

In Confidence

Minister of Transport

Chair, Cabinet

## The Clean Car Standard

### Proposal

1. This paper seeks agreement to:
  - introduce a vehicle import carbon dioxide (CO<sub>2</sub>) standard called the Clean Car Standard (the Standard); and
  - the Standard's key design features, which have been improved following consultation with the public and the vehicle industry.

### Relation to Government priorities

2. This proposal is intended to be one of a number of actions taken in response to Parliament's declaration of a climate change emergency. It also gives effect to the commitment in the Labour Party's Clean Energy Policy 2020 and to the Cooperation Agreement between the Labour and Green parties, to regulate a vehicle CO<sub>2</sub> standard to increase the supply and variety of low emissions vehicles.
3. The Standard will be one of a number of transport policies included in the Government's first Emission Reduction Plan, which must be published by 31 December 2021. This Plan, led by the Minister for Climate Change, will outline the strategies and policies that will be used to achieve the first emissions budget for 2022–2025 and will be built on to deliver the second and third budgets.

### Executive Summary

4. The Climate Change Response (Zero Carbon) Amendment Act 2019 requires CO<sub>2</sub> emissions to be reduced to net zero by 2050. As transport is responsible for 47 percent of New Zealand's domestic CO<sub>2</sub> emissions, this target cannot be achieved without largely decarbonising transport.
5. Two-thirds of transport emissions come from our light vehicles, which are cars, sport utility vehicles (SUVs), vans, utes and light trucks all under 3.5 tonnes<sup>1</sup>. Fortunately, low emission light vehicles offer a substantial, achievable and cost-effective opportunity to decarbonise.
6. It is critical to take immediate action to realise this opportunity. Without intervention, every high-emitting vehicle that enters the fleet today will be driven until it is, on average, 20 years old. For new vehicles, this means it may be 2041 until there is another opportunity to switch these vehicles for low carbon ones.

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<sup>1</sup> Cars and other light vehicles produced 9389 kT of CO<sub>2</sub> emissions in 2018. This compares to the domestic transport sector total of 16,484 kT and to New Zealand's total CO<sub>2</sub> emissions of 35,080 kT. New Zealand's emissions including methane and other gases is 78,862 kT CO<sub>2</sub>e (Ministry for the Environment, New Zealand's Greenhouse Gas Inventory published in 2020).

7. Increasing the uptake of zero-emission vehicles and introducing clean car standards are areas of cooperation under the Cooperation Agreement between the New Zealand Labour Party and the Green Party of Aotearoa New Zealand. This policy was initially worked on by Hon Julie Anne Genter as Associate Minister of Transport in the last term of Parliament.
8. To realise the light vehicle opportunity, on 17 June 2019 Cabinet agreed to release the consultation document: *Moving the light vehicle fleet to low-emissions: discussion paper on a Clean Car Standard and Clean Car Discount* [CAB-19-MIN-02873 refers]. The Standard outlined in this document is the same as that proposed in Labour's Clean Energy Policy 2020.
9. Following consultation in 2020, Ministry of Transport officials worked with the vehicle industry and the Automobile Association to improve the design of the Standard. I am now seeking Cabinet agreement to introduce the Standard and its improved design.
10. The Standard will help incentivise the transition to lower carbon vehicles which is key to achieving emission reductions in the transport sector. Depending on the year chosen a 105g target could reduce emissions by around 0.8 million tonnes by 2030 (4.3 million tonnes by 2040). This is complemented by the Government investigation of a biofuels obligation to reduce vehicle emissions of the existing fleet.
11. If Ministers agree, I will include the legislative amendments needed for the Standard in a Bill amending the Land Transport Act 1998, and if necessary, the Land Transport Management Act 2003. I will seek a priority of Category 2 for the Bill on the 2021 Legislative Programme meaning that it must be passed in the year. New funding, to implement the Standard, of \$28.7 million in operating funding over 4 years and \$16.2 million in capital will be sought as part of Budget 2021.
12. The design of the Standard I am proposing includes:
  - **Vehicle CO<sub>2</sub> targets:** the initial headline vehicle CO<sub>2</sub> target will be 105 grams. There are three target years proposed for Cabinet's consideration. and more stringent targets will be introduced in future years
  - **Adjustments for vehicle weight and types:** CO<sub>2</sub> targets will vary by vehicle weight allowing all vehicle types to attract an appropriate target. There will also be lower target for cars and SUVs, and a higher one for vans, utes and light trucks.
  - **Compliance regime:** allowing the new vehicle distributors and used-vehicle importers to take different approaches to meeting their CO<sub>2</sub> obligations, and instituting banking, borrowing and transfers, to manage target over- and under achievement.
  - **Charges:** to incentivise meeting CO<sub>2</sub> targets and generate funds to contribute towards projects that will lower emissions across the transport system.
  - **Offences and penalties:** for failing to keep the necessary records required for the Standard and administrative misconduct.
  - **Exceptions:** for vehicles of social and historic value.
  - **Administration of the scheme:** allocating responsibility to Waka Kotahi New Zealand Transport Agency (Waka Kotahi). This includes to establish processes to mitigate gaming and rorting of the Standard and to ensure consistency for vehicle CO<sub>2</sub> emission values.

## Impact and benefit of this policy

13. Table 1 below summarises forecast carbon emissions of New Zealand's light vehicle fleet from today out to 2030 and to out 2050, together with the impact of this policy in terms of carbon reduction and social cost benefit.

| Area   | Year    | Business as usual | With Clean Car Standard  |
|--|---------|-------------------|--|
| Average vehicle emissions<br>(grams of CO <sub>2</sub> per kilometre (g CO <sub>2</sub> / km)) | In 2025 | 152g              | 116g in 2025 (25% reduction)<br>if 105g (31% reduction) set for 2026 |
|  | In 2030 | 99g               | 90g (refer para 14)  |
|  | In 2035 | 63g               | 63g (refer para 14)  |
| Total emissions from all light vehicles from 2020 (Megatonnes (Mt) CO <sub>2</sub> )           | to 2030 | 122               | 120 (1% reduction)   |
|  | to 2050 | 293               | 290 (1% reduction)   |
| Total emissions for light vehicles entering NZ from 2020 (Mt CO <sub>2</sub> )                 | to 2030 | 31                | 29 (5% reduction)  |
|  | to 2050 | 130               | 127 (3% reduction)   |
| Social cost benefit (\$m) from 2020  | to 2030 | -                 | \$188m   |
|  | to 2050 | -                 | \$403m   |

14. The above table is based on benefits isolated to the Clean Car Standard having an initial target of 105 g/km set for 2026, as no targets have yet been set for 2030 or 2035. When targets are set for 2030 and 2035, forecasts can be updated to show greater levels of CO<sub>2</sub> reduction and social benefits. These calculations do not factor in any further policies that might enhance the affordability of clean cars and/or raise prices of high-emitting vehicles.
15. This policy will generate substantial annual fuel cost savings for households and businesses. Vehicles entering the country in 2025/26 will on average save their owners approximately 31% in annual fuel costs compared to business as usual. These savings will be most noticeable to motorists on low incomes as they spend greater proportions of their income on fuel.

## Background

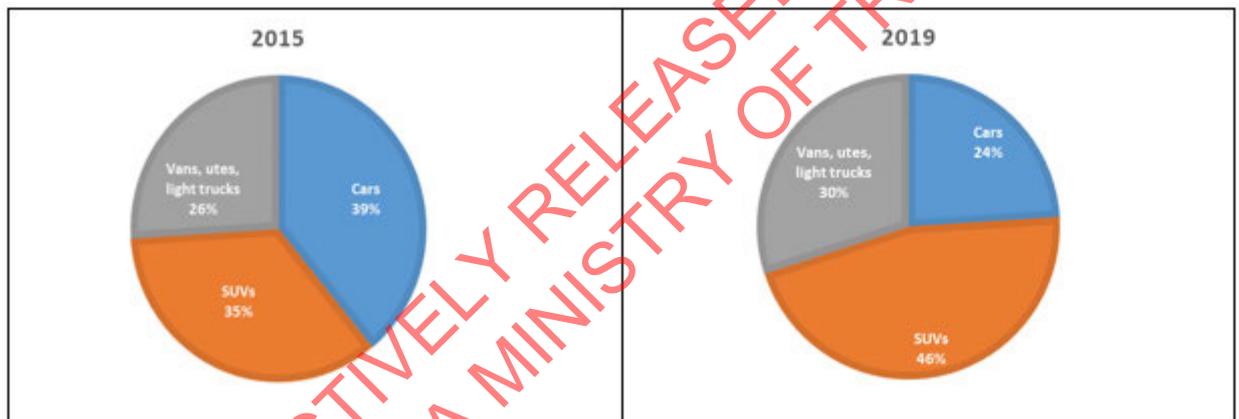
*A Clean Car Standard is fundamental to reducing transport emissions*

16. New Zealand has become a dumping ground for high emission vehicles because it is indifferent to vehicle CO<sub>2</sub> emissions. Currently, the light vehicles coming into the country are among the most fuel inefficient, and emission intensive, of any OECD country. The average vehicle in New Zealand has CO<sub>2</sub> emissions of around 171 grams per kilometre (g/km). Our cars and SUVs alone average 161 g/km, compared to 105 g/km in Europe.
17. Without new standards and incentives, this gap will continue to widen. In 2025, our light vehicle average is forecast to remain at 152 g/km, by which time Europe is expected to target between 80 and 50 g/km.

18. All other OECD countries bar Russia have now implemented a light vehicle emissions standard, including the countries we import most used vehicles from. Many have also now set dates after which new petrol and diesel vehicles will be banned, from as early as 2025–2030.<sup>2</sup>

19. Our average vehicle has higher emissions because of the following supply and demand factors:

- **Manufacturers do not supply us with their most efficient vehicle models.** When they do it is often with a delay of several years. In 2017, the most efficient vehicle models on our market had, on average, 21 percent higher emissions than their counterpart models in the United Kingdom. Vehicle manufacturers are able to supply less efficient vehicles because we have insufficient regulations, or meaningful incentives, to lower vehicle CO<sub>2</sub> emissions. This allows manufacturers to minimise their costs by providing vehicles with older and cheaper technologies.
- **Consumers are increasingly buying heavier new vehicles with higher emissions.** The graphs below show the shift in consumers' buying patterns for new vehicles over the last five years. Another way to appreciate this shift, is that in 2011 small vehicles were 16.6 percent of new vehicle sales. By 2019 their share of sales halved to 8.5 percent.



- **Half of the vehicles that come into New Zealand each year are used-imports.** In 2000, the average age of these vehicles was around seven years. In 2019 average age had increased to around 10 years. Generally, for the same vehicle model, newer versions tend to be more energy efficient and thus have lower emissions.

20. New Zealand is an outlier among developed countries, along with Australia and Russia, in not regulating vehicle CO<sub>2</sub> emissions/fuel efficiency. Australia will move forward in 2021 through its vehicle industry having a voluntary CO<sub>2</sub> standard of 130 g/km in 2030.

*New Zealand stands to benefit substantially from implementing a Clean Car Standard*

21. Vehicle CO<sub>2</sub> standards are used widely internationally and have been effective in mobilising large, low-cost reductions in vehicle CO<sub>2</sub> emissions<sup>3</sup>. Introduced here, a Clean Car Standard would:

- progressively reduce the average emissions of light vehicles coming into New Zealand;
- increase the range of low emitting vehicles available to New Zealanders across all vehicle types (for example, vans, utes, SUVs and cars);

<sup>2</sup> This includes the right hand drive markets, United Kingdom (2030), Tokyo (2030), and remainder of Japan (mid 2030s).

<sup>3</sup> International Energy Agency 2012, Technology Roadmap, Fuel Economy of Road Vehicles, OECD/IEA, Paris

- lower the average age of used imports coming in, as younger vehicle models tend to have lower emissions than older versions of the same model;
- give New Zealanders earlier access to the world's best low emission vehicles through increasing the leverage new vehicle distributors have with their parent companies;
- reward vehicle suppliers that choose to import and market low emission vehicles, and in so doing will make them more competitive.

22. From a national perspective, implementing the Standard will provide a net benefit. The largest portion of these benefits will come from fuel savings to households and businesses. Compared to other vehicle emission reduction policies investigated by officials<sup>4</sup>, the Standard is estimated to deliver the largest reduction in emissions and largest net benefit to the country. The Standard would also contribute to reducing harmful local air pollution, which imposes a multi-billion dollar social cost on New Zealand annually due to its impact on human health.

#### *A Clean Car Standard would reduce motoring costs for people and businesses*

23. The poor fuel efficiency and higher emissions of our vehicles comes at a significant cost to households and businesses. On average, New Zealanders pay 65 percent more in annual vehicle fuel costs than people in the European Union, even though Europe's petrol prices are higher.
24. By having no vehicle CO<sub>2</sub> standards we are forgoing a cost effective way to decarbonise as the resultant fuel savings are significant. Research from the United States, over the period 1984-2014, suggests that the households that benefit the most from vehicle CO<sub>2</sub>/fuel efficiency standards are low-income ones<sup>5</sup>. This is because as a percentage of income, savings from improved fuel efficiency are highest for households with lower incomes.

#### *How the Standard would work*

25. The Standard would achieve the above effect by setting increasingly tighter CO<sub>2</sub> emission targets, which would vary by vehicle weight. A large SUV will not be expected to meet the same CO<sub>2</sub> emission target as a small car.
26. The CO<sub>2</sub> targets would be fleet based averaged across all the vehicles sold rather than applying to individual cars. This would allow suppliers to import vehicles with emissions over the target without charge, as long as they are balanced by sufficient numbers of vehicles with emissions under the target. In this way suppliers would decide how they will configure their mix of vehicles to meet the target.
27. The Standard would apply to all new and used light vehicles sold for the first time in New Zealand. The vehicles already in New Zealand and being re-sold would not be affected.

### **The key design decisions for the Standard**

#### **(1) Vehicle CO<sub>2</sub> targets**

*A fleet average of 105 grams CO<sub>2</sub> per kilometre*

<sup>4</sup> Policies investigated included the Clean Car Discount, varying annual vehicle licenses, fringe benefit tax exemptions for EVs, GST exemptions for EVs, increased depreciation rates for EVs, and emissions testing as part of Warrants of Fitness.

<sup>5</sup> [http://bakercenter.utk.edu/wp-content/uploads/2016/09/Equity-Impacts-of-Fuel-Economy-Report\\_final.pdf](http://bakercenter.utk.edu/wp-content/uploads/2016/09/Equity-Impacts-of-Fuel-Economy-Report_final.pdf)

28. The consultation document and Labour Party's Clean Energy Policy 2020 advocate a fleet average CO<sub>2</sub> target of 105 grams CO<sub>2</sub> per kilometre (g CO<sub>2</sub> / km) in 2025. The industry has requested more time to adjust so additional options of 2026 and 2028 are added for Cabinet's consideration.
29. A target of 105 (g CO<sub>2</sub> / km) by the original 2025 timeframe is technically plausible for New Zealand. A 2025 target would put us five years behind the European Union. It would be around two years behind the targets in countries such as Canada, China and the USA states that have joined California in setting their own emission standards<sup>6</sup>. However the vehicle industry has argued strongly that globally, low and zero emission vehicles are prioritised for Europe, which has the strongest regulated targets, consumer incentives, and penalties, and that this heavily reduces what can be supplied to New Zealand in the short term.
30. Japan reached 105 g/km in 2014, although does so with a higher proportion of small vehicles than what New Zealand buys, and offers subsidies to low emission vehicles. Nevertheless, Japan has steadily increased its manufacture of hybrid vehicles and electric vehicles for its domestic market, increasingly enabling our used import market to transition to low emission vehicles.
31. The vehicle industry has argued a target year of 2025 could present a real risk to the vehicle market. Some suppliers have said they would be unlikely to secure enough affordable lower emission vehicles, and this would limit supply and push up vehicle prices. This could reduce public confidence in the policy.
32. The new vehicle industry has requested a target of 2030 and officials last year recommended 2028, as the earliest the industry could achieve a 105 g/km target. A 2028 or 2030 goal could be achieved by the Clean Car Standard without many additional emission reduction policies, and gives the global automotive market more time to supply New Zealand with more affordable low and zero emission vehicles. Current transport policies, with the addition of a 2025 Clean Car Standard, will already fall short of delivering emissions reductions with the urgency that we need to tackle our 2030 and 2050 climate commitments, and a later target date would increase that gap.
33. In order to accelerate this change, and ensure the success of this transition, I will come back to Cabinet with further proposals for a feebate scheme or variant on this that creates stronger incentives/disincentives to encourage the purchase of low emission vehicles and measures to increase access to low emissions transport options for lower-income households. It is unlikely that the Clean Car Standard target can be met in 2025 or 2026 or more stringent targets achieved without additional policies such as these.

*Targets would be phased in with annual changes*

34. The consultation document outlined two approaches for phasing in the CO<sub>2</sub> emissions targets. These were:
- having annual CO<sub>2</sub> targets that lower to the headline target through time, or
  - requiring that an increasing percentage of suppliers' fleets meet the headline target.
35. I am proposing to phase-in this policy by having annual CO<sub>2</sub> targets, which is in line with the feedback of most submitters. Annual targets better communicate the need for all vehicle importers to achieve emission reductions.

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<sup>6</sup> All data is from the International Council for Clean Transportation.

36. The first year of the Standard, 2022, would be an importer registration, education and familiarisation period only. This also gives sufficient time for Waka Kotahi to develop necessary systems. Suppliers would not be obliged to meet any targets until 1 January 2023.
37. The tables in Appendix 1 show how progressive annual targets would be phased in depending on whether a target year of 2025, 2026, or 2028 is set. Each scenario assumes an initial rate of improvement of 3 to 5 percent in emissions per year, followed by much higher rates closer to the target year. This gives the industry and public more time to adjust. The average rate of improvement for the past 10 years has been 1 percent, although in some vehicle segments, such as utes, there has been no emission reduction in several years.

#### *Light Passenger Vehicles and Light Commercial Vehicles have separate targets*

38. I also propose that the 105 g/km target be split into separate targets for light passenger vehicles (cars and SUVs)<sup>7</sup> of 102 g/km, and light commercial vehicles (vans, utes and light trucks under 3.5 tonnes)<sup>8</sup> of 132 g/km<sup>9</sup>. The two vehicle categories refer to body type. They do not distinguish between vehicles used for a commercial or an individual purpose.
39. The two separate targets should result in an average CO<sub>2</sub> level being achieved across the whole light fleet of 105 g/km. Separate targets were recommended by the International Council for Clean Transportation and the vehicle industry. They are proposed because:
- the rate of annual efficiency improvements in light commercial vehicles has historically been lower than that for light passenger vehicles;
  - leading edge technology is first applied to light passenger vehicles, which makes a lower target appropriate for them; and
  - it is what all other jurisdictions have. This will make our system easier to understand for overseas manufacturers and enable us to make better comparisons with other countries. For example, Europe has a split target for light commercial vehicles of 125 g/km by 2025.

#### *Vehicle weight adjustment and small vehicle target*

40. I propose that the CO<sub>2</sub> targets be weight adjusted. This would mean a van or a ute would not be expected to meet the same CO<sub>2</sub> target as a small car.
41. A weight adjusted target would ensure there is equal pressure to increase the supply of lower emissions vehicles across all vehicle types (i.e. small and medium cars, SUVs, vans and utes). A diagram showing how the weight adjustment would be done, and the formula that would be used are in Appendix 2.
42. The vehicle industry and Ministry of Transport officials have, however, identified that the weight adjusted formula tends to give small vehicles very low targets relative to the average vehicle. The vehicle industry and my officials have recommended an exception to this formula for small vehicles with a tare weight under 1,200 kilograms<sup>10</sup>. For these vehicles a single target would apply each year irrespective of the weight differences between them. Provisionally, the targets

<sup>7</sup> Light passenger vehicles includes all sedans, hatchbacks, convertibles, station wagons and SUVs in the vehicle class MA.

<sup>8</sup> Light commercial vehicles are utility type vehicles in the following vehicle classes: NA, MD1, MD2 and MB.

<sup>9</sup> Modelling assumes a reduction in the market share of vans and utes back to levels experienced earlier this decade (from 17.5% to around 10%), as this will generate a reduction in emissions. Alternatively, with no market share change, cars/SUVs would need to reduce by an additional 2g or utes/vans by an additional 10g in the target year.

<sup>10</sup> For example a popular small car is the Suzuki Swift with models ranging in tare weight from 870–970 kilograms.

would be those set by the weight adjusting formula for a vehicle of 1,200 kilograms. I propose to confirm the slope and minimum threshold for the weight adjusted target in the process of implementing this initiative.

43. This will avoid the potentially perverse outcome of suppliers reducing the number and type of small vehicles on the market because they cannot meet strict targets derived from the formula.
44. A weight adjusted target does not provide an incentive for consumers to opt for smaller vehicles over larger ones. Additional policies that influence consumers' vehicle decisions are still needed, such as a clean car discount (which would not be weight-adjusted) and targeted public engagement on this issue.

#### *Targets will be reviewed periodically*

45. The key challenge in setting the CO<sub>2</sub> targets is ensuring they create the right level of tension for suppliers. They should drive suppliers to secure the supply of more low emission vehicles.
46. If targets are too aggressive, however, they could reduce the range of vehicles available, increase prices, and reduce the number of vehicle suppliers. At the same time, there is the potential for the increase in the supply of low emission vehicles to be much faster than predicted, and weak targets would risk New Zealand continuing to be a dumping ground for the world's higher emitting vehicles.
47. Given the uncertainty, the industry suggested having a review of the suitability of the mandated CO<sub>2</sub> targets. If the targets prove too aggressive, or not aggressive enough, they would be reset. I support their suggestion with a first review done in 2024.
48. To lessen the risk of the review undermining the perceived durability of the Standard, the review would focus on what industry leaders in emission reductions are achieving, both in New Zealand and globally. It would also be informed by the Climate Change Commission's advice on the rolling set of three 5-yearly emission budgets.
49. After the 2024 review, the ongoing review period is expected to be on five year intervals. For example, a review of the provisional 2030 target would occur in 2027 and a review of the 2035 target would occur in 2032. This enables the future targets to be ambitious, achievable, and clear. The Minister of Transport would retain the ability to update target intervals and commission further reviews necessary due to changes in the vehicle market.
50. I also recommend that the terms of reference for the reviews of targets be agreed by the Minister for Transport. I envisage that the reviews would involve the vehicle industry, and include advice from overseas experts, such as the International Committee on Clean Transportation.

## **(2) Compliance regime**

### *Fleet averaging and vehicle-by-vehicle targets*

51. All new vehicle distributors, and some used-vehicle importers, would be required to ensure the average emissions of their fleets of vehicles meet the CO<sub>2</sub> target for that year. At the end of each year, the average CO<sub>2</sub> emissions of the vehicles they supply would need to be equal to, or less than, the annual target. If it were higher they would have to pay a charge imposed under Transport regulation.

52. A fleet based target gives importers the flexibility to meet the annual, average CO<sub>2</sub> target over the course of a year and offset the sale of high emitting models with low emitting models overtime.
53. For most used vehicle suppliers I propose a simpler default compliance model. Used vehicle importers would comply with the CO<sub>2</sub> target on a vehicle-by-vehicle basis. This would take place at the point of vehicle entry certification, where the vehicle's CO<sub>2</sub> emissions would be compared to the applicable target. If the emissions are higher, then the importer would pay a charge before the vehicle is released. If its emissions were lower than the target, the vehicle would be released to the importer and the importer would accrue a CO<sub>2</sub> credit.<sup>11</sup> This credit could be used to offset the emissions of future high emission vehicles. Appendix 3 shows worked examples of this approach.
54. The design ensures that used-vehicle importers are incentivised to achieve the same result over the course of a year that businesses using a fleet-averaging model do. This design would be administratively simpler for smaller used-vehicle importers who purchase vehicles on an ad hoc basis through online auctions. As they cannot ensure which vehicles they will win at auction, it will provide greater certainty about the costs they will face, and therefore the bids they can make. It would also significantly reduce the risk of non-compliance.<sup>12</sup> This option has been put forward by the used-vehicle representative body and co-designed with Ministry of Transport officials.
55. Reputable used-vehicle importers would still be able to opt for the fleet-averaging approach if they meet specific criteria<sup>13</sup>.

#### *Banking, borrowing, and transferring*

56. The Standard will increase compliance costs for the vehicle industry. To help minimise these costs, I propose the following three flexibility mechanisms:
- Banking, the ability for suppliers to carry forward any annual overachievement of their CO<sub>2</sub> targets to offset future underachievement over the following three years (this would only apply where fleet-averaging is used).
  - Borrowing, the ability for suppliers to underachieve an annual emissions target and to make the underachievement up in the following year by overachieving (this would only apply where fleet-averaging is used).
  - Transferring, which allows suppliers to transfer overachievement of their CO<sub>2</sub> target to one or more other suppliers operating within the same compliance regime. This creates larger fleets of vehicles over which the CO<sub>2</sub> from high emitting vehicles can be offset by low emitting ones. This flexibility is considered important to enabling the industry to reduce

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<sup>11</sup> Vehicle offsetting would be enabled within this approach through each importer having a "CO<sub>2</sub> account" analogous to a bank account. The currency of the credit would be grams CO<sub>2</sub>/km. The accounts would be set up and maintained by Waka Kotahi.

<sup>12</sup> The vehicle industry is concerned about the number of transitory traders in the used vehicle industry. They consider that many would actively evade their obligations to meet annual average fleet CO<sub>2</sub> targets and pay any charges, for example, by dissolving their businesses and establishing new ones.

<sup>13</sup> These criteria would include that the supplier:

- is registered as a vehicle importer with Waka Kotahi New Zealand Transport Agency
- has been operating continuously for at least five years and can reasonably be expected to remain in the business of importing vehicles and trading as the same company for the coming two years
- has not been convicted under the Fair Trading Act 1986 or the Motor Vehicle Sales Act 2003 in the past five years
- has not been convicted of a criminal offence involving dishonesty in the past five years.

vehicle emissions in a short space of time. Transfers provide a more nimble and simpler replacement to the arrangement of formal groupings as originally conceived by the consultation. The transfer will be affected by Waka Kotahi debiting the agreed overachievement from one supplier's CO<sub>2</sub> account and crediting that amount to the other supplier's CO<sub>2</sub> account. However, any price or other conditions of such transfers will be determined by the suppliers in question. Waka Kotahi would recover the administrative costs of this system from the industry. Limits on distributing or receiving transfers of CO<sub>2</sub> credits may need to be considered at a later point if unintended consequences are occurring.

57. Used vehicle importers would not be able to transfer CO<sub>2</sub> overachievement with new vehicle importers, and vice versa. This is to ensure that both the new and used vehicle segments reduce their emissions.

### (3) Charges and Offences

#### *Charges to incentivise meeting CO<sub>2</sub> targets*

58. I am recommending charges be imposed under the Land Transport Act 1998 to incentivise meeting the CO<sub>2</sub> targets and lead to a change in behaviour at a vehicle supplier level. These charges would be:

| Application of the Standard                                  | Charges From 1 January 2023 | Charges From 1 January 2025 | Measurement   |
|--|-----------------------------|-----------------------------|---|
| The Standard is applied to individual used imported vehicles | \$20                        | \$30                        | per gram CO <sub>2</sub> that a vehicle exceeds its target                    |
| The Standard is applied to individual new imported vehicles  | \$40                        | \$60                        | per gram CO <sub>2</sub> that a vehicle exceeds its target                    |
| The Standard is applied annually to new vehicle fleets       | \$50                        | \$75                        | per average gram CO <sub>2</sub> exceedance x the number of vehicles in fleet |
| The Standard is applied annually to used-import fleets       | \$25                        | \$37.50                     | per average gram CO <sub>2</sub> exceedance x the number of vehicles in fleet |

59. The charges would be land transport revenue and would go into the National Land Transport Fund. The charges are designed to incentivise behaviour that supports CO<sub>2</sub> reductions across the vehicle fleet, and will generate funds to contribute towards projects that lower emissions in the transport system.
60. These charges would be in effect from 1 January 2023 with 2022 being a reporting and monitoring year only.

61. The proposed charges are lower than those in the consultation document. These changes have been made in response to issues identified by the vehicle industry. Specifically:
- The per gram charge for new vehicle fleets has been reduced from \$100 per gram to \$50. This recognises that irrespective of the vehicles sought by domestic distributors, the final decisions about the vehicles supplied are made by overseas vehicle manufacturers.
  - The per gram charge for used-import fleets has been reduced from \$50 per gram to \$25. This recognises that used-vehicles have lower lifetime emissions in New Zealand than new vehicles.
  - There is a new charge of \$20 per gram for used-vehicle suppliers who comply on a vehicle-by-vehicle basis and \$40 per gram for individuals who import new vehicles and comply on a vehicle-by-vehicle basis. The lower amounts recognise that a per vehicle charge is imposed immediately. As well, with vehicle-by-vehicle compliance, a supplier would only fully benefit from offsetting within its fleet if it imports sufficient numbers of low emission vehicles ahead of high emission ones.
62. The charges are likely to be as low as they can be without compromising their effectiveness as an incentive to change behaviour. They are initially set at a lower level to enable a transition for the industry, and will then increase by 50% in 2025. After this increase, the resulting figures will still be below those originally proposed by the consultation document.
63. However, as it is difficult to know with certainty the effect the charges will have as an incentive to meet the targets, I propose an initial review of charges be carried out in 2024 together with the wider CO<sub>2</sub> target review. Reviews of charges will be performed with a view that rates continue to increase over time, so that overachievement is increasingly rewarded and underachievement increasingly discouraged<sup>14</sup>.
64. Waka Kotahi would be the administrator and enforcement agency for the Standard. It would be empowered to impose charges. It would also have the ability to require all necessary data from suppliers that it needs to fulfil this function.

#### *Offences for administrative misconduct*

65. To ensure the integrity of the data underpinning the Standard, I propose that offences be created for failing to keep the necessary accounts, or records, required for the Standard, or to provide information that is misleading, incorrect or incomplete. These offences would apply from 2023. I also propose that the penalty<sup>15</sup> for the offences be:
- for an individual, a fine not exceeding \$15,000;
  - for a person or an organisation other than an individual, a fine not exceeding \$75,000.
66. Waka Kotahi would be empowered to bring court proceedings where there appears to be intentional or reckless breaches of the reporting requirements, and penalties would be imposed on conviction.

#### **(4) Exceptions**

67. I propose that the Standard does not apply to the following light vehicles:

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<sup>14</sup> The penalty per gram in European regulation is NZD164 per gram.

<sup>15</sup> This penalty is the same as applies for the offence of failing to keep and provide records for the administration and enforcement of the regional fuel tax.

- vehicles intended primarily for military operational purposes
- agricultural vehicles/equipment that are primarily driven on farms, such as tractors, harvesters, mowers, toppers, bailers
- special interest vehicles<sup>16</sup>
- vintage vehicles<sup>17</sup> and veteran vehicles<sup>18</sup>
- scratch built vehicles and modified vehicles certified by the Low Volume Vehicle Technical Association Incorporated.

68. These exceptions acknowledge that some vehicles have specific social and historic value to some New Zealanders. The impact of not including these vehicle types on New Zealand's CO<sub>2</sub> emissions would be minimal, as the number of vehicles imported each year is very low and they tend to be driven less than other vehicles.

69. The importation of damaged vehicles not covered by the above exceptions will remain subject to the Standard when they reach entry certification, otherwise they could be deliberately imported and repaired as an avoidance strategy. Vehicles over 20 years of age would also remain subject to the Standard, where not covered by exceptions above.

#### **(5) Administration of the scheme**

70. Waka Kotahi would administer and enforce the Standard and the Ministry of Transport would provide ongoing policy support.

*The Standard will be supported by an online tracking and forecasting tool*

71. To help importers comply, Waka Kotahi will develop an online tracking and forecasting tool. This tool will allow importers to see how their CO<sub>2</sub> accounts would be affected if they purchase particular vehicles in international auctions. It would also help importers complying on a fleet-basis by easily allowing them to monitor how their actual average fleet CO<sub>2</sub> emissions are tracking, against their fleet targets. It would be populated with vehicle data obtained in the vehicle certification process.

#### *Standardising vehicle CO<sub>2</sub> values*

72. Currently New Zealand accepts vehicles assessed through five different drive-cycle tests. This can lead to different CO<sub>2</sub> values even for the same vehicle. Over time this issue will be improved through manufacturers using the Worldwide Harmonised Light Vehicle Test Procedure (WLTP). Thus for the Standard the WLTP will be the default test for determining values and values from other tests will be converted to it. The methodology and conversion formulas will be specified in Transport regulation using figures shown in Appendix 4. All figures in this Cabinet Paper and the consultation document are New European Driving Cycle (NEDC) figures.

73. Currently, the majority of vehicles entering New Zealand are assessed by the NEDC and the Japanese JC08 and 10-15 tests. These tests under-report emissions compared to the WLTP. European manufacturers have been required to use the WLTP from 1 September 2019, and Japanese manufacturers will be required to do so from 1 January 2021.

<sup>16</sup> Special interest vehicles are defined in Transport regulation as vehicles with historic value, or vehicles such as classic cars.

<sup>17</sup> Vintage vehicles are motor vehicles constructed on or after 1 January 1919 and are at least 40 years old on the date that they were registered, reregistered, or licensed.

<sup>18</sup> Veteran vehicles are motor vehicles constructed before 1 January 1919.

74. New Zealand will transition to the WLTP to enable a better assessment of vehicle emissions and our progress towards CO<sub>2</sub> targets. To facilitate this, I propose that vehicles manufactured from 1 January 2022 (regardless of whether used or new when imported) will need to include WLTP fuel economy and CO<sub>2</sub> emissions information in order to be certified for use on New Zealand roads. This should not create a supply constraint on vehicles given our major source markets of Europe and Japan will have had to align to WLTP testing prior to that date, though it may create impacts on suppliers using Australian models who have not adopted WLTP.
75. American-manufactured vehicles are assessed by a different, but modern, Environmental Protection Agency (EPA) test cycle which would continue to be accepted. These vehicles are under 1 percent of vehicle imports.
76. I also propose that New Zealand stop allowing traditional petrol and diesel vehicles into the fleet that have been assessed with the old Japanese 10/15 drive-cycle test from 1 July 2022. The CO<sub>2</sub> values from this test are too variable and could result in importers being either unfairly penalised with charges, or not penalised enough relative to other importers.
77. Originally I considered restricting all vehicles certified to the Japanese 10/15 drive-cycle test—including hybrids and electric vehicles. However, this would restrict a proportion of older, and therefore more affordable, low emission hybrid vehicles. To enable low-income households to access fuel savings and contribute to the 105g target, we will permit hybrid and electric vehicles on the old Japanese 10/15 test cycle for now.
78. The 2015 “Dieselgate” scandal has revealed in Europe and USA a deliberate and growing gap between the emissions measured in testing versus real-world performance<sup>19</sup>. One result has been the development of more modern Euro standards that place increasing pressure on manufacturers that tested emissions are reflected in real world performance, plus more recently the inclusion of CO<sub>2</sub> into vehicle laboratory testing. Euro 6 became mandatory in Europe in 2015 and equivalent standards are now incorporated in North America, India and China. New Zealand presently accepts Euro 5 on new vehicles and Euro 4 on used vehicles, which were superseded respectively 6 and 11 years ago. Less than 25% of Euro-standard based vehicles entering New Zealand in 2020 meet Euro 6. I will therefore establish a phased approach over this decade for New Zealand light vehicles to transition to the latest Euro 6 standards for new and used vehicles, and equivalent standards from other markets. The phasing will need to take into account our used vehicle import market and provide notice to our new vehicle industry as it would require the industry to supply improved vehicles. In addition to this giving greater certainty that stated CO<sub>2</sub> figures conform to real-world performance, this will have an important impact on reducing harmful NO<sub>x</sub>, carbon monoxide, and particulate emissions.
79. In my 2024 review, I will consider how sufficient the current light vehicle emission policy is on reducing CO<sub>2</sub> emissions and in enabling good quality emissions data. I will review whether it is appropriate to progressively stop allowing entry certification of vehicles assessed to the other drive cycle tests, such as the Japanese ‘JC08’ test. I will also review findings from international research regarding the degree that WLTP values reflect real-world emissions, to determine whether future policy changes are warranted.<sup>20</sup> I will consider impacts on vehicle safety in performing my review.

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<sup>19</sup> VW was found to have ‘defeat devices’ meaning NO<sub>x</sub> was 40 times higher in real world than in testing. An ICCT study showed an average European real-world CO<sub>2</sub> emission divergence of 40% in 2015.

[https://theicct.org/sites/default/files/publications/ICCT\\_RoadTested\\_201709.pdf](https://theicct.org/sites/default/files/publications/ICCT_RoadTested_201709.pdf)

<sup>20</sup> The EU plans to perform ongoing real-world testing of WLTP values and publish findings throughout this decade, due to historical and present discrepancies between vehicle emission test cycles and real-world results.

80. Also there will be a small number of vehicles with no manufacturer's CO<sub>2</sub> value. In this situation I propose that Waka Kotahi be empowered to ascribe a suitable value based on authoritative information about the same or similar vehicles, and that if no suitable value can be found, the vehicle will be deemed to exceed its weight-adjusted target by a set value of 50g / km.

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81. The Ministry of Transport considers that charges are necessary to incentivise meeting CO<sub>2</sub> targets. However, the ideal outcome is for importers to adjust the mix of vehicles they are supplying so that no charges are imposed. The proposed design of the Standard seeks to incentivise this outcome by:

- reviewing the stringency of the CO<sub>2</sub> targets in 2024. If the targets prove too aggressive, or not aggressive enough, they would be reset;
- having split targets for passenger and commercial vehicles;
- having a single-target for small vehicles up to 1,200 kilograms (tare weight);
- allowing the used-vehicle sector to meet the target on a vehicle consignment basis, which allows low emitting vehicles to offset high emitting vehicles (as shown in Appendix 3);
- the flexibility mechanisms of transferring credits, banking and borrowing.

82. Another mitigating factor is the requirement, since 1 March 2020, for all used-vehicle imports to have electronic stability control (ESC). Anecdotal data suggests this is already having the co-benefit of increasing the supply of low emission vehicles.

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### Implementation

89. The Ministry of Transport will work with the Parliamentary Counsel Office to develop the necessary legislation for the Standard. Waka Kotahi will develop, build, test and implement the Information Technology system and business processes to operationalise it.

90. The intention is for a Bill to be drafted and introduced in early 2021 and for the Standard and accompanying regulations to be in force and taking effect early 2022. Waka Kotahi will need 18 months to fully operationalise the Standard, meaning this won't occur until mid 2022.

### Financial Implications

91. Implementation of the Standard is not possible without additional funding. Specifically, \$28.7 million in operating funding over 4 years, and \$16.2 million in capital is needed. A breakdown of the operating funding is in Table 3..

**Table 3: Operating funding to implement the Clean Car Standard**

| Breakdown of costs   | 4-year cost (\$ million) |
|--|--------------------------|
| Waka Kotahi resources (staff and other direct costs) to operate the Standard (information provision, application processing, management of the importer portal, financial management, compliance activity) | \$5.3                    |
| IT infrastructure and system maintenance   | \$3.7                    |
| Other operational activities (merchant fees, call centre costs, legal costs associated with enforcement activities, staff outsourcing contract charges and other direct costs)                             | \$3.1                    |
| Back office support (including corporate charges for premises, management overhead)  | \$7.4                    |
| Depreciation and capital charge  | \$9.2                    |
| <b>Total operating costs</b>   | <b>\$28.7</b>            |

92. The capital costs relate to one-off implementation costs to create a new online system to process all vehicle import transactions, establish and maintain an importer register, and establish links with the Motor Vehicle Register and Waka Kotahi's financial systems.

93. Funding will be sought as part of Budget 2021 – this is similar to the funding request considered for Budget 2020.

### Legislative Implications

94. I propose to include the legislative amendments needed for the Standard in a Bill to amend the Land Transport Act 1998, and if necessary, the Land Transport Management Act 2003. I will be seeking a priority of Category 2 for the Bill for the 2021 Legislative Programme meaning it must be passed in the year.

95. Regulations and rules will be required to give full effect to the Standard. They will specify the administrative, compliance and enforcement responsibilities of Waka Kotahi, and the operational details of the Standard. The primary and secondary legislation would be drafted concurrently with the intention that the secondary legislation will be in force by early 2022.

### Impact Analysis

#### *Cost Benefit Analysis*

96. The effectiveness of the Standard in accelerating the supply of low emission light vehicles and in reducing CO<sub>2</sub> emissions is affected by a large number of factors, many of which are subject to a high degree of uncertainty.

97. Given the uncertainty, the Ministry of Transport's analysis has taken a conservative approach to estimation. Its cost benefit analysis indicates that the Standard would be a cost effective way of reducing emissions. The net present value ranges from \$248 million to \$836 million, and the benefit to cost ratio ranges from 2.3 to 3.8. The total CO<sub>2</sub> emissions reduction ranges from 1.2

million tonnes to 3 million tonnes. The marginal abatement cost<sup>21</sup> per tonne of CO<sub>2</sub> ranges from -\$160 to -\$344. This indicates that the benefits in fuel savings and CO<sub>2</sub> reductions are in the order of \$160 to \$344 from every tonne of CO<sub>2</sub> avoided through the Standard.

98. These results were based on a sales-weighted target of 105 gram of CO<sub>2</sub> emissions by 2025 with a \$75 per gram charge for new imports and \$38 per gram charge for used-vehicle imports.
99. Since the cost-benefit analysis was completed, the design of the Standard has been improved by the changes suggested by the vehicle industry. These changes will make the Standard easier to comply with and increase the likelihood that the Standard's targets will be achieved.
100. The level of uncertainty is likely to increase over the next two to three years, as the economy recovers from the impact of Covid-19. Given the impending global economic slowdown with consumers and businesses being less likely to take on additional risk, this would have significant impact on vehicle purchase decisions, which will affect the supply of vehicles over the next few years.

#### *Regulatory Impact Statement*

101. A Regulatory Impact Statement has been prepared and is attached to this Cabinet paper. It has been assessed by an inter-agency panel as partially meeting the quality assurance criteria.
102. The Regulatory Impact Statement provides some indication of the impact the proposal will have on businesses. However the Regulatory Impact Statement acknowledges that some impacts are unknown and will depend on business performance and COVID-19 recovery. As such, the Ministry of Transport and Waka Kotahi will monitor the changes in the industry as the policy is implemented.

#### *Climate Implications of Policy Assessment (CIPA)*

103. The Ministry for the Environment (MfE) has been consulted and confirms that the CIPA requirements do apply to this proposal. MfE is highly supportive of the proposal and expects that it will deliver substantial reductions to CO<sub>2</sub> emissions over time. The modelling of the emissions reductions are subject to high levels of uncertainty, but it is MfE's view that the estimated impact will likely be at the high end of the emissions reductions range provided. This assessment is based on analysis of the Ministry of Transport's modelling, comparative modelling and the effects of similar international schemes.
104. The CIPA Disclosure Sheet is attached as Appendix 5.

#### *Population impact*

105. There are no significant gender, disability, or other population implications from the Standard. Modified vehicles needed by people with disabilities are to be exempt from the Standard.
106. People and businesses who require vehicles such as utes, where emission reducing technology is still coming to the market, could potentially face an increase in vehicle prices in the early years of the scheme. However, the supply of low emission options is expected to continue to

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<sup>21</sup> A marginal abatement cost is a measure of the cost-effectiveness of the policy intervention in reducing GHG emissions. It is calculated by dividing the net present value (NPV) of the intervention with the expected reduction in emissions from implementation of the intervention. When the estimated MAC is negative, it indicates implementation of the policy intervention has a net benefit.

increase across all vehicle classes and prices are expected to fall. For example, a Toyota Hilux hybrid ute<sup>22</sup> and a fully electric LDV ute<sup>23</sup> could be available in New Zealand in late 2021. Ford is working to release a plug-in hybrid Ford Ranger ute in other countries' vehicle markets in 2022<sup>24</sup>.

107. As well, where higher emission vehicles, such as utes, are imported and the supplier offsets the higher emissions with lower emitting vehicles then no charges would be imposed.
108. Over 70 percent of annual vehicle sales are of vehicles already in the New Zealand fleet. These vehicles will not be subject to the Standard. This minimises the likelihood that groups such as lower income households and younger workers and students would be negatively affected by the Standard.

## Human Rights

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

## Consultation

### *Departmental consultation*

110. The following agencies were consulted in the development of this paper: Waka Kotahi, Treasury, Ministry for the Environment, Department of Conservation, Department of Internal Affairs, Ministry of Defence, New Zealand Defence Force, Ministry of Social Development, Office for Disability Issues, Ministry of Justice, Ministry of Foreign Affairs and Trade, Ministry of Business, Innovation and Employment, New Zealand Customs Service, Ministry for Primary Industries, Inland Revenue, Te Puni Kokiri, and the Energy Efficiency and Conservation Authority. The Department of Prime Minister and Cabinet have been informed.

### *Outcome of the public consultation on the Clean Car Reforms*

111. The consultation on the Clean Car Reforms took place over 9 July–20 August 2019. People could comment through Survey Monkey, or by emailing a submission to the Ministry of Transport (the Ministry). An extension to 10 September 2019 was granted for key stakeholder organisations to enable them to canvass their members' views.
112. The Ministry received 860 Survey Monkey responses, 196 email submissions and 1,644 emails from the [action@campaignnow.co](mailto:action@campaignnow.co) email address set up by the New Zealand National Party. The [action@campaignnow.co](mailto:action@campaignnow.co) emails did not comment on the Standard. A summary of consultation responses and copies of submissions are on the Ministry's website.
113. There was significant support for the Standard from Survey Monkey respondents (87 percent) and from those who made a written submission (70 percent). Overall, 85 percent of submitters who engaged with the discussion document supported the Standard. Opposition to the Standard came from a few individuals, and the motor vehicle industry.

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<sup>22</sup> <https://www.driven.co.nz/news/a-hybrid-version-of-the-toyota-hilux-ute-is-on-its-way/>

<sup>23</sup> <https://www.driven.co.nz/news/nz-s-first-ev-ute-fully-electric-ldv-t60-set-to-land-in-2021/>

<sup>24</sup> <https://www.stuff.co.nz/motoring/121613572/ford-working-on-plugin-ranger>

### *View of the motor vehicle industry and the Automobile Association*

114. There are a range of views within the vehicle industry about how best to incentive low emission vehicles. During the consultation process the Motor Industry Association (MIA) (representing new vehicle distributors) and the Automobile Association expressed a strong preference for a consumer demand-based incentive such as the Clean Car Discount. They opposed the Standard, as consulted on, as they considered the target to be too aggressive.
115. Toyota New Zealand, was an exception to this opposition in the new vehicle sector. It supported the Standard (albeit with a more gradual phase in), arguing it would enable new vehicle distributors to better negotiate the supply of larger volumes of low emission vehicles from their overseas manufacturers.
116. The MIA now supports the Government introducing a fuel economy standard but with a 2030 target year, and only if *“it is implemented alongside a progressive feebate scheme so that the two policies work in combination to accelerate the uptake of low emission vehicles.”*
117. The Imported Vehicle Industry Association (representing used importers) has consistently opposed both the Standard and Clean Car Discount. Nevertheless it has been constructive in suggesting a number of modifications to the design of the Standard.

### **Communications**

118. I intend to announce the Clean Car Standard in consultation with the Prime Minister’s Office. Waka Kotahi will develop communication and education materials for the vehicle industry.

### **Proactive Release**

119. I propose to proactively release this Cabinet paper, and the associated cost benefit analysis, the Regulatory Impact Statement, and the climate implications of policy assessment, subject to any necessary redactions. This would be done within 30 business days of decisions being confirmed by Cabinet.

### **Recommendations**

The Minister of Transport recommends that Cabinet:

1. **note** that the recommendations on the Clean Car Standard have been informed by public consultation and by workshops with the vehicle industry

#### *Application and commencement of the Clean Car Standard*

2. **agree** that the Clean Car Standard will come into effect during 2022 with vehicle importers being subject to its registration and reporting requirements and with the obligations to meet annual CO<sub>2</sub> targets applying from 1 January 2023
3. **agree** that the Clean Car Standard apply only to new and used light vehicles (vehicles under 3.5 tonnes) being imported into New Zealand of the following vehicle classes<sup>25</sup>: MA (passenger car),

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<sup>25</sup> These are Waka Kotahi vehicle equipment standards classifications

MB (forward control passenger vehicle), MC (off-road passenger vehicle), MD1 and MD2 (omnibus vehicles) and NA (light goods vehicle)

4. **agree** that the measurement of vehicle CO<sub>2</sub> emissions and fuel efficiency be grams CO<sub>2</sub> per kilometre

#### *Headline CO<sub>2</sub> targets*

5. **agree** that the first headline CO<sub>2</sub> target be 105 grams CO<sub>2</sub> per kilometre (based on the New European Drive Cycle, or NEDC, test cycle)
6. **agree** that the 105 grams CO<sub>2</sub> target be split into separate targets for cars and sport utility vehicles (SUVs) of 102 grams, and vans, utes and light trucks of 132 grams
7. **agree** that to build confidence to proceed with the Clean Car Standard, the suitability of the CO<sub>2</sub> targets (including the split targets) be reviewed in the first half of 2024, with a view to recalibrating them if they prove either too aggressive, or not aggressive enough, but only in a way that is consistent with the Emissions Reduction Plan.
8. **agree** that the 2024 review take into account impacts on emissions, vehicle safety, affordability, and availability
9. **invite** the Minister of Transport to determine the terms of reference for the above review and to commission further interim reviews of targets as and when deemed necessary due to changes in the vehicle market

#### *Headline target year and future CO<sub>2</sub> targets*

10. **agree** that the headline target year will be EITHER
  - 10.1. set for **2025**, acknowledging that this will be very challenging for the vehicle industry to supply sufficient numbers of affordable low and zero emission vehicles, even with further policies to lower the upfront cost of low emission vehicles
  - OR
  - 10.2. set for **2026**, acknowledging that policies to lower the upfront cost of low emission vehicles will be essential to hitting this target
  - OR
  - 10.3. set for **2028**, and note that this will increase the gap between the trajectory of transport emissions and with the wider climate change targets the Government has set.
11. **invite** the Minister of Transport to report back to the Cabinet Environment, Energy and Climate Committee with recommendations for provisional CO<sub>2</sub> targets for 2030 and 2035 informed by the advice of the Climate Change Commission at the same time in 2021 as the Committee considers decisions on the Emissions Reduction Plan to respond to New Zealand's first emissions budgets.
12. **agree** to set CO<sub>2</sub> targets on an ongoing basis such that there are always targets set for at least 12 months into the future, and to maintain one or more provisional CO<sub>2</sub> targets that are at least five or more years in the future, and that such targets are to be ambitious, achievable, and clear

*Annual targets to phase-in the headline CO<sub>2</sub> targets*

13. **agree** that the CO<sub>2</sub> targets be phased in progressively from 2022 and strengthen annually until reaching 105 g/km in the headline target year, as described by Appendix 1.

*Determination and labelling of vehicle CO<sub>2</sub> values*

14. **note** that a vehicle's CO<sub>2</sub> emissions will be determined by its manufacturer
15. **agree** that where vehicles have no manufacturer's CO<sub>2</sub> value, Waka Kotahi will ascribe a suitable value based on authoritative information on the same or similar vehicles, and that if no information exists the vehicle will be deemed to exceed its weight-adjusted target by 50g
16. **agree** the values of vehicle CO<sub>2</sub> emissions for all targets and vehicles be determined by, or converted to, the three-phase Worldwide Harmonised Light Vehicle Test Procedure (WLTP) with the methodology and conversion formulas for this purpose being prescribed in Transport regulation
17. **agree** that vehicles manufactured from 2022 onwards must have their fuel efficiency and CO<sub>2</sub> emission values assessed through a WLTP cycle test, or if not available, by the American Environmental Protection Agency (EPA) test.
18. **note** that vehicle fuel labelling information will need to be transitioned to using WLTP and expanded to include CO<sub>2</sub> emission information.
19. **agree** that from 1 July 2022 New Zealand stop allowing vehicles into the fleet whose fuel efficiency and CO<sub>2</sub> emission values have been assessed through the pre-2008 Japanese 10/15 drive-cycle test, except where they are hybrid or electric vehicles.
20. **agree** to update the Land Transport Rule: Vehicle Exhaust Emissions 2007 by the end of 2022 with a phased approach on used and new light vehicles to meet the latest Euro 6 and equivalent standards from other markets this decade.
21. **agree** that in 2024 a review consider staged timeframes for ending or restricting the entry certification of vehicles certified to the Japanese 10/15, the New European Drive Cycle and the Japan 08 drive cycle tests, and review international research regarding accuracy of WLTP values reflecting real world emissions, and that such reviews consider any adverse effects or opportunities on vehicle emission policy has on vehicle safety
22. **invite** the Minister of Transport to determine the terms of reference for the 2024 review

*The targets for individual vehicle suppliers will be weight-adjusted*

23. **agree** that the headline targets be weight adjusted formulaically to afford heavier vehicles, such as utes, numerically higher targets than lighter vehicles
24. **note** that weight adjusted targets provide no incentive for people to opt for smaller vehicles over larger ones, and additional policies that influence consumers' vehicle decisions are still needed, such as a clean car discount
25. **agree** that small vehicles with a tare weight under a specific value all have the same non-weight adjusted annual targets and that the targets would be set through the weight adjustment formula, provisionally for vehicles under 1,200 kilograms, with the final weight value to be agreed by the Minister of Transport following further advice on the most recent vehicle registration data and how to apply appropriate pressure on emission reduction on vehicles with different weights

*There will be two compliance regimes – fleet based and vehicle-by-vehicle*

26. **agree** that the default for the Clean Car Standard is that it applies to all new vehicles imported by the official vehicle distributors on a fleet-average basis, and to all imported used-vehicles and to new vehicles imported by individuals on a vehicle-by-vehicle basis
27. **agree** that importers of used vehicles may apply to Waka Kotahi to implement the Clean Car Standard on a fleet-average basis and the criteria to assess their applications be that the importer:
- 27.1. is registered as a vehicle importer with Waka Kotahi
  - 27.2. has operated continuously as a vehicle importer for at least 5-years and can reasonably be expected to remain in the business of importing vehicles and trading as the same company for the coming 2-years
  - 27.3. has not been convicted under the Fair Trading Act 1986 or the Motor Vehicle Sales Act 2003 in the past 5-years
  - 27.4. has not been convicted of a criminal offence involving dishonesty in the past 5 years

*CO<sub>2</sub> accounts for vehicle importers*

28. **agree** that Waka Kotahi will establish and maintain CO<sub>2</sub> accounts for all importers whether complying on a vehicle-by-vehicle or a fleet-average basis

*For vehicle importers complying on a vehicle-by-vehicle basis*

29. **agree** that when an importer, complying on a vehicle-by-vehicle basis brings in vehicles with CO<sub>2</sub> emissions below their respective targets, credits would accrue in its CO<sub>2</sub> account, and if the account has sufficient credits, these credits would offset the debits from any vehicles that exceed their relevant targets
30. **agree** that when a vehicle causes an importer's CO<sub>2</sub> account to move into deficit, a per CO<sub>2</sub> gram charge be paid (or CO<sub>2</sub> credit be transferred from another willing account holder) before the vehicle can be cleared through the vehicle certification process

*For vehicle importers complying on a fleet-average basis*

31. **agree** that when an importer complying on a fleet-average basis brings in vehicles, the vehicles' CO<sub>2</sub> emission credits and debits offset each other, and the end of year CO<sub>2</sub> emissions result will show separately the light passenger vehicle and the light commercial vehicle fleets' average weight, average actual CO<sub>2</sub> emissions, and average target emissions, and any adjustments made by CO<sub>2</sub> transfers with other importers,
32. **agree** that for importers, complying on a fleet-average basis, a per CO<sub>2</sub> gram charge be paid on the amount the imported fleet's average CO<sub>2</sub> emissions (adjusted for any CO<sub>2</sub> transfers made with other importers) exceed the fleet's average target emissions multiplied by the number of vehicles in the fleet

*Charges and offences*

33. **agree** to have the following charges imposed under the Land Transport Act 1998 to incentivise meeting CO<sub>2</sub> targets:

| Application of the Standard                                  | Charges From 1 January 2023 | Charges From 1 January 2025 | Measurement   |
|--|-----------------------------|-----------------------------|---|
| The Standard is applied to individual used imported vehicles | \$20                        | \$30                        | per gram CO <sub>2</sub> that a vehicle exceeds its target                    |
| The Standard is applied to individual new imported vehicles  | \$40                        | \$60                        | per gram CO <sub>2</sub> that a vehicle exceeds its target                    |
| The Standard is applied annually to new vehicle fleets       | \$50                        | \$75                        | per average gram CO <sub>2</sub> exceedance x the number of vehicles in fleet |
| The Standard is applied annually to used-import fleets       | \$25                        | \$37.50                     | per average gram CO <sub>2</sub> exceedance x the number of vehicles in fleet |

34. **agree** that the charges in recommendation 34 above, would be land transport revenue and would go into the National Land Transport Fund, and will be used to contribute towards projects that lower emissions in the transport system
35. **agree** provisionally to increase these charges in 2025, subject to a review of the effectiveness of the incentive effect of the charges in recommendation 33 above, in the first half of 2024, and repeat such reviews from 2027 on a five year basis
36. **direct** officials from the Ministry of Transport to report to the Minister of Transport on the outcome of reviews, including proposing future increases to charges where this would help accelerate reductions to transport emissions
37. **agree** that it be an offence for an importer to fail to keep the necessary accounts, or records, required to provide the data needed for the Standard, or to knowingly provide information that is incorrect or incomplete
38. **agree** that the penalty for the offence in recommendation 37 above is:
- 38.1. for an individual, a fine not exceeding \$15,000; and
- 38.2. for a person or an organisation other than an individual, a fine not exceeding \$75,000
39. **agree** that Waka Kotahi will develop a register of vehicle importers to assist in administering the Standard, and that only importers listed on this register be able to get entry certification on vehicles for use on New Zealand roads
40. **agree** that where an importer fails to comply with their obligations and requirements under the Clean Car Standard, Waka Kotahi may remove the importer from the register of vehicle importers

for a period of up to five years. Waka Kotahi will also have the power to investigate and access records

41. **agree** that Waka Kotahi be empowered to impose the charges in recommendation 38 above and to take court proceedings where breaches of the reporting requirements in recommendation 37 above have occurred

#### *Flexibility mechanisms*

42. **agree** that new vehicle distributors and used-vehicle importers that comply on a fleet-average basis be able to bank any overachievement of their annual CO<sub>2</sub> targets to offset future underachievement over the following three years, and this ability apply from 2023
43. **agree** that new vehicle distributors and used-vehicle importers that comply on a fleet-average basis be able to underachieve an annual CO<sub>2</sub> target in 2023 and 2024 and 2025 (but not subsequently) and make the underachievement up in the following year by overachieving
44. **agree** that a new vehicle distributor (transferor) is permitted to transfer some or all of its CO<sub>2</sub> target overachievement to one or more other new vehicle distributors (transferee), and do so during the course of a year, and that a corresponding credit will be applied to the transferee's CO<sub>2</sub> account and debit taken from the transferor's CO<sub>2</sub> account, and that any price or other conditions of such transfers are to be determined by the distributors in question
45. **agree** that in the same fashion as outlined in recommendation 44, used vehicle importers may transfer over-achievement of CO<sub>2</sub> targets to other used vehicle importers
46. **agree** that in providing for credit transfers between suppliers that Waka Kotahi would recover the system and administration costs involved
47. **agree** that limits on distributing or receiving transfers of CO<sub>2</sub> credits may be later added if unintended consequences are occurring

#### *Standard does not apply to certain vehicles*

48. **agree** that the Clean Car Standard does not apply to the following vehicles:
  - 48.1. vehicles intended primarily for military operational purposes
  - 48.2. agricultural vehicles/equipment that are primarily driven on farms, such as, tractors, harvesters, mowers, toppers, bailers
  - 48.3. special interest vehicles
  - 48.4. vintage vehicles and veteran vehicles
  - 48.5. scratch built vehicles and modified vehicles certified by the Low Volume Vehicle Technical Association Incorporated

#### *Waka Kotahi will be the administrator*

49. **agree** that Waka Kotahi will be responsible for the implementation, administration and enforcement of the Clean Car Standard

### *Additional incentives*

50. **agree** in principle to support the introduction of the Clean Car Standard by implementing additional incentives to increase the purchase of low emission vehicles and reduce the number of high emission vehicles in the market

### *Financial implications*

51. **note** that new funding will be required to implement and administer the Clean Car Standard, and \$28.7 million in operating funding over 4 years, and \$16.2 million in capital, will be sought as part of Budget 2021
52. **note** that additional capability funding will be sought as part of the transport emissions Budget initiative

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### *Communications*

54. **note** that this Cabinet paper, and the associated cost benefit analysis, the Regulatory Impact Statement, and the climate implications of policy assessment, will be proactively released, subject to any necessary redactions, within 30 business days of decisions being confirmed by Cabinet

### *Legislation*

55. **invite** the Minister of Transport to issue drafting instructions to the Parliamentary Counsel Office to give legislative effect to the policy proposals above (including for primary legislation and associated regulations) including any necessary consequential amendments, savings and transitional provisions
56. **authorise** the Minister of Transport, in consultation with the Minister of Climate Change, to make decisions that are consistent with the overall policy, and support its achievement of emissions reductions, provided that these decisions are confirmed when the Bill is considered for introduction.

### *Co-operation agreement support*

57. **note** that the Clean Car Standard is included in the Cooperation Agreement between the Labour and Green parties and that the Green Party has been involved in the development of this Cabinet paper
58. **note** that the Green Party supports the Clean Car Standard, and considers the headline target year should be either 2025 or 2026 and that additional policies to reduce transport emissions are necessary.

Authorised for Lodgement

Hon Michael Wood  
**Minister of Transport**

Dated: \_\_\_\_\_

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## Appendix 1: Annual CO<sub>2</sub> Phase-In Targets

If 2025 is selected as a target year:

| Grams CO <sub>2</sub> /km (NEDC) | 2020<br><i>actual</i> | 2021<br><i>projected</i> | 2022 | 2023 | 2024 | 2025 |
|----------------------------------|-----------------------|--------------------------|------|------|------|------|
| Cars and SUVs                    | 161                   | 150                      | 140  | 130  | 120  | 102  |
| Vans and Utes                    | 220                   | 220                      | 205  | 190  | 175  | 132  |
| Average                          | 171                   | 162                      | 153  | 139  | 128  | 105  |

If 2026 is selected as a target year:

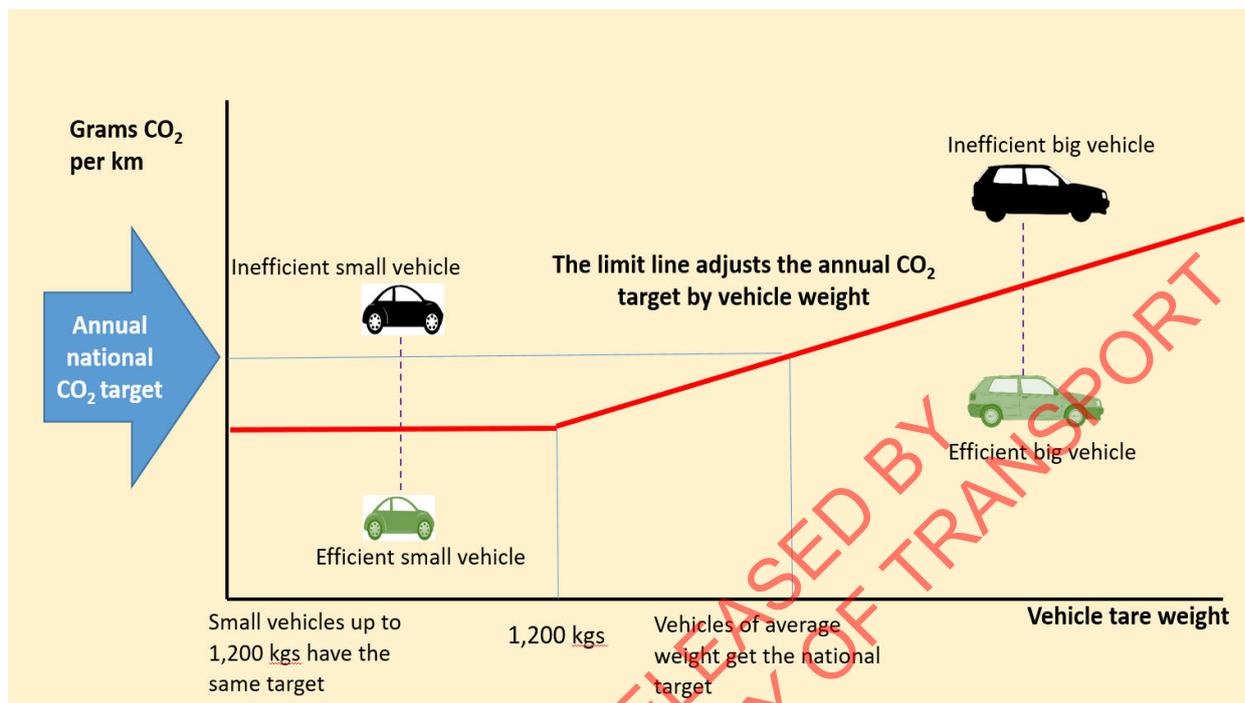
| Grams CO <sub>2</sub> /km (NEDC) | 2020<br><i>actual</i> | 2021<br><i>projected</i> | 2022 | 2023 | 2024 | 2025 | 2026 |
|----------------------------------|-----------------------|--------------------------|------|------|------|------|------|
| Cars and SUVs                    | 161                   | 150                      | 140  | 130  | 120  | 110  | 102  |
| Vans and Utes                    | 220                   | 220                      | 205  | 190  | 175  | 150  | 132  |
| Average                          | 171                   | 162                      | 153  | 139  | 128  | 116  | 105  |

If 2028 is selected as a target year:

| Grams CO <sub>2</sub> /km (NEDC) | 2020<br><i>actual</i> | 2021<br><i>projected</i> | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
|----------------------------------|-----------------------|--------------------------|------|------|------|------|------|------|------|
| Cars and SUVs                    | 161                   | 155                      | 150  | 145  | 140  | 135  | 130  | 125  | 102  |
| Vans and Utes                    | 220                   | 220                      | 210  | 200  | 190  | 180  | 170  | 160  | 132  |
| Average                          | 171                   | 166                      | 160  | 153  | 147  | 142  | 136  | 129  | 105  |

Note: 2021 and 2022 figures assume a positive change in consumer behaviour and voluntary industry action towards emission reduction which may or may not occur, given no charges for the Standard would yet be in force. The 2025 or 2026 target year scenarios would need, and assume, greater industry effort and additional Government policy than what is needed under a 2028 target year scenario.

## Appendix 2: The CO<sub>2</sub> weight adjusted standard



For individual importers' fleet targets, the headline targets will be weight adjusted using the following formula:

$$\begin{aligned} \text{Supplier's CO}_2 \text{ fleet target} &= \text{annual light vehicle (car and SUV) target} + a \times (M - M_0) \\ &= \text{annual light vehicle (ute and van) target} + a \times (M - M_0) \end{aligned}$$

$a$  = the slope of the limit line. This line will be derived through correlating vehicle tare weights and vehicle CO<sub>2</sub> emissions of the vehicles (cars and SUVs or utes and vans) entering New Zealand in a past year (eg 2021)

$M$  = the weighted average tare weight of the light vehicles (cars and SUVs) imported by a supplier

$M_0$  = the weighted average tare weight of all light vehicles (utes and vans) imported.

For individual vehicles the headline targets will be weight adjusted using the following formula:

$$\begin{aligned} \text{Cars and SUVs vehicle CO}_2 \text{ target} &= \text{annual Cars and SUV vehicle target} + a \times (V - V_0) \\ \text{Utes and vans vehicle CO}_2 \text{ target} &= \text{annual Utes and Vans vehicle target} + a \times (V - V_0) \end{aligned}$$

$a$  = the slope of the limit line. This line will be derived through correlating vehicle tare weights and vehicle CO<sub>2</sub> emissions of the vehicles (cars and SUVs or utes and vans) entering New Zealand in a past year (eg 2021)

$V$  = the tare weight of the vehicle

$V_0$  = the weighted average tare weight of all light vehicles imported (cars and SUVs or utes and vans).

Vehicles below 1200kg are to be treated as though they weigh 1200kg. This figure is subject to being finalised.

Using 2019 vehicle data, the value of  $a$  is 0.09 and the average weight was 1438kg for cars and SUVs.

The value of  $a$  is 0.04 and the average weight was 1998kg for utes and vans.

These figures will be recalculated closer to the adoption of the Clean Car Standard using more recent data.

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## Appendix 3: Worked examples of the vehicle-by-vehicle approach

In the first example, a used vehicle supplier imports seven vehicles in the order in the table. Through importing the first three low emission vehicles it has enough emission credits to offset the following four vehicles, which have CO<sub>2</sub> emissions that exceed their target emissions. For this consignment of vehicles no charge is payable.

The annual target applying in this example is a year or two into the Standard being in place; the exact scenario would change depending on the agreed annual phase-in CO<sub>2</sub> and weight-adjusted targets for the Standard.

| Make   | Model   | Weight Adjusted Target | Actual CO <sub>2</sub> emissions | Difference (+ve Debit) (-ve Credit) | Cumulative Balance | Cumulative charge (\$20 per gram) |
|--------|---------|------------------------|----------------------------------|-------------------------------------|--------------------|-----------------------------------|
| Toyota | Prius P | 146                    | 39                               | -107                                | -107               | Nil                               |
| Toyota | Prius P | 146                    | 39                               | -107                                | -214               | Nil                               |
| Nissan | Leaf    | 153                    | 0                                | -153                                | -367               | Nil                               |
| Toyota | Wish    | 145                    | 198                              | 53                                  | -314               | Nil                               |
| Nissan | X-Trail | 154                    | 181                              | 27                                  | -287               | Nil                               |
| Ford   | Ranger  | 191                    | 214                              | 23                                  | -264               | Nil                               |
| Nissan | Patrol  | 265                    | 333                              | 68                                  | -196               | nil                               |

However, if vehicles are imported without the offset of low emission vehicles, then charges are payable. In the second example, the four higher emitting vehicles from the first example are imported with no offset from low emitting ones. The total level of charges across the four vehicles is \$3,420.

| Make   | Model   | Weight Adjusted Target 2022 | Actual CO <sub>2</sub> emissions | Difference (+ve Debit) (-ve Credit) | Cumulative Balance | Cumulative charge (\$20 per gram) |
|--------|---------|-----------------------------|----------------------------------|-------------------------------------|--------------------|-----------------------------------|
| Toyota | Wish    | 145                         | 198                              | 53                                  | 53                 | \$1,060                           |
| Nissan | X-Trail | 154                         | 181                              | 27                                  | 80                 | \$1,600                           |
| Nissan | Patrol  | 265                         | 333                              | 68                                  | 121                | \$2,960                           |
| Ford   | Ranger  | 191                         | 214                              | 23                                  | 144                | \$3,420                           |

## Appendix 4: Test Cycle Conversions

The following conversion formulas will apply when converting between test cycles. These were determined by independent research undertaken in 2020 by the ICCT report titled “*Methods of converting the type approval fuel economy and CO<sub>2</sub> emission values of light vehicles: An analysis for New Zealand*”.

| From Cycle | To Cycle | Fuel   | a      | b (gCO <sub>2</sub> /km) | Standard Error of Prediction (gCO <sub>2</sub> /km) |
|------------|----------|--------|--------|--------------------------|---|
| 4P-WLTP    | 3P-WLTP  | Petrol | 1.1569 | -31.0519                 | 6.35  |
| NEDC       |          |        | 1.1194 | -1.1618                  | 13.12   |
| JC08       |          |        | 0.9695 | 24.6742                  | 10.08   |
| CAFE       |          |        | 1.2094 | -16.4856                 | 7.95  |
| 10-15 Mode |          |        | 0.9353 | 39.774                   | 12.52   |
| 4P-WLTP    | 3P-WLTP  | Diesel | 1.0497 | -14.4674                 | 4.49  |
| NEDC       |          |        | 1.0871 | 12.73                    | 10.68   |
| JC08       |          |        | 0.9695 | 27.4167                  | 11.2  |
| CAFE       |          |        | 1.1589 | -16.5771                 | 5.11  |
| 10-15 Mode |          |        | 0.9353 | 44.1947                  | 13.91   |

Relations are of the form: 3P-WLTP = a(From Cycle) + b

Both 3P-WLTP and From Cycle are in units of gCO<sub>2</sub>/km.

4P-WLTP to 3P-WLTP relation should not be used unless data for an algebraic calculation is not available.

Utilising the conversions above, the following table illustrates how charges can be calculated for vehicles entering New Zealand on different test cycles:

|                    | Petrol |           |             |            |              | Diesel |           |             |            |              |
|--------------------|--------|-----------|-------------|------------|--------------|--------|-----------|-------------|------------|--------------|
|                    | Factor | New Fleet | New Vehicle | Used Fleet | Used Vehicle | Factor | New Fleet | New Vehicle | Used Fleet | Used Vehicle |
| Base Charge (NEDC) |        | \$ 50.00  | \$ 40.00    | \$ 25.00   | \$ 20.00     |        | \$ 50.00  | \$ 40.00    | \$ 25.00   | \$ 20.00     |
| WLTP               | 0.893  | \$ 44.67  | \$ 35.73    | \$ 22.33   | \$ 17.87     | 0.920  | \$ 45.99  | \$ 36.80    | \$ 23.00   | \$ 18.40     |
| NEDC               | 1.000  | \$ 50.00  | \$ 40.00    | \$ 25.00   | \$ 20.00     | 1.000  | \$ 50.00  | \$ 40.00    | \$ 25.00   | \$ 20.00     |
| JC08               | 0.866  | \$ 43.30  | \$ 34.64    | \$ 21.65   | \$ 17.32     | 0.892  | \$ 44.59  | \$ 35.67    | \$ 22.30   | \$ 17.84     |
| CAFÉ               | 1.080  | \$ 54.02  | \$ 43.22    | \$ 27.01   | \$ 21.61     | 1.066  | \$ 53.30  | \$ 42.64    | \$ 26.65   | \$ 21.32     |

## Appendix 5: Climate Implications of Policy Assessment: Disclosure Sheet

This disclosure sheet provides the responsible department's best estimate of the greenhouse gas emissions impacts for New Zealand that would arise from the implementation of the policy proposal or option described below. It has been prepared to help inform Cabinet decisions about this policy. It is broken down by periods that align with New Zealand's future emissions budgets.

### Section 1: General information

| General information                             |  |
|---|--|
| Name/title of policy proposal or policy option: | Clean Car Standard   |
| Agency responsible for the Cabinet paper:       | Ministry of Transport  |
| Date finalised:                                 | 20 May 2020  |
| Short description of the policy proposal:       | <p>The Clean Car Standard (also known as the Vehicle Fuel Efficiency Standard) aims to improve the CO<sub>2</sub> emissions per kilometre travelled (g CO<sub>2</sub>/km) averaged over the imported fleet of light passenger and commercial vehicles by mandating annual CO<sub>2</sub> emissions targets across the import fleet.<sup>26</sup> These targets will apply equally to both new and used light vehicle imports with a gross vehicle mass (GVM) of 3.5 tonnes or less that are first registered in New Zealand from 2022.<sup>27</sup> Any divergence from the target will be subject to a charge of \$50/g CO<sub>2</sub> for new imports and \$25/g CO<sub>2</sub> for used imports. Where compliance is done on a vehicle-by-vehicle basis the charges are \$40/g CO<sub>2</sub> for new imports and \$20/g CO<sub>2</sub> for used imports.</p> <p>More information can be found in the accompanying Regulatory Impact Statement.</p> |

<sup>26</sup> In 2017, the weighted average CO<sub>2</sub> emissions of the vehicle imports stood at 178 gCO<sub>2</sub>/km and this is expected to decrease to 175 gCO<sub>2</sub>/km by 2020 and 166 gCO<sub>2</sub>/km by 2022.

<sup>27</sup> Light vehicles with a gross vehicle mass of 3.5 tonnes or less include cars, sports utility vehicles, people movers, utes, vans and light trucks.

## Section 2: Greenhouse gas emission impacts

Option 1

Mandating the Clean Car Standard with a target of 105g CO<sub>2</sub>/km by 2025 and 90g CO<sub>2</sub>/km by 2030

| Changes in greenhouse gas emissions (tonnes of kilograms of carbon dioxide equivalent).<br>Report on all sectors impacted. |               |               |                 |                 |               |                   |
|--|---------------|---------------|-----------------|-----------------|---------------|-------------------|
| Sector & source  | 2020–2025     | 2022–2025     | 2026–2030       | 2031–2035       | 2036–2040     | Cumulative impact |
| Electricity  |               |               |                 |                 |               |                   |
| Transport  | -76,560       | -22,687       | 620,927         | 579,822         | 123,665       | 1,194,908         |
| 90 percent confidence interval   | to<br>135,539 | to<br>190,802 | to<br>1,529,202 | to<br>1,226,268 | to<br>254,566 | to<br>3,019,025   |
| Minimum  | -101,030      | -54,072       | 404,851         | 413,568         | 82,776        | 766,579           |
| Maximum  | 257,827       | 329,637       | 2,280,845       | 1,757,341       | 381,040       | 4,335,564         |
| Mean   | 16,106        | 70,916        | 1,022,522       | 864,638         | 181,564       | 1,992,576         |
| Estimates with default assumptions   | -25,902       | 29,311        | 847,578         | 737,425         | 155,773       | 1,631,865         |

Notes:

- Positive numbers represent reductions in CO<sub>2</sub>
- The estimated increase in emissions during the initial years is due to potential stock piling of high emission vehicles before the policy period.

**Option 2 Mandating the Clean Car Standard with a target of 105g CO<sub>2</sub>/km by 2028 and 90g CO<sub>2</sub>/km by 2030**

| Changes in greenhouse gas emissions (tonnes of kilograms of carbon dioxide equivalent).<br>Report on all sectors impacted. |          |          |           |           |          |                   |
|--|----------|----------|-----------|-----------|----------|-------------------|
| Sector & source  | 2020–25  | 2022–25  | 2026–30   | 2031–35   | 2036–40  | Cumulative impact |
| Electricity  |          |          |           |           |          |                   |
| Transport  | -163,087 | -108,341 | 345,161   | 454,688   | -132,698 | 737,324           |
| 90 percent confidence interval   | to       | to       | to        | to        | to       | to                |
|  | -34,845  | 20,363   | 965,224   | 995,337   | 273,698  | 2,119,891         |
| Minimum  | -207,435 | -146,968 | 188,643   | 316,349   | 92,377   | 376,603           |
| Maximum  | 37,936   | 102,201  | 1,406,438 | 1,299,609 | 347,394  | 2,945,206         |
| Mean   | -106,573 | -51,707  | 617,377   | 691,928   | 194,506  | 1,344,340         |
| Estimates with default assumptions   | -131,541 | -76,329  | 496,880   | 586,422   | 166,488  | 1,069,392         |

Notes:

- Positive numbers represent reductions in CO<sub>2</sub>
- The estimated increase in emissions during the initial years is due to potential stock piling of high emission vehicles before the policy period.

### Section 3: Additional information

Due to the high level of uncertainty around how vehicle buyers would response to the policy intervention, this section provides additional scenarios with higher behavioural responses (by doubling and quadrupling the price elasticities used in the analysis).

| Additional information  |                     |  |   |
|---|---------------------|--|---|
| Estimated carbon reduction potentials – scenario analysis   |                     |  |   |
|   | default assumptions | High behavioural response scenario 1 (doubling price elasticity) | High behavioural response scenario 2 (quadrupling price elasticity) |
| <b>OPTION 1</b>   |                     |  |   |
| <b>Mandating the Clean Car Standard with a target of 105g CO<sub>2</sub>/km by 2025 and 90g CO<sub>2</sub>/km by 2030</b> |                     |  |   |
| Total CO <sub>2</sub> reduction (tonnes), 2020-2050   | 1,631,865           | 3,592,699  | 7,913,076   |
| Increase in the number of EVs/PHEVs (2020-2041)   | 89,331              | 164,995  | 331,709   |
| Average CO <sub>2</sub> value (light vehicle imports) by 2025   | 146.9               | 141.5  | 126.5   |
| Marginal Abatement Cost per tonne of CO <sub>2</sub>  | -\$244              | -\$269   | -\$280  |
| Changes in the number of vehicle imported 2020-2050   | -35,340             | -70,029  | -146,462  |
| Estimated carbon reduction potentials – scenario analysis   |                     |  |   |
|   | default assumptions | High behavioural response scenario 1 (doubling price elasticity) | High behavioural response scenario 2 (quadrupling price elasticity) |
| <b>OPTION 2</b>   |                     |  |   |
| <b>Mandating the Clean Car Standard with a target of 105g CO<sub>2</sub>/km by 2028 and 90g CO<sub>2</sub>/km by 2030</b> |                     |  |   |
| Total CO <sub>2</sub> reduction (tonnes), 2020-2050   | 1,069,392           | 2,562,799  | 5,853,275   |
| Increase in the number of EVs/PHEVs (2020-2041)   | 84,237              | 155,668  | 313,055   |
| Average CO <sub>2</sub> value (light vehicle imports) by 2025   | 146.9               | 142.1  | 130.3   |
| Marginal Abatement Cost per tonne of CO <sub>2</sub>  | -\$207              | -\$250   | -\$268  |
| Changes in the number of vehicle imported 2020-2050   | -11,683             | -26,714  | -59,832   |

## Section 4: Quality assurance

### Quality assurance

The Ministry for the Environment (MfE) has been consulted and confirms that the CIPA requirements do apply to this proposal. MfE is highly supportive of the proposal and expects that it will deliver substantial reductions to CO<sub>2</sub> emissions over time. The modelling of the emissions reductions are subject to high levels of uncertainty, but it is MfE's view that the estimated impact will likely to be at the high end of the emissions reductions range provided. This assessment is based on analysis of the Ministry of Transport's modelling, comparative modelling and the effects of similar international schemes.

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