



COVERSHEET

Minister	Hon Shane Jones	Portfolio	Associate Energy
Title of Cabinet paper	Updating the Engine Fuel Specifications Regulations 2011 Renewable diesel and other fuel specification changes	Date to be published	21 November 2025

List of documents that have been proactively released

Date	Title	Author
August 2025	Updating the Engine Fuel Specifications Regulations 2011	Office of the Associate Minister for Energy
4 August 2025	Updating the Engine Fuel Specifications Regulations 2011 CAB-25-MIN-0261 Minute	Cabinet Office
October 2025	Renewable diesel and other fuel specification changes	Office of the Associate Minister for Energy
15 October 2025	Renewable diesel and other fuel specification changes ECO-25-MIN-0165 Minute	Cabinet Office

Information redacted

YES / NO (please select)

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Some information has been withheld for the reason of constitutional conventions.

In Confidence

Office of the Associate Minister for Energy
Cabinet Economic Policy Committee

Updating the Engine Fuel Specifications Regulations 2011

Proposal

- 1 This paper seeks Cabinet's agreement to update the *Engine Fuel Specifications Regulations 2011*.

Relation to government priorities

- 2 Improvements to fuel specifications seek to ensure that vehicle importers will supply the latest vehicle and engine technology to New Zealand – these vehicles need compatible fuel to run well. This would contribute to fostering innovation, technology and science, and promoting global trade.

Executive Summary

- 3 The *Engine Fuel Specifications Regulations 2011* (the **Regulations**) set the parameters for the quality of petrol, diesel, ethanol, biodiesel, marine fuel oils, and blends of these fuels, that are supplied in New Zealand. The Regulations need to be reviewed periodically to ensure they keep up with innovations in the fuel and vehicle technology sectors, and changing vehicle standards. The last time that the Regulations were fully reviewed was in 2016/17.

- 4 I released a discussion document on updating the Regulations in February 2025. Following consideration of feedback, I am recommending amendments to the Regulations. The two most significant proposals are:

- 4.1 Changing the specifications for petrol. Constitutional conventions

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- 4.2 Allowing 100% renewable diesel to be sold in New Zealand, subject to labelling requirements and other conditions.

- 4.2.1 Countries like Australia have recently updated their national fuel quality standards to facilitate the import, blending, and sale of renewable diesel. This fuel is gaining traction in global markets as a cleaner, drop-in alternative to conventional diesel. It offers reductions in greenhouse gas emissions without requiring engine modifications.
- 4.2.2 New Zealand's fuel specifications allow for a blend of up to seven percent of *biodiesel* with conventional diesel. However, there is no separate specification for *renewable diesel*. This is creating confusion for businesses and fuel importers. A clear specification for renewable diesel should be introduced.

Background

Euro 6d Vehicle Standards

- 5 The European Union (EU) has common standards for fuel and engine specifications. The Euro 6/VI¹ standard was introduced there in 2014. However, New Zealand currently allows vehicles to enter the fleet that meet the outdated Euro 5 vehicle standard.²
- 6 From July 2027, new vehicles imported into New Zealand must meet the Euro 6d vehicle standard. Used vehicles have until July 2028 to meet the standard.³ Heavy vehicles must also meet a separate Euro VI step C standard from November 2025.

7 Constitutional conventions

Renewable diesel

- 8 Renewable diesel, also known as hydrotreated vegetable oil, or HVO, is gaining traction in global markets as a cleaner, drop-in alternative to conventional diesel and biodiesel. It offers reductions in greenhouse gas emissions without requiring engine modifications, unlike biodiesel.
- 9 To support its adoption, countries like Australia have recently updated their national fuel quality standards to facilitate the import, blending, and sale of renewable diesel.
- 10 New Zealand's fuel specifications allow for a blend of up to 7% of biodiesel with conventional diesel. However, there is no separate specification for renewable diesel. This is creating confusion for businesses and fuel importers.

Public consultation

- 11 Cabinet previously agreed to release a discussion document on updating our fuel specifications [EXP-25-MIN-0002 refers].

¹ Euro 6 standard focuses on light vehicles, while Euro VI standard focuses on heavy-duty diesel vehicles.

² Europe introduced the Euro 5 standard in 2009. It was replaced with Euro 6 in 2014.

³ *Land Transport: Vehicle Exhaust Emissions Rule 2007*.

- 12 Public consultation took place between February and April 2025. The Ministry of Business, Innovation and Employment (**MBIE**) received 17 submissions from vehicle manufacturers, fuel companies and transport industry organisations.
- 13 In response to feedback received; I have slightly modified some of my original recommendations. These changes are detailed below.
- 14 A full list of recommendations (including some other minor technical changes) is set out in **Annex 1**.

Detail of the proposed changes

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Introducing a new specification for renewable diesel

- 25 I recommend that Cabinet agree to introduce a new standard for renewable diesel, based on the European specification (EN15940). All submitters support this.
- 26 Transport sector representatives submitted that pure renewable diesel (or blends with very high renewable diesel content) should also be available to transport businesses who wish to reduce their emissions.
- 27 I am aware that renewable diesel tends to be less dense than conventional diesel, so could contain slightly less energy. For this reason, pure renewable diesel (and blends that do not meet the specification for diesel) should be clearly labelled at fuel pumps. The labels should also suggest motorists check vehicle compatibility before filling up.
- 28 To reflect the lower density of renewable diesel, I also recommend that:
- 28.1 The density of pure renewable diesel at 15°C must be in the range of 765–810 kg/m³. This is based on the international standard EN 15940.
- 28.2 The density of diesel blends containing more than 25 percent renewable diesel at 15°C must be in the range of 765–820 kg/ m³. Blends over 25 should also have to meet all other specifications for conventional diesel. This proposal was not directly consulted on, but reflects the Australian density specification for renewable diesel blends. A higher maximum density limit (820 kg/ m³, instead of 810 kg/ m³) allows for greater flexibility when blending.
- 29 In the case of non-retail sale, energy content differences can be addressed directly in the contract, if desired.

Diesel blends that contain up to 25% renewable diesel

- 30 Neste (the leading global producer of renewable diesel) submitted that renewable diesel delivers very similar performance to conventional diesel and should not be subject to a blend limit.
- 31 I agree in principle but recommend that any renewable diesel blends with up to 25% renewable diesel content be required to comply with the specifications for conventional diesel (including the higher density specification, of 820-845 kg/m³). This would not prevent blends below 25% from being brought to market (for such blends, an 820-845 kg/m³ density range is achievable). Rather, it would allow lighter blends (<25%) to be marketed in a flexible manner – either as renewable diesel, or diesel. The application of the conventional diesel density limit to these blends would ensure consumers obtain similar levels of energy from diesel/renewable diesel blends below 25% as they do from conventional diesel, if retailers choose to market a weaker blend (e.g., 5%) as diesel. In this context, strict labelling requirements for renewable diesel blends up to 25% are also unnecessary (although fuel retailers may label these blends if they wish).

Introducing a petrol density specification of 720 – 755 kg/m³

- 32 I recommend that Cabinet agree to introduce a petrol density specification of 720 – 755 kg/m³.
- 33 Fuel density is the mass of fuel per unit volume. Density is determined by both the quality of crude oil used to produce the fuel and the refining process. The New Zealand specification does not currently have a density specification for petrol.
- 34 While most fuel importers do not consider this specification necessary, introducing a petrol density range of 720-775 kg/m³ would align our Regulations with Euro 6 Standards, and help to reduce particulate emissions. It would also protect consumers, since fuel may be consumed more quickly than expected if petrol with a density below 720 kg/m³ can be legally sold. The density range I recommend is already in line with import standards set by the fuel industry – I do not expect this change to have any impact on the price of fuel, or impose an onerous compliance cost on fuel importers.

Reducing the maximum allowable density of diesel and biodiesel

- 35 I recommend that Cabinet agree to reduce the maximum allowable density of:
- 35.1 conventional diesel (from 850 kg/m³ to 845 kg/m³), and
- 35.2 diesel/biodiesel blends⁶ (from 854 kg/m³ to 849 kg/m³).
- 36 This change would bring New Zealand's diesel specification into line with the European diesel standard (EN590), and would not have any effect on the price of diesel. New Zealand diesel is already very low in sulphur (10 ppm) and therefore tends to be less dense. The purpose of the lower diesel density limit in the European standard is to reduce particulate emissions and improve air quality by limiting heavier, more polluting fuel components.

⁶ The maximum diesel/biodiesel blend rate is 7%. I do not propose any change to this.

- 37 I consulted on reducing our diesel density specification to a maximum of 845 kg/m³. While many submitters supported this proposal, most fuel companies would like a higher maximum density limit for *biodiesel blends*. Biodiesel is heavier than conventional diesel due to the presence of oxygen (rather than heavier polluting fuel components). In this context, relaxing the density limit for biodiesel blends makes sense. To have the same density limit for both fuels (845 kg/m³) could make it harder for fuel companies to comply with the Regulations, and disincentivise them from selling biodiesel blends.
- 38 This is why I recommend a 849 kg/m³ density limit for *biodiesel blends*, and a 845 kg/m³ density limit for *conventional diesel*.

Reducing PAH limit from 11 percent to eight percent

- 39 Polycyclic aromatic hydrocarbons (**PAHs**) are hydrocarbons found in crude oil and bitumen. They can also be produced from combustion processes. PAHs in exhaust fumes can irritate eyes and lungs and are potentially carcinogenic and mutagenic.
- 40 I recommend reducing the limit on PAH from 11% to 8%. No submitters opposed this proposal. An 8% limit would align our Regulations with the European specification (EN 590), and is unlikely to have any impact on fuel prices — the PAH content of diesel supplied to New Zealand is typically below 4%.

Reducing Filter Blocking Tendency from 2.5 to 2.0

- 41 Fuel filters screen out any contamination in fuel. If the filters are clogged, fuel cannot circulate properly, causing serious engine operation problems. Fuel with a higher Filter Blocking Tendency (**FBT**) is more likely to block engine filters. The FBT ranges from 1.00 (perfectly clean) to greater than 3, which can cause serious problems in diesel engines.
- 42 I recommend lowering the Filter Blocking Tendency from 2.5 to 2.0. Most submitters support this. Fuel quality monitoring data shows that the FBT of diesel supplied in New Zealand is typically below 2.0, so it would not increase compliance costs for industry. Australia also uses a FBT specification of 2.0.

Add an appearance test for diesel and biodiesel

- 43 I recommend requiring an appearance test for diesel and biodiesel, based on visual inspection (a method used to assess the clarity and cleanliness of fuel samples). Visual criteria may include that a sample appears clear (i.e., no visible haze or cloudiness) and bright (i.e., reflects light well, indicating absence of suspended particles or water).
- 44 During consultation, Z Energy and bp submitted that such a test is not necessary. I disagree. This test would help MBIE to detect the presence of particulates and water quickly, before laboratories undertake detailed tests.
- 45 One testing laboratory raised concern about the complexity of the processes involved in a particular testing method (ASTM D4176). This is why I recommend that the appearance test would be based on visual inspection only.

Clarify the distinction between Regulation 15 and Regulation 17A

- 46 The introduction of Regulation 17A in 2022, covering marine fuel oil sold by non-retail sale, created ambiguity with Regulation 15, which applies to diesel sold by non-retail sale. Since marine fuel oil is defined as any non-petrol engine fuel delivered to a ship, including diesel, it's unclear whether diesel supplied for marine use should meet Regulation 15 or 17A. Clarification is needed to distinguish their application and ensure consistent compliance.

Reviewing the Excise and Excise-equivalent Duties Table, and Climate Change (Liquid Fossil Fuels) Regulations.

- 47 There is some inconsistency between the *Engine Fuel Specifications Regulations 2011*, the *Excise and Excise Equivalent Duties Table* (the Table) and the *Climate Change (Liquid Fossil Fuels) Regulations 2008*. It would be beneficial to harmonise all three to provide clarity about how legal requirements, such as those relating to the New Zealand Emission Trading Scheme, apply to different fuel products. MBIE should work with the New Zealand Customs Service (Customs) and the Ministry for the Environment (MfE) to determine whether a review of the Table and *Liquid Fossil Fuel Regulations* is needed.

Cost-of-living Implications

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Financial Implications

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Legislative Implications

- 51 Implementing the recommendations in this paper will require amendments to the *Engine Fuel Specifications Regulations 2011*. The Amendment Regulations would come into force 28 days after they have been gazetted.

Impact Analysis

Regulatory Impact Statement

- 52 The Ministry for Regulation has determined that this proposal is exempt from the requirement to provide a Regulatory Impact Statement on the grounds that the economic, social or environmental impacts are limited and easy to assess.

Climate Implications of Policy Assessment

- 53 The Climate Implications of Policy Assessment (CIPA) team has been consulted and confirms that the CIPA requirements do not apply to this policy proposal, as the threshold for significance is not met. The proposed changes are expected to reduce toxic emissions that harm air quality and human health, but will not have a direct impact on greenhouse gas emissions.

Population Implications

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Human Rights

- 55 The proposals in this paper are consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

Consultation

- 56 Public consultation took place between February and April 2025, and MBIE received 17 submissions from vehicle manufacturers, fuel companies and transport industry organisations.
- 57 Other Government agencies have been consulted including the Ministry of Transport, Ministry for the Environment, the New Zealand Customs Service, NZ Transport Agency Waka Kotahi, the New Zealand Defence Force, the Energy Efficiency and Conservation Authority, and Maritime New Zealand.
- 58 This paper highlights where and how my recommendations changed in response to consultation feedback.

Communications

- 59 MBIE will contact fuel importers and other key stakeholders by the end of July 2025 to inform them of the final policy decisions.

Proactive Release

- 60 I propose to proactively release this Cabinet paper subject to any necessary redactions. This will be done within 30 business days following confirmation of Cabinet's decisions.

Recommendations

The Associate Minister for Energy recommends that the Committee:

- 1 **Note** that the *Engine Fuel Specification Regulations 2011* sets standards for engine fuel quality in New Zealand, and that these Regulations are not fully compatible with modern vehicle standards;
- 2 **Note** that public consultation on proposals to update the *Engine Fuel Specification Regulations 2011* took place between February and April 2025;
- 3 **Constitutional conventions**
- 4 **Agree** to all recommended changes to the *Engine Fuel Specifications Regulations 2011*, as listed in **Annex 1**;
- 5 **Agree** that, for consistency with the *Engine Fuel Specifications Regulations 2011*, Customs and the Ministry for the Environment will engage with MBIE the Ministry for Business, Innovation and Employment to review the fuel classifications in *Excise Duties Table*, Tariff Working Document and the *Climate Change (Liquid Fossil Fuels) Regulations 2008*;
- 6 **Invite** the Associate Minister for Energy to issue drafting instructions to Parliamentary Counsel Office to give effect to the decisions referred to in the recommendations above;
- 7 **Authorise** the Associate Minister for Energy to make further policy decisions consistent with the policy in the paper;
- 8 **Note** that the Minister for Energy intends to issue a press statement announcing the policy decisions proposed in this paper.

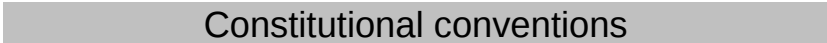
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Hon Shane Jones

Associate Minister for Energy

Annex One: Package of proposed amendments to the Engine Fuel Specifications Regulations 2011

Petrol

-  Constitutional conventions




- Allow fuel suppliers to use more modern test methods if they originate from a recognised international method which has a valid precision statement.
- Introduce a silver strip corrosion test for active sulphur.
- Relax the 10 ppm maximum allowable sulphur level for ethanol denaturants.
- Introduce a fuel density specification of 720-775 kg/m³.
- Amend the definition of petrol to reflect a boiling point of 210 °C.
- Amend the silver strip test standard in for fuel ethanol to ASTM D7667/D7671.
- Change the ethanol range in fuel ethanol by lowering the range starting from '70 per cent to 85 per cent' to '51 per cent to 83 per cent' as in ASTM D5798.

Diesel/biodiesel

- Reduce the allowable density of diesel to 845 kg/m³ (from 850 kg/m³) and reduce the allowable density of biodiesel to 849 kg/m³.
- Add an appearance test for diesel and biodiesel based on visual inspection.
- Reduce PAH limit from 11 per cent to 8 per cent.
- Reduce Filter blocking tendency from 2.5 to 2.0.
- Introduce a renewable diesel specification, with different rules for blends above and below 25%.
- Replace the maximum limit for diesel's total contamination of 24 mg/kg with 20 mg/l.
- Add an appearance test and remove the colour test for both diesel and biodiesel.
- Amend the definition of diesel to reflect a biodiesel blending limit of up to 7 per cent.
- Clarify which regulations apply to diesel supplied for marine use.

Implementation of the Fuel Quality Monitoring Programme

- Revise the description of the types of engine fuels the regulations apply to so that it is focused on exemptions for engine fuels which are meant for internal combustion engines.
- Revise the definition of 'engine fuel' to include marine fuel oil.
- Update the reference to ISO standard 9001 relating to accreditation for engine fuel sampling or testing, so that it does not refer to a specific year of issue and instead refers to a requirement for accreditation to ISO 9001, ISO17020 or ISO 17025.
- Revise the description of accreditation to specify that an organisation or agency can be authorised to take fuel samples or to conduct testing of engine fuel, rather than just an individual person or employee.