i) a low-cost administrative option to allow for the supply of niche fuels in specific circumstances, and ii) a testing ground for emerging fuels manufacturers to develop and gain exposure for their products. The latter approach is expected to support the Government's transition to cleaner fuels as it:

- provides the platform for a market-driven revealed preference on the development and use of emerging fuels, and provides a signal on whether a fuel should be included as a covered product
- allows for a relatively low-cost assessment of the quality implications and testing of an emerging fuel
- gives flexibility in the testing and adoption of emerging fuels
- gives sufficient certainty to support investment by developers of emerging fuels
- provides for an adequate level of oversight and compliance testing for emerging fuels

Recommendation: Stakeholder feedback suggests that further improvements to the current process are worthy of consideration. Examples of improvements to the current process for section 13 exemptions include:

- *Extending the length of renewals:* For instances where the usage of fuel does not change, a longer renewal period will help to decrease the administrative burden to process application extensions, without significantly increasing the risks.
- *Streamline exemptions for similar products:* To ensure stakeholders continue to benefit from application streamlining on an ongoing basis, it is important that processes are consistent, and bulk applications are considered wherever possible.

Terminology and definitions

Finding: On occasion, the wording between the *Fuel Quality Standards Act 2000* (Cth) and the *Fuel Security Act 2021* (Cth) is misaligned, with the former referring to 'petrol' and the latter referring to 'gasoline'.

Recommendation: It is recommended to standardise the terminology for petrol between the Fuel Quality Standards Act and the Fuel Security Act, in order to reduce confusion borne by industry.

Register of Prohibited Additives

Finding: The Register of Prohibited Fuel Additives (the Register) is currently empty, and there are complexities that are preventing it from being fit for purpose. As an alternative, the department can enforce trace limits for fuel additives within Fuel Quality Standards.

Recommendation: It is recommended that the Register be removed from the FQS Act to avoid the risks associated with using the Register. Because it is not currently used, removing it will not have an impact on the regulation of fuel quality.

Fuel labelling

Finding: Stakeholders expressed three minor concerns around the labelling of fuel:

1. *E10 labelling:* Due to the two labelling options allowed under the E10 information standard, consumers will not always know exactly how much ethanol is in a sample of E10, as it could be any percentage up to 10 per cent.
2. *Misleading advertising:* Stakeholders noted labelling references to products such as 'Premium Diesel', without a clear explanation of the associated benefits from the premium type of diesel.
3. *Inconsistent labelling:* Fuel labelling can be inconsistent and varied between regions and retailers. It was claimed that there are instances of petrol with the same level of octane being advertised under different labels. This means that customers are not fully aware of the similarities and differences between fuel products, especially when travelling between states.

Recommendation: This review recommends that the department consider investigating the merits of a consistent labelling regime across states and retailers, which is similar to the 2014/94/EU Directive in the Eurozone. This would ensure transparency for consumers in their purchasing decisions and ensures consistency for those who frequently travel across borders or use multiple vehicles.

Review Focus III: Compliance, disclosure and testing

Infringement notices and penalties

Finding: The infringement notice and penalty system are working appropriately, and the introduction of a tiered penalty system would not have material benefits.

Recommendation: No changes are recommended to the infringement notice or penalty system.

Emergency law exemptions

Finding: Sections 12(1)(f) and 12AA(1)(f) provide exemptions for persons supplying fuel that does not comply with fuel standards, provided that the supply is in order to comply with a direction or order made under the LFE Act.

The LFE Act gives the Minister various powers in the event of the declaration of a fuel emergency. These powers include the power to give directions to:

- (a) corporations regulating or prohibiting the supply of liquid fuel; and

(b) relevant persons regulating or prohibiting the supply of liquid fuel.

This review considers the policy intent of the exemptions contained in subsections 12(1)(f) and 12AA(1)(f) as being to protect all liquid fuel suppliers connected with the supply of fuel from criminal liability and civil penalties if the supply is subject to an emergency direction made under the LFE Act. However, it is currently unclear if all parties in the supply chain would have the same protections as those acting according to a direct order under the LFE Act.

Should Australia face a national fuel emergency, and were these provisions not in place, some suppliers that are not the direct subjects of the exemptions may be discouraged from providing fuel during a liquid fuel emergency due to fear of facing criminal or civil penalties. This would contradict the objectives of the LFE Act, which provides the structure under which the government manages liquid fuel resources in relation to a national liquid fuel emergency.

Recommendation: It is recommended that sections 12 and 12AA be amended to ensure that all parties along the supply chain are protected from civil and criminal penalties in a situation where a national fuel emergency were to be declared, as this would support administration of the policy objectives the LFE Act.

Fuel sampling consent

Finding: Currently, most fuel sampling is done at retail fuel stations. Inspectors require the consent of the supplier before taking a sample, and suppliers rarely refuse to give consent. On the basis of stakeholder feedback, this review finds that the current provisions surrounding fuel sampling are appropriate, and that the current requirements to gain consent before testing are suitable.

Recommendation: This review recommends that no legislative changes are necessary for current fuel sampling consent, as the existing requirements to gain consent before testing are reasonable.

Data publishing provisions

Finding: There is broad stakeholder support for the publishing of fuel testing results to demonstrate Australia's fuel quality. However, issues were raised around the appropriate level of aggregation and ensuring that individual suppliers are not able to be identified in remote and regional areas where there may only be a few suppliers operating.

Recommendation: This review supports the principle of publishing an aggregated and de-identifiable set of fuel testing results. However, this is based on the department ensuring that individual suppliers are not able to be identified in remote and regional areas where there may only be a few suppliers operating.

Annual statements under the FQS Act

Finding: This review finds that the FQS Act contains annual statement provisions that have not been enforced by the department in recent years. While fuel quality information is unlikely to be required on an annual basis, data on fuel quality may still have value to Government in maintaining policy oversight and informing the creation of new standards.

Recommendation: It is recommended that the annual statement be replaced by an alternative data submission that is less frequent and imposed only on an as-needed basis. This balances the needs of regulators and mitigates the burden on industry in a business-as-usual setting. If the department were to require data, the following guidelines could be used:

- statements are to be received on a frequency no greater than once a year
- submissions must be confined to information on fuel quality only
- the Secretary must communicate the intended uses of data and timelines where appropriate. An example of this could be the development of new fuel quality standards.

In implementing these guidelines, the department will be able to maintain their collaborative relationship towards industry and minimise the regulatory burden as much as possible, while still sourcing critical information for policy making purposes should it be required.

Consumer complaints

Finding: The FQS Act does not give the department the power to resolve consumer complaints, and consumers are referred to their respective state/territory government fair trading bodies. Stakeholder feedback revealed that the scale of consumer complaints on fuel quality is relatively small, and there are currently well-established channels in state legislation for pursuing these claims.

Recommendation: Given the rarity of fuel quality complaints by consumers and the existing channels for consumers to pursue quality issues, it is not considered necessary to introduce specific consumer protections under the FQS Act. Instead, we recommend that consideration be given to providing more clarity to consumers on the procedures available to them in the event that they are exposed to contaminated fuel.

There is capacity for state and territory governments to improve their communications towards customers and also between branches and departments, but this is ultimately a question of resourcing and not something that can be remedied through legislative amendment. It is recommended that the department works with the states and territories to ensure that consistent and accurate materials are presented to consumers on both the process for lodging complaints and their rights in the case of a contaminated fuel event.

Independent review interval

Finding: The current five-year independent review interval allows for the consideration of emerging trends in the fuels environment. However, this timeframe places a material burden on the department, and a longer review period is likely to provide the same benefits. Other pieces of recent legislation have a ten-year independent review frequency.

Recommendation: It is recommended to increase the independent review period from every five years to ten years.

1. Introduction

1.1 *The Fuel Quality Standards Act 2000 (Cth)*

In 2000, the Australian Government introduced the *Fuel Quality Standards Act 2000 (Cth)* (FQS Act) to provide a national framework for fuel quality and information standards across Australia. The FQS Act was introduced in response to market failures stemming from negative externalities of fuel usage such as particulate pollution and carbon emissions. These negative externalities can have wide ranging implications on health and environmental outcomes, therefore warranting government intervention.

The objects of the FQS Act (Box 1) aim to mitigate the impacts of market failure from negative externalities while also encompassing other priorities such as efficient engine operation and adoption of emissions control technology. In 2003, the FQS Act was amended to introduce the power to make fuel quality information standards. Following the first statutory review in 2005, further changes were made in 2009. These changes included emergency powers to vary a fuel standard or fuel quality information standard, an expansion of the range of conditions for a variation of a fuel standard by the Minister, and enhancements to penalties and monitoring powers.³

Box 1: Objectives of the Fuel Quality Standards Act

Objectives of the FQS Act

- Reduce the level of pollutants and emissions which cause environmental and health problems
- Facilitate the adoption of better engine and emission control technology
- Allow for more effective operation of engines
- Ensure that appropriate information about fuel is provided to consumers when supplied

1.2 Previous reviews of the FQS Act

The FQS Act includes a requirement that an independent review of the operation of the FQS Act must be taken at least every five years and be presented to the Minister. The first review for the FQS Act was conducted in 2005 by the FQS Act Review Panel, with assistance from Economic Associates and SWB Consulting. In 2016, a second independent review was conducted by Marsden Jacob Associates (MJA); this is the most recent review and forms the platform for our understanding on many key issues. Additionally, over this period, other reviews have been conducted focussing on engine emissions and pollution studies. These studies have not been directly related to the FQS Act but are tangentially related to fuel quality and have influenced the formation of the current set of fuel standards.

1.3 Marsden Jacob Associates (MJA) 2016 Independent Review

In 2015, the former Department of the Environment engaged MJA to conduct an independent review of the FQS Act. This review, published in 2016, evaluated whether the regulatory framework of the FQS Act was an appropriate regulatory response to the policy problems, and whether it was achieving its stated policy objectives. It also considered and assessed a range of alternative policy options against the status quo policy settings of the FQS Act at that time.

The 2016 MJA review found that the FQS Act was an appropriate regulatory response to identified policy problems and had met its objectives in reducing pollution, improving health outcomes and in reducing greenhouse gas emissions. However, they did recommend consideration be given to a range of amendments, which are discussed in Section 2.4.

³ Parliament of Australia (2009), *Fuel Quality Standards Amendment Bill 2009*

1.4 **Better fuel for cleaner air RIS 2018**

In 2018, the former Department of the Environment and Energy published a regulation impact statement (RIS) entitled *Better fuel for cleaner air* to investigate policy options for the FQS Act. Their assessment made two concrete recommendations:

- i) a reduction of sulfur in petrol to 10 parts per million (ppm) from 2027, and
- ii) a reduction in the pool average of aromatics in petrol from 42% to 35%, effective by 2022.

In addition, it also recommended further work be undertaken on:

- i) reviewing the aromatics limit in petrol by 2022 with the aim of setting a reduced limit by 2027, and
- ii) consulting on parameters in the fuel standards.

This review notes that (ii) was completed in 2019 with the release of determinations for petrol, automotive diesel, autogas, biodiesel and ethanol E85.

In July 2022, as a result of recommendations in the 2018 RIS, the implementation of proposed changes to sulfur levels for all grades of petrol was brought forward from 2027 to 2024 in an effort to achieve international harmonisation.⁴ The department continues to assess both local and international fuel regulations and standards to ensure that Australia remains in line with international regulations. Many of these research areas are ongoing at the time of this review, including a consideration of improving fuel quality to enable the introduction of Euro 6d noxious emissions standards for light vehicles.

1.5 **Better fuel for cleaner vehicles draft RIS 2022**

Following the 2018 RIS, the department has considered further changes to fuel quality standards.⁵ For example, in late 2022, the department consulted on the policy options to improve fuel quality which could enable the introduction of Euro 6d noxious emissions standards for light vehicles. A cost-benefit analysis (CBA) on this topic by the department found that reducing aromatics in 95 RON petrol to a 35% maximum provides the greatest net community benefits if the Government introduces Euro 6d vehicle standards. No changes to the diesel fuel standard were recommended by the department.

1.6 **EY Review of the FQS Act**

This review's analysis of key issues that currently pertain to the FQS Act builds on previously conducted reviews relating to the FQS Act, as well as information gathered during multiple phases of EY's review.

Phase 1: Refining the review scope – Using information from previous reviews, we engaged with the department to refine the scope by seeking clarity on priorities and complementary analysis. From a legal standpoint, the process included a legislative review and a benchmarking analysis of internationally comparable Acts. This combination provided a platform to understand the regulatory landscape and where the key areas of focus should be applied.

Phase 2: Engaging with stakeholders – We consulted with stakeholders to learn about how the FQS Act interacts with their activities. Consultation sessions were targeted around a set of areas that were in scope, as well as general feedback on the performance of the FQS Act and the potential areas for improvement. Stakeholders included state and federal government departments and agencies, industry bodies, individual firms and subject matter experts. A list of specific questions posed to

⁴ Federal Register of Legislation (2022), *Fuel Quality Standards (Petrol) Amendment Determination 2022 Explanatory Statement*

⁵ DCCEE (2022), *Better fuel for cleaner vehicles; Draft Regulation Impact Statement for consultation*

government and industry stakeholders is included in Appendix A: List of stakeholder interview questions.

Phase 3: Analysis of submissions and policy issues – We analysed feedback from government and industry on how the FQS Act is functioning and incorporated this information to develop stances on various policy options regarding the issues in scope.

1.7 EY Review approach

This review used the guiding principles outlined in the *Australian Government Guide to Policy Impact Analysis*.⁶ This approach is used for specific topics where an extensive assessment was considered appropriate, in contrast to other aspects of the FQS Act where such rigour was not deemed necessary due to either the scope of the review or the importance and complexity of the topic. For topics that were considered using the government's Impact Analysis framework, and where the relevant information was available, the analysis of the problem included a definition of the problem, reasons for policy intervention, a description of the possible policy options and their impacts, as well as a recommended approach.

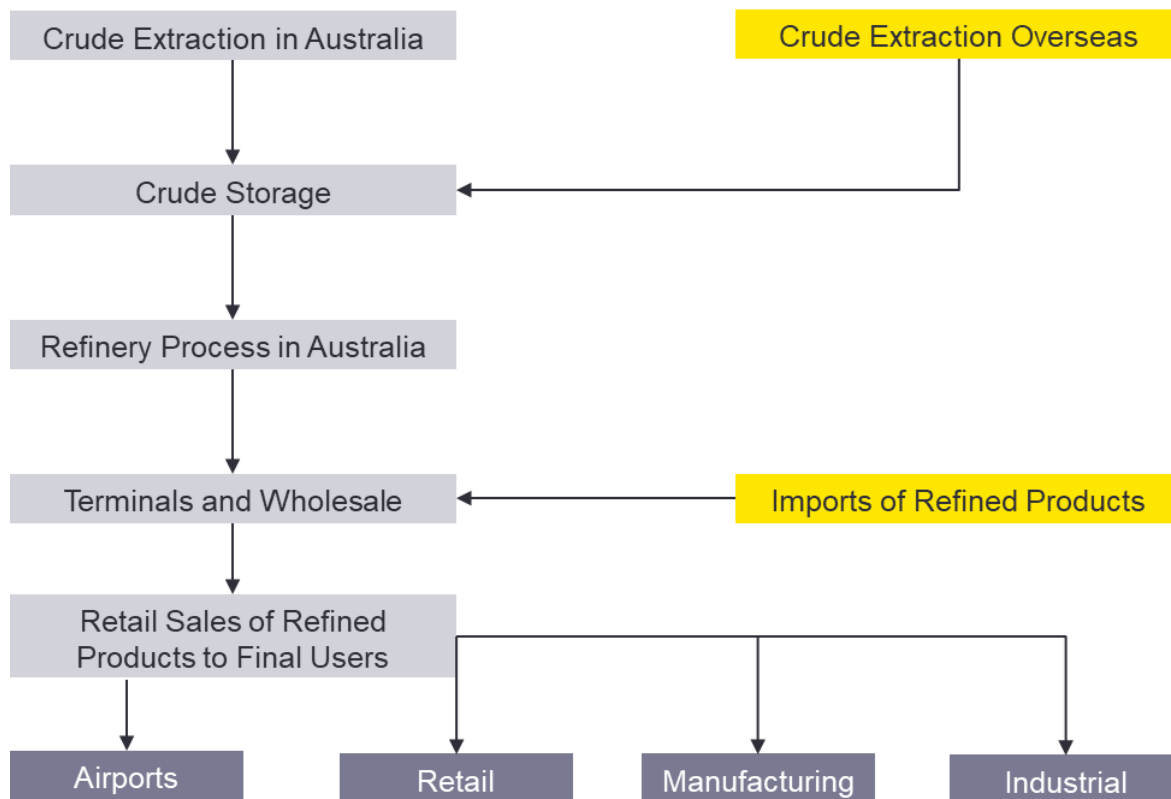
⁶ Australian Government Department of Prime Minister and Cabinet (2023), *Australian Government Guide to Policy Impact Analysis*

2. Review Context and Scope

2.1 Background into liquid fuels sector

The liquid fuel sector comprises both unrefined product and refined product as described in Figure 1 below. Unrefined product includes crude oil and condensate, which are used as inputs to produce refined product such as petrol, diesel and jet fuels, ethanol and biodiesel.

Figure 1: Petroleum production activities



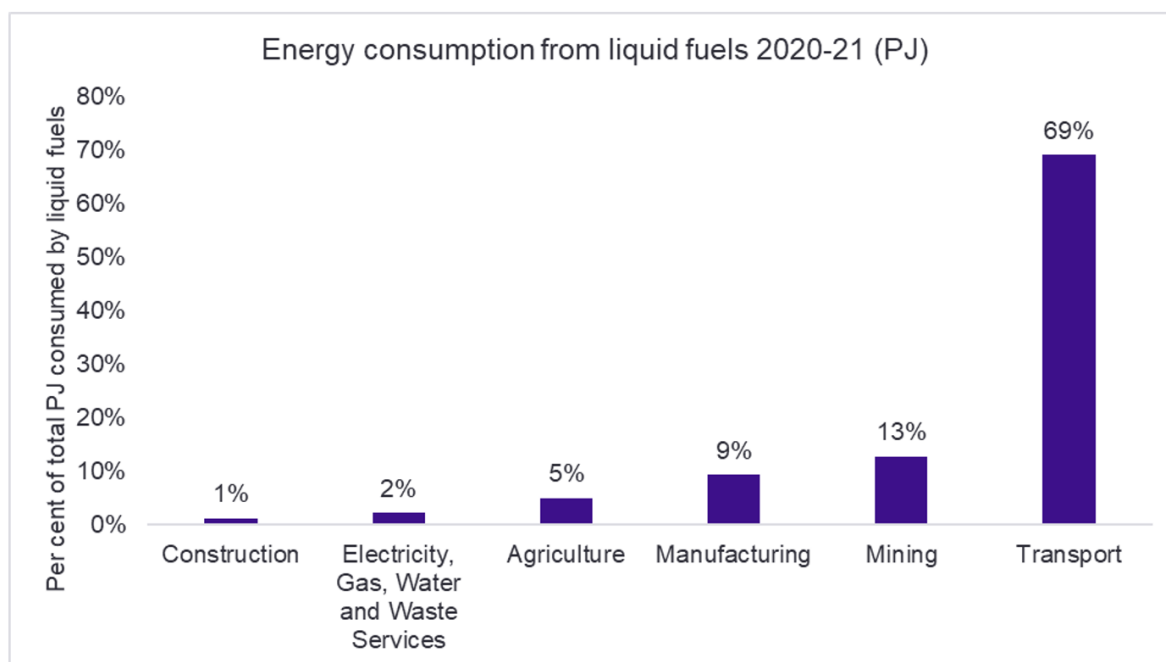
Australia's supply of unrefined and refined products is heavily reliant on imports from Asia and the Middle East. In 2021, 91% of all refined product consumed in Australia was imported, of which 60% was imported as refined product (i.e., a finished product) and the remaining amount was refined using imported crude oil feedstock in one of Australia's four domestic refineries⁷. In 2022, two domestic refineries ceased production and were converted to import terminals. A decline in production from local refineries implies that domestic supply is likely to become even more reliant on global sources.

Liquid fuels are crucial to the functioning of many industries including transport, agriculture, manufacturing, mining and remote power generation. As shown in Figure 2 below, consumption of fuels is driven largely by the transport sector which comprised 69% of total energy consumption from liquid fuels in the economy in 2020–21.⁸ Non-road sectors such as mining, agriculture and manufacturing make up the remaining demand for fuel and are heavily reliant on diesel fuel for various production activities.

⁷ DCCEEW (2021) *Australian Petroleum Statistics – Issue 299 June 2021*

⁸ DCCEEW (2022), *Australian Energy Statistics 2021*

Figure 2: The usage of liquid fuel products by industry in Australia



Source: Table F_0, Australian Energy Statistics, DCCEEW (2022)

2.2 Fuel regulation in Australia

Due to the complex nature of fuel supply in Australia and the importance of satisfying demand for fuel, there are several fuel-related regulations that play important roles in the functioning of the market. Table 3 below outlines the main federal legislation that apply to liquid fuels, the relevant departments who administer them and their objectives. It should be noted that in addition to these, there are also a range of regulatory and monitoring activities that are undertaken at the state level.

Table 3: Legislation relevant to the liquid fuels sector

Legislation	Department	Objectives
<i>Fuel Quality Standards Act 2000</i>	Department of Climate Change, Energy, the Environment and Water	<ul style="list-style-type: none"> To reduce the level of pollutants and emissions which cause environmental/health problems To facilitate the adoption of better engine and emission control technology To allow for more effective operation of engines To ensure that appropriate information about fuel is provided to consumers when supplied
<i>Petroleum and Other Fuels Reporting Act 2017</i>	Department of Climate Change, Energy, the Environment and Water	<ul style="list-style-type: none"> To assist the Commonwealth to monitor fuel security and to aid the Commonwealth to develop policy relating to the prevention of, or preparation for, fuel supply disruptions or potential disruptions To assist the Commonwealth to give effect to Australia's obligations under the Agreement on an International Energy Program Treaty, or under any other international agreement to which Australia is a party relating to: i) international energy security ii) the reporting of data relating to petroleum, other fuels or fuel-related products

		<ul style="list-style-type: none"> To facilitate the publication of information relating to Australia's petroleum and other fuel markets To support the implementation of the <i>Fuel Security Act 2021</i>
Competition and Consumer (Industry Codes—Oil) Regulations 2017	Federal Treasury; Australian Competition and Consumer Commission; Department of Climate Change, Energy, the Environment and Water	<ul style="list-style-type: none"> Setting minimum standards in relation to contract requirements and tenure Assisting participants to make informed decisions when managing fuel re-selling agreements through the disclosure of specific information Improving transparency in wholesale pricing and access to declared petroleum products at a published terminal gate price Provisions for access to a cost-effective and timely dispute resolution scheme as an alternative to litigation
<i>Fuel Security Act 2021</i>	Department of Climate Change, Energy, the Environment and Water	<ul style="list-style-type: none"> To improve security and confidence in Australia's fuel supplies To support sovereign capability to maintain fuel supplies To contribute to meeting Australia's obligations associated with under the International Energy Agreement. To assist in preventing disruptions in fuel supplies
<i>Liquid Fuel Emergency Act 1984</i>	Department of Climate Change, Energy, the Environment and Water	<ul style="list-style-type: none"> To facilitate the management of liquid fuel that is, or is likely to be, in short supply
Vehicle Standard (Australian Design Rule 7904 – Emission Control for Light Vehicles) 2011	Department of Infrastructure, Transport, Regional Development, Communications and the Arts	<ul style="list-style-type: none"> To prescribe the exhaust and evaporative emissions requirements for light vehicles in order to reduce air pollution
Australian Consumer Law – <i>Competition and Consumer Act 2010</i>	Australian Competition and Consumer Commission ⁹	<ul style="list-style-type: none"> To enhance the welfare of Australians through the promotion of competition, fair trading and provision for consumer protection

Within the broader government regulatory frameworks for vehicles and machinery, the FQS Act dictates the requirements for the specifications of fuel and the associated penalties for non-compliance. This works alongside the Vehicle Standard 2011 (Australian Design Rule 79/04) and Vehicle Standard (Australian Design Rule 80/03) 2006 to achieve emissions outcomes for light passenger vehicles and heavy vehicles, respectively. At the retail level, the Competition and Consumer (Industry Codes—Oil) Regulations 2017 regulates pricing arrangements for fuel and contract matters for franchising agreements.

In relation to the quantities of refined products, suppliers are obligated to submit volumes sold under the Petroleum and Other Fuels Reporting Act. This works in conjunction with the Fuel Security Act to secure domestic petroleum supply and focuses on mitigating against the risk of disruptions. The

⁹ Australian Consumer Law is important for the functioning of the fuel market as it instils confidence in the consumption decisions of consumers. In its absence, instances of contamination could cause market frictions due to demand side uncertainty about fuel quality.

Liquid Fuel Emergency Act (LFE Act) would be employed in very rare circumstances and gives power to the Minister responsible for the LFE Act to give directions across various sectors. To date, an emergency direction has never been declared by the Government.

On the demand side, consumer purchases of liquid fuel products are subject to the automatic consumer rights and guarantees available under Australian Consumer Law (ACL). In particular, the ACL grants rights to consumers in respect of most goods and services (including liquid fuel products). The ACL is administered jointly by the ACCC and state and territory consumer protection agencies and provides consumers with assurances and avenues to seek compensation. This includes assurances that goods are of acceptable quality, match any description provided and that any express warranties will be honoured. If guarantees are not met, consumers have a right to receive a repair, replacement or refund, as well as compensation for damages and financial loss.

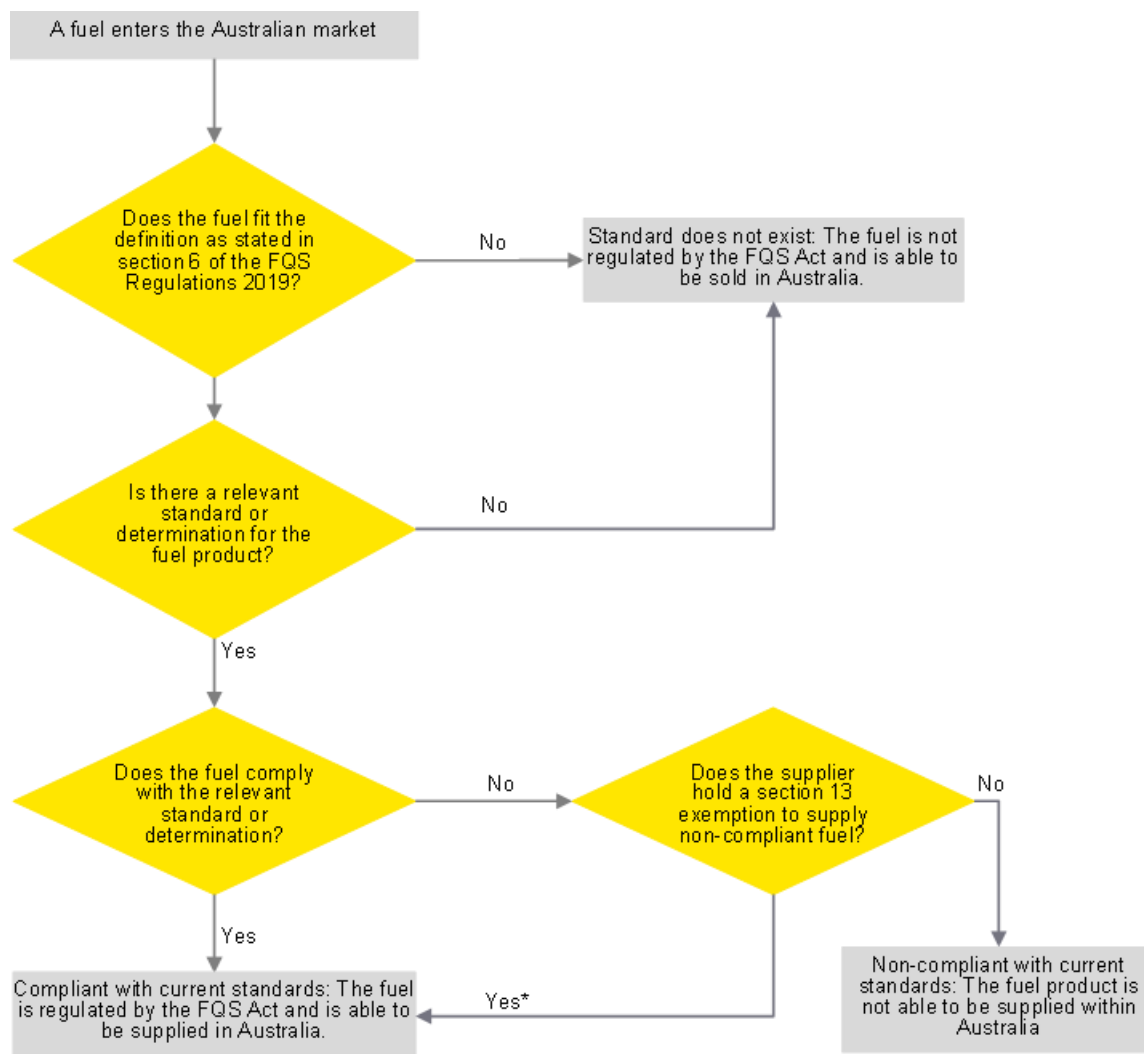
2.3 Regulation of fuel under the FQS Act

The FQS Act provides the foundation to create, amend and enforce fuel quality standards at a national level. As the individual standards sit under the FQS Act, certain amendments to the FQS Act will influence every standard in operation. While the standards do not exclude concurrent state and territory laws in all cases, they do override them where specified in the FQS Act. Other legislative requirements are set by the Fuel Quality Standards Regulations 2019 (FQS Regulations), which outlines further definitions, regulation of fuel and fuel additives, administration of the Fuel Standards Consultative Committee (FSCC), enforcement of the FQS Act and other matters. The compliance regime of the standards and other fuel-related activities is also defined by the FQS Act.

Figure 3 below illustrates the possible ways in which fuel products fall under the FQS Act. Under the FQS Act, fuel products are treated differently depending on whether a standard exists for a particular product. A product must meet a definition of fuel under the FQS Regulations to be covered by the FQS Act. The majority of liquid fuels including petrol, diesel, biodiesel and ethanol are covered by a standard which dictates the quality for the respective products. If a fuel varies from its standard, it can only be supplied after acquiring a section 13 exemption, which outlines special conditions and requirements for its usage. This leads to three categories for fuel products, shown below:

- i) **Compliant with Current Standards:** These fuels fall under current standards that exist within the FQS Act and are compliant with the standards. They require no further assessment of their quality or any other qualification prior to their sale by retailers.
- ii) **Non-Compliant with Current Standards:** These fuels fall under current standards that exist within the FQS Act, however they do not comply with the current standards. The FQS Act provides flexibility for non-compliant fuels in the form of section 13 exemptions, which allow for testing and adoption of new fuels where they are not compliant with current standards. The decision on whether to grant a section 13 exemption is made by the Minister responsible for the FQS Act, following consultation with the FSCC. Exemptions are granted on a temporary basis, for a certain period of time. Section 4.2 of this review provides further discussion on the reasons and process for obtaining a section 13 exemption.
- iii) **Standard does not exist:** Some fuels are not covered by a relevant standard within the FQS Act. In some cases such as hydrogen and aviation fuel, a relevant standard for these products may exist under other domestic or international regulation. Part 4.2, and other parts of this review, provide some discussion on factors considered when a relevant standard does not exist within the FQS Act.

Figure 3: Regulation of fuels under the FQS Act



2.4 Recommendations from the 2016 Marsden Jacob Associates Review

The effectiveness of the FQS Act has been reviewed in the past, with the most recent review undertaken in 2016, by Marsden Jacob Associates (MJA). Overall, the MJA review found that the FQS Act was an appropriate regulatory response to the identified policy problem, and had, to date, met its stated objectives. However, it also made several findings and recommendations for adjustments to improve the effectiveness and functioning of the FQS Act.

A key focus of the MJA recommendations was for consideration to be given to:

- consumer protections provisions in the FQS Act
- FQS Act review provisions
- section 13 exemption provisions for emerging fuels
- section 13 exemption provisions for racing fuels.

These findings are discussed below and are considered further in this review where appropriate. It should be noted that the department has looked to address some of these recommendations, and where concurrent assessments are already underway by the department, these issues have been removed from our scope of work to avoid duplication of work efforts.

2.4.1 Review of consumer protection provisions in the FQS Act

The findings of the MJA review on consumer protection informed our scope of work, and the concept of including consumer protection under the FQS Act has been explored further in this review. The MJA review found that it is not feasible or desirable to incorporate a listing of all possible contaminants into the fuel standards. However, it noted that consideration should be given to amending the FQS Act and future determinations to specify that the fuel supplied is free of any contaminants that affect engine operability.

The MJA report recommended consideration be given to extending the scope of the FQS Act by including 'engine operability' and 'fit for purpose' provisions in the objects of the FQS Act. EY notes that engine operability is already included in the objects of the FQS Act. Further consideration of consumer protection and consumer complaints can be found in Section 5.6.

2.4.2 FQS Act review provisions

Under section 72 of the FQS Act, the Minister must cause an independent review of the operation of the FQS Act to be undertaken at least every five years. MJA recommended that the interval be extended to ten years, which is more appropriate to assess whether the FQS Act is achieving its objectives. This review analyses the independent review period in Section 5.7.

2.4.3 Provisions for section 13 exemptions for emerging fuels

In the 2016 MJA review, the biofuels industry stated that the process for establishing a new fuel blend was unwieldy and should be streamlined. The approach proposed by industry for the 2016 review was to allow a blend to be compliant if it is made up of products that in their own right, complied with a standard. This notion allows the biofuels industry to introduce higher grades of blending to certain products without violating a standard.

The MJA report rejected this suggestion on the grounds that it would likely result in anomalies. The former Department of the Environment noted that blended fuel may react differently in the combustion process depending on the blend ratio. The review supported the status quo for regulation where standards have strict blending limits for covered products.

However, MJA proposed an alternative approach to streamlining the process through amending section 13 of the FQS Act to provide the Minister or delegate authority to make bulk section 13 exemptions for suppliers of an emerging fuel and a mass application fee waiver where a standard is in development for the emerging fuel in question.

The section 13 exemption process remains a core component of the FQS Act. Fuel suppliers can apply for a section 13 exemption to supply a fuel that would otherwise be non-compliant with the standards. The overall effectiveness and efficiency of the section 13 exemption process is assessed in part 4.2 of this review, taking these previous findings into consideration.

2.4.4 Provisions for section 13 exemptions for racing fuels

In many cases, fuels used in motor racing and water sports do not comply with existing fuel standards. Racing fuels may contain elevated quantities of a range of substances including lead, methyl tert-butyl ether (MTBE) and aromatics. In order to allow motor racing events to continue, the department regulates racing fuels through the section 13 exemption process under the FQS Act. However, stakeholder feedback received as part of the 2016 MJA review stated that this process applied a high administrative burden on suppliers of racing fuels.

The MJA review in 2016 resulted in the department implementing measures to improve and streamline the process of allowing section 13 exemptions, seeking to reduce the administrative burden on industry, while maintaining a high standard. Since then, the workload placed on the FSCC¹⁰ has been reduced, with the department undertaking a greater share of the preparation and

¹⁰ The role and function of the FSCC are explored in more detail in Section 5 of this report.

assessments on submissions. The department has also removed the administrative charge to industry when submitting an application, which required an amendment to the FQS regulations.

2.5 Topics in scope of this review

The scope of this review was defined based on several considerations, one of which being the findings of the MJA review. As mentioned above, some of the recommendations from the MJA review have already been addressed prior to this review, such as some changes to the section 13 exemption process, while other issues are revisited in this review or are being addressed in parallel workstreams. For example, some specific topics such as penalties, independent review period length, and consumer protections have been revisited and explored further in this review.

In refining the areas of scope for review, this review also prioritised the main issues and concerns held by stakeholders. As the department is also currently undergoing a series of related workstreams on topics covered under the FQS Act, the scope was chosen to maximise impact and to avoid duplication of research. An example of this is the department's CBA into fuel quality improvements to enable the implementation of Euro 6d noxious emissions standards for light vehicles. Additionally, to ensure a complete set of topics within and out of scope, EY engaged with the department to consider current trends, consumer feedback received by the department, and alignment with other relevant studies being undertaken by the department. This resulted in a final set of topics considered in and out of scope, as outlined in Box 2 below:

Box 2: Topics in and out of scope of review

Topics in scope

- Assessing whether definitions in the FQS Act are appropriate and inclusive for alternative and emerging fuels
- Confirming whether the definition of supply/suppliers is accurate and consistent with other domestic and international regulation
- Evaluating the penalty structure, exemptions for emergency laws, annual reporting and fuel sampling practices
- Determining whether the coverage for aviation, racing and non-road fuel is appropriate
- Reviewing whether consumers are adequately protected from fuel contamination incidents
- Other topics within scope include data publishing provisions, independent review intervals and the Prohibited Fuel Additives Register.

Topics out of scope

- The environmental impact of changing fuel standards or the chemical composition of fuel
- The potential for biofuel mandates at a national level
- Vehicle emissions standards and the operability of vehicles
- The contents of any new fuel standard
- A decarbonisation/emissions reduction strategy associated with emerging fuels.

It should be noted that stakeholders were given the opportunity to comment on the broader effectiveness and efficiency of the FQS Act at present, and to highlight any general concerns or issues that need to be raised. Specific questions were then tailored to specific areas of focus for stakeholders consisting of three broad groups – industry bodies, government and individual firms. A summary of the key questions asked to each group of stakeholders can be found in Appendix A.

3. Review Focus I: Coverage of Fuels

A key focus of the review was the examination of whether the FQS Act adequately covers fuels and fuel use in Australia. This includes consideration of the following:

- regulation of *aviation fuel*, which currently sits outside the FQS Act despite forming a portion of domestic fuels demand
- whether *non-road usage of diesel* is adequately regulated by the FQS Act
- regulation of *racing fuels*, which usually employ section 13 exemptions based on their characteristics, and
- regulation of emerging fuels, defined as products that have been recently introduced to the market, which includes *renewable diesel* and *hydrogen*.

3.1 Aviation fuel

Aviation fuel does not currently fall under the FQS Act and has no bespoke domestic regulation. Further, and by extension, an assessment of whether to include or expand enforcement around the incorporation of sustainable aviation fuel (SAF) was considered.

SAF, as a substitute for aviation fuel, also does not fall under the FQS Act. The International Air Transport Association (IATA) defined SAF as 'jet fuel derived from biomass or non-biomass waste and used as a blending component to meet American Society for Testing and Materials (ASTM) technical certification.' Meeting ASTM requirements is a thorough process where manufacturers must conduct extensive testing to guarantee compliance with the current fuel infrastructure and operating environments. Furthermore, SAF producers must apply for a sustainability certification to ensure the necessary emissions reduction target is met.

3.1.1 Aviation fuel – Stakeholder engagement

EY received unanimous feedback that opposed the inclusion of aviation fuel under the FQS Act for a variety of reasons. A primary factor is that any domestic regulation could vary from international standards, creating inconsistencies for suppliers.

Furthermore, the current system for industry regulation is robust as aviation fuel is tested and scrutinised at many points across the supply chain and is well regulated at a global level. Within this component of the liquid fuels sector, consistency in application of standards at a global level is paramount, and there is a strong level of compliance testing and self-regulation.

3.1.2 Aviation fuel – Policy options and analysis

The stakeholder feedback and legislative analysis both were consistent in indicating that any changes to the status quo would not be advisable. Therefore, this review considers it unnecessary to consider alternative approaches to where aviation fuel falling outside of the FQS Act and does not provide a discussion of policy issues considered.

3.1.3 Aviation fuel – Finding and recommendation

Finding: 3.1 – Aviation fuel

Aviation fuel is regulated by the international aviation industry. Any domestic regulation would cause inconsistencies with international standards and would be complex to enforce under the FQS Act or other legislation.

Recommendation: 3.1 – Aviation fuel

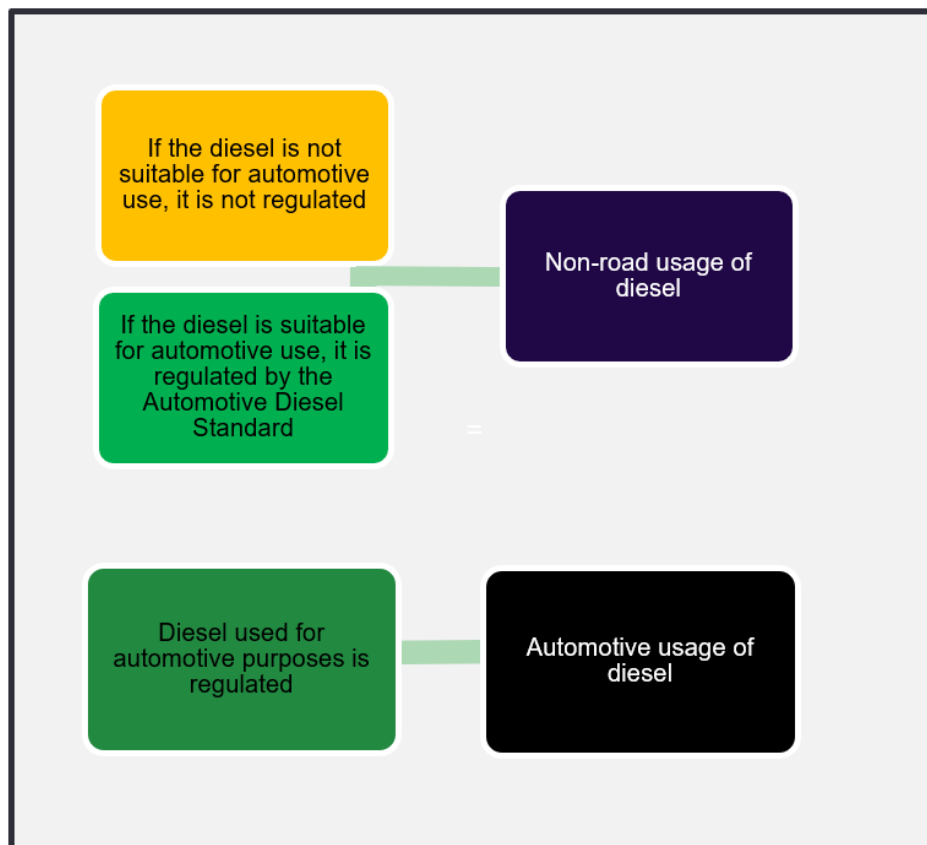
Because it is adequately regulated by the industry, no changes are recommended to include aviation fuel within the FQS Act.

3.2 Automotive diesel and non-road diesel usage

Under the *Fuel Quality Standards (Automotive Diesel) Determination 2019* (Automotive Diesel Standard), diesel is defined as ‘all fuel supplied or represented as automotive diesel, including renewable diesel and synthetic diesel and any combination of these’. In practice, the department uses a working interpretation of diesel to determine whether a certain use case, particularly for non-automotive usage, should fall under the standard. When determining if a diesel or biodiesel product is covered by the Automotive Diesel Standard, consideration is given to various factors including but not limited to the chemical properties of fuel with regards to its suitability for use in motor vehicles, and the representation or marketing of fuel as suitable for use in motor vehicles.

This assessment of coverage creates ambiguity in the application of the FQS Act for diesel used in off-road settings. Most diesel used off road is suitable for use in a motor vehicle, and therefore would be regulated by the Automotive Diesel Standard. However, the situation may arise where diesel not suitable for automotive use could be used in an off-road setting. As illustrated in Figure 4 below, there could exist a subset of diesel that is not suitable for automotive purposes, and therefore is not regulated by the Automotive Diesel Standard and the FQS Act. Indeed, the ‘Automotive’ part of the standard’s title conveys this issue as it implicitly excludes other non-automotive forms of usage, which could deter from the FQS Act achieving its objectives. It should be noted that this section specifically excludes marine fuels, which are not covered by the FQS Act.

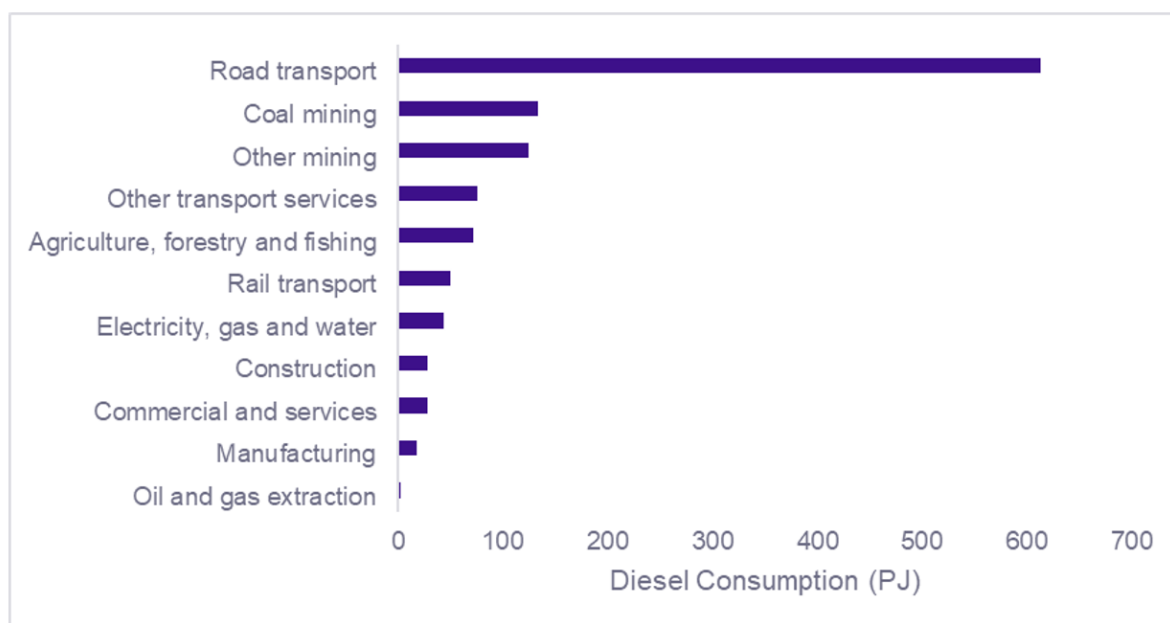
Figure 4: Regulatory treatment of diesel fuel



Non-road diesel machines are a significant contributor to particulate emissions and are comparable in usage to those of on-road vehicles. Research conducted by the department revealed that in 2021, 54% of diesel use in Australia was for road transport, while the remaining 46% was split across

various non-road usages such as mining, oil and gas extraction, agriculture, forestry and fishing, manufacturing and construction among other sectors (Figure 5).

Figure 5: Diesel use by sector in 2021



Source: Australian Energy Statistics 2021, DCCEEW (formerly DISER)

In the 2018 RIS *Better fuel for cleaner air*, the department outlined various options to ensure non-road diesel usage is regulated by the FQS Act. The RIS supported this policy development, however it has not yet been implemented.

3.2.1 Automotive diesel and non-road diesel usage – Policy problem

The Automotive Diesel Standard only regulates the quality of diesel suitable for use in automotive vehicles. This means that there is the potential for diesel to be used for non-road purposes, which is sub-standard to the Automotive Diesel Standard. While feedback from stakeholders suggests that non-road vehicles typically use diesel that complies with the Automotive Diesel Standard, there is still scope for sub-standard diesel to be used as some non-road usage of diesel may potentially not fall under the Automotive Diesel Standard. Moreover, some stakeholders have proposed that non-road machinery, such as agricultural vehicles, may in some cases face incentives to use diesel with higher sulfur content due to lower costs. We therefore consider this issue worth exploring in more detail and refer to this situation as the ‘regulatory gap’.

3.2.2 Risks of a regulatory gap for non-road diesel usage

Non-road users of diesel are not monitored with regularity like road users that are typically regulated under the Automotive Diesel Standard, so there is minimal visibility about the quality of diesel that is currently used for non-road users. Instead, monitoring and enforcing non-road fuel usage is predominantly reliant on other legislation and differs by industry. For example, mining relies on Occupational Health and Safety Standards for employee safety and emissions profiles included in environmental impact assessments required for mining licenses. In NSW, the NSW legislation Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 (NSW) states that underground mine operators must ensure that fuel is supplied in accordance with the FQS Act, and that fuel or fuel additives used do not increase the health and safety risks to workers at the mine.¹¹ In this way, some non-road diesel usage is regulated and monitored through various other pieces of state and federal

¹¹ NSW Legislation, *Work Health and Safety (Mines and Petroleum Sites) Regulation 2022*

legislation, but they are not nationally aligned and do not always explicitly monitor fuel quality in the way intended by the FQS Act.

A lack of direct regulatory oversight for non-road diesel usage is a risk for Government given that it could be detrimental to achieving the objectives of the FQS Act. This mainly applies to the environmental protection aim, whereby poor fuel quality can lead to greater particulate emissions output. Due to the variety of vehicle types and sectors involved, mapping diesel fuel quality and emissions output from non-road diesel usage is a complex exercise that requires further analysis. In this space, a review is currently underway to inform a possible vehicle standard for non-road hardware, which should complement any findings from a fuel quality perspective.¹²

Other issues are relevant for the FQS Act's objective to allow for effective operability of engines, which theoretically is relevant to all types of vehicles, not just automotive vehicles. Ensuring the appropriate disclosure of information to buyers may not be a strong consideration, however given the perceived lack of transparency in the quality of non-road diesel, buyers could have an increased awareness of the quality of their fuel if it is explicitly regulated by the FQS Act. To assess the significance of the current potential regulatory gap, it is important to consider the following dimensions.

3.2.3 Probability of poor-quality diesel usage in non-road machinery

Despite the existence of the regulatory gap discussed above, the following factors point to the low probability of non-road users using sub-standard diesel:

- The high value of the equipment and their importance to revenue streams means it is unlikely that machinery and equipment operators would take risks with using low grade, sub-standard diesel that is not recommended by the manufacturers.
- Most machinery and equipment used for non-road purposes are manufactured abroad and the fuel required for their usage is imported from international refineries that meet strict standards. These standards are typically as or more stringent than what is required by the Automotive Diesel Standard today.
- Another factor that indicates a low probability of breaches is compliance with industry regulations and requirements around emissions. For example, the mining industry has ambitious environmental, social and governance goals that would constrain any decision to use sub-standard diesel for its machinery.

While the current incentives to exploit the regulatory gap in non-road usage are low, factors that could change this assessment going forward include:

- **Economic Headwinds:** Faced with rising inflationary pressures and declining profitability, firms may face incentives to take more risks with compliance measures, and in doing so, substitute high grade diesel fuel for sub-standard diesel that does not comply with the Automotive Diesel Standard.
- **Changing International Standards & Harmonisation:** As the international benchmark evolves, there is a possibility that the cost gap between internationally compliant fuel and sub-standard fuel widens, which could provide greater incentives to source sub-standard diesel.

3.2.4 Implications of a regulatory gap

Despite the low probability of poor-quality diesel being used for non-road use, the implications of the regulatory gap are as follows:

- **Undermining key policy objectives:** Poor quality diesel unsuitable for automotive use could be supplied for non-road use. This diesel would not be regulated under the FQS Act. The use of such a fuel could result in an increase in air pollution, negatively impacting the environment

¹² DCCEE (2022), *Evaluation of Non-Road Diesel Engine emissions*

and human health. This may also impact the adoption of better engine technology and cause vehicle operability issues.

- Uncertainty for the regulator and regulated entities: For both the regulator and the regulated entities, there may be a degree of ambiguity as to whether the supply of non-road diesel is subject to the Automotive Diesel Standard.

If any further improvements to the quality of diesel in the Automotive Diesel Standard are introduced, there could be a miscalibration between the quality of diesel used for non-road and automotive purposes, which would potentially change the scale and (likelihood) of the implications.

3.2.5 Automotive diesel and non-road usage – Stakeholder engagement

Through the consultation process, we received a range of perspectives on the scale of this problem and the preferred options to solve the issue. Feedback from government stakeholders indicated that almost all non-road diesel engines use automotive diesel, with the minor exception of more sustainable emerging fuels in recent years. Smaller mining and agricultural firms are likely to continue using diesel engines for the foreseeable future. Given that non-road engines mostly use automotive diesel, it may not be worth duplicating the existing Automotive Diesel Standard because it would cause administrative burden. However, it was noted that diesel is currently mainly tested at service station forecourts, so if the supply of diesel for non-road use occurred elsewhere, the department and National Measurement Institute may need to explore other options for testing regimes. It is currently unclear where this diesel is being supplied from, which limits the scope of regulatory oversight.

Some industry stakeholders were opposed to extending the scope of the FQS Act to cover non-road diesel. From a logistics point of view, using the same automotive grade of diesel is convenient, due to the low impacts on interchangeability and supply chains. Although there is a price premium for higher grade diesel, in practice it is unlikely that a firm would deliberately source cheaper diesel when these often require special waivers from within the petroleum supplier's operations to extract these fuels from terminals. Therefore, it would not be in the suppliers' interests to trade lower quality diesel because of reputational risk.

Another source of feedback stated that the quality and usage of non-road diesel varies depending on its purpose. They were against the introduction of a bespoke non-road diesel standard because of the cost implications, particularly for agriculture and heavy rail. In the affected industries, rising input costs can be passed onto consumers, causing a loss of wellbeing across the wider economy. Because specifications can vary, the practicalities of making a standard that covers all non-road sectors would be difficult. It could be argued here that the environmental damage associated with lower quality fuel would outweigh the additional cost of setting the right standard.

Other stakeholders argued that all domestic uses of diesel should be captured under the one standard. This originated from concerns that diesel use in large operations could be 'leaked' into the fuel supply for other vehicles, particularly heavy-duty trucks. As refuelling occurs at mining and construction sites, there is potential for non-road diesel to enter road vehicles. A solution would be to standardise the types of diesel under the regulations, to reflect industry best practice. They claimed that this extension would have a low-cost impact on industry, and the benefits would provide greater certainty under an enhanced monitoring scheme, while also reducing the cost of compliance, should non-road diesel be included in the FQS Act.

Lastly, it was communicated that engine hardware regulation is more important than fuel quality to limit emissions output. This included state governments, who have been supportive of a national framework for emissions standards. At the federal level, the department continues to evaluate non-road diesel engine emissions and options to regulate noxious emissions from these vehicles.¹³ Although this topic is out of scope of review, it is apparent that engine standards and fuel composition both contribute to emissions output simultaneously, so these regulations should work in tandem to achieve a given objective.

¹³ DCCEE, *Evaluation of Non-road Diesel Engine emissions*

3.2.6 Automotive diesel and non-road usage – Policy options

There are three main courses of approach for this problem:

Policy option 1: Retain status quo for non-road diesel

Non-road diesel usage will continue to receive little oversight from the department. While the likelihood of poor-quality diesel being used is very low, the regulatory gap could pose a risk for achieving the policy's objectives. Based on the lack of evidence to indicate that there is widespread use of diesel that deviates from the standard today, combined with limited evidence of damages from sub-standard fuels, this risk would seem to be small.

The benefits of this are the lack of additional costs borne by both government and industry for the monitoring of non-road diesel usage. The status quo allows entities the flexibility to employ different grades of diesel for various engines. There is currently little evidence to quantify significant health and environmental costs associated with poor-quality diesel use in non-road settings.

However, this does bring some risks, as diesel for non-road vehicles can be misaligned with the Automotive Diesel Standard. The primary concern is around particulate emissions, which are exacerbated by higher sulfur content. In the future, a change in market conditions may incentivise the supply of poor-quality diesel, with no consequences or ability to regulate under the FQS Act.

Policy option 2: Expand the definition of diesel to include non-road usage

This option means incorporating non-road usage of diesel under the Automotive Diesel Standard. For usage of fuel that varies from the standard, a section 13 exemption would need to be acquired.

This option would close the potential regulatory gap identified earlier and eliminate the risk that stems from it. Another advantage of this option is that automotive grade diesel will be commonly used across the domestic market, meaning that it will be more convenient to regulate a standardised product. For firms who substitute their fuels towards higher quality diesel, there will be a reduction in emissions from non-road engines, leading to better health and environmental outcomes.

On the cost side of this option, non-road diesel is almost half the total diesel market, so the amount of ongoing resources required to ensure compliance may increase from their current levels. There are also likely to be further complexities for Government in establishing where in the supply chain testing will occur as non-road diesel is not always sold at retail sites like automotive diesel is. This option would also result in a greater number of section 13 exemptions, which has a resourcing burden for the department, the FSCC and industry. Fixed costs are also borne from the government resources required to change the FQS Regulations and standards such that non-road diesel usage is covered under the Automotive Diesel Standard, or even renaming it to a broader diesel standard. The main downside of this option is the potentially substantial costs to industry and consumers. As this review was unable to ascertain key inputs required to estimate the relevant costs and benefits, further work may be needed to assess the regulatory impact of this option.

Policy option 3: Create a bespoke non-road diesel standard

The final alternative is to establish a new standard that specifically applies to non-road usage. This would provide clarity for users of diesel and eliminate the regulatory gap that currently exists. Other environmental benefits are likely to result from firms that may improve the quality of fuels they purchase.

On the other hand, given that stakeholders have emphasised the similarity between on-road and non-road diesel, the standard is likely to be duplicative. At the same time, making a new standard for all non-road fuel usage will be difficult given the range of applications compared to on-road vehicles. From an administrative perspective, it may be more cost effective and efficient to maintain both uses under the same standard. There is also a thorough process to establish a new standard which involves the FSCC and the Minister, consuming significant government resources. This is likely to be a multi-year process and involve stakeholders across many areas of the economy. Overall, this will

increase the burden to suppliers who currently fall outside of the FQS Act, resulting from the change to the scope of liquid fuels regulation.

3.2.7 Automotive diesel and non-road diesel usage – Policy discussion

From the available information, there is the potential for externalities resulting from non-road diesel engines. Reviews of this issue are underway at federal and state levels of government to examine options for non-road vehicle emissions standards. To complement this workstream, we recommend that more investigation be done into the relationship between fuel quality and exhaust emissions, particularly for older vehicles. The decision to alter fuel standards usually follows a CBA, where the total benefits to the community are compared against economic costs to businesses and individuals. These findings should be used to inform the recommendations on the incorporation of non-road diesel into the FQS Act.

Option 3 should be rejected on the basis that it is unlikely to remedy the externality, could have significant costs to producers, and will be costly and lengthy to implement. It will be more convenient to extend the existing Automotive Diesel Standard, rather than duplicate it through negotiation with the FSCC. Both Options 2 and 3 will increase the volume of section 13 exemptions, which will apply to specialist uses of diesel in non-road engines.

From this assessment, Option 1 – maintain the status quo – is supported. Despite the possible externalities, this review is unable to ascertain the resulting burden on industry and consumers resulting from Option 2. As such, there is insufficient evidence to justify mitigating this regulatory problem. However, further investigation is warranted on the sources, usage and quality of diesel used for non-road engines. Particular attention should be given to i) determining whether the quality of diesel used for non-road purposes varies from the Automotive Diesel Standard, and ii) understanding the logistics required for a robust non-road diesel sampling regime, as it would make up a large part of total costs associated with a broader regulatory regime covering non-road diesel.

3.2.8 Automotive diesel and non-road usage – Finding and recommendation

Finding: 3.2 – Automotive diesel and non-road diesel usage

Stakeholders communicated that most diesel used for non-road purposes is likely to comply with the Automotive Diesel Standard, but not all diesel supplied for use in non-road vehicles is regulated by the FQS Act. As there is little information available on the quality of diesel that is used for non-road purposes, it is unclear what the impact would be on industry and consumers from expanding the scope of the FQS Act to cover non-road diesel usage.

Recommendation: 3.2 – Automotive diesel and non-road diesel usage

It is recommended to retain the status quo but give consideration to improving Government visibility of non-road diesel usage. This allows the department to start collecting information on the overall impact of extending the scope of the definition and standard for all uses of diesel.

3.3 Racing fuels

3.3.1 Fuel regulation in motorsports

Racing fuels are mainly supplied by small to medium businesses in small volumes and make up only 0.002% of Australia's total annual supply of petrol. Racing fuels are typically manufactured abroad and imported into Australia. The three main stages of the regulatory landscape for racing fuels are described below:

Production stage

Before fuel enters the domestic market, it is usually subject to testing and certification by the manufacturer to ensure that it complies with production standards.

Importation stage

Some racing fuels are certified by the Fédération Internationale de l'Automobile (FIA), which aims to encourage and implement the adoption of common regulations for all forms of motorsports and series across the world. The objective of FIA's fuel regulations is to ensure competitive parity in racing fuel events, which is in contrast to the FQS Act, which aims to minimise the health and environmental impacts of fuel usage. Because racing fuels may contain higher levels of aromatics, oxygen and other additives compared to regular road petrol, distributors will require a section 13 exemption from the relevant fuel quality standard to supply racing fuels in Australia. Fuel suppliers can apply for a section 13 exemption to supply a fuel that would otherwise be non-compliant with the relevant fuel quality standard.

Domestic usage

In terms of domestic usage, racing fuel is also regulated by the relevant domestic motorsport body for the relevant groups that use them. Throughout racing events, coordinators will inspect usage of fuel by competitors, with the intention of ensuring competitive parity and safety. The level of inspection that occurs during each event is left to the discretion of the various motorsport bodies but is generally more thorough than the broader testing undertaken by the department due to the focus on competitive parity and safety within the sector.

3.3.2 Racing fuels – Policy problem

Racing fuels typically do not comply with the relevant fuel standard because they often contain high levels of additives such as methyl tert-butyl ether (MTBE), oxygenated compounds and aromatics. However, due to their usage in small quantities, they are routinely processed and approved for section 13 exemptions. During this process, the FSCC evaluates and provides comments on the applications or proposed variations. This results in a regulatory burden for both the racing fuels industry who submit and renew applications every year, and for the department and FSCC who evaluate these submissions once they are lodged.

3.3.3 Racing fuels – Stakeholder engagement

Stakeholders noted that in recent times, the quality of racing fuels has improved given the ban on leaded racing fuels in 2019.¹⁴ Apart from regulatory action, progress has been made by motorsport event organisers to standardise and monitor the fuel events of race participants. However, the policy problem remains as racing fuels typically contain high amounts of harmful substances and therefore still require a section 13 exemption, which imposes a regulatory burden on suppliers, FSCC and the department.

Regarding the regulation of racing fuels, stakeholders noted that incidences of new section 13 exemption applications are rare. Instead, most resources are directed towards the variation and extension of existing applications, which are done in bulk and usually on an annual basis. As a result, most stakeholders conveyed that a racing fuel standard would not solve the policy problem as it would not be able to cover all types of racing fuels used for various events. Some stakeholders suggested modifications of the section 13 exemption process to lessen the administrative burden for smaller suppliers, which we have incorporated into policy option 2 in the policy options discussion below.

3.3.4 Racing fuels – Policy options

Policy option 1: Retaining the status quo

The main advantage of retaining the current section 13 exemption process for racing fuels is maintaining oversight of racing fuels that enter the Australian market while also having the flexibility to allow for small quantities to be permitted for specific purposes. With a regular rollover period of

¹⁴ Motorsport Australia (2018), *Historic Fuel Requirements for 2019*

approvals, committee members can assess the overall impacts of these fuels and whether these health and environmental impacts have varied over time based on their intended usage.

Policy option 2: Continue the section 13 exemption process with modifications

While both Government and the racing industry are broadly comfortable with racing fuels continuing to fall under section 13 exemptions, there are some pathways that can be explored that would improve the process for all involved parties. One suggestion could be to invoke a quantity threshold, where exemptions are not required for fuels supplied in low quantities. This option has the potential to lessen the administrative burden on smaller suppliers of specialist racing fuels. The negative externalities associated with the use of specific forms of racing fuels diminish as the volumes decrease, so the FSCC can divert resources towards larger quantity applications and streamline their approval. The FSCC could also consider increasing the time period of exemptions in order to reduce administrative burden.

Policy option 3: Mandate through the FQS/bespoke racing standard

This option entails creating a bespoke racing standard that sits under the FQS Act and outlines the exact specifications for racing fuels to comply. A racing fuel standard could be informed by international trends to allow a more efficient benchmark for regulation. The main benefit would be to increase operational efficiency for suppliers of racing fuels, in particular those who hold international certifications in other markets. These suppliers would no longer have to employ section 13 exemptions for certain types of fuel.

However, it is a large regulatory undertaking to create a bespoke standard, and a racing standard is unlikely to cover every aspect of racing fuels. Stakeholder feedback has indicated that a large variety of fuels exist for different purposes and categories of events. A racing fuel standard will also need to specify certain allowable end-uses for specific racing fuel products, which may be difficult to enforce. Broadly, the risk of these unique fuels breaching into the wider fuel supply for passenger vehicles should be taken into consideration. Under a new standard, section 13 exemptions are likely to continue for racing fuels that are more novel or deviate from the determination. Without the sufficient flexibility provided by the section 13 exemption process, there is the possibility that certain racing events will need to be adjusted or cancelled, which has an adverse economic impact for event organisers, participants and local communities.

3.3.5 Racing fuels – Policy discussion

Contrary to the outcomes of the previous review, feedback received from the racing sector supports the current section 13 exemption procedures from racing organisations, as it is effective to ensure compliance with the FQS Act. It is also a useful tool to import racing fuels from overseas markets with different requirements, for instance elevated levels of MTBE. It is considered that for racing fuels, the FSCC can assist the Minister or Minister's delegate to make a judgement around their suitability for use in Australia. The change of position by the racing sector could be attributed to improvements deployed by the department to reduce the cost and burden associated with applying for section 13 exemptions. This supports Options 1 and 2, which both entail a continuation of the section 13 exemption framework albeit with modifications.

The section 13 exemption process for racing fuels differs from its use for other purposes due to the amount of small and medium suppliers in the sector. Thus, consideration was given towards modifying the section 13 process to improve the process for smaller and medium sized suppliers. This could be achieved through a volume threshold, which would reduce the burden faced by smaller businesses. Despite this, a volume threshold would be difficult to enforce, and may compromise the effectiveness of the exemption system to protect environmental and health outcomes. Although the risk may be lower in small quantities, there are still potentially harmful impacts of racing fuels at these volumes, such as trace amounts of MTBE. The threshold would need to be set carefully so that it does not cover the entire market and suppliers are unable to circumvent it in some way. There is the risk of leaded racing fuels entering the market, as some are still being used from other nations. It also raises the question of why this scenario is not applied to other specialist fuels on the current approvals list, including emerging fuels. Any inconsistencies in how fuels are dealt with in regards to section 13 exemptions are likely to be contentious with industry. The risks associated with a lack of regulation

outweigh any benefits that could be seen from this option. Further, this adjustment to the regulatory framework would increase uncertainty in application, for both industry and government, and would likely need to be applied across the entire liquid fuels industry.

Another parameter to consider altering under Option 2 is the timeframe for exemptions. Currently, approvals for racing fuels are revisited on a yearly basis and require extensions if the conditions or regulated persons are altered. The option to grant three-year approvals for racing fuel applications, where the usage and components of the fuel have not changed, could help reduce the administrative burden for suppliers, the department and FSCC.

3.3.6 Racing fuels – Finding and recommendation

Finding: 3.3 – Racing fuels

Since the last review conducted by MJA in 2016, the racing industry has been more supportive of regulation for racing fuels and the section 13 exemption process. Although there are some opportunities for improvements, section 13 exemptions are the optimal way to allow for the supply of specialist racing fuels in Australia.

Recommendation: 3.3 – Racing fuels

Based on stakeholder feedback, the section 13 exemption process should be maintained to regulate the supply of racing fuels. Consideration of ways to improve the section 13 exemption process is outlined in Review Focus II, Recommendation 2.

3.4 Renewable diesel

Renewable diesel falls under the Automotive Diesel Standard of the FQS Act and is defined as *“liquid fuel that is manufactured by chemically altering and hydrotreating (or equivalent) vegetable oils, animal fats, organic waste and other biomass, but also includes non-organic waste that cannot be reasonably recycled. It is not directly made from any fossil fuel.”*

The current coverage of renewable diesel under the FQS Act does not necessarily pose a policy problem. However, due to recent developments in the trial supply of renewable diesel in Australia, stakeholders were interested to share their experiences surrounding this topic and offer viewpoints on the implications of different regulatory approaches for renewable diesel.

3.4.1 Renewable diesel – Stakeholder engagement

Stakeholders have suggested that the current definition is generally sufficient for the renewable diesel industry. Hydrotreatment is the primary chemical process for creating renewable diesel, and the current definition allows for renewable diesel to be produced through hydrotreatment or alternative processes.

However, some stakeholders noted issues around including renewable diesel under the Automotive Diesel Standard. Renewable diesel usually does not meet the density specification within the Automotive Diesel Standard, and so suppliers must rely upon the section 13 exemption process to supply the product, which adds uncertainty for the industry. Thus, Australia’s adoption of new international developments in the manufacturing of renewable diesel may be delayed due to the lack of a suitable standard.

The roadblocks manifest in the prevention or delay of renewable diesel investment projects in Australia. Stakeholders noted that building plants can be a multi-year process, and the section 13 exemption process creates uncertainty around the legal framework to supply certain fuels. As the approval could technically be revoked at any time, and is given for a finite time horizon, firms do not always have assurance that they will be able to continue operations over the medium term. This can affect the investors’ ability to attract financing, increase the level of governance risk associated with renewable diesel projects and limit the ability to localise the supply of these fuels.

3.4.2 Renewable diesel – Policy discussion

Due to the recent introduction of renewable diesel and the nature of approach taken, it is not necessary to define policy options for the purposes of this review. Instead, we offer broad commentary on the issue that is informed by stakeholder feedback and a cursory view of similar regulations in other jurisdictions.

In other markets such as within the European Union, the paraffinic diesel standard (which includes renewable diesel) has a lower density range in the definition to accommodate this very issue.¹⁵ While assessing the merits of the recommendation to change/alter density ranges is out of scope for this review, the application of the section 13 exemption process is still a relevant consideration. This review also acknowledges that research into this subject area is currently underway by the department.

3.4.3 Renewable diesel – Finding and recommendation

Finding: 3.4 – Renewable diesel

Research and development into renewable diesel has resulted in the initial trials of supply through section 13 exemptions in Australia. Due to lower density limits mandated by the Automotive Diesel Standard, most renewable diesel products will require a section 13 exemption for domestic supply. This may hinder the investment into renewable diesel production in Australia.

Recommendation: 3.4 – Renewable diesel

On the basis of engagements with industry, but without the necessary analysis to confirm the full implications of regulatory changes, we recommend further investigation be done into the following:

- Assessing whether the definition of renewable diesel is fit for purpose and does not restrict supply or technical innovation. Consideration could be given to the merits of having a more technologically neutral definition.
- Determining the costs and benefits of altering the density measures in the automotive diesel standard to cater for renewable diesel products not requiring a section 13 exemption.
- Developing a bespoke renewable diesel standard to cover the supply of renewable diesel.

More information on these topics can help inform a policy approach that encourages domestic investment into renewable diesel, while also ensuring the smooth and safe adoption of emerging fuels into the market.

3.5 Hydrogen as a transport fuel

Hydrogen has the potential to be a low-carbon transport fuel in many sectors and is therefore expected to have a strong role in Australia's energy transition. The production and usage of hydrogen fuel can generate varying levels of carbon lifecycle emissions, depending on the sources of energy that are used. The application of hydrogen fuel in Fuel Cell Electric Vehicles (FCEV) results in no carbon emissions from vehicle exhausts, as tailpipes only emit water vapour. Therefore, when synthesised from renewable energy sources, hydrogen is a renewable fuel which has positive outcomes for environmental sustainability.¹⁶ At the time of writing, hydrogen fuel is not widely commercially available in Australia despite several stations supplying it on a closed-trial basis.

The Commonwealth Government, through the Hydrogen Policy Branch of the department and in partnership with the states and territories, is reviewing existing legislation and regulations to determine whether they can support hydrogen industry development. Currently, hydrogen fuel quality

¹⁵ Zeman, Petr & Hönig, Vladimír & Kotek, Martin & Táborský, Jan & Obergruber, Michal & Mařík, Jakub & Hartová, Veronika & Pechout, Martin. (2019). *Hydrotreated Vegetable Oil as a Fuel from Waste Materials*

¹⁶ International Energy Agency (2022), *Hydrogen*

is not regulated at the federal level and is not included in the FQS Act. As hydrogen differs significantly from conventional fuels, a number of complexities exist with the regulation of hydrogen fuels and whether it should be regulated by the FQS Act.

In the private sector, a number of technical standards have been adopted for hydrogen products and infrastructure. Standards Australia released the AS ISO 14867:2020 standard which outlines an internationally recognised product specification for hydrogen fuel quality. This technical standard identifies different end uses for each grade and the associated minimum quality requirements, and can be voluntarily adopted by industry where it is appropriate to do so. The standard represents current industry best practice and has not been legislated at a state or Commonwealth level.

3.5.1 Hydrogen as a transport fuel – Previous and parallel reviews

There are several reviews that have been and are currently being undertaken on the relevance of current legislations to the development of hydrogen as a fuel.

In 2019, the Hydrogen Industry Legislation report was prepared by Clayton Utz for the former Department of Industry, Innovation, and Science. The review identified the FQS Act as one legislation that is directly applicable to the development of the hydrogen industry, and in particular, advised the department to prioritise the development of national technical safety standards.¹⁷ It is important to note that the Hydrogen Industry Legislation report has been superseded by more recent reviews undertaken by the Government.

In drafting the Hydrogen Safety Code of Practice, Queensland Resources Safety & Health documented stakeholder feedback that initially suggested Commonwealth Fuel Quality Standards may apply to automotive uses of hydrogen in the future.¹⁸ However, the final draft Code of Practice proposed a legislative amendment to Queensland state law, to prescribe quality under the *SAE J2719 Hydrogen fuel – Product specification* standard.¹⁹

The 2019 National Hydrogen Strategy, released by the Australian Government's Energy Council, contained action items to ensure hydrogen safety and industry development. Stemming from parts 4.1 - 4.4 of these action items, a Commonwealth, state and territory working group, the Legal Frameworks Review Working Group, was established for the purposes of conducting the review and developing recommendations for the Energy and Climate Minister's Council Meeting.²⁰ The scope of the Government's parallel review extends beyond fuel quality and includes other aspects of the hydrogen industry such as production, refuelling infrastructure and regulatory guidance for transport applications. The working group also aims to complete a coordinated review of legal frameworks across jurisdictions. No public information is available at the time of writing regarding the outcomes of this review, and specifically, whether hydrogen should fall under the FQS Act.

This review recognises that the issue of hydrogen as a transport fuel is covered more extensively in the Government's parallel review conducted by the Legal Frameworks Review Working Group, and therefore defers to the Government's review in making any recommendations. However, as this review is focused on fuel quality, EY is of the view that our analysis could be of use to policy makers and complement the existing broad base of information on this issue.

3.5.2 Hydrogen as a transport Fuel – Stakeholder engagement

Overall, stakeholders had mixed viewpoints on the inclusion of hydrogen under the FQS Act. Despite this, there was broad support for a nationally consistent framework, whether it be under the FQS Act or some other regulatory development.

Feedback received from stakeholders highlighted concerns with state and territory regulations for hydrogen fuel. These regulations are often inconsistent between regions and require firms to apply for exemptions for certain use cases. Because they are not designed for hydrogen as a transport fuel, but

¹⁷ Clayton Utz (2019), *Hydrogen Industry Legislation*

¹⁸ Queensland Resources Safety & Health (2022), *RSHQ Response Document – Feedback from consultation draft Hydrogen Safety Code of Practice*

¹⁹ Queensland Resources Safety & Health (2022), *Hydrogen Safety Code of Practice | Petroleum and Gas Inspectorate*

²⁰ DCCEE (2022), *Legal Frameworks Review – Industry Consultation – information for seminar and survey participants*

rather as part of a wider gas energy system, state and territory laws are not always fit for purpose. An example of a shortcoming in this system is the mandated use of odorants, which can impact the purity levels of hydrogen and its potential to power a fuel cell. Dangerous goods policies can also apply to hydrogen and affect its transportation to various fuelling stations. Going forward, any regulation for hydrogen fuel should also be aligned with vehicle design rules to create a consistent national framework.

Stakeholders also expressed views that other regulations outside of the FQS Act are needed for the smooth adoption of hydrogen fuel. This includes guidelines for the safe transportation and storage of hydrogen, which are currently regulated at a state level, and National Codes of Practice for the safety and operation of hydrogen refuelling. In addition, design rules for refuelling infrastructure are also necessary, as research and development has already begun for private sector investments. In the fuel retailing space, stakeholders conveyed that further guidance for hydrogen fuel dispersal will be critical, as hydrogen fuel can be sensitive to the levels of temperature and pressure exhibited by the technology. The differences between conventional fuels and hydrogen fuels can result in the emergence of regulatory gaps. Because of this, fuel quality is just one aspect of what will be a wider regulatory framework for hydrogen fuel.

Other government stakeholders were against the inclusion of hydrogen fuel into the FQS Act on the basis that hydrogen is more suited for bespoke regulation. They conveyed that the FQS Act is not consistent with regulatory requirements for hydrogen fuel purity, and that significant amendments to the FQS Act would be needed to provide for this authority. These views were influenced by the differences between hydrogen and the fuels currently covered under the FQS Act. In particular, hydrogen fuel is not necessarily susceptible to contamination and so efforts to sample hydrogen fuel at the point of sale may not be necessary. They also questioned whether a hydrogen fuel standard could fall within the objects of the FQS Act, as hydrogen fuel can generate zero carbon emissions output from vehicle tailpipes and one of the Act's objectives is to reduce emissions. For these reasons, they opposed broadening the scope of the objects of the FQS Act and conveyed that it would be more appropriate to utilise other existing regulatory frameworks for hydrogen fuel quality.

3.5.3 Hydrogen as a transport fuel – Policy discussion

There are two main uses of hydrogen fuel in engines – to power FCEV or to drive internal combustion engines, which can tolerate slightly lower quality grades of hydrogen. Many organisations are also investigating the potential to blend hydrogen with other fuels including petrol, diesel and natural gas for the purpose of reducing emissions. Given these distinct use cases, there may need to be a flexible definition of hydrogen or even multiple standards in future. For now, it appears that it is too early to formulate a standard as use cases are still being defined and explored. This introduces complexity from a regulatory perspective as without an established standard, hydrogen usage may fall outside the FQS Act's scope as currently constructed.

In looking at comparable jurisdictions abroad, Australia is not in a unique position in the regulation of hydrogen fuel. Other advanced economies are also dealing with the problem of transitioning hydrogen usage away from industrial gas and energy regulations towards a bespoke approach for uses as a transport fuel. In the UK, there is not a well-defined legislative framework for hydrogen projects, and the UK's Hydrogen Strategy is unlikely to deliver a new regulatory network until at least 2025.²¹ The European Union regulations emphasised the need for standardisation of gas quality standards across member states, particularly for blending hydrogen with other substances.²² As Australia is likely to import hydrogen as well as produce it domestically, maintaining alignment with international best practice is critical while technical standards continue to be developed in other nations.

3.5.4 Hydrogen as a transport fuel – Policy options

Policy option 1: The department investigates implications of making a hydrogen fuel quality standard

²¹ CMW (2021), *Hydrogen Law, Regulations & Strategy in the United Kingdom*

²² European Commission (2021), *Proposal for a Regulation of the European Parliament and of the Council on the Internal Markets for Renewable and Natural gases and for Hydrogen*

Under this pathway, the department could consult with industry and subject matter experts to investigate a bespoke hydrogen standard for fuel quality. This may entail an amendment to section 6 of the FQS Regulations to expand the definition of fuel to include hydrogen.

The primary benefit of this would be to ensure a consistent national approach towards hydrogen fuel quality, instead of the state and territory laws which can vary. It also provides a sense of consistent quality assurance for market participants who are interested in developing or using hydrogen fuel. This contributes towards the objectives of the FQS Act to maintain vehicle operability and transparency around information for transport fuels. Further, hydrogen fuel used in FCEV is emissions free in terms of output from vehicle exhausts, potentially contributing to the broader environmental objectives of the FQS Act. On the other hand, stakeholder feedback has indicated that the scope of the FQS Act's objectives would need to be expanded to cater for hydrogen fuel, which suggests that other national codes may be a preferred approach.

Policy option 2: Retain the status quo for the FQS Act and regulate hydrogen under other national codes

This option would not include hydrogen in the FQS Act but instead await the development of a centralised national framework for hydrogen fuel quality. This would allow a bespoke approach towards developing regulation for hydrogen fuel, which can cater for its various use cases.

The main benefit of this option is to ensure consistency with other hydrogen regulations that are currently being developed. In their ongoing review to improve hydrogen regulation, the Legal Frameworks Review Working Group is reviewing federal, state, and territory laws that affect the hydrogen industry. This includes an outline of the barriers which have been categorised into regulatory gaps, areas lacking clarity for regulatory approval and differing regulatory regimes between states and territories.²³ The exploration to extend national gas regulations to include hydrogen is also likely to have an impact, although this is not specifically designed for transportation fuel.

While a bespoke framework would allow for better coverage of hydrogen's other use cases, there may still be complex cases which would need to be accounted for. There also may be other risks to not include hydrogen under the FQS Act, where fuel retailers and vehicle manufacturers may face inconsistent enforcement and monitoring for different types of fuel products. If this was not integrated smoothly, there is the risk of inconsistent approaches to compliance for what could be a widely used fuel alternative in the future.

In comparing the policy options, both alternatives can resolve the policy problems raised by stakeholders surrounding the inconsistent application of state and territory regulations, and the current exemptions-based framework. As they are both viable, the decision on where to regulate hydrogen fuel quality could be influenced by the respective timeframes to amend the FQS Act, or to implement National Codes of Practice. Another aspect to consider is the relationship between hydrogen fuel quality regulations and other ancillary regulations for hydrogen that would result from either policy option.

3.5.5 Hydrogen as a transport fuel – Finding and recommendation

Finding: 3.5 – Hydrogen as a transport fuel

This report finds that the landscape for regulating hydrogen fuel quality is complex and must account for multiple use cases. As the market continues to develop, maintaining alignment with international best practice is critical while technical standards continue to be developed in other nations. The FQS Act is one option to regulate hydrogen fuel quality, with the other approach being to develop consistent national regulations or practices specific to hydrogen. This review finds that both policy approaches have varying levels of support from stakeholders.

Recommendation: 3.5 – Hydrogen as a transport fuel

Due to other parallel reviews conducted by Government, this review does not make any recommendation on regulating hydrogen fuel quality and defers to the Government's parallel review

²³ DCCEE (2022), *Review of Hydrogen Regulation Industry Consultation: Information for seminar and survey participants*

on this issue. We encourage policy makers to consider and make use of this review's stakeholder feedback and policy analysis on regulating hydrogen fuel quality.

4. Review Focus II: Processes, Clauses and Definitions

4.1 Fuel Standards Consultative Committee (FSCC)

The FSCC is a statutory committee made under the FQS Act. The membership of the FSCC is determined by the Minister and must include a member representing each state and territory, a representative of the Commonwealth, a member representing fuel producers, a member from a non-government environmental group and a member representing the interests of consumers. The Minister must consult with the FSCC before making certain decisions under the Act, including before granting an exemption under section 13 of the FQS Act or making a fuel standard.

As part of the review, EY analysed whether reforms to the FSCC were appropriate. Feedback received from stakeholders on issues surrounding the regulation of emerging fuels and racing fuels were used to formulate recommendations regarding the FSCC.

4.1.1 FSCC – Stakeholder engagement and policy analysis

Stakeholders were broadly supportive of the FSCC as an effective advisory body and suggested some areas for improvement. A stakeholder noted that the FSCC has not held meetings in recent years to discuss items and noted that there could be a greater frequency of meetings to collaborate on fuel quality-related issues. Another stakeholder shared this view and noted that the FSCC is largely focussed on the procedural aspects of section 13 exemptions alongside the department. They expressed that the FSCC is not as well engaged on changes to fuel quality standards, and that the group's collective expertise is currently underutilised. By looking at bigger picture issues around standards and the FQS Act itself, the FSCC could be a more influential advisory committee.

Another stakeholder expressed that although the current mix of opinions on the FSCC can be unwieldy, it remains the best option available to fulfil its responsibilities. They noted that in the past, options were considered to alter the membership of the FSCC, but no changes were made. A different stakeholder conveyed that the current FSCC may not have the best levels of knowledge on specialist fuels such as biofuels, racing fuels and renewable diesel. They also proposed adding new members with specific expertise on pollution and particulate matter to evaluate health and environmental outcomes.

Due to the consensus stakeholder feedback and the perceived effectiveness of the solutions proposed, it was not deemed necessary to undertake a comprehensive analysis of policy options. Instead, it is considered sufficient to proceed with the findings and recommendations as they directly address the policy issue outlined.

4.1.2 FSCC – Finding and recommendation

Finding: 4.1 – FSCC

The FSCC effectively performs its legislative role to inform the Minister and Minister's delegate. However, stakeholder feedback noted that some aspects of the FSCC could be changed to improve its function as an advisory body that informs decision making related to the FQS Act. This feedback has been considered in formulating the recommendation for this issue.

Recommendation: 4.1 – FSCC

To further improve the effectiveness of the FSCC, we recommend that the FSCC takes a more collaborative approach towards complex issues such as proposed changes to standards. This could be achieved through two changes:

- The reintroduction of regular meetings to create a more collaborative process that ensures the group's expertise are not underutilised on important topics.

- A review of the membership of the FSCC to ensure collaborative discussions on key issues both in terms of breadth and depth for key issues.

These changes will work to improve confidence in the FSCC's decision making and ensure that it is an influential committee on important subject matter related to the FQS Act.

4.2 The section 13 exemption process

An application to supply fuels that would otherwise not comply with the standards is made under section 13 of the FQS Act and is referred to as a section 13 exemption in this report. The objective of the exemption process is to provide flexibility for allowing specific circumstances of non-compliance. This avoids the burden of developing a specific standard which can be prohibitively costly or quickly become outdated. Exemptions are typically applied for and received for different products, including racing fuels, emerging fuels and other specialist fuels.

An applicant seeking a section 13 exemption applies to the department. The department provides the application to the FSCC for comment. The Minister, or the Minister's delegate, will then decide on the application, taking into consideration the response from the FSCC.

The process for the consideration and issuance of section 13 exemptions includes the following steps for the department:

1. Receive application and liaise with applicant to ensure application is complete
2. Assess the application and seek external technical or legal advice as required
3. Prepare a draft recommendation for appropriate consultation with FSCC members
4. Consult with the FSCC and conduct departmental evaluation for comment
5. Brief the Minister and/or delegate to seek a decision on the application
6. Notify the applicant of the decision and if approved, any conditions of approval
7. If approved, publish the decision in the Commonwealth Gazette and record the approval.

The department previously charged applicants a fee that aimed at recovering some of the costs imposed on Government from an application. As of 2021, a legislative amendment to the FQS Regulations removed the application fee, to minimise the administrative burden, which was particularly burdensome for small and medium-sized suppliers.²⁴ Recent information provided by the department has indicated that successful exemptions typically encounter the following indicative timeframe:

1. The department receives the application from applicant, reviews the application and prepares a preliminary assessment of the application (2–3 weeks)
2. The department consults with FSCC on the topic (2 weeks)
3. The department considers the FSCC's feedback (1 week)
4. The documentation for the exemption or response is drafted (1 week)
5. The delegate (or Minister) approves the exemption (1–2 weeks).

Although this timeframe can be variable and depends on a number of factors including the type and proposed usage of fuel, this information suggests that exemptions typically take around two months to complete.

As outlined in the FQS Act, when assessing applications, consideration must be given to protection of the environment, public health and safety, the interests of consumers, the impact on economic regional development, and any other matters the Minister deems relevant. Approval for an existing section 13 exemption can also be varied to extend the duration of the exemption, although consultation with the FSCC is required before any variation to the timeframe is granted.

4.2.1 The section 13 exemption process – Stakeholder engagement

Feedback from stakeholders supported the Section 13 exemption process, but cited different reasoning based on the specific nature of the section 13 exemption application. When a fuel differs

²⁴ Federal Register of Legislation (2021), *Fuel Quality Standards Amendment (Fees) Regulations 2021*

from a conventional standard, stakeholders identified two main reasons for using the section 13 exemption process:

- i) *To regulate specialist fuels.* The main type of specialist fuel where these exemptions are used are racing fuels, for which stakeholders noted that most applications are variations or extensions of existing applications. These applications are usually done in bulk and on an annual basis.

Other specialist fuels also require exemptions such as B20, which exceeds the range of biodiesel content stipulated in the Automotive Diesel Standard. Stakeholders suggested that where standards do not cater for new and emerging fuels, bulk exemption applications and renewals would be an effective way to lessen the administrative burden.

- ii) *To provide a testing ground for new and emerging fuels.* For some biofuels, stakeholders noted that the section 13 exemption process allows the trial of supply for fuels that may not comply with a relevant standard, such as renewable diesel. This was identified as particularly important considering the timeframes and amount of consultation that is needed to alter or create new standards.

4.2.2 The section 13 exemption process – Policy analysis

While regulating specialist fuels such as racing fuels is an important role for section 13 exemptions, it is the second category of stakeholders that the process delivers significant policy benefits. In this role as a testing ground for new and emerging fuels, the section 13 process plays an important role in the development of fuel standards over time as it:

- i) signals potential candidates for new bespoke standards through the volume of different types of applications, and
- ii) enables customers and manufacturers to access newly developed fuels without having to go through the onerous steps of creating a new standard.

The role performed by the section 13 exemption process has significant benefits in terms of consumer choice and transitioning to a carbon friendlier economy. This benefit is expressed in further detail in the finding and recommendation below.

4.2.3 The section 13 exemption process – Finding and recommendation

Finding: 4.2 – The section 13 exemption process

In 2022, the department made considerable progress to improve the section 13 exemption process for emerging fuels in terms of application timeframes and transparency in requirements.

Going forward, the ad-hoc use of the section 13 exemption process enables i) a low-cost administrative option to allow for the supply of niche fuels in specific circumstances, and ii) a testing ground for emerging fuels manufacturers to develop and gain exposure for their products. The latter approach is expected to support the Government's transition to cleaner fuels as it:

- provides the platform for a market-driven revealed preference on the development and use of emerging fuels, and provides a signal on whether a fuel should be included as a covered product
- allows for a relatively low-cost assessment of the quality implications and testing of an emerging fuel
- gives flexibility in the testing and adoption of emerging fuels
- gives sufficient certainty to support investment by developers of emerging fuels
- provides for an adequate level of oversight and compliance testing for emerging fuels.

Recommendation: 4.2 –The section 13 exemption process

Stakeholder feedback suggests that further improvements to the current process are worthy of consideration. Examples of improvements to the current process for section 13 exemptions include:

- *Extending the length of renewals:* For instances where the usage of fuel does not change, a longer renewal period will help to decrease the administrative burden to process application extensions, without significantly increasing the risks.
- *Streamline exemptions for similar products:* To ensure stakeholders continue to benefit from application streamlining on an ongoing basis, it is important that processes are consistent, and bulk applications are considered wherever possible.

4.3 Terminology and definitions

It is necessary to ensure that covered products and associated definitions are standardised between the various pieces of legislation that govern the sector, in order to reduce confusion borne by industry.

4.3.1 Terminology and definitions – Stakeholder engagement

For issues surrounding terminology, we did not consider it as necessary to conduct stakeholder engagement as the policy issues, findings and recommendation were predicated on outcomes from the legislative review and international benchmarking.

4.3.2 Terminology and definitions – Policy discussion

It was considered whether the nomenclature for certain terms is accurate within the FQS Act and consistent with other pieces of domestic regulation. An example of this is the division between petrol and gasoline. There is no reference to 'petrol' itself in the main FQS Act and instead it is referred to in section 6 of the FQS Regulations under the list of products that constitute fuel. Meanwhile, the Fuel Security Act refers to 'gasoline' in the definitions of 'MSO product' and 'FSSP fuel' without a further definition.

While there are unlikely to be material impacts in this instance to differentiate between gasoline and petrol, it is recommended to consider the wider implications of inconsistent wording and utilise established definitions where possible. The benefit of this is to provide clarity for businesses who are involved in quality management, reporting and stockholding under various laws that sometimes intersect. As the liquid fuels regulatory framework continues to expand with the introduction of the Fuel Security Act, it is necessary to ensure that covered products and associated definitions are standardised between Acts to reduce burden and confusion borne by industry.

Another aspect of review focus are the definitions of supply and supplier. The FQS Act sets out actions that constitute the supply of fuel and the conditions under which supply of fuel constitutes an offence. We evaluated this alongside other similar regulation in other jurisdictions to ensure that these definitions are appropriate.

After comparing with similar provisions internationally, we find that the Australian definition of supplier is broadly in line with other jurisdictions. An exception to this was New Zealand, which provides further detail about the different kinds of suppliers. Our legislative review concluded that this level of detail may not be helpful for the FQS Act where the intention is to cover all suppliers regardless of what stage of the supply-chain they are in.

There is evidence that the definitions of supply and supplier are aligned with international best practice. However, one element that warrants further analysis is the definition of 'automotive diesel' and whether the supply of all diesel fuel is covered by the Standard – this is expanded upon in Section 3.2 of this report.

4.3.3 Terminology and definitions – Finding and recommendation

Finding: 4.3 – Terminologies and definitions

On occasion, the wording between the Fuel Quality Standards Act and the Fuel Security Act is misaligned, with the former referring to 'petrol' and the latter referring to 'gasoline'.

Recommendation: 4.3 – Terminologies and definitions

It is recommended to standardise the terminology for petrol between the Fuel Quality Standards Act and the Fuel Security Act, in order to reduce confusion borne by industry.

4.4 Register of Prohibited Additives

The purpose of the Register of Prohibited Additives (the Register) is to restrict the wholesale or commercial sale of off-the-shelf additives in fuel. Sections 30 and 31 of the FQS Act decree offences and civil penalties to those who supply or import a fuel additive on the Register. This means that a fuel additive on the Register would be illegal to supply or import as a discrete product, regardless of whether it is blended into fuel. If a substance were to be added on the Register, the FSCC must advise the Minister who will then publish the decision and notify the affected parties. It is not currently utilised, with the Register being empty at the time of review as a result of the concerns with prohibiting all uses of a certain additive.

4.4.1 Register of Prohibited Additives – Stakeholder engagement

Most stakeholders were indifferent towards this issue and are unaffected by the Register not being used. Some stakeholders expressed a preference for trace limits in the fuel standards as they can be modified when needed, whereas the Register acts as a blunt instrument and would likely prohibit the supply of a fuel additive. Some stakeholders preferred using the Register over trace limits as the Register can be monitored to ensure alignment with international standards. Other stakeholders were in favour of using the Register as a means to prevent specific additives from existing in fuel and to achieve harmonisation with international trends.

4.4.2 Register of Prohibited Additives – Policy discussion

Despite the benefits from banning certain additives from being blended into fuel, complete prohibition of an additive would entail legal risk, and does not meet the needs of regulators. If the Government were to use the Register for an additive, it must first ensure that there are no other legitimate and legal uses for the additive, even in niche cases. As a result, the Government is not currently using the Register, and instead chooses to regulate trace limits for various substances in the relevant standards. This makes the Register unfit for purpose in its current form.

4.4.3 Register of Prohibited Additives – Finding and recommendation

Finding: 4.4 – Register of Prohibited Additives

The Prohibited Fuel Additives Register is currently empty, and there are complexities that are preventing it from being fit for purpose. As an alternative, the department can enforce trace limits for fuel additives within Fuel Quality Standards.

Recommendation: 4.4 – Register of Prohibited Additives

It is recommended that the Register be removed from the FQS Act to avoid the risks associated with using the Register. Because it is not currently used, removing it will not have an impact on the regulation of fuel quality.

4.5 Fuel labelling

Adequate labelling at fuel stations is essential to ensure that consumers are informed about the products they are buying, and to minimise the risk of misfuelling. Under the FQS Act, labelling requirements for E10 and E85 are outlined in the FQS Standards (Ethanol) Information Standard 2019 and the FQS Standards (Ethanol E85) Information Standard 2019.^{25, 26} These standards outline requirements that the phrase ‘contains up to x% ethanol’ or ‘contains y% ethanol’, where x is no less than the percentage of ethanol in the ethanol blend, and y is the percentage of ethanol in the ethanol blend, which must be communicated to buyers either on the fuel pump or in a separate document.

The information standards are designed to inform consumers of the levels of ethanol that are present in biofuel products. Actual levels of ethanol may vary due to the range of ethanol specifications that are outlined in the Fuel Quality Standards (Petrol) Determination 2019 and Fuel Quality Standards (Ethanol E85) Determination 2019. In particular, petrol must be labelled if it contains more than 1% ethanol (with a maximum allowable ethanol content of 10%), and E85 can contain between 70–85% of volume. Labelling requirements for other fuels, including petrol and diesel, are not covered by the FQS Act.

4.5.1 Fuel labelling – Stakeholder engagement

Stakeholders expressed minor concerns around the labelling of fuel, which can be categorised into three types of issues.

1. *E10 labelling*: Due to the two labelling options allowed under the E10 information standard, consumers will not always know exactly how much ethanol is in a sample of E10, as it could be any percentage up to 10 per cent. Stakeholders expressed that more specificity could be given to the exact amount of the ethanol content.
2. *Misleading advertising*: Stakeholders noted labelling references to products such as ‘Premium Diesel’, without a clear explanation of the associated benefits from the premium type of diesel. This was also suggested to be misaligned with the set of Fuel Quality Standards, as there is no standard or information standard for premium diesel or other specific grades of diesel.
3. *Inconsistent labelling*: Fuel labelling can be inconsistent and varied between regions and retailers. It was claimed that there are instances of petrol with the same level of octane being advertised under different labels. This means that customers are not fully aware of the similarities and differences between fuel products, especially when travelling between states.

4.5.2 Fuel labelling – Policy discussion

The following section provides a discussion of the three categories of stakeholder feedback, of which only the last issue (No. 3) is considered to merit a recommendation.

1. *E10 labelling*: At present, the labelling regime reflects the range of ethanol blends that are permitted under the determinations. As such, as a range is specified, it is impractical to convey more exact blending information to consumers in fuel labels without altering the mandated specifications. It is uncertain whether benefits of ensuring consumers have access to accurate ethanol blending figures outweigh the regulatory burden of imposing more stringent labelling requirements, for example mandating a more exact representation of the actual ethanol content. This review does not have sufficient evidence to definitively address this question but considers it unlikely that a change to the labelling regime would have material net benefits.
2. *Misleading advertising*: It is likely that misleading labelling such as that of premium diesel is better suited to false advertising protections under the Australian Consumer Law framework rather than labelling provisions in the FQS Act.

²⁵ Federal Register of Legislation (2019), *Fuel Quality Standards (Ethanol) Information Standard 2019*

²⁶ Federal Register of Legislation (2019), *Fuel Quality Standards (Ethanol E85) Information Standard 2019*

3. *Inconsistent labelling*: Inconsistent labelling could be addressed through a national labelling framework, which would ensure consumers are better informed about their purchasing decisions. Such a system has been implemented in the Eurozone through the 2014/94/EU Directive, which outlines the graphical expression and colour coding schemes for corresponding pumps and nozzles, as well as for the fuel tanks of vehicles. Other standards in the EU also apply to create a uniform fuel labelling system across countries, and clearly prescribe elements for colour scheme, fuel types, size required for labels, numbers representing ethanol blend ratio or biodiesel content, specified shapes for each fuel type and specified fonts to ensure uniformity and compliance. This ensures transparency for consumers in their purchasing decisions and ensures consistency for those who frequently travel across borders or use multiple vehicles. A similar approach could be adopted in Australia, where currently different labels exist across regions and fuel retailers.

4.5.3 Fuel labelling – Finding and recommendation

Finding: 4.5 – Fuel labelling

Stakeholders expressed three minor concerns around the labelling of fuel:

1. *E10 labelling*: Due to the two labelling options allowed under the E10 information standard, consumers will not always know exactly how much ethanol is in a sample of E10, as it could be any percentage up to 10 per cent.
2. *Misleading advertising*: Stakeholders noted labelling references to products such as ‘Premium Diesel’, without a clear explanation of the associated benefits from the premium type of diesel.
3. *Inconsistent labelling*: Fuel labelling can be inconsistent and varied between regions and retailers. It was claimed that there are instances of petrol with the same level of octane being advertised under different labels. This means that customers are not fully aware of the similarities and differences between fuel products, especially when travelling between states.

Recommendation: 4.5 – Fuel labelling

This review recommends that the department consider investigating the merits of a consistent labelling regime across states and retailers, which is similar to the 2014/94/EU Directive in the Eurozone. This would ensure transparency for consumers in their purchasing decisions and ensure consistency for those who frequently travel across borders or use multiple vehicles.

5. Review Focus III: Compliance, Disclosure & Testing

5.1 Infringement notices and penalties

The FQS Act and Regulations set out when an infringement notice may be given, matters to be included in the notice, withdrawal of the notice and matters related to the withdrawal of the notice. An infringement officer may give a person an infringement notice where they believe on reasonable grounds that a person has committed an offence against the FQS Act or has contravened a civil penalty provision.

5.1.1 Infringement notices and penalties – Legislative review and international benchmarking

EY's legislative review conducted a benchmarking on penalty notices across the EU, United States and New Zealand and found that for various liquid fuel and energy regulations, no tiered penalty structures are currently enforced. Moving to a tiered penalty approach for liquid fuels under the FQS Act could result in Australia being an outlier.

One aspect not covered in the legislative review is the adoption of the *Regulatory Powers (Standard Provisions) Act 2014* (Cth) for the provisions of the FQS Act involved in monitoring, investigation and enforcement. While the FQS Act does not currently mention the Regulatory Powers Act, other laws such as the Fuel Security Act have been drafted to incorporate the Regulatory Powers Act. This topic was left out of scope for our review, and the department may wish to undertake further work to assess its merits.

5.1.2 Infringement notices and penalties – Policy discussion

In the context of infringement notices, consideration was given to the introduction and development of a tiered penalty approach to the FQS Act. The process to develop and introduce this change would require extensive stakeholder engagement and it could add uncertainty around the application of penalties. If incorrectly applied, it could result in relaxing standards for important compliance breaches or impose incommensurate penalties for minor infringements. The main benefit of imposing escalating penalties on repeat offenders would be minimal as there are few instances where a repeat offender would be subject to escalating penalties.

Based on factors identified in the legislative review, this review does not consider it necessary to make changes to the infringement notice or penalty system. The findings and recommendations below are predicated only on the legislative review and international benchmarking as no further stakeholder engagement or policy analysis was required.

5.1.3 Infringement notices and penalties – Finding and recommendation

Finding: 5.1 – Infringement notices and penalties

The infringement notice and penalty system are working appropriately, and the introduction of a tiered penalty system would not have material benefits.

Recommendation: 5.1 – Infringement notices and penalties

No changes are recommended to the infringement notice or penalty system.

5.2 Emergency law exemptions

Under the Liquid Fuel Emergency Act, the Minister responsible for the Act has authority to make a range of exemptions to various entities including a 'relevant fuel industry corporation' or 'relevant person'. For example, the Minister responsible for the Act can direct these entities to produce a specified kind of liquid fuel to be available for purchase by specified persons (section 19). Subsections 12(f) and 12AA(f) of the FQS Act have the effect that a supplier is not liable for an offence or a civil penalty for the supply of non-compliant fuel if the supply of that fuel is in order to comply with a direction or order under an emergency law. That is, due to the severity of an emergency situation, suppliers are protected against offences and civil penalties from the supply of sub-standard fuel due to the disruption of supply chains.

5.2.1 Emergency law exemptions – Stakeholder engagement and policy discussion

Division 2 of the FQS Act imposes criminal and civil penalties on liquid fuel suppliers for supplying fuel which does not meet the required standards under the FQS Act. Sections 12 and 12AA respectively impose criminal and civil penalties for the offence of supplying fuel that does not comply with fuel standards. Both sections contain exemptions for liquid fuel suppliers who supply non-compliant fuel under an emergency law.

However, as currently drafted, it is unclear if the exemptions in sections 12(1)(f) and 12AA(1)(f) of the FQS Act extend to all entities on the supply chain. Government stakeholders indicated that the policy should work to exempt all corporations or persons involved along the supply chain of fuel after a direction has been made under emergency law.

This review did not consider it necessary to consider alternative policy options or conduct further analysis of the policy problem. Findings and recommendations below were based on stakeholder feedback received from Government stakeholders.

5.2.2 Emergency law exemptions – Finding and recommendation

Finding: 5.2 – Emergency law exemptions

Sections 12(1)(f) and 12AA(1)(f) provide exemptions for persons supplying fuel that does not comply with fuel standards, provided that the supply is in order to comply with a direction or order made under the LFE Act.

The LFE Act gives the Minister various powers in the event of the declaration of a fuel emergency. These powers include the power to give directions to:

- (a) corporations regulating or prohibiting the supply of liquid fuel; and
- (b) relevant persons regulating or prohibiting the supply of liquid fuel.

This review considers the policy intent of the exemptions contained in subsections 12(1)(f) and 12AA(1)(f) as being to protect all liquid fuel suppliers connected with the supply of fuel from criminal liability and civil penalties if the supply is subject to an emergency direction made under the LFE Act. However, it is currently unclear if all parties in the supply chain would have the same protections as those acting according to a direct order under the LFE Act.

Should Australia face a national fuel emergency, and were these provisions not in place, some suppliers that are not the direct subjects of the exemptions may be discouraged from providing fuel during a liquid fuel emergency due to fear of facing criminal or civil penalties. This would contradict the objectives of the LFE Act, which provides the structure under which the government manages liquid fuel resources in relation to a national liquid fuel emergency.

Recommendation: 5.2 – Emergency law exemptions

It is recommended that sections 12 and 12AA be amended to ensure that all parties along the supply chain are protected from civil and criminal penalties in a situation where a national fuel emergency were to be declared, as this would support administration of the policy objectives the LFE Act.

5.3 Fuel sampling consent

The compliance, monitoring and testing of fuels under the FQS Act is undertaken across all areas of the national fuel supply chain and testing can include fuels approved under section 13 of the FQS Act. Samples may be taken from importers, refineries, distributors and service station forecourts. Under the FQS Act, inspectors require the consent of the occupier of the premises to enter and conduct monitoring activities, including sampling. The other avenue to enter the premises is to obtain a monitoring warrant, which is issued by the magistrate. This review aims to consider whether fuel sampling can be undertaken without the need for consent and whether the current provisions surrounding this issue are appropriate.

5.3.1 Fuel sampling consent – Stakeholder engagement

Stakeholders were opposed to the notion of removing the requirement to gain consent when sampling fuel. This derived from concerns around safety, where inspectors could theoretically be entering dangerous goods sites to inspect fuel without notifying site operators. This makes it impractical to sample fuel without consent, particularly from sites further up the supply chain.

Stakeholders indicated that the process to gain consent for fuel sampling is working effectively. They expressed that fuel sampling is done at retail fuel stations, where inspectors require the consent of the supplier before taking a sample. Stakeholders noted that suppliers rarely if ever refuse to give consent to inspectors.

5.3.2 Fuel sampling consent – Policy discussion

Fuel sampling consent is necessary to ensure that suppliers maintain compliance with Occupational Health & Safety Standards as well as for practical reasons around protecting supplier's property. The current process of requiring consent from suppliers prior to taking a sample is working effectively given that testing is usually done effectively, in a timely manner and suppliers rarely decline to give consent for testing.

5.3.3 Fuel sampling consent – Finding and recommendation

Finding: 5.3 – Fuel sampling consent

Currently, fuel sampling is done at retail fuel stations. Inspectors require the consent of the supplier before taking a sample, and suppliers rarely refuse to give consent. On the basis of stakeholder feedback, this review finds that the current provisions surrounding fuel sampling are appropriate, and that the current requirements to gain consent before testing are suitable.

Recommendation: 5.3 – Fuel sampling consent

This review recommends that no legislative changes are necessary for current fuel sampling consent, as the existing requirements to gain consent before testing are reasonable.

5.4 Data publishing provisions

The department has commenced the disclosure of aggregated fuel testing results. The aim of disclosing this information is to improve transparency and inform the public about Australia's current fuel standards.

5.4.1 Data publishing provisions – Stakeholder engagement

Stakeholders were generally supportive of the publishing provisions that would increase transparency of fuel testing results. A greater level of transparency would be helpful to support the relationship between industry and government to foster the maximum benefits from data sharing. These stakeholders argued that plans to disclose aggregated testing results are potentially useful for policy and decision making. Industry stakeholders also held this viewpoint and emphasised the need for a broader dialogue around the specific uses of data to inform policy and decision making. They also communicated the necessity for mechanisms to prevent potential identification of suppliers, especially in remote and regional areas where there may only be a few suppliers operating.

5.4.2 Data publishing provisions – Policy discussion

Plans to disclose aggregated testing results are potentially useful for policy makers and consumer awareness, thereby fostering industry dialogue. Therefore, given the potential benefit from publication and the broad stakeholder support, publishing aggregated data is likely to be a beneficial practice. At the same time, it is important to protect the commercial sensitivities of data through the appropriate level of aggregation to prevent the identification of suppliers, particularly in remote areas where there may only be a few suppliers operating.

5.4.3 Data publishing provisions – Finding and recommendation

Finding: 5.4 – Data publishing provisions

There is broad stakeholder support for the publishing of fuel testing results to demonstrate Australia's fuel quality. However, issues were raised around the appropriate level of aggregation and ensuring that individual suppliers are not able to be identified in remote and regional areas where there may only be a few suppliers operating.

Recommendation: 5.4 – Data publishing provisions

This review supports the principle of publishing an aggregated and de-identifiable set of fuel testing results. However, this is based on the department ensuring that individual suppliers are not able to be identified in remote and regional areas where there may only be a few suppliers operating.

5.5 Annual statements under the FQS Act

The FQS Act requires producers, importers and suppliers of fuel to provide an annual statement, which provides information on fuel quality and volume, that is to be held by the department for policy making purposes. However, this obligation has not recently been enforced, partially due to the introduction of the *Petroleum and Other Fuels Reporting Act (Cth)* (POFR) in 2017, which collects information on fuel volumes but not fuel quality from suppliers. As an alternative to the statement, information on fuel quality is currently collected voluntarily through the Australian Institute of Petroleum (AIP) on behalf of their membership. As fuel volumes are reported under the POFR Act, any use of the annual statement effectively results in a duplicative requirement.

Therefore, as there is currently limited information provided publicly on fuel quality, there are several policy options that could be considered. The policy discussion below aims to balance regulatory burden and duplication on the one hand, and ensuring sufficient information on fuel quality on the other.

5.5.1 Annual statement – Stakeholder engagement

Feedback from stakeholders has suggested that when the annual statement was enforced, submission of the annual statement raised several concerns:

- Regulatory Burden: It took a manual process for businesses to extract and prepare data for submission.

- **Regulatory Imposition:** Some stakeholders expressed concern that the power of the Secretary to collect 'any information required' may be a risk if the Secretary were to use this ability to source sensitive or confidential information.
- **Regulatory Certainty:** Other stakeholders, both in industry and government, indicated that a provision that has not been used in recent times should not be retained to reduce confusion.

While some stakeholders emphasised the importance of obtaining fuel quality data to inform policymaking, others communicated that industry is largely open to voluntary reporting on request, as long as regulators adequately communicate and justify the intended uses of their data requests.

In line with feedback given on data publishing provisions (Section 5.4), government stakeholders supported the collection of data on fuel quality, and expressed that in future the annual report could be used to source information on aromatics, sulfur levels or other parameters related to fuel quality. Collection of this information could be used to inform the development of new standards, or to maintain oversight on the fuels market.

5.5.2 Annual statement – Policy options

Policy option 1: Retain the annual statement

Under this option, no changes will be made to the annual statement provisions. In retaining the annual statement, the Secretary will have the authority to collect statements from suppliers if they choose to do so. This pathway creates the highest benefits for Government, through the open-ended information request currently within the FQS Act. Based on stakeholder feedback, this also creates regulatory burden due to the complexities of extracting fuel quality information and the irregular usage of this obligation.

Policy option 2: Create an alternative information provision method

Another avenue is to source information from industry as needed, rather than on an annual basis. The department would have the authority to source information to investigate fuel quality trends and possess the legislative authority to enforce these requests if needed. Amendments could also clarify the scope of annual statements to be strictly around fuel quality, which narrows the current provisions that do not specify the contents of the statement.

Policy option 3: Repeal the annual statement provision and use voluntary statements

The final option is to remove the annual statement requirement from the FQS Act. This decision will reduce industry concerns by removing the legislative power for the Secretary to receive an annual statement. At the same time, the department may prefer compliance mechanisms to source data when it is necessary, instead of relying on voluntary submissions from industry. In recent times participation in voluntary submissions has been adequate, though there may be circumstances where industry would choose not to send information if there was no enforceable provision.

5.5.3 Annual statement – Policy discussion

The annual statement requirement could be retained in the FQS Act in case it is needed to obtain aggregate data on fuel quality, which sits outside the collection requirements of the POFR Act. This review notes that while retaining the annual statement to collect information specifically on fuel quality could be worthwhile, the industry is understood to heavily self-regulate quality in conjunction with stringent Government regulation through random testing of batches across retail fuelling sites nationwide. Additional testing could be undertaken by Government, should it be required. Lastly, the likelihood of widespread fuel quality issues in the current market is low based on the lack of consumer complaints on contamination incidents and minimal evidence of non-compliance from NMI testing.

The policy options represent differing approaches towards annual statements and their objective of obtaining data on fuel quality. Option 1 retains the provision but with a likely continuation from Government in not enforcing the collection of annual statements. If this provision were to be enforced, it would result in duplication and minimal benefit from information on fuel quality. This is because

since the introduction of the POFR Act, information on fuel volumes is likely to be duplicated and detail on fuel quality has been reduced. Voluntary submissions on fuel quality to AIP are published with consent through the FQS annual report.

A possible middle ground is to amend the requirement to be used on an as-needed basis, so that the department can receive information when necessary (option 2). A set of guidelines should be established to ensure that these submissions have the appropriate levels of scope, timing and intended usage. This option has been assessed as the preferred option due to the deficiencies identified in options 1 and 3, and has been more clearly defined and outlined in Recommendation 5.5 below.

5.5.4 Annual statement – Finding and recommendation

Finding: 5.5 – Annual statement

This review finds that the FQS Act contains annual statement provisions that have not been enforced by the department in recent years. While fuel quality information is unlikely to be required on an annual basis, data on fuel quality may still have value to Government in maintaining policy oversight and informing the creation of new standards.

Recommendation: 5.5 – Annual statement

It is recommended that the annual statement be replaced by an alternative data submission that is less frequent and imposed only on an as-needed basis. This balances the needs of regulators and mitigates the burden on industry in a business-as-usual setting. If the department were to require data, the following guidelines could be used:

- statements are to be received on a frequency no greater than once a year
- submissions must be confined to information on fuel quality only
- the Secretary must communicate the intended uses of data and timelines where appropriate. An example of this could be the development of new fuel quality standards.

In implementing these guidelines, the department will be able to maintain their collaborative relationship towards industry and minimise the regulatory burden as much as possible, while still sourcing critical information for policy making purposes should it be required.

5.6 Consumer complaints

At present, the FQS Act does not provide consumers with recourse to compensation from contaminated fuel claims. Therefore, the department is unable to assist with claims for damages, engine operability, financial loss or other issues caused by fuel quality.

In the instances of fuel contamination events, consumers have the following channels to lodge a claim seeking recourse for damages:

- i) Fuel suppliers – All major suppliers have consumer complaints departments that provide consumers with avenues for seeking compensation if they are exposed to contaminated fuel.
- ii) Australian Consumer Law (ACL) – as a schedule to Commonwealth legislation and part of the Competition and Consumer Act, the ACL grants consumers a set of rights that goods are of acceptable quality based on a range of factors. Each state and territory has adopted the provisions of ACL, allowing governments to administer the law. If consumers are unable to resolve an issue, there are opportunities to make applications for consumer affair bodies to resolve the issue at a state/territory level.

The review conducted in 2016 noted that consumer protection could further improve the effectiveness of the FQS Act:

... the department currently expends significant resources dealing with complaints from members of the public relating to isolated incidents of fuel contamination that cannot be fully addressed by the Australian Competition and Consumer Commission due to resource constraints and other priorities.

Information provided to the MJA review team by the Australian Competition and Consumer Commission (ACCC) indicated that although there had been a significant number of enquiries or complaints by consumers regarding the supply of fuel from retail outlets, most were price related and few of these complaints have related to the quality of fuel supplied. For example, in 2012–13 approximately 3% (30) of all fuel related enquires or complaints to the ACCC were related to fuel quality.

5.6.1 Consumer complaints – Stakeholder engagement

Stakeholder feedback received by EY indicates that there have been few recent consumer complaint cases related to fuel quality. In the instances where complaints do occur, it was seen as a difficult forensic exercise to determine the exact causes of engine damage.

Government stakeholders expressed that state and federal government are collectively motivated to improve outcomes for consumers affected by these issues. One concern was that consumers at times will contact the department to receive compensation for poor quality fuel, however the FQS Act does not give the department the power to resolve consumer complaints, and consumers are referred to their respective state/territory government fair trading bodies. Secondly, publicly available information on the process is inconsistent across the states, who are currently responsible for handling these issues. For example, the Queensland Government redirects consumers to the department's webpage for fuel quality²⁷, whereas the Victorian Government has a website dedicated to assisting consumers with this problem.²⁸ Although communication is inconsistent across state/territory governments, the state/territory fair trading bodies are seen to be well-equipped to deal with these complaints as they have a greater proximity to the affected businesses and individuals.

As there are no comparable instances where clauses have been added for consumer protections for federal legislation, government stakeholders claimed that there would need to be a compelling explanation to construct a tailored national approach for fuel contamination incidents.

5.6.2 Consumer complaints – Policy discussion

Given the small number of recent consumer complaint cases related to fuel quality and the adequacy of state legislation in dealing with these issues, this review did not explore options to provide consumers with recourse to compensation from contaminated fuel claims.

While there is no discussion of policy issues, it was noted that information available on contaminated fuels is not consistent across state and territory Governments, and that more consistent messaging could be provided to consumers on both the process for lodging complaints and their rights in the case of a contaminated fuel event.

5.6.3 Consumer complaints – Finding and recommendation

Finding: 5.6 – Consumer complaints

The FQS Act does not give the department the power to resolve consumer complaints, and consumers are referred to their respective state/territory government fair trading bodies. Stakeholder feedback revealed that the scale of consumer complaints on fuel quality is relatively small, and there are currently well-established channels in state legislation for pursuing these claims.

²⁷ Queensland Government Office of Fair Trading, *Your rights, crime and the law... Buying products... Buying fuel*

²⁸ Consumer Affairs Victoria, *Cars... Maintenance and repairs... Damage by contaminated fuel*

Recommendation: 5.6 – Consumer complaints

Given the rarity of fuel quality complaints by consumers and the existing channels for consumers to pursue quality issues, it is not considered necessary to introduce specific consumer protections under the FQS Act. Instead, we recommend that consideration be given to providing more clarity to consumers on the procedures available to them in the event that they are exposed to contaminated fuel.

There is capacity for state and territory governments to improve their communications towards customers and also between branches and departments, but this is ultimately a question of resourcing and not something that can be remedied through legislative amendment. It is recommended that the department works with the states and territories to ensure that consistent and accurate materials are presented to consumers on both the process for lodging complaints and their rights in the case of a contaminated fuel event.

5.7 Independent review interval

The 2016 Review of the FQS Act recommended that the FQS Act's mandatory review period be increased from five to ten years, arguing that a five-year period may be too short to properly assess whether the FQS Act is achieving its objectives.²⁹ While an amendment to lengthen the review interval was not implemented, this review aims to reassess the topic.

5.7.1 Independent review interval – Stakeholder engagement

During the consultation process, stakeholders did not have strong views on whether the review period should be changed.

5.7.2 Independent review interval – Policy discussion

The first point to consider is that the FQS Act and each determination made under the FQS Act exist independently. Individual standards can and have been altered several times since the last review in 2016, in addition to new standards being introduced. This suggests that achieving international harmonisation through regulatory changes does not require alignment with the FQS Act's review, and therefore is not affected by the review period of the FQS Act. It also requires significant government resources to undergo the independent review process.

A comparison with similar Acts finds that the FQS Act may be an outlier in terms of an independent review period. Other legislation in the liquid fuels sector do not typically have periodic independent reviews, such as the Fuel Security Act and Petroleum and Other Fuels Reporting Act. As shown in Table 4, regulations concerning product standards, such as the *Product Emissions Standards Act 2017* (Cth) and the *Greenhouse and Energy Minimum Standards Act 2012* (Cth) require an independent review every ten years. This evidence indicates that moving to a ten-year interval will provide some consistency with comparable legislation.

Table 4: Independent Review Benchmarking

Act	Initial Review	Ongoing Periodic Review
Fuel Quality Standards Act	2 years after the Act commences	Every 5 years
Petroleum and Other Fuels Reporting Act	3 years after the Act commences	No further review provisions
Fuel Security Act	No review provisions	No review provisions
Product Emissions Standards Act	7 years after the Act commences	Every 10 years

²⁹ Department of the Environment, 'Final Report: Review of the Fuel Quality Standards Act 2000', pp. 39

Greenhouse and Energy Minimum Standards Act	5 years after the Act commences	Every 10 years
---	---------------------------------	----------------

As shown above, the Product Emissions Standards Act and Greenhouse and Energy Minimum Standards Act are likely to be the most comparable to the FQS Act because they are administered by the department and enforce frameworks for national regulations. As they are more recently established, it would be suitable to update the FQS Act's independent review period to align with newer legislation. Despite the fuels sector experiencing rapid change, it is unlikely that the main framework of the FQS Act will vary significantly between reviews. It is advised that a ten-year interval period be implemented so that a more extensive and detailed analysis of the FQS Act can be achieved.

5.7.3 Independent review interval – Finding and recommendation

Finding: 5.7 – Independent review interval

The current five-year independent review interval allows for the consideration of emerging trends in the fuel environment. However, this timeframe places a material burden on the department, and a longer review period is likely to provide the same benefits. Other pieces of recent legislation have a ten-year independent review frequency.

Recommendation: 5.7– Independent review interval

This review recommends increasing the independent review period from every five years to ten years.

6. Summary

Is the Act operating effectively and have the FQS Act's objectives been achieved?

Following extensive consultation with stakeholders, this review concluded that the FQS Act has been operating effectively and remains relevant and fit for purpose in achieving its policy objectives.

Stakeholders agreed that there is a requirement for the FQS Act to continue to be in operation due to the fact that fuel standards continue to change globally. As the FQS Act oversees the enforcement of fuel quality standards, it is necessary to facilitate alignment with international developments. Stakeholders conveyed that the collective benefits of the FQS Act outweigh the regulatory costs, although this concept was not quantified and tested in this analysis. They confirmed that the FQS Act has supported the continued regulation of fuel in Australia, in terms of testing and compliance, and access to information. However, they also stated a range of areas that improvements can be made, which focus on the implementation of specific components of the FQS Act.

As a regulation that directly influences businesses in the petroleum and vehicle sectors, and affects the community through environmental and health factors, the FQS Act is a critical regulation for the Australian economy. In facilitating the requisite fuel standards in Australia, the FQS Act is pivotal to ensuring consumers are sold adequate quality fuel and enabling continual improvements to fuel quality. This review indicates that the FQS Act remains relevant and fit for purpose in achieving its policy objectives, although several amendments are recommended where potential improvements could be made.

While the legislative framework of the FQS Act is adequate for emerging fuels, there will be challenges ahead for certain products, which will require more extensive policy coordination compared to conventional fuels. In monitoring these trends, comprehensive and up-to-date information is critical, and the data sourcing provisions within the FQS Act are a key source of information for the department. Stakeholders are aligned on the overall importance of reporting and managing the relationship between government and industry, and we encourage the continuance of these relations.

The fuels sector is experiencing rapid changes due to a range of factors. Efforts to decarbonise the economy are incentivising a shift towards cleaner fuels, including both low-emissions production of fossil fuels and the expansion of emerging fuels and electric vehicles. At the same time, transitioning consumer preferences are causing some uncertainty for the future of fuels demand. In this regard, the role of the FQS Act is to oversee the safe and smooth adoption of these fuels into the market, perhaps more so than in years past. This review is intended to ensure that the FQS Act is best placed to perform this role, amongst its several other functions.

Appendices

Appendix A: List of stakeholder interview questions

Topic	Background	Question
Overall functioning of the FQS Act	Not applicable	<p><i>Are the overall pieces of legislation still relevant and fit for purpose?</i></p> <p><i>What issues do market participants encounter in practice?</i></p> <p><i>How can the regulatory framework be improved to better achieve the stated policy objectives?</i></p>
The definition of fuel	<p>The FQS Act defines fuel as any of the following: petrol, a mixture of petrol and ethanol, automotive diesel, any mixture of automotive diesel and biodiesel, liquefied petroleum gas, liquefied natural gas, compressed natural gas, or any substance that is used as a substitute for any of the fuels previously mentioned. However, based on the current standards, not all fuel products in usage by industry are outlined in this definition. We would like to explore whether the current definition is appropriate and whether there are ways in which more clarity can be provided to the definitions.</p> <p>There are currently no references to advanced biofuels or hydrogen fuel in the FQS Act. Other fuels such as renewable biodiesel and synthetic fuel are covered in the Automotive Diesel Standard but not in the FQS Act itself. We would like to explore if the FQS Act is appropriately facilitating the rapid development of these emerging fuels.</p>	<p><i>Are the current definitions appropriate for industry and government is more clarity needed for certain products?</i></p> <p><i>Does the FQS Act sufficiently cater for emerging fuels?</i></p>
Consumer protections	At present, the FQS Act does not cover consumer protections. As such the department is unable to assist with compensation claims, damages, engine operability, financial loss or other issues caused by fuel quality. In the rare instances of fuel contamination events, consumers are directed to their respective state and territory governments for complaints and the associated compensation claims. We would like to explore whether the FQS Act should include consumer protection provisions.	<i>Is the current system for consumer protections functioning appropriately?</i>
Compliance and penalties	At present there is no tiered system of penalty notices, which is similar to the compliance structure found in the Fuel Security (FS) Act.	<i>Should changes to the penalty structure be considered?</i>

Exemptions for Emergency Laws	The Liquid Fuel Emergency Act gives the Minister various powers in the event of the declaration of a fuel emergency. However, it is currently unclear whether all suppliers involved in the supply chain have sufficient legal protection from supplying non-compliant fuel should a fuel emergency be declared.	<i>Are the exemptions for Emergency Laws appropriate?</i>
Annual report	Suppliers of fuel in Australia must make an annual statement regarding their supply under the FQS Act as directed by the Secretary (Section 67). However, the department has not enforced this requirement recently, mostly due to the introduction of the POFR Act, which requires disclosure of similar information.	<i>Should the annual reporting provision be retained to collect additional data outside the scope of the POFR Act? What would be the impact of annual fuel reporting on industry?</i>
Fuel testing	Currently, under the FQS Act, inspectors require either the consent of the occupier of a premises or a relevant monitoring warrant to enter and conduct fuel sampling.	<i>In practice, is fuel testing done with the consent of the occupier? Is this method appropriate?</i>
Aviation fuel	EY does not currently have precise information about the regulation of aviation fuel. We are interested in exploring the current regulatory environment for aviation fuel and whether it could fall under the objectives of the FQS Act, as the airline industry contributes to emissions.	<i>How is aviation fuel currently covered from a regulatory perspective and should it be included in the FQS Act?</i>
Non-road diesel	Almost half of all diesel usage is not for ground transport (i.e. off-road diesel) and is not necessarily regulated by the automotive diesel standard.	<i>Are there issues with the regulation of off-road diesel under the automotive diesel standard?</i>
Racing fuels	Specialist racing fuels need exemptions under Section 13 of the FQS Act because they do not comply with the defined fuel standard. This has an administrative cost to the department and the relevant suppliers.	<i>Should there be a separate racing fuels standard?</i>
Data publishing	The department is interested in disclosing aggregated fuel testing results. The aim of disclosing this information would be to improve transparency and inform the public about Australia's current fuel standards.	<i>Are the data publishing provisions in the FQS Act appropriate?</i>
Independent review period	Currently, the FQS Act must be reviewed every five years, and the most recent review suggested increasing this period to ten years. While a longer review period can reduce burden, it could also make it more difficult to achieve harmonisation with international fuel standards in the cases where certain provisions have become outdated. However, the flexibility in the wording of the FQS Act still allows for more frequent reviews if this is	<i>Is a five-year or a ten-year interval more appropriate for an independent review? What factors influence the length of the review period?</i>

	deemed to be necessary in the face of a rapidly changing external environment.	
Prohibited fuels register	Section 32 of Division 8 of the FQS Act instructs the Minister to keep a Register of Prohibited Fuel Additives. The Register's purpose is to restrict the wholesale or commercial sale of additives, rather than to regulate fuels that already include these additives. That is, the Register effectively only regulates the 'off-the-shelf' supply of the additives and not fuels which already include them, which would be regulated by the Fuel Standards.	<i>Could the prohibited fuel additives register be better utilised?</i>

Note: Throughout the stakeholder engagement process, various questions from the above list were directed towards different stakeholders based on importance and priority of information for both government and industry participants. Additional questions to these may have also been asked depending on the context and the various conversations during the interview discussion.

Appendix B: Independent Review Terms of Reference

In precise terms, EY's terms of reference for this review involves assessing:

1. the respective legislative requirements for reviewing the pieces of legislation.
2. the appropriateness and relevance of the objectives and purpose of the pieces of legislation including consideration of:
 - a) the extent to which the pieces of legislation have been able to meet their objectives and purpose.
 - b) options to improve the pieces of legislation in meeting their objectives and purpose, or to otherwise better support Australia's fuel security that:
 - i. are efficient and effective
 - ii. allocate roles and responsibilities to those best placed to deliver outcomes, e.g. government, industry and community
 - iii. are appropriate in the context of the fuel security legislative framework, including new pieces of legislation enacted since the pieces of legislation were made/amended.
 - c) other relevant matters, which may include environmental, health, technical and regulatory issues.
3. the appropriateness of further aligning the pieces of legislation with other Acts to further prepare Australia to respond to fuel disruptions and reduce regulatory burden.
4. if any consequential amendments to be made to other relevant laws.

The consultancy will be supported by a policy team in the department and assisted by advice obtained from states, territories and industry representatives.

The independent review will commence in 2022, and the reviewer will provide a final report to the Minister in the third quarter of 2022.

The independent review will, as relevant, consider:

1. all relevant legislation and associated explanatory materials
2. consultations with industry, the community, and relevant Commonwealth, state and territory agencies
3. reports from studies relevant to the review
4. any other relevant material.

The independent review will meet the requirements of the Australian Government Guide to Regulation, answering the seven Regulation Impact Statement questions.

EY | Building a better working world

EY exists to build a better working world, helping to create long-term value for clients, people and society and build trust in the capital markets.

Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform and operate.

Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. Information about how EY collects and uses personal data and a description of the rights individuals have under data protection legislation are available via ey.com/privacy. EY member firms do not practice law where prohibited by local laws. For more information about our organization, please visit ey.com.

© 2023 Ernst & Young, Australia
All Rights Reserved.

Liability limited by a scheme approved under Professional Standards Legislation.



In line with EY's commitment to minimize its impact on the environment, this document has been printed on paper with a high recycled content.

Ernst & Young is a registered trademark.

Our report may be relied upon by Department of Climate Change, Energy, the Environment and Water for the purpose of the review of the Fuel Quality Standards Act only pursuant to the terms of our work order dated 17 May 2022. We disclaim all responsibility to any other party for any loss or liability that the other party may suffer or incur arising from or relating to or in any way connected with the contents of our report, the provision of our report to the other party or the reliance upon our report by the other party.

ey.com