[In Confidence]

Office of the Minister of Transport

Cabinet Economic Development Committee

Implementing the Euro 6/VI emissions standard

Proposal

1 This paper seeks agreement to commence public consultation on amendments to the Land Transport Rule: Vehicle Exhaust Emissions Rule 2007 (the Rule).

2 The purpose of updating the Rule is to require vehicles entering the country to meet the stronger emissions standards of Euro 6 (for light vehicles) or Euro VI (for heavy vehicles), and other international equivalents, which will significantly reduce harms to human health.

Relation to government priorities

3 The policy will reduce pollutants in a way that supports:

3.1 priority three of the interim Government Policy Statement on Health: "keeping people well in their communities"

3.2 nitrogen dioxide (NO_2) reductions sought through the Resource Management (National Environmental Standards for Air Quality) Regulations 2004

3.3 preventative measures to improve health and wellbeing under the Pae Ora Act

3.4 the Wai ora component of He Korowai Oranga (HKO) (Māori Health Strategy)

4 Adopting the Euro VI emissions standard for heavy vehicles is an action included in the Government's 2022 Emissions Reduction Plan (the ERP). ERP action 10.3.1: *Support the decarbonisation of freight, requires the Government to consider the implementation timing of Euro VI standard for heavy vehicles*.

Executive Summary

5 Harmful pollutant emissions from motor vehicles are a problem in Aotearoa. The 2022 Health and Air Pollution in New Zealand (HAPINZ 3.0) report found that air pollution from motor vehicles was annually responsible for 13,000 cases of asthma prevalence in our tamariki, 2,200 premature deaths, and a total of $10.5 billion in social costs[1] (for comparison, road crashes cause more than $8 billion in social costs per year)[2].

6 Harmful emissions standards relate primarily to pollutants emitted from motor vehicles that are harmful to human health, such as nitrogen oxides and fine particulates. This is different to greenhouse gas (GHG) emissions, such as carbon dioxide (CO_2), which

[1] Kuschel et al (2022). Health and air pollution in New Zealand 2016 (HAPINZ 3.0): Volume 1 – Finding and implications. Report prepared by G Kuschel, J Metcalfe, S Sridhar, P Davy, K Hastings, K Mason, T Denne, J Berentson-Shaw, S Bell, S Hales, J Atkinson and A Woodward for Ministry for the Environment, Ministry of Health, Te Manatū Waka Ministry of Transport and Waka Kotahi NZ Transport Agency, March 2022.

[2] https://www.nzta.govt.nz/resources/research/reports/698

contribute to climate change (though the proposal will have some associated CO_2 reductions).

7 Requiring vehicle imports to meet stronger emissions standards is a key tool to reduce domestic motor vehicle pollution health impacts. Aotearoa and Australia are the only remaining developed countries[3] in the world that do not yet require a modern harmful emissions standard (Euro 6/VI or equivalent), with some jurisdictions soon to move to stricter standards (China in 2023, Europe from 2025 to 2027, and the United States in 2027). Aotearoa still permits Euro 4/IV and 5/V vehicles to enter our fleet and is therefore falling two to three generations behind other major markets. A small minority of vehicles are voluntarily entering Aotearoa to the Euro 6/VI standard, but this is not forecast to materially rise this decade without intervention.

8 I am therefore seeking agreement to consult publicly on implementation dates for the Euro 6/VI harmful emissions standards (Euro 6d for light vehicles and Euro VI-e for heavy vehicles). I propose that equivalent standards recognised by other countries will also be accepted. These standards have been in place in Europe and other major vehicle markets for several years.

9 Euro 6/VI will lower the permitted level of nitrogen oxides by about 56 percent for light diesel vehicles and 80 percent for heavy vehicles compared to Euro 5/V, the current regulated requirement on new vehicles. Euro 6/VI will also lower the permitted levels of particulate matter and introduce more accurate testing practices, leading to better real-world emission reductions.[4,5,6]

10 The Euro 6/VI evaluation study[4] demonstrated that Europe's shift to Euro 6d/VI over the last decade caused dramatic improvements in air quality, with reductions of:

10.1 nitrogen oxides (65 percent for petrol cars, 91 percent for light diesel vehicles, and 72 percent for heavy vehicles)

10.2 exhaust particles (86 percent for petrol cars, 91 percent for light diesel vehicles, and 28 percent for heavy trucks)

10.3 carbon monoxide (83 percent for petrol cars, 30 percent for light diesel vehicles, 85 percent for heavy trucks)

10.4 and further reductions for other pollutants.

11 From 2006 to 2016 the percentage of Aotearoa's population living in areas where World Health Organisation guidelines for NO_2 (which is a NOx) were exceeded increased from 24 percent to 31 percent, with higher rates for Pacific peoples (increased from 43 percent to 54 percent). Domestically, NO_2 is almost

[3] Using the United Nations Trade and Development definition of "developed countries" (North America, Europe, Israel, Japan, Korea, Australia, New Zealand),
[4] Euro 6 Evaluation Report (European Commission, 2022)
[5] Remote sensing of heavy-duty vehicle emissions in Europe (The ICCT, 2022)
[6] Euro 6e: Changes to the European Union light duty vehicle type-approval procedure (The ICCT, 2022)

exclusively produced by motor vehicles.[7] By contrast, in Europe, exposure to NO_2 is decreasing due to the impact made by stricter Euro standards.[8]

I propose vehicles entering Aotearoa would be required to meet Euro 6/VI from 2024-2028

16 Annex 1 sets out the lead in times for Euro 6/VI proposed to be consulted on for light and heavy vehicles, motorcycles and disability vehicles. The proposal is to transition gradually towards Euro 6/VI between 2024 and 2028. The proposal for final dates for requirements to apply to all vehicles within a group are:

11.1 **1 January 2028** for all light vehicles, including disability vehicles, (new and used) to meet Euro 6d when imported

11.2 **1 November 2026** for all heavy vehicles (new and used) to meet Euro VI-E when imported

11.3 **1 January 2027** for all motorcycles and mopeds (new and used) to meet Euro 5 when imported.

12 Consultation will test the suitability of these dates as well as the phase-in period and the time needed to transition through the earlier Euro standards. While the final date for disability vehicles to meet Euro 6d is the same as for all light vehicles, there are differences in the phasing proposed, with disability vehicles allowed more time to transition. See Annex 1 for more information.

13 The proposal includes regulating emissions for motorcycles and mopeds, that are currently unregulated.

14 The move to a Euro 6 and VI harmful emissions standards requirement is modelled to save between $3.8 and $6.7 billion in social harm costs out to 2050, while allowing sufficient lead time for vehicle importers to source supply of cleaner Euro 6/VI compliant vehicles.[9]

17 To simplify implementation for the vehicle industry, I am proposing dates broadly consistent with Australia, which assists compliance by importers of brand-new vehicles, and with Japan, which largely supports compliance by importers of used vehicles. I note however that Australia appears to be one of the last developed countries in the world to adopt Euro 6/VI.

18 The motor vehicle industry is generally supportive of improving emission standards. However, some brand new vehicle distributors seek New Zealand adopt standards at exactly the same time as Australia, who have finalised Euro VI-C for heavy vehicles but are yet to determine timeframes for light vehicles. Other distributers, especially European ones, are open to a faster and stricter standard.

19 The used motor vehicle industry has sought more time for used Japanese petrol vehicles. Therefore, I propose a longer lead in time to ensure consumers have on-going access to affordable used cars.

[7] https://www.stats.govt.nz/news/health-impacts-of-exposure-to-human-made-air-pollution/
[8] https://www.eea.europa.eu/ims/exceedance-of-air-quality-standards
[9] https://www.transport.govt.nz/assets/MoT-Euro-6-modelling-final-report-4-July.pdf

Background

Harmful pollution from motor vehicles is a significant problem in Aotearoa

20 Although our air quality is generally good by world standards, air pollution is still a major health concern in Aotearoa. Vehicles are the major source of air pollution, most acutely in Auckland and alongside busy road corridors. Air pollution causes significant health impacts, ranging from respiratory symptoms and illness (morbidity) to premature death (mortality).

21 The largest and most well-known impacts on health (in terms of the burden on the health system and society) arise from the fine particulate matter known as PM_{10} (particles with a size less than 10 µm) and $PM_{2.5}$ (particles with a size less than 2.5 µm).

22 Exposure to oxides of nitrogen (NO and NO_2 referred to collectively as NOx) also has concerning consequences, including effects on the respiratory health of children, causing asthma. Transport is understood to be primary source of NOx in Aotearoa, and its presence can be significant in cities.[10]

23 Air pollution is unequally distributed in Aotearoa. The young, sick, and elderly are much more likely to be affected. Māori and Pacific peoples are respectively two- and three-times more likely to be hospitalised for asthma than Pākehā or others. People living in the most deprived areas are almost three times more likely to be hospitalised than those in the least deprived areas.[11] The World Health Organisation (WHO) states that children living close to roads with heavy-duty vehicle traffic have twice the risk of developing respiratory disease as children who do not.[12]

The 2022 HAPINZ 3.0 report provides impetus to address motor vehicle exhaust emissions

24 The HAPINZ 3.0 report found that transport sector air pollution (primarily NO_2, PM_{10} and $PM_{2.5}$) was responsible for the following annual health effects:

24.1 13,000 cases of asthma prevalence in our tamariki, and 900 childhood hospitalisations per year due to asthma/wheezing

24.2 2,200 premature deaths

24.3 9,000 cardiovascular and respiratory hospital admissions

24.4 $10.5 billion in social costs per year (for comparison the social harm from road crashes at $8 billion per year[13]).[14]

25 The HAPINZ 3.0 report (based on 2015–2017 data) has found motor vehicle emissions contribute 67 percent of the total social cost health burden due to air pollution. This is roughly twice that of the second highest contributor – domestic fires (29 percent). Motor

[10] https://www.stats.govt.nz/news/health-impacts-of-exposure-to-human-made-air-pollution/
[11] https://www.asthmafoundation.org.nz/research/key-statistics
[12] https://www.euro.who.int/en/health-topics/environment-and-health/Transport-and-health/data-and-statistics/air-pollution-and-climate-change2
[13] https://www.nzta.govt.nz/resources/research/reports/698
[14] Kuschel et al (2022). Health and air pollution in New Zealand 2016 (HAPINZ 3.0): Volume 1 – Finding and implications. Report prepared by G Kuschel, J Metcalfe, S Sridhar, P Davy, K Hastings, K Mason, T Denne, J Berentson-Shaw, S Bell, S Hales, J Atkinson and A Woodward for Ministry for the Environment, Ministry of Health, Te Manatū Waka Ministry of Transport and Waka Kotahi NZ Transport Agency, March 2022.

vehicle emission health impacts were found to be significantly higher than previously understood due to improved measurement and increased recognition that significant health impacts can result from exposure to even low levels of NO_2.[15]

26 Unlike particulate emissions, primarily from domestic fires, NOx emissions are primarily a product of fossil fuel combustion, especially from diesel vehicles.[16]

27 Health studies, both here and overseas, show that NOx emissions have health impacts that are separate from particulates and these impacts are significant. HAPINZ 3.0 found that particulate matter contributes to 10 percent of the total health burden due to motor vehicles; NO_2 contributes to the remaining 90 percent.[17]

28 From 2006 to 2016 the percentage of Aotearoa's population living in areas where World Health Organisation guidelines for NO_2 exposure were exceeded, increased from 24 percent to 31 percent with higher rates for Pacific peoples (increased from 43 percent to 54 percent).[18] While Auckland, Christchurch and Dunedin experienced the highest number of premature deaths due to human made $PM_{2.5}$ and NOx air pollution, in 2016.[19] This shows that motor vehicle pollution is a concern affecting the country broadly.

Aotearoa currently allows the importation of vehicles that were banned from sale in other jurisdictions 7 years ago (new vehicles) and 12 years ago (used vehicles)

29 Requiring vehicle imports to meet stronger emissions standards is a key tool to reduce the impact of motor vehicle pollution on the health of people in Aotearoa.

30 European (Euro) emissions standards define the maximum limits for exhaust emissions of new vehicles sold in the European Union (EU) and European Economic Area member states. The Euro standard has become the most recognised standard globally since 2018, which is when Japan looked to align with Euro and UN standards, rather than continuing to develop its own unique standards, although Japan's standards remain slightly weaker.[20] Under the European standards, light vehicle standards are referred to using Arabic numbers (i.e. 6) and heavy vehicle standards use roman numerals (i.e. VI). Since the introduction of Euro 6/VI, progressively tighter standards have been introduced, these are referred to by letter. The most recent are Euro 6d, and Euro VI-E, which were required in Europe from 2021.

31 Aotearoa currently requires Euro 5/V for new vehicle imports and Euro 4/IV for used vehicle imports. This paper proposes that Aotearoa moves to Euro 6d and Euro VI-E by using a phased approach.

32 Euro 6/VI will lower the permitted level of nitrogen oxides by about 56 percent for light diesel vehicles and 80 percent for heavy vehicles compared to Euro 5/V, the current

[15] Ibid.
[16] Paul Nieuwenhuis, *Fact Check: are diesel cars really more polluting than petrol cars?*, Cardiff University, accessed: https://theconversation.com/fact-check-are-diesel-cars-really-more-polluting-than-petrol-cars-76241
[17] Kuschel et al (2022). Health and air pollution in New Zealand 2016 (HAPINZ 3.0): Volume 1 – Finding and implications
[18] https://www.stats.govt.nz/news/health-impacts-of-exposure-to-human-made-air-pollution/
[19] HAPINZ 3.0 (instantatlas.com)
[20] Japan moved to utilise UNECE worldwide harmonised test procedures for light and heavy vehicles, and largely adopted similar emission limits, with some notable exceptions that weaken their standards.

regulated requirement on new vehicles[21,22,23] Euro 6/VI will also reduce the permitted and real-world emissions of carbon monoxide, particulates, and other pollutants, either through setting stricter limits or through imposing better methods of testing. Moving from Euro 5/V to 6/VI will reduce harmful emissions from diesel vehicles, in particular the level of NOx that diesel engines produce and will result in the biggest improvement for New Zealand air quality.

33 A recent comprehensive study published by the European Commission demonstrated that Europe's shift to Euro 6d/VI last decade caused dramatic reductions of NOx (about 65 percent for petrol vehicles, 91 percent for light diesel vehicles and 72 percent for heavy diesel vehicles[24]). The study also showed dramatic reductions to exhaust particles (86 percent for petrol cars, 91 percent for light diesel vehicles, and 28 percent for heavy trucks), carbon monoxide (83 percent for petrol cars, 30 percent for light diesel vehicles, 85 percent for heavy trucks), and other pollutants. More information on the improvements from Euro 5/V to Euro 6/VI is included in the A3 attached at **Annex 2.**

Even stronger standards than Euro 6/VI are already being adopted abroad

34 The EU continues to advance standards, as do other jurisdictions. The EU has agreed to phase in Euro 6e in late 2023 and end approvals for the current Euro 6d standard during 2024. Euro 6e adds further provisions to restrict real-world emissions closer to lab-tested emissions, and a more accurate assessment of plug-in hybrids.

35 Draft regulations for a Euro 7 standard were released by the European Commission for public consultation in late 2022.[25] Euro 7 is intended to supersede Euro 6, which was adopted in Europe nearly a decade ago. The draft proposes stronger requirements for light vehicles from 2025 and heavy vehicles from 2027. After Euro 7, Europe expects to mandate zero emission vehicle sales.

36 The United States has recently agreed tougher 'Euro 7' style harmful emission heavy vehicle standards that will apply from 2027. The United States already regulates light vehicles to a standard stricter than Euro 6 and intends to strengthen the standard further in 2027.[26] The world's largest vehicle market, China, moves to a standard stricter than Euro 6/VI for light and heavy vehicles in July 2023.[27]

Euro 6/VI is unlikely to be voluntarily adopted by vehicle importers until next decade

37 Given vehicles tend to stay in the fleet for an average of 19 years, those imported under lower standards will lock in air pollution related harm in Aotearoa. Only about 10 percent of light vehicles and 27 percent of heavy vehicles first registered in Aotearoa met Euro 6/VI or equivalents in the first half of 2022.

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[21] Euro 6 Evaluation Report (European Commission, 2022)
[22] Remote sensing of heavy-duty vehicle emissions in Europe (The ICCT, 2022)
[23] Euro 6e: Changes to the European Union light duty vehicle type-approval procedure (The ICCT, 2022)
[24] https://op.europa.eu/en/publication-detail/-/publication/a9a2eadb-5f1d-11ed-92ed-01aa75ed71a1/language-en
[25] https://ec.europa.eu/commission/presscorner/detail/en/IP_22_6495
[26] https://www.epa.gov/newsreleases/epa-proposes-stronger-standards-heavy-duty-vehicles-promote-clean-air-protect and https://www.epa.gov/newsreleases/final-epa-standards-heavy-duty-vehicles-slash-dangerous-pollution-and-take-key-step
[27] https://theicct.org/publication/chinas-stage-6-emission-standard-for-new-light-duty-vehicles-final-rule/ and https://theicct.org/publication/chinas-stage-vi-emissions-standard-for-heavy-duty-vehicles-final-rule/

38 In a status quo scenario, Euro 5/V vehicles are forecast to be imported out to 2035, and these vehicles would then continue emitting high levels of harmful pollution until they are scrapped (on average) around 2054. Diesel vehicles, which contribute the bulk of transport emissions and social harm, would take longer to shift than petrol vehicles – likely not until well into the next decade.[28]

Analysis

39 This paper seeks agreement to consult on, and subsequently implement, a phased approach to transition to the latest Euro 6d/VI-E standards, and equivalent standards from other markets. The proposed phasing considers our large used vehicle import market and provides time for the industry to source and supply different vehicles.

40 Based on a cost benefit analysis in the attached regulatory impact statement, officials expect the option proposed to result in social cost savings of at least $6b out to 2050, with accumulative costs to consumers of between $182m–$236m.

A phased transition to Euro 6d and VI-E is proposed for light and heavy vehicles, motorcycles and mopeds, and disability vehicles

41 Details of the proposed phasing and standards to be required is set out in **Annex 1** and summarised below.

41.1 For **new light vehicles**, the proposal introduces Euro 6d for newly introduced vehicle models (i.e. models not previously produced) 18 months after the Vehicle Exhaust Emissions Amendment Rule (the Amendment Rule) is published in the *Gazette*. For existing models of new vehicles, the Euro 6d requirement is introduced 30 months after the Amendment Rule is published in the *Gazette*.

41.2 For **new heavy vehicles**, the proposal introduces Euro VI-C for newly introduced vehicle models 15 months after the Amendment Rule is published in the *Gazette*. For existing models of new vehicles, the Euro VI-C requirement is introduced 27 months after the Amendment Rule is published in the *Gazette*. Finally, the proposal introduces a Euro VI-E requirement for all new heavy vehicles from 1 November 2026 at the latest.

41.3 For **used light vehicles** (both petrol and diesel), the proposal introduces Euro 5 requirements 6 months after the Amendment Rule is published in the *Gazette*. Euro 6d is then introduced as a requirement 30 months after the Amendment Rule is published in the *Gazette*. Note that the proposal includes a phase-in of the Japan Low Harm standards, which means full Euro 6d requirements, including the equivalent Japan standards will not be required for all vehicles until 1 January 2028. See Annex 1 for details.

41.4 For **used heavy vehicles**, the proposal introduces Euro V requirements 6 months after the Amendment Rule is published in the *Gazette*. Euro VI-C is then introduced as a requirement 27 months after the Amendment Rule is published in the *Gazette*. Finally, the proposal introduces a Euro VI-E

[28] Metcalfe J and Kuschel G (2022). Estimating the impacts of introducing Euro 6/VI vehicle emission standards for New Zealand. Report prepared by Emission Impossible Ltd for NZ Ministry of Transport, 12 April 2022

requirement for all used and new heavy vehicles from 1 November 2026 at the latest.

41.5 For both **new and used motorcycles and mopeds**, the proposal introduces Euro 4 requirements 18 months after the Amendment Rule is published in the *Gazette*. Euro 5 requirements are then introduced from 1 January 2027 at the latest.

41.6 For both **new and used disability vehicles**, the proposal introduces Euro 5 requirements 6 months after the Amendment Rule is published in the *Gazette*. Euro 6d requirements are then introduced from 1 January 2028 at the latest.

42 The consultation will also propose accepting some standards from other jurisdictions as equivalent to the Euro standards. These standards include the US, Japan, Australia and the UNECE standards. There is a risk in using these standards as they are not fully equivalent to the Euro standards and vehicle manufacturers could look to supply cars that meet the weakest standard possible. For example, Japan's standards remain slightly weaker than their Euro equivalents due to some specific exceptions in the Japan standards.

43 For consistency, the proposal specifies that new and used import vehicles will be assessed on date of entry into service. s 9(2)(g)(ii) [redacted]

I am seeking agreement to consult on implementation dates for requiring Euro 6/VI with proposed timing to meet our international obligations

44 Consultation is proposed to test whether the phase-in dates proposed are reasonable and feasible for the industry, as well as whether the alternate standards proposed to be accepted are appropriate.

45 Subject to Cabinet agreement, Te Manatū Waka Ministry of Transport (the Ministry) will undertake a 6-week public consultation on the Amendment Rule.

46 Alongside the 6-week consultation a Technical Barriers to Trade (TBT) notification will also be required as part of New Zealand's obligations under the World Trade Organisation (WTO) TBT Agreement. To meet these obligations, a 60-day commenting period will be opened to allow early appropriate notification to members and to allow reasonable time for members to submit comments on the TBT notification. This commenting period can run concurrently alongside our domestic public consultation.

47 Additionally, as part of New Zealand's obligations under the WTO TBT Agreement, 6 months between publication in the *Gazette* and the measures coming into force is proposed, to allow reasonable notification for members.

Public consultation is needed to provide more clarity on how requiring Euro 6/VI will affect vehicle supply, especially for light diesel vehicles

48 Implementation lead in times and final implementation dates have been proposed based on discussions with distributors of motor vehicles over the past two years. These

dates appear achievable for passenger cars and vans, but are potentially more challenging for some (but not all) distributors of diesel utes.

49 The initial requirements in 2024 and 2025 for heavy vehicles appear to be achievable, because this is aligned with the new Australian law. The 2026 requirement for much stronger emission reductions, may be challenging for some non-European based truck suppliers. Distributors would need to arrange higher specification products, source products from different factories, or reduce model choices.

50 Public consultation will provide more clarity on what is possible for individual manufacturers and the resulting impact on vehicle supply (particularly for diesel vans, utes and trucks), which will then inform the final implementation dates for Euro 6/VI.

Requiring Euro 6/VI for new vehicles may result in some increases to vehicle prices, however the benefits outweigh costs within a matter of months.

51 Detailed below are the cost premiums for manufacturing a Euro 6/VI vehicle compared with a Euro 5/V, for brand new vehicles, and the social benefit for each 10,000km driven, compared to the vehicle it replaces[29]. The benefits accumulate very quickly as the vehicle is driven:

51.1 Petrol light passenger vehicles:
$300 one-off cost per vehicle against $250 benefit per 10,000km driven.

51.2 Diesel light commercial vehicles:
$900 one-off cost per vehicle against $1,950 benefit per 10,000km driven.

51.3 Diesel heavy duty vehicles:
$4000 one-off cost per vehicle against $9,230 benefit per 10,000km driven[30]

52 It is difficult to project what price increases could occur by phasing in the Euro 6/VI requirement for used vehicles as far out as 2028. Public consultation on the proposed lead in and final implementation dates will help to clarify how significant these costs could be.

53 Any potential increase in new vehicle costs as a result of this policy could have a disproportionate impact on low-income households, however, there will also be health benefits for this group.

There may also be small increased ongoing costs for diesel vehicles

54 Euro 6/VI diesel vehicles require the use of exhaust reagent (most commonly known as AdBlue). Between 30–60 litres of AdBlue (priced between 0.6–1.50 per litre) is needed per 1000 litres of diesel used. Passenger vehicles (such as diesel vans and utes) generally require around 10 litres of exhaust reagent every 10,000km, which can be topped up during a routine service or at a petrol station.

55 This would be an additional cost to diesel vehicle users but could be offset by gains made in reduced fuel consumption. Exhaust reagent is considered to be a minimal expense in other jurisdictions where Euro 6/VI has been required for some time.

[29] https://www.transport.govt.nz/assets/MoT-Euro-6-modelling-final-report-4-July.pdf
[30] On average. Very heavy trucks cost more to achieve Euro VI, however there significantly less of them and their sticker price is high regardless of Euro specification. Benefit assume ~20 tonne truck.

Our fuel specifications will need amending before the end of 2024

56 The composition of petrol and diesel must meet certain characteristics to be compatible with Euro 6d vehicles. For Aotearoa, this means the level of aromatics must be below 35 percent in petrol. Following the closure of New Zealand's only domestic fuel refinery, we now import all petrol, and the desired aromatic level is achieved on average. However, individual shipments can contain higher levels, which may cause damage or reduce the lifespan of Euro 6d engines.

57 s 9(2)(f)(iv) [redacted]

This proposal partially aligns with Australia, but includes stronger requirements in some areas

58 s 6(b) [redacted] Unlike New Zealand, Australia needs to upgrade petrol refineries to produce fuel compatible with Euro 6d. Australia has recently updated fuel requirements to reduce sulphur levels in petrol to meet Euro 6d levels next year, and a solution to reducing 'aromatics' is being finalised and will then make their fuel Euro 6d compatible.

59 Australia's diesel (like New Zealand's) is already compatible with Euro VI engines. Following the 2022 Australian Federal election, the Australian Government announced and amended relevant law, making Euro VI-C required for newly approved heavy vehicle models supplied from 1 November 2024 and all existing heavy vehicle models still being supplied to the Australian market on or after 1 November 2025.[31]

60 This update did not propose the strongest version of Euro VI (stage E), because Australia permits a significant engine performance burden on trucks which makes emission reductions harder. For example, 'road trains' up to 200 tonnes and four trailers are permitted in parts of Australia; such configurations are not permitted in Aotearoa, so this is not an issue we have to contend with.

61 The proposal for Euro VI stage C aligns with Australia. However, the proposal to move to Euro VI stage E by 1 November 2026 at the latest, does not align to Australia.

The new vehicle industry has requested more time ahead of requiring Euro 6/VI

62 Industry representatives that officials have engaged with broadly support moving to Euro 6. Some concern has been expressed around adopting Euro 6d/VI-E ahead of Australia, in relation to the practicality for importers of meeting two separate standards in the two markets. By providing a sufficient notice period ahead of the stronger Euro

[31] https://www.infrastructure.gov.au/infrastructure-transport-vehicles/vehicles/vehicle-safety-environment/emission-standards

6d/VI-E requirements coming into effect, suppliers will have additional time to prepare for the new emission standards.

We do not expect the proposed sequencing for used vehicles to constrain supply, but this will need to be tested by consultation

63 Moving to Euro 5/V as soon as possible is unlikely to cause any significant supply or purchase price impact for used vehicles as the majority (85 percent) of used imports already meet this standard.

64 For used diesel vehicles, moving to Euro 6d/VI-C officials do not expect supply to be constrained as the Japanese equivalent of this standard has been in place since 2016, meaning used trucks aged 8 years or younger could be imported in late 2025, when this requirement is expected to come into force.

65 Light petrol vehicles *manufactured* from 2025 (not to be confused with *imported*) would also have to meet the Euro 6d standard from 2026. This standard is already domestic law in our source markets today.

66 Under this proposal, from 2028, used light petrol vehicles imported would have to meet Euro 6d/VI. The Euro 6/VI standard was introduced in Japan in 2018 but was not mandatory until 2020. This means most vehicles older than 8–10 years would not be able to be imported into Aotearoa. This is not expected to have significant impacts on the supply of used light vehicle imports into Aotearoa, but this will be tested by consultation. For comparison, when the Rule was first introduced it established rules that led to a temporary 7-year-old age limit.

67 Public consultation will help to understand the impact of requiring Euro 6/VI for used diesel vehicles. Japanese light diesel standards were required in Japan from 2018 but remain noticeably weaker than Euro 6, particularly due to permitted NOx levels being double those specified by Euro 6d. However, Aotearoa imports very few used diesel vehicles from Japan; most of our diesel vehicle imports are sourced from other markets which align with Euro 6/VI standards. Whilst the introduction of Euro 6/VI standards would limit the importation of many used light diesel vehicles manufactured in Japan, this is unlikely to have any impact on supply of used light diesels vehicles into Aotearoa.

68 The Amendment Rule also includes the Japan emissions standard 5BA under the definition of *Japan 2018 Low Harm*. This was included in response to some new vehicle industry feedback stating that this was required to ensure diversity of vehicle models. However, the inclusion of 5BA lowers the requirement for reduced harmful emissions from 75 percent to 50 percent. Waka Kotahi and Te Manatū Waka are not able to predict the impact of including or excluding this standard at this stage. We propose to include this proposal for consideration in the consultation to received feedback on its inclusion.

69 The used vehicle industry also proposed including the older Japan emissions standard CBA (the older equivalent of 5BA for *Japan 2005 Low Harm*). However, Waka Kotahi data indicates that it is a low volume of vehicles that are currently imported under this standard, so we are not proposing to include this standard.

70 Waka Kotahi and Te Manatū Waka are working to understand if inclusion of 5BA and not CBA will create any inconsistencies for the proposals. A specific question has also been included in the consultation document to understand this better.

71 Over 70 percent of annual vehicle sales are of used vehicles already in our fleet. These vehicles will not be subject to the Amendment Rule. This should help to mitigate any risks of Euro 6/VI or equivalent standard requirements impacting supply of imported vehicles.

The Amendment Rule proposes that motorcycles and mopeds meet minimum emissions standards for the first time

72 The Rule currently does not apply minimum emissions standards for motorcycles and mopeds. Waka Kotahi also does not currently collect relevant vehicle data when motorcycles are registered. Subsequently, we cannot accurately determine their fuel consumption, CO_2 emissions, or harmful emissions. Although they are a small proportion of our overall fleet and are driven less, the social costs generated per kilometre driven by the average motorcycle are approximately twice that of the average petrol car in our fleet.[32]

73 The proposal introduces Euro 4 requirements for motorcycles and mopeds 18 months after the proposed Amendment Rule is published in the *Gazette*. It then introduces Euro 5 requirements from 1 January 2027 at the latest. A weaker emissions standard is proposed for motorcycles and mopeds due to the small percentage of these vehicles in our fleet, and the lack of data available to analyse what impact applying emissions standards to these vehicles will have.

74 The Euro standards do not yet extend beyond Euro 5 in the case of motorcycles and mopeds.

75 Industry representatives that officials have engaged with have indicated general support for the motorcycle and moped proposals, although the new vehicle industry has sought for all mopeds and some low power motorcycles to be excluded. Industry have also confirmed that mopeds and low power motorcycle models in New Zealand do not meet any level of emissions standard, so are likely to have very poor emissions performance. These vehicles are subject to Euro 5 regulations in Europe today. To address some of industry's concerns, the proposal excludes a small selection of motorcycles from the Euro 4 and 5 requirements, including those designed for off-road use on farms and in motorsport. The remaining concerns will be tested further as part of public consultation.

Exemptions

76 The Amendment Rule retains the current Rule exemptions, and adds new provisions to cater for motorcycles:

76.1 immigrants' vehicles

76.2 Class MA special interest vehicles

76.3 mobile cranes

[32] Metcalfe J and Kuschel G (2022). Estimating the impacts of introducing Euro 6/VI vehicle emission standards for New Zealand

76.4 vehicles specified in paragraph (a) of the definition of 'low volume vehicle' that comply with the emissions requirements of the Low Volume Vehicle Code

76.5 military vehicles

77 New provisions will be added for:

77.1 special interest motorcycles

77.2 farm motorcycles

77.3 enduro motorcycles

77.4 trials motorcycles.

Other issues related to the Amendment Rule will be addressed through future work

The relationship between adopting stronger emission standards and safety is expected to be positive but more information is needed

78 The Road to Zero Action Plan includes an action to investigate the uptake of new safety features in vehicles entering Aotearoa's vehicle fleet. Increasing the uptake of Euro 6d/VI-E vehicles could deliver environmental and safety benefits, in addition to the human health benefits outlined above. This is because newer vehicles tend to be safer and lower-emitting.

79 However, while the environmental benefits to Euro 6/VI are very likely, there are possible safety disbenefits by excluding some vehicles with more advanced safety features, but which are not compliant with the Euro 6 standard. This is difficult to measure as we cannot predict how the vehicle market will adapt to this proposed changed.

Further work is required to address the risks of tampering of vehicle emission control systems

80 Technologies to reduce emissions have become more complex and expensive to maintain, leading to 'tampering' of vehicle emission control systems. The tampering issue is operationally complex and requires further policy analysis. Waka Kotahi and the Ministry will work to consider tampering further under a more comprehensive review of the Rule to be undertaken next year.

81 As Euro 6/VI requires the use of additional processes in diesel vehicles, the issue of tampering is likely to get larger over time as we require these standards. My intent is to address the tampering issue ahead of requiring Euro 6/VI for new imports.

Implementation of the Amendment Rule

82 Subject to Cabinet approval, public consultation on the Amendment Rule is expected to take place for six weeks. This will include consultation with industry stakeholders such as the Motor Industry Association (MIA), the Imported Motor Vehicle Industry Association (VIA), the Motor Trade Association, the Special Interest Vehicles Association, the Automobile Association, and the Low Volume Vehicle Technical Association. This will support the technical accuracy of the Rule before providing a final copy to me for signing.

83 An updated Amendment Rule is expected to be finalised in mid-2023. The phased transition will begin after the Amendment Rule comes into effect; moving to Euro 6/VI will take place between 2024 and 2028.

84 If there are substantive policy changes needed to the Amendment Rule after consultation, I will report back to Cabinet in 2023. My expectation is to keep implementation dates as close to the current proposal as is reasonable. Should I be required to report back to Cabinet, an updated Amendment Rule would be delayed until later in 2023.

85 The key implementation risk is the achievability of implementation dates for Euro 6/VI requirements. Ongoing engagement and public consultation will inform decisions to ensure dates put forward are ambitious but achievable: tackling the serious health harm and maintaining access to vehicles for consumers.

Relationship to CO_2 emissions and the long-term strategy for transport

86 The Government is taking comprehensive action on vehicle emissions through other CO_2 and GHG reduction policies. However, reducing emissions harmful to human health will not occur through CO_2/greenhouse gas reduction initiatives and will rely on requiring a specific standard (Euro 6/VI).

87 Despite Euro 6/VI focussing on harmful emissions, the newer technologies it necessitates for heavy vehicles brings fuel efficiencies and therefore reductions in CO_2 emissions.

88 Implementing CO_2 and harmful emission policies in similar timeframes could ease the transition for industry, assuming sufficient notice is given. It is disruptive to arrange changes to vehicle supply to meet new emission requirements; giving the industry notice about both Euro 6/VI and the Clean Car Standard requirements enables them to incorporate all the work into one transition.

89 s 9(2)(f)(iv) [redacted]

Financial Implications

90 There are currently no financial implications for the Crown associated with this paper.

91 Waka Kotahi expects that the funding for this change could be covered by its baseline. However, it notes that the work would need to be considered alongside other Ministerial priorities and funding may be required if there are competing priorities for limited Waka Kotahi resources. Waka Kotahi has calculated the approximate cost of updating its systems to be $350,000.

Legislative Implications

92 This paper proposes consultation on a proposed amendment to the Land Transport Rule: Vehicle Exhaust Emissions 2007.

Impact Analysis - Regulatory Impact Statement (RIS)

93 Impact analysis is required for this proposal. A RIS has been prepared and is attached to this Cabinet paper. The RIS was prepared based on the expectation that an Amendment Rule would be completed by the end of 2022, thus the implementation options put forward for analysis in the RIS are slightly different to the implementation dates suggested in this Cabinet paper, to account for the delay in Cabinet consideration due to competing priorities. While option 3b in the RIS is still preferred, we have proposed updated dates and to remove the transition to Euro 6b and transition directly to Euro 6d, to account for the delay. Te Manatū Waka has also included phasing for new and existing vehicle models for new vehicles in response to industry feedback. Te Manatū Waka considers these changes to be relatively immaterial in assessing the costs and benefits of alternative options.

94 The RIS has been reviewed by a panel of representatives from the Ministry and Waka Kotahi. It has been given a 'meets' rating against the quality assurance criteria for the purpose of informing in-principle Cabinet decisions. The RIS is "complete, convincing, and clear and concise. Some targeted consultation has occurred, and feedback from public consultation will be used to further develop the RIS before final policy decisions are made. This review was subject to some agreed-upon additions to the context section regarding the existing market and regulation." These additions to the RIS have been made.

Climate Implications of Policy Assessment

95 Improved fuel consumption in Euro 6/VI vehicles will likely lead to reduced CO_2 emissions. However, the expected reduction in CO_2 emissions is estimated to be less than 10 Kt CO_2e per annum but will reduce further over time.

96 Accordingly, the Climate Implications of Policy Assessment (CIPA) team has been consulted and confirms that the CIPA requirements do not apply to this proposal as the threshold for significance is not met.

Population Implications

97 There is no significant gender, or other population implications from the Amendment Rule.

98 However, cost impacts could disproportionately fall on some communities and particularly low-income households. For example, disabled people are more likely than others to have lower incomes and therefore less likely to be able to afford the additional costs involved.

99 Modified vehicles are needed by people with disabilities. This does not pose an issue for new vehicle imports, as these vehicles are usually bought new and then modified to suit the needs of its disabled driver. Supply constraints could occur in the case of used imports, as these vehicles will have already been modified and used before being imported to Aotearoa. To mitigate any risk of supply constraints, the proposal allows

disability vehicles, where they are used imports, to be given 3 years longer to comply with Euro 6/VI.

100 Currently, vehicle distributors must apply for a case-by-case exemption to the Director of Land Transport where they seek to sell a disability vehicle that does not meet necessary emissions standards. While that would still be permitted, providing an explicit time extension to used disability vehicles will reduce the need for case-by-case exemptions.

101 Māori are more likely to live in small communities, in lower income households, and work in industries that require lengthy travel, such as horticulture and forestry. Where involved in horticulture, forestry, and some other trades, it is likely that Māori are more likely to purchase used commercial vehicles and more likely to drive them significant distances, and therefore, be more impacted by any additional costs (such as the purchase of AdBlue necessary with diesel vehicles). However, very small volumes of used diesel vehicles are imported, so it is likely any impact would only be felt later in the decade, or in the 2030s (after more expensive to buy/run new diesel imports are sold on within the Aotearoa market). Where Māori and other groups can use petrol cars, impacts are expected to minimal (and in fact, are likely to benefit from the rapid shift of petrol passenger cars towards hybrid and electric cars over the course of this decade, which significantly reduces the burden of ongoing fuel costs).

102 Exposure to NO_2 levels above WHO guidelines is noticeably higher for Pacific peoples (54 percent of the population) than the national average (31 percent). On average Māori exposure is lower (23 percent), although in all cases NO_2 exposure levels are rising.[33]

103 Public consultation will provide an opportunity to further understand if there are any disproportionate population implications for the Amendment Rule, and implementation dates, and if any changes are required to mitigate to this. Targeted consultation with communities identified in this paper who may experience disproportionate impacts from these proposals would allow for further understanding of any disproportionate population implications. However, to perform effective targeted consultation, Te Manatū Waka would require more than the proposed six-week consultation period currently proposed.

Human Rights

104 The proposal in this paper is consistent with the fundamental freedoms in the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

105 Officials have identified potential impacts on the availability of disability vehicles and will ensure that this is taken into account in the drafting and implementation of the Amendment Rule so that this proposal remains consistent with human rights.

s 9(2)(h) [redacted]

[redacted]

[33] https://www.stats.govt.nz/news/health-impacts-of-exposure-to-human-made-air-pollution/

s 9(2)(h)

[redacted]

[redacted]

[redacted]

Consultation

109 The following agencies were consulted on the contents of this paper: Waka Kotahi, Ministry of Foreign Affairs and Trade, Ministry of Business, Innovation and Employment, the Treasury, Ministry for the Environment, Ministry of Health, Te Aka Whai Ora Māori Health Authority, Department of Conservation, Department of Internal Affairs, New Zealand Defence Force, Ministry of Social Development, Ministry for Disabled People, Ministry for Primary Industries, Inland Revenue, Te Puni Kokiri, WorkSafe New Zealand, New Zealand Customs Office, and the Energy Efficiency and Conservation Authority. The Department of Prime Minister and Cabinet has been informed.

110 I have had ongoing engagement with the MIA and VIA on this topic throughout 2021, 2022 and 2023. Officials also conducted informal engagement with these parties and the Automobile Association, the Motor Trade Association and the New Zealand Bus and Coach Association, in June 2021.

Communications

111 I intend to announce the Amendment Rule through publication in the *Gazette*. Te Manatū Waka will develop communication and education materials for the vehicle industry.

112 Waka Kotahi is separately updating the consumer-facing RightCar website to provide information on which vehicle models achieve which vehicle standard. This will enable consumers to find vehicles that have lower harmful emissions.

Proactive Release

113 I propose to proactively release this Cabinet paper, the RIS, and briefings I have received, subject to any necessary redactions. This would be done within 30 business days of decisions being confirmed by Cabinet. I will also proactively release material relating to the adoption of the Amendment Rule shortly after it is signed.

Recommendations

The Minister of Transport recommends that the Committee:

Background

1 **note** that in 2021, Cabinet agreed to amend the Land Transport Rule: Vehicle Exhaust Emissions 2007 (the Rule) to require Euro 6 for light vehicles by the end of 2022 (CAB-21-MIN-004)

2 **note** that adopting Euro VI for heavy vehicles is a committed action under the Government's 2022 Emissions Reduction Plan

3 **note** the 2022 Health and Air Pollution in New Zealand (HAPINZ 3.0) report found that transport-related air pollution was responsible for 13,000 cases of asthma prevalence in our tamariki, 2,200 premature deaths, and a total of $10.5 billion in social costs per year

4 **note** that Euro 6/VI is unlikely to be voluntarily adopted by vehicle importers until the middle of next decade

Proposal

5 **agree** to release for public consultation the proposals in Annex 1 and draft amendment to the Rule (the Land Transport: Vehicle Exhaust Emissions Amendment Rule) on the implementation timeframes and dates proposed to the latest European harmful emissions standards to be required in Aotearoa in order to give effect to recommendation 1

6 **agree** that the Minister of Transport will make minor and technical changes to the Land Transport: Vehicle Exhaust Emissions Amendment Rule and the consultation document that may be required ahead of release for public consultation

7 **note** my intention to undertake the procedure concerning ordinary rules under section 161 of the Land Transport Act 1998 and to not report back to Cabinet unless material changes are needed to the policy following public consultation

8 **note** that the exact dates proposed in the Land Transport: Vehicle Exhaust Emissions Amendment Rule are subject to change, pending public consultation feedback on the notice period required before the requirement comes into force

9 **note** the Land Transport: Vehicle Exhaust Emissions Amendment Rule proposes introducing minimum emissions standards for new and used motorcycles and mopeds entering the fleet from 2025, though exclusions would be added to cover special interest, farm, enduro, and trials motorcycles

10 **note** that the Land Transport: Vehicle Exhaust Emissions Amendment Rule proposes used light imports meeting a definition of a disability vehicle will be required to meet Euro 5 at the same time as other used light vehicles, but will be given until January 2028 to transition to Euro 6d, recognising that supply of these vehicles is limited

11 **note** that the European Commission is consulting on a proposal to introduce Euro 7 for light vehicles in 2025 and heavy vehicles in 2027

12 s 9(2)(f)(iv) [redacted]

Authorised for lodgement

Hon Michael Wood