In Confidence
Office of the Associate Minister of Transport

Chair
Cabinet Economic Development Committee

MOVING THE LIGHT VEHICLE FLEET TO LOW-EMISSIONS: AGREEMENT TO CONSULT ON A VEHICLE FUEL EFFICIENCY STANDARD AND A FEEBATE SCHEME

Proposal

1. This paper seeks Ministers' agreement to release a public consultation document on introducing a vehicle fuel efficiency standard and a vehicle purchase feebate scheme to address light vehicle emissions.

Executive summary

2. The New Zealand Government committed to take action on climate change by signing and ratifying the Paris Agreement. This included a commitment to reduce net greenhouse gas emissions (emissions) by 30 percent below 2005 levels by 2030. This year the Government also intends to introduce a Climate Change Bill to set a new 2050 climate target and establish the Climate Change Commission.

3. In an ideal situation, before deciding on policy changes in any particular sector, the Government would wait to establish the Climate Change Commission and to set future carbon budgets. However, in transport, there is a significant risk of locking in a high emission future, or requiring a more abrupt transition, if policy changes are further delayed.

4. Transport is responsible for 20 percent of our domestic emissions. Light vehicles (cars, SUVs, vans and utes) alone produce 67 percent of transport emissions and 13 percent of total domestic emissions.

5. Light vehicles that enter the New Zealand market over the next five years will lock in emissions out to at least 2043. This is because a new vehicle is driven until it is, on average, 19 years old.

6. Light vehicle emissions are projected to keep rising until around 2022. There is significant uncertainty about the contribution that improving vehicle technology will make to reducing light vehicle emissions after this date. Even the best case projections for electric vehicle (EV) uptake do not result in light vehicle emissions reducing in line with our 2030 or 2050 climate targets. Today, New Zealand is not on track to meet the EV target for 2021 set by the previous Government.

7. One of the reasons for this uncertainty is that New Zealand has no regulations, or meaningful incentives, to influence the fuel efficiency[1] of light vehicles entering our fleet. We are an outlier in this respect, as one of only three OECD countries without vehicle fuel efficiency standards[2].

[1] Fuel efficiency is effectively how much fuel a vehicle uses per kilometre. Improving the efficiency of a vehicle means it uses less fuel to travel the same distance and is a primary way to reduce vehicle CO_2 emissions.
[2] The other two OECD countries being Russia and Australia.

8. In the absence of regulation, the vehicles being supplied into New Zealand are among the most fuel inefficient[3], and emission intensive, of any OECD country. In addition, we do not enjoy access to the many fuel efficient vehicle models sold overseas[4].

9. While more EVs are being sold in New Zealand than ever before, there is also an increasing supply of larger, more emission-intensive vehicles. As a result, the average vehicle fuel efficiency and emission intensity of vehicles coming into New Zealand is not improving[5].

10. The Government's investment in rail, public transport and active modes will mitigate vehicle emissions, however, the emission reduction potential of mode shift in the short term is relatively small.

11. The Emissions Trading Scheme is another existing tool to drive emission reductions. However, a significant increase in the carbon price would be required to deliver a meaningful change in fuel price and behaviour change.

12. International evidence suggests the highest fuel and emissions savings for light vehicles result when vehicle fuel efficiency standards are combined with fiscal incentives, such as subsidies and taxes differentiated on the basis of vehicle emissions[6].

13. In line with this evidence, to address the challenges identified above, I seek Ministers' agreement to publicly consult on introducing a:

    13.1. clean car standard (technically referred to as a vehicle fuel efficiency standard) for new and used light vehicles entering the fleet. This standard would require vehicle suppliers to lower the average CO_2 emissions of the vehicles they are importing to 105gCO_2 /km. It would be gradually phased in from 2021 to 2025.

    13.2. clean car discount scheme (technically referred to as a feebate scheme) for new and used light vehicles sold for the first time in New Zealand. Feebates would complement an efficiency standard by providing a marketable discount on fuel efficient vehicles and by putting a fee on high emission vehicle.

14. Both measures would apply only to the supply of new and used vehicles entering the New Zealand market. They would not apply to the re-sale of existing vehicles in the domestic market, which account for the vast majority (74 percent) of annual vehicle sales.

15. The 105 gram CO_2/km (g CO_2/km) target for the clean car standard would be aligned with the target being investigated in Australia[7]. It would be slightly weaker than standards proposed in Canada and the European Union, however, I consider this is necessary given New Zealand has more ground to cover to reduce vehicle fleet emissions than these jurisdictions.

16. Both schemes would make significant contributions to reducing light vehicle emissions and deliver significant fuel savings for households. The clean car standard alone is expected to

[3] The average vehicle entering our fleet emits around 180 grams of carbon per kilometre. This compares with 105 grams of carbon per kilometre in Japan in 2014.
[4] For example, across the top-selling 17 new light vehicle models, the most efficient variants available in New Zealand have, on average, 21 percent higher emissions than their comparable variants in the United Kingdom
[5] Ministry of Transport, 2017, *Annual Fleet Statistics 2017,* New Zealand.
[6] Vehicle Emissions and Impacts of Taxes and Incentives in the Evolution of Past Emissions, Report to the European Environment Agency. Eionet Report - ETC/ACM 2018/1
[7] *Improving the efficiency of new light vehicles*, Commonwealth of Australia, 2016.

result in average fuel savings of $6,810 per vehicle over its lifetime. This in turn would help to insulate New Zealanders from global fuel price shocks and future carbon price rises.

17. A standard of 105g CO_2/km would increase the variety of low emitting vehicle models available to New Zealanders across all vehicle segments. It could also discourage suppliers from selling high emitting vehicles across all segments. The standard would not, however, prohibit high emitting vehicles from being sold.

18. I am confident that there will be a sufficient supply of new and used vehicles compliant with a 105 g CO_2/km standard. Japan is our largest supplier of new and used vehicles and the average new vehicle entering its fleet had emissions of 105 g CO_2/km in 2014.

19. The clean car standard could lead to a small increase in average vehicle prices in the short term. In the medium term the market will likely adjust to minimise this impact, particularly as the price of hybrid vehicles and EVs becomes on par with that of conventional vehicles.

20. Whether price increase are noticeable to consumers, and the speed at which the market adjusts, will depend on a number of factors. These includes competition and pricing strategies between suppliers and changes to other vehicle attributes that affect average prices, such as weight, power, and the share of premium models.

21. The clean car discount scheme could offset, in part or full, any price premiums associated with more fuel efficient, hybrid and electric vehicles. In the first year likely discounts would range from $600–$8,000 for new vehicles and $200–$2,600 for used vehicles. These discounts would be financed by putting a fee on larger, high emitting vehicles ($1,100–$1,500 for used vehicles and $2,000–$3,000 on new vehicles). Mid-range emitting vehicles would receive neither a discount nor face a fee. Consumers can choose to avoid paying a fee by purchasing from the variety of low or mid-range emitting vehicles on the market.

22. I intend to have a six-week period of consultation over 24 June to 5 August 2019. Following consultation, I expect to report back with final proposals for Ministers' consideration by the end of 2019.

Background

23. New Zealand has ratified the Paris Agreement and committed to reduce net emissions to 30 per cent below 2005 levels by 2030. The Government will shortly be introducing the Climate Change Bill to signal New Zealand's long-term emissions reduction goals and define a target for reduce emissions by 2050 [CAB-17-MIN-0547.01 refers].

24. Specific action is needed to reduce transport emissions. The Interim Climate Change Commission has recommended that the Government prioritise the accelerated electrification of transport ahead of pursuing 100 percent renewable electricity. It has specifically recommended that it adopt a mix of accelerated policies, included an efficiency standard, to grow electric mobility.

Light vehicles are the biggest transport emissions problem

25. Transport accounts for 20 percent of New Zealand's domestic emissions. Within transport, light vehicles account for 67 percent of emissions.

26. A key reason why light vehicles are the biggest part of the transport emissions problem, is that vehicle decisions are long-term. A light vehicle entering the fleet is driven until it is, on average, over 19 years old. If current trends continue, about 1.3 to 1.5 million vehicles will

enter the light fleet over the next five years. The emissions from these vehicles will be locked-in until around 2043.

Emissions from light vehicles are projected to keep increasing until 2022 with current policies

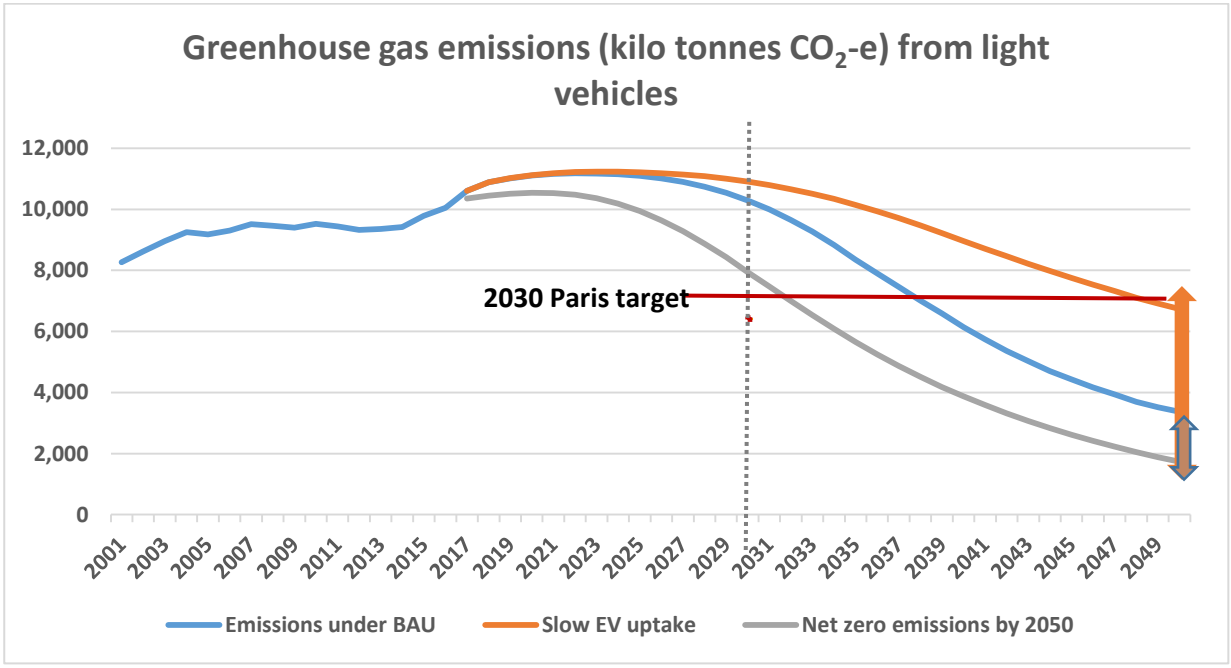
27. Graph 1 below compares the Ministry's emission projections for the light vehicle fleet, with the path consistent with New Zealand achieving net zero emissions by 2050[8]. It also identifies a target for transport emissions that would be equivalent to our economy-wide 2030 climate target.

28. The projections suggest that with current policies, light vehicle emissions will continue to rise until around 2022. Emissions are then expected to plateau before falling. There is considerable uncertainty about the possible pace of this decline. If there is a favourable uptake of EVs, emissions will still be 12 percent above 2005 levels in 2030 and it would take until 2040 to reach 33 percent below 2005 levels.

29. This pace of decline would also not be consistent with a target of net zero emissions by 2050.

30. If future market conditions are unfavourable for EV uptake, as shown in the slow EV uptake projection, then the light fleet would not achieve an emissions decline in the order of 30 percent below 2005 levels until nearer to 2050.

Graph 1: Emissions projections of the light vehicle fleet[9]



[8] Vehicle emissions are represented by grams of carbon dioxide produced per kilometre (gCO_2/km). To put these numbers in context a new EV produces zero gCO_2/km, if the electricity used to charge them is generated from 100 percent renewable sources. A new large petrol SUV emits around 200 gCO_2/km.

[9] The '2030 Paris target' is indicative only and assumes that light vehicle emissions are reduced in equal proportion to other emissions sources to meet New Zealand's economy-wide 2030 target. How the target is met will be a balance between abatement across all emitting sectors, CO_2 removals from forestry and use of international units. The Climate Commission is expected to be tasked to advise on this. Within this balance, and as emitters face stronger incentives to reduce emissions, it could be optimal for light vehicles to abate more than, or less than, other sectors.

The inefficient vehicles sold in New Zealand impose a high ongoing cost on households and the economy

31. The poor fuel efficiency of New Zealand vehicles comes at a significant annual cost to households and businesses. The table below shows the average annual fuel use cost to drive a light petrol vehicle in New Zealand, compared to other countries. On average New Zealanders pay 65 percent more in vehicle fuel costs than the average person in the European Union, even though petrol prices are higher in Europe.

		New Zealand	United Kingdom	European Union	Japan	United States
Fuel efficiency - petrol equivalent	ltrs/100km	9.5	5.8	4.9	6.2	8.6
Petrol Price inclusive of duties & taxes	NZ$/ltr	$1.92	$2.26	$2.25	$1.81	$1.05
Vehicle use	kms	11,000	11,000	11,000	11,000	11,000
Fuel Use Cost	NZ$	$2,007	$1,443	$1,213	$1,235	$995

There are few, effective alternative levers available to government to reduce light vehicle emissions

32. The Government's Policy Statement includes a direction for transport investment to support a mode shift from private vehicles to public transport, walking and cycling. However, the emission reduction potential of mode shift on its own is relatively small. For example, achieving a 1 percent reduction in private vehicle emissions would require a 30 percent increase in public transport and cycling trips, and a doubling of walking trips over the next 20 years.

33. The Emissions Trading Scheme (the ETS) is another existing tool to drive emission reductions. However, relying on the ETS to reduce transport emissions is unlikely to be effective and raises equity concerns. While a higher carbon price would raise fuel costs,[10] research shows this would not necessarily encourage people to buy more fuel efficient vehicles. This is because people significantly discount future fuel costs in their vehicle purchasing decisions[11].

34. Over the past year, transport officials have investigated a number of polices to reduce vehicle emissions. The following policies were investigated, but discarded due to being either ineffective, poor value for money, or regressive:

    34.1. Varying annual vehicle licensing fees based on their CO_2 emissions

    34.2. Air pollutant emissions testing as part of Warrant of Fitness checks

    34.3. Mandating a certain proportion of vehicle sale to be low emission

    34.4. A fringe benefit tax exemption for electric vehicles

    34.5. A GST exemption for electric vehicles

    34.6. Increased depreciation rates for electric vehicles

[10] The current carbon price is about $25/tonnes ($CO_2$-e). If the carbon price were to increase to $100/tonne, the petrol price would increase by 18 cents/litre. It is estimated this would reduce transport emissions by 11 percent.
[11] Green, D 2010, *Why the Market for New Passenger Cars Generally Undervalues Fuel Economy*, Joint Transport Research Centre Discussion Paper No. 2010-6, Oak Ridge, United States.

34.7. An upfront subsidy of $1000-$2000 for electric vehicles[12]

34.8. A legislated end date for the import of fossil-fuelled vehicles.

Work on complimentary initiatives is still progressing

35. Work is being progressed by transport officials on four other initiatives that will support vehicle emission reductions goals. These initiatives will not have a substantial impact on vehicle emissions on their own but they are necessary compliments to the two policies proposed in this paper. The four initiatives are:

35.1. expanding public charging infrastructure for EVs

35.2. a voluntary vehicle scrappage scheme to accelerate the exit of less safe and higher polluting vehicles from the fleet

35.3. a second-hand EV leasing scheme aimed at reducing transport costs for low income households and supporting EV uptake

35.4. introducing Euro 6 exhaust emissions standards[13] for imported vehicles to improve air quality. This is necessary to mitigate the risk of more diesel vehicles entering the fleet as a result of the efficiency standard.

The Government is leading by example to reduce vehicle emissions

36. Government agencies will be required to improve the emissions profile of the vehicles they purchase at a faster rate than what I am proposing for the national fleet. Virtually all vehicles entering the government fleet will need to be zero emissions by 2025/26. To reach this 2025/26 target vehicles entering the government vehicle fleet will meet the 2025 emissions standard proposed for the national fleet around four years early.

I propose a vehicle fuel efficiency standard to increase the supply of low-emissions vehicles

What problem would a vehicle fuel efficiency standard address?

37. The light vehicles entering our fleet are more emissions-intensive than in most other developed countries. In 2018, the average vehicle entering our fleet emitted around 180 gCO_2/km. In Japan, by contrast, the average passenger vehicle entering its fleet had an emissions intensity of 105 g CO_2/km in 2014. In Europe the average car and SUV was 118 gCO_2/km and light commercial vehicle[14] was 164 g CO_2/km, in 2016.

38. Part of the reason why our vehicles are more emission-intensive is that vehicle suppliers are unconstrained by any regulation while nearly all other OECD counties have vehicle efficiency standards. This results in vehicles suppliers making a less fuel efficient selection of vehicles available to our market, than to other markets. For example, across the top-selling 17 new light vehicle models, the most efficient variants available in New Zealand have, on average, 21 percent higher emissions than their comparable variants in the United Kingdom.

39. This occurs because manufacturers select vehicle variants from their global portfolio that they believe will sell well and will maximise their profits in New Zealand. They will not necessarily

[12] This is currently a bid for Budget 2019 but has been 'triaged' out of contention.
[13] This initiative addresses air pollutant emissions rather than CO_2 emissions.
[14] Light commercial vehicles are vans, utes, small trucks up to 3.5 tonnes.

opt to select the most fuel efficient variants of vehicle models as these variants cost more to produce[15].

40. Our average vehicle emissions are also high because the average vehicle being imported has become heavier over time. This reflects the changing vehicle mix with the share of conventional cars falling and the share of SUVs and utes rising. These heavier vehicles require more fuel to move and emit more CO_2.

How would the clean car standard work?

41. The proposed clean car standard would require vehicle suppliers to lower the average CO_2 emissions of the vehicles they are importing. This will change the composition of vehicle imports in favour of ones with lower emissions, including EVs, hybrids, and other low-emissions vehicles.

42. The clean car standard would work by setting a CO_2 emissions target that suppliers have to meet, on average, across their fleets. An average fleet emissions target means that vehicle suppliers can sell vehicles with CO_2 emissions over the emissions target, so long as this is balanced by sufficient sales of vehicles that are under the target. In this way a fleet target allows a diverse range of vehicles to continue to be sold.

The initial emissions target I propose is 105 grams in 2025

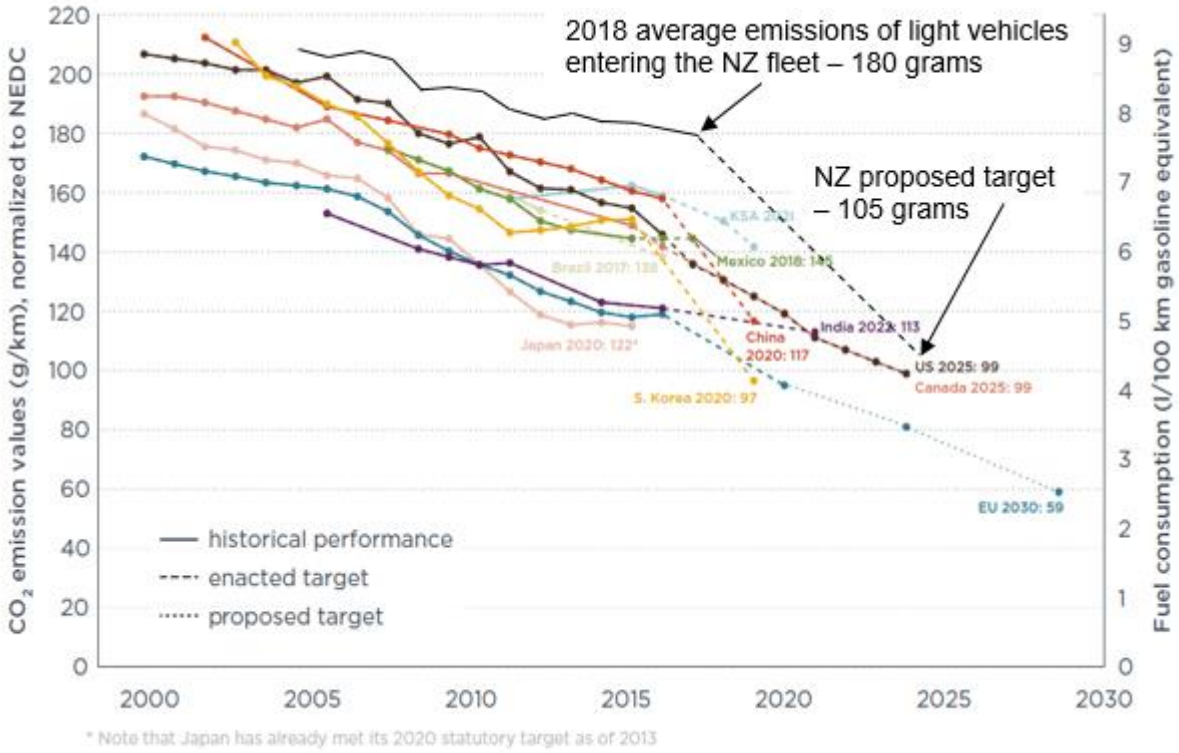
43. I propose consulting on an initial emissions fleet average target of 105 g CO_2/km in 2025. While this standard alone would not ensure light vehicle emissions reduce in line with our economy wide 2030 target, it would be both a significant and achievable first step. It would result in a 40 percent reduction in the average emissions of vehicles entering our fleet by 2025.

44. This 105 gram target is aligned with the standard being investigated in Australia[16]. Graph 2 shows that this target would be weaker that standards proposed in Canada and European Union. It would also be higher than the average emission profile of vehicles already entering the Japanese fleet. However, I consider that initially a higher target for New Zealand is necessary given the significant ground we have to cover to improve the emissions profile of vehicles entering the fleet.

45. I propose phasing-in the emissions target over five years. In 2021, vehicle suppliers would only be required to report the emissions of the vehicles they import. Over the period 2022–2025 vehicle suppliers would be required to meet stricter annual emission standards each year. Two different approaches to phasing in the standards are discussed in the consultation document.

[15] *Improving the efficiency of new light vehicles*, Commonwealth of Australia, 2016
[16] *Improving the efficiency of new light vehicles*, Commonwealth of Australia, 2016.

Graph 2: Comparison of global CO_2 regulations for new passenger cars



Source: ICCT. January 2019. *Policy update: CO_2 emissions standards for passenger cars and light-commercial vehicles in the European Union. Note: the Trump administration has removed the US 2025 target*

46. Stricter targets would be set beyond 2025 to continue to drive the transition to a low emissions vehicle fleet. These targets would align with future carbon budgets, when they have been set. The proposed process for setting future targets is set out in the consultation document.

The emissions target would vary with vehicle weight

47. I propose to vary the emissions targets with vehicle weight. Vehicles that are heavier than the average vehicle weight would attract a higher target. Vehicles that are lighter than the average attract a lower target. This will help maintain a diversity of vehicle types by allowing suppliers of heavier vehicles (e.g. utes and large SUVs) to meet higher emissions targets than for average sized vehicles.

The issues that would be consulted on for the clean car standard

48. The key issues to consult on are:

    48.1. what the initial emissions target in the standard is

    48.2. how the emissions target would be phased-in

    48.3. the process for setting future targets

    48.4. what vehicles would be exempt from the standard

48.5. the penalties that would apply for non-compliance with the standard.

I propose a 'clean car discount' to build demand for low-emission vehicles

What problem would a clean car discount address?

49. I consider we need a policy that directly builds demand for these vehicles, particularly EVs, to support the clean car standard that will increase the supply of low-emission vehicles.

50. The number one barrier to EV uptake is the higher upfront cost. The cheapest new EV retails for around $48,500 compared with $36,500 for its petrol equivalent.

51. Evidence also shows up-front costs, rather than future fuel and running costs, have a much greater effect on the average consumer's purchasing decisions as consumers significantly discount ongoing vehicle costs.

52. Some commentators are of the view that purchase price parity between electric and conventional vehicles will occur in the mid-2020s in the major markets[17]. However, officials forecast that price parity in terms of total cost of ownership may not occur until the late 2020s and price parity in terms of upfront costs would be later still.

53. While this price disparity remains between electric and conventional vehicles demand for cleaner vehicles is likely to remain relatively low.

How would the clean car discount work?

54. To make low emission vehicles more affordable, I propose to consult on a clean car discount scheme (technically referred to as a feebate scheme) for new and used light vehicles sold for the first time in New Zealand. This policy would not apply to the sale of vehicles that are already in the domestic vehicle fleet.

55. Under this policy, consumers would receive a discount when purchasing low-emissions vehicles, including EVs, and pay a fee when purchasing higher emission vehicles. People buying vehicles that are mid-range emitters would receive neither a discount nor pay a fee. The proposed schedule to be consulted on for discounts and fees is in Appendix A.

56. The scheme would be self-financing over its life with the discounts paid for from the fees. A Crown-funded cash reserve of potentially $25 million[18] would be required to manage the risk of over- or under-fee collection from year to year.

57. The discounts would be required to be visible at the point of purchase in order to highlight the savings associated with buying a cleaner, more fuel efficiency vehicle.

58. Vehicles with a recommended retail price over $80,000, including GST, would not be eligible for rebates. This cut off would help avoid the risk of a transfer of wealth occurring between someone who pays a fee on a standard car and someone buying a luxury fuel efficient vehicle. Fees would apply to all vehicles regardless of retail price.

[17] Deloitte, 2019. *New market. New entrants. New challenges. Battery Electric Vehicles*. Accessed from: https://www2.deloitte.com/uk/en/pages/manufacturing/articles/battery-electric-vehicles.html.

[18] This would be similar to the appropriation that was established for the SuperGold card when it was first implemented. An amount of funding was held that councils could apply to access if they required financial assistance with the initial costs of implementing and administering the scheme. However, unlike this appropriation, the cash reserve would operate more like a loan. The scheme would pay back any reserve funding used.

59. The clean car discount will be timed to replace the exemption from road user charges that applies to electric vehicles. For light vehicles the exemption applies until December 2021, or until they make up 2 percent of the light vehicle fleet.

The issues that will be consulted on for a clean car discount

60. The key issues to consult on the clean car discount are:

    60.1. whether people consider a vehicle purchase feebate scheme appropriate for New Zealand

    60.2. the level of the emissions benchmark that distinguishes what vehicles are low emissions and receive a discount, what vehicles are high emissions and attract a fee

    60.3. whether to have a "zero band" where mid-range vehicles attract no fee even though their emissions are above the benchmark

    60.4. the size of the discounts and fees and how they will be collected.

How effective will these policies be at reducing vehicle emissions?

Emissions savings from the clean car standard

61. Internationally, vehicle fuel efficiency standards have been highly effective in driving emission reductions in light vehicles[19]. In New Zealand it is estimated that a clean car standard, with an emissions target of 105 gCO_2/km in 2025, would reduce emissions by 5.1 million tonnes over 2020–2041. The contribution this level of CO_2 mitigation will make to help meeting our 2030 Paris target is shown in Graph 3 below.

62. The blue line shows the Ministry of Transport's base case emission projection with current policy settings. The orange line shows the base case emission projection for the vehicle fuel efficiency standard with an emissions target of 105 gCO_2/km in 2025. With this projection, an emissions reduction equivalent to the 2030 Paris target could be achieved in 2037[20].

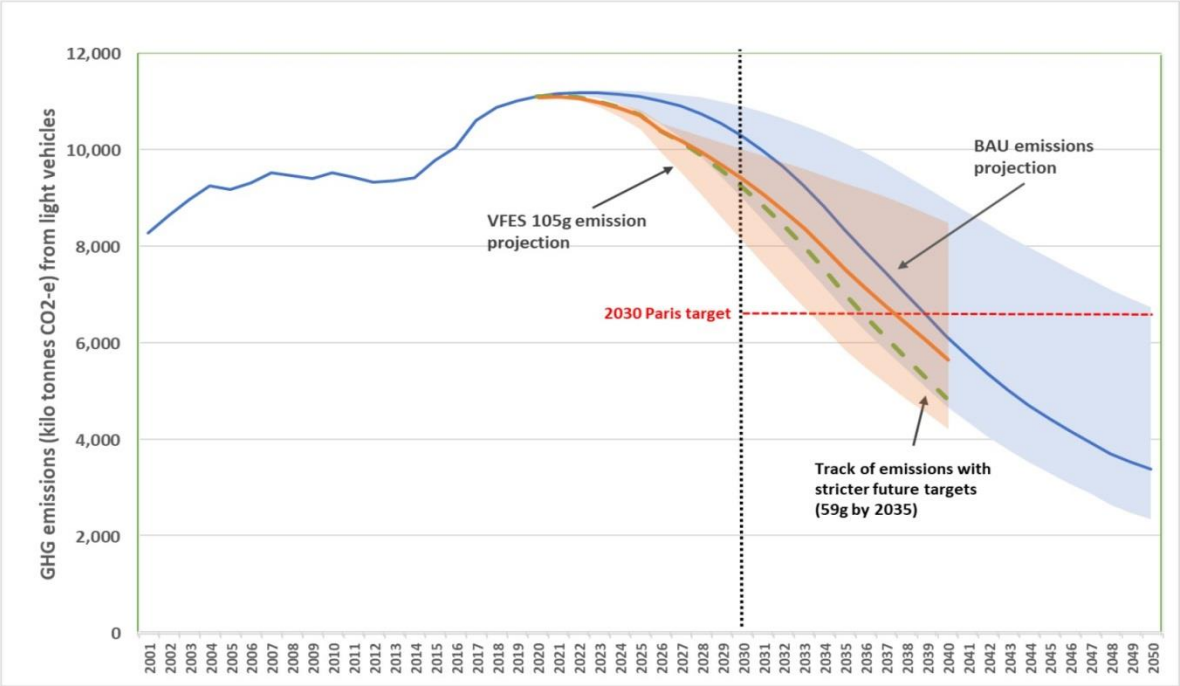
63. Both sets of projections are subject to a high level of uncertainty[21].

[19] For example, a 2015 evaluation of the European Union's vehicle fuel efficiency standard for new light vehicles, found that it is likely to have accounted for 65–85 percent of the reductions that occurred in tailpipe emissions over 2009–2014. The standard achieved an estimated rate of annual improvement of 3.4 to 4.8 gCO_2/km. This compared to the annual rate of improvement of 1.1 to 1.9 gCO_2/km previously experienced under a voluntary industry standard.

[20] To simplify interpretation, this graph assumes that stricter emissions targets are set beyond 2025. Such targets, however, would be subject to future policy decisions. This graph assumes future emissions targets of 80 gCO_2/km in 2030 and 59 gCO_2/km in 2035.

[21] The blue shaded area shows the range of uncertainty relating to the Ministry's emissions projections for EV uptake. The orange shaded area shows the range of uncertainty relating to the impact of a efficiency standard, This includes the potential for changes in the distance people travel, in vehicle import trends, in economic life of a vehicle, and the possibility that some people may choose to driver further if their vehicle become more fuel efficient (i.e. a rebound effect).

Graph 3: The impact of the vehicle fuel efficiency standard (VFES) on light vehicle emissions



Emissions savings from the clean car discount

64. International evidence suggests the highest fuel and emissions savings for light vehicles result when vehicle fuel efficiency standards are combined with fiscal incentives, such as subsidies and taxes differentiated on the basis of vehicle emissions[22].

65. In New Zealand a clean car discount, in operation for 6 years, is estimated to reduce emissions by 1.6 million tonnes over the 20-year evaluation period of 2020-2041. This reduction would come from an increased uptake of low-emission vehicles and would be expected to increase the pace of the initial emissions decline shown in Graph 3 above.

Combined effects of both policies

66. The two policies are designed to complement each other with the clean car discount providing financial incentives to support the clean car standard.

67. The combined emissions reduction of these two policies, however, would likely be less than the summation of the two emission reduction estimates. The Ministry of Transport intends to complete an estimate the impact the combined measures will have in lowering emissions prior to Ministers taking final decisions on the proposals in August 2019.

What are the wider benefits of these two policies?

The wider benefits of a clean car standard

68. The Ministry's preliminary cost-benefit analysis of the proposed clean car standard indicates that it has a benefit-cost ratio of 3:1 and a net present value of $2.4 billion.

[22] Vehicle Emissions and Impacts of Taxes and Incentives in the Evolution of Past Emissions, Report to the European Environment Agency. Eionet Report - ETC/ACM 2018/1

69. The largest share of the benefits comes from reduced transport costs to households. The increased supply of fuel efficient and electric vehicles is estimated to save the country about $3.4 billion on fuel over the life of the vehicles affected by the scheme. The average lifetime savings per vehicle are $6,800.

The wider benefits of a clean car discount

70. The Ministry's preliminary cost-benefit analysis of the proposed clean car discount, estimates that it would have a benefit-cost ratio of 2.6:1 and a net present value of $413 million. Most of the benefit would be to motorists from fuel savings. It is estimated that motorists would enjoy the largest share of these benefits by saving about $627 million on fuel over the life of the vehicles affected by the scheme, or about $5,200 per vehicle.

71. Both policies will, over time, reduce motorist's reliance on imported fuels by improving fuel efficiency and increasing the uptake of EVs. This has the potential to better insulate New Zealanders from future oil price shocks.

72. An increase in EVs will increase demand for domestically generated energy sources. This would have a particular benefit for renewable energy sources if the bulk of charging occurs during off-peak periods, such as overnight.

What impact will these policies have on vehicle prices?

The potential costs of a clean car standard

73. Due to a lack of information on how buyers and importers may behave, it is difficult to estimate whether, and how, a fuel efficiency standard would impact on vehicle prices.

74. There may be a small increase in average vehicle prices in the short term. To meet the emissions target, suppliers would need to increase the supply of more fuel efficient conventional vehicles, petrol hybrids and electric vehicles. The improved fuel efficiency of these vehicles comes with an added technology cost so they will be, theoretically, more expensive that the equivalent conventional vehicles. The standard may also result in the import of newer used vehicles.

75. In the medium term the market will adjust to minimise this impact, particularly as the price of hybrid vehicles and EVs becomes on par with that of conventional vehicles.

76. Whether any short term price increases are noticeable to consumers, and the speed at which the market adjusts, will depend on a number of factors. Competition and pricing strategies between suppliers will determine whether the increased vehicle costs and the additional compliance costs from the standard are worn by suppliers, manufacturers, or passed onto consumers.

77. Changes to other vehicle attributes will also determine whether price changes are noticeable. Following a 10 year study of fuel economy improvements across OECD and non-OECD countries, the OECD and IEA concluded that vehicle prices are not strongly driven by fuel economy parameters[23]. They noted that other changes in the vehicle market appear to have had a much more noticeable impact on average vehicle price over this period, including changes to vehicle weight, power, and the share of premium brands.

[23] IEA/OECD, 2017, International comparison of light-duty vehicle fuel economy: 10 years of international benchmarking, p.39

78. Overseas, fuel economy improvements have not correlated with a noticeable change in average vehicle prices. A study of the European Union (EU) experience, for example, showed that the introduction of efficiency standards in 2009 did not result in a noticeable increase in vehicle prices, despite an increase being predicted. In the EU, the cost of fuel efficiency improvements appear to have been lower than predicted and costs were absorbed by manufacturers[24].

79. The Australian government's investigation of a 105g CO_2/km emissions standard for its vehicle fleet[25], estimated that the per vehicle cost for vehicle suppliers in providing more efficient, conventional new vehicles could be $747 in 2021[26] and $1,582 in 2025. The cost premiums for suppliers to provide new EVs rather than new conventional vehicles could be $9,482 in 2021 and $7,548 in 2025.

80. The Australian cost estimates are likely to overstate what will be experienced here. This is because they only relate to new vehicles. As well, some commentators predict that EVs will reach price parity with conventional vehicles sooner than the Australian estimates imply.

81. In looking at these international estimates, officials believe that New Zealand's experience may be more closely aligned to that predicted for Australia than the EU.

82. There are differences between the EU and New Zealand vehicle markets. In the EU manufacturers were strongly influenced to absorb part of the costs. We do not manufacture vehicles locally, and are a very small market with limited ability to influence global suppliers, which makes it more likely costs will be passed on to consumers than borne by manufacturers.

83. Australia by comparison has a similar market to New Zealand and has investigated seeking the same level of decrease in emissions. Officials have assumed in their cost-benefit analysis that the additional cost estimated for suppliers in Australia may also apply to suppliers in New Zealand. They also assumed that this cost will be passed on to consumers.

84. If these costs were to be passed onto consumers, the ongoing fuel savings over the life of the vehicle would outweigh this added cost for consumers, on average, by a factor of three to one.

85. Any potential increase in cost would also be offset in part or in full by the clean car discount discussed later in this paper. There would also be mitigation strategies for vehicle owners who might not want to pay a higher price in the short term, preferring to wait for the market to readjust until fuel efficient vehicles come on par with less fuel efficient vehicles. For example, people could choose to hold onto vehicles for longer, or purchase a vehicle from the domestic second hand market, or choose not to purchase another vehicle.

86. Officials estimate that vehicle suppliers in New Zealand will also face added compliance costs as they adjust their vehicle fleets to meet the new efficiency standard. This burden would be minimised through the provision of a free on-line tool to help them track the average emissions of their fleets compared to the target averages they are required to meet. The tool could include a calculator to show how their fleet averages would change if they were to purchase particular vehicles.

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[24] Evaluation of Regulation 443/2009 and 510/2011 on the reduction of CO_2 emissions from light-duty vehicles" Study contract no 071201/2013/664487/ETU/CLIMA.C.2

[25] *Improving the efficiency of new light vehicles*, Commonwealth of Australia, 2016.

[26] The Australian estimates assume that a 105 gram target is phased in over 2020–2025.

87. Officials assume in the cost benefit analysis additional compliance and vehicle manufacturing costs of $1.07 billion[27] over 2020 to 2041 against $3.4 billion in fuel savings.

88. To administer the efficiency standard initial indications suggest a capital cost to government of $6.75 million and annual operating costs of $1.5 million. The capital cost reflects the need to invest in IT systems to allow suppliers to report their vehicle data, and for fleet emissions to be monitored. A Budget bid would be made for funding should Ministers agree to introduce the clean car standard.

The costs of a clean car discount

89. Under a clean car discount, consumers who choose to buy large, high emitting new and used imports will likely pay a fee. Across most vehicle types consumers will be able to avoid paying a fee by opting for a mid to low emissions vehicle model or by buying from within the existing vehicle fleet.

90. In the early years of the clean car discount scheme, the fee and discount schedule is designed to ensure that a variety of new utes and new and used vans, SUVs, and people-movers pay no fee and some vans and SUVs receive a rebate. Over time more low emitting, large vehicles are expected to enter the market.

91. In the first few years of this policy, it is possible that people who want to buy a new or used imported ute may have limited choices of vehicles that do not incur a fee. However, in 2019 there are already several models of new double cab utes that would not incur a fee. By 2022 there would likely be more. In the coming years, new hybrid, plug-in hybrid, and battery electric ute models are expected to be introduced into the market.

92. The proposed fees on high emitting vehicles are outlined in Appendix A.

93. The clean car discount would create some additional compliance costs for vehicle suppliers in displaying the discounts on vehicles for sale, in collecting fees and passing them on to the scheme administrator, and in ensuring consumers are aware of how rebates can be claimed.

94. As well, initial cost indications suggest a capital cost to government of $7.5 million with annual operating costs of $2.75 million. The capital cost assumes the development of an automated rebate submission and payment process, as well as a fee collection process. A Budget bid would be made for funding should Ministers agree to introduce a feebate scheme.

What impact will these policies have on the supply of vehicles?

The clean car standard would change the type of vehicles supplied to New Zealand

95. The clean car standard would likely result in a noticeable change in the type of vehicles sold in New Zealand. Predicting exactly what this change will look like in 2025, however, is difficult.

96. At a high level, the vehicle fuel efficiency already achieved in Japan, our major vehicle supplier[28], provides confidence that there will be sufficient supply of low emission vehicles

[27] Estimates of vehicle price changes used in the cost benefit analysis were taken from the draft Australian regulatory impact statement and converted to New Zealand dollars (Department of Infrastructure and Regional Development, December 2016. *Improving the fuel efficiency of new light vehicles: Draft Regulation Impact Statement*).
[28] In 2017, around 70 percent of new light vehicles and 95 percent of used light vehicles that entered the New Zealand fleet were sourced from Japan

available to vehicle importers that will allow them to comply with a standard of 105 gCO_2/km in 2025.

97. The average emissions of new light vehicles manufactured and registered in Japan met the proposed target of 105 gCO_2/km in 2014, ten years ahead of the proposed phase in date for New Zealand's standard. The Japanese passenger vehicle fleet is now trending to achieve an average of 82 gCO_2/km by 2020[29].

98. The fact that the Japanese domestic fleet has been compliant, on average, with a 105 standard since 2014 also provides confidence that by 2025 there would be a significant supply of compliant used vehicles available to New Zealand. In 2018, only 43 percent of used vehicles that enter New Zealand are less than 10 years old.

99. The remaining demand for Japanese used vehicles older than 10 years, however, would have to be met from a more constrained pool of vehicles, complaint with a 105 gram standard and manufactured prior to 2014. This would limit the variety of older imported Japanese used vehicle models available in New Zealand. Some portion of consumers who would have bought a 10 plus year old used import, may choose instead to purchase from within the existing domestic vehicle fleet, or hold onto their existing car for longer.

100. At a more detailed level, an efficiency standard of 105 g CO_2/km would likely alter the type of vehicles supplied to and bought in New Zealand. An emission standard should result in more fuel efficient vehicle models being made available across all vehicle segments (i.e. across utility vehicles, vans, SUVs, small and medium cars). Nissan, Ford, and Toyota have all already made commitments in the last year to introduce a wider variety of electric vehicles into the New Zealand market.

101. Meeting the standard will have implications for the supply of traditionally high emitting vehicle models. Appendix B shows that some vehicles sold in New Zealand today sit above the proposed emissions targets from 2022-2025. This does not necessarily mean that these vehicles would not be sold in New Zealand, but, in order to comply with this standard, vehicle suppliers may change the way these, or other, vehicles are priced or supplied. For example, suppliers could choose to limit the sale of high emitting vehicle models; and/or increase the price of luxury or high emitting vehicle models (where profit margins are greatest) in order to discount the price of low emitting models.

102. There are already low emission alternatives sold in the New Zealand market for most vehicle types. For example, there are low emission vans, SUVs, medium and small cars sold in the market at comparable prices to conventional vehicles. The current exception to this is for single and double cab utility vehicles (utes). Officials understand that the lowest emitting ute currently sold in New Zealand is 166 gCO_2/km.

103. Over the next few years, low emitting models of utes may gradually become more commonly available. Motor vehicle industry representatives have said that manufacturers are working on hybrid, plug-in hybrid and battery electric ute models and they expect to see these introduced into the market in the coming years. Toyota has said that by 2025 it aims to have every model in the Toyota and Lexus line-up around the world available as either a dedicated electrified model or have an electrified option. Great Wall Motors is expected to unveil a fully battery powered ute this year. Also the American based company Rivian has unveiled a fully battery powered ute and SUV that could provide the platform for a range of Ford utes and light trucks.

[29] ICCT, 2017. 2017 Global Update: Light duty vehicle greenhouse gas and fuel economy standards.

We would have to stop accepting pre-2008 Japanese vehicles

104. I plan to consult on no longer accepting vehicles that were tested using the old Japanese 10/15 emissions testing procedure. This is because the vehicle tailpipe emissions assessed through this test, cannot be reliably converted into emission values consistent with those derived from the more modern tests.

105. Japanese vehicles manufactured prior to 2008 were assessed using this test. As a result these vehicles would no longer be able to be imported into New Zealand. Officials estimate that in 2021 this would restrict only 2 percent of used vehicles that would otherwise have been imported.

A clean car discount will increase the variety of affordable low emission vehicles

106. The clean car discount scheme is intended to reduce the upfront cost of low emission vehicles and therefore increase the variety of low emissions vehicles that are affordable to New Zealanders. The discounts also have the potential to incentivise suppliers to introduce a wider variety of low emission models into the New Zealand market.

107. Conversely, the policy will increase the upfront cost of some large, high emitting vehicle models. This may discourage some suppliers from providing these vehicles.

How would the benefits and costs of these policies fall across society?

108. Ministry of Transport analysis suggests that businesses and households would, on average, be significantly better off as a result of the clean car standard and discount policies. Households purchase 74 percent of the vehicles entering the fleet, with businesses purchasing the remainder.

109. A standard of 105 g CO_2/km could deliver, on average, fuel savings of $6,800 to the owner over the economic life of vehicles purchased under the scheme. The clean car discount could deliver, on average, fuel savings of $5,200 to the owner over the economic life of vehicles purchased under the scheme.

110. While neither policy would directly apply to the re-sale of existing vehicles in the domestic market, they would induce a gradual phase-in of more low-emission vehicles into the domestic used-vehicle market. These developments would benefit all used vehicle buyers, including low income households, through a wider choice of affordable low-emissions vehicles.

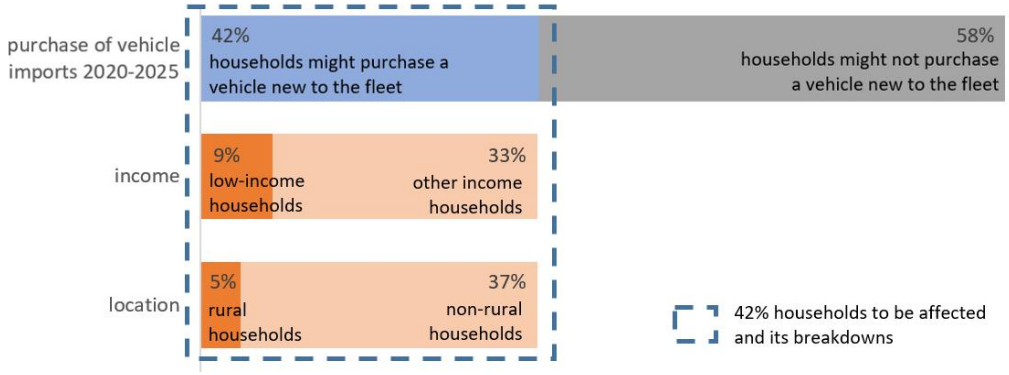
111. Officials estimate that 42 percent of all New Zealand households may purchase a vehicle new to the fleet over the 6 years to 2025[30]. This means that 42 percent of households may be directly affected by these policies over the next 6 years.

112. Graph 4 below shows that the low income households expected to purchase new to the fleet vehicles make up 9 percent of all New Zealand households. Households with other incomes purchasing new to New Zealand vehicles make up 33 percent of all New Zealand households.

[30] This estimate is based on combining information from different sources pertaining to the three years to June 2018. This includes vehicle registration projections from the Ministry's Vehicle Fleet Emission Model and households information from administrative data.

Rural households purchasing new to the fleet vehicles make up 5 percent of New Zealand households.

Graph 4: Estimated share of households to be affected by the clean car policies



113. How people will be impacted by the proposals will depend on how individuals, and the market respond. This makes it difficult to predict with any certainty what the impacts will be.

114. Average vehicle prices might increase in the short term as a result of the introduction of the clean car standard. This may impact low income households more as it would consume a greater proportion of their income. However, any increase will be in part, or fully, mitigated through the clean car discount.

115. In the medium term, the market is expected to adjust to the clean car standard and minimise any price or choice impacts, particularly as the price of hybrid vehicles and EVs becomes on par with that of conventional vehicles.

116. In the first year of the clean car discount, the estimated proportion of new to the fleet vehicles facing a fee is expected to be similar to those receiving a discount.

117. Graph 5 below shows that 59 percent of households buying new to the fleet vehicles are expected to either receive a discount, or not incur a fee.

118. Of the low income households that purchase a new to the fleet vehicle, more are expected to receive a discount than pay a fee. This is because a lower proportion of their vehicle purchases are of high emitting vehicles.

119. All households will ultimately have the ability to avoid paying a fee by selecting a low emitting vehicle model.

Graph 5. Estimated shares of new and used light vehicle imports subject to fees, discounts, and exemptions by household type in 2021

120. Of the rural households buying a vehicle new to the fleet, slightly more than half are more likely to pay a fee than receive a discount. This is because a greater proportion of their vehicle purchases are of high emitting vehicles. However, there is the opportunity for these households to change their buying habits and avoid this fee.

121. The other impact of the clean car discount could be for households that require a larger, heavier vehicle for work or other purposes. There is limited data available to assess how the clean car standard or discount policies would affect these households. This is primarily because we do not have complete data and pricing information on all vehicles that are available in the market within these vehicle segments.

122. A simple analysis in Appendix C shows, however, that a number of larger SUVs and utes currently sold in New Zealand would face a fee under the clean car discount policy. At the same time, there are some mid-range price new and used utes and new and used vans, SUVs, and people-movers that would be unaffected in 2021. Some SUVs and vans already sold in New Zealand would attract a discount in 2021.

123. The clean car reforms are designed to increasingly improve the supply and variety of low emission vehicles. At the same time, the price of EVs and petrol hybrids will become on par with that of conventional vehicles. This change in the overall mix and pricing of vehicles available in our market will make it easier for people (rural or urban, wanting smaller or larger vehicles) to opt for low emission vehicles and avoid paying a fee.

124. The proposed schedule of fees and discounts envisages reducing the vehicle emission bands eligible for rebates and the level of the rebates through time. In contrast, fees broaden to more emission bands and the maximum fees do not change through time. Over time, this would increase the share of vehicles that would be required to pay a fee. However, when the effects of the clean car standard on vehicle purchasing choices are included, the actual share of vehicles to be subject to a fee is likely to be lower.

Next steps

125. Subject to Cabinet agreement, I propose the Ministry release the attached consultation document on implementing the clean car standard and clean car discount scheme. Following consultation, I expect to report back to Cabinet with final proposals for Ministers' consideration by the end of 2019.

Consultation

126. The following agencies were consulted in the development of this paper: the Ministry for the Environment, the NZ Transport Agency, the Ministry of Business, Innovation and Employment, the Ministry for Primary Industries, the Ministry of Social Development, Te Puni Kōkiri, the Ministry of Defence, the Treasury, the New Zealand Customs Service, the Energy Efficiency and Conservation Authority, the Ministry of Foreign Affairs and Trade, the Department of Internal Affairs, and the Department of Conservation. The Department of Prime Minister and Cabinet has been informed.

Feedback from agencies

127. The New Zealand Defence Force noted that operational vehicles should be exempt from the options outlined in this paper where required, in addition to agricultural vehicles, vehicles used for off-road purposes only, and airport vehicles.

128. Te Puni Kōkiri noted that while light EVs are currently not suited to long-distance travel, they will develop the ability to travel further in the future. In this case, the government may have a role in ensuring the infrastructure is in place to make light EVs a viable option for whanau, hapū and iwi that want to purchase these vehicles for the regions.

129. The Ministry of Social Development noted that people with disabilities may be affected by the vehicle fuel efficiency standard. They face higher costs when buying or switching vehicles, as the vehicle often needs to be modified. In addition to the higher upfront cost, this could make low-emissions vehicles unaffordable for those with disabilities.

Treasury comment

130. Transport is already in the NZ ETS. We consider the evidence pointing to a need for further intervention is mixed, and the emissions reduction is estimated to be very small.

131. If Ministers wish to proceed, we recommend only Vehicle Fuel Efficiency Standards be taken forward to consultation. A feebate and higher ETS prices would create a “double burden” for those unable to purchase fuel efficient vehicles (e.g., those needing dual cab utes), and a “double benefit” for those able to purchase them.

Ministry for the Environment comment

132. MfE supports a set of regulatory measures in transport where they are forecast to lower the overall cost to the New Zealand economy of reducing emissions, relative to a scenario where emissions pricing is used in isolation. The combination of low-cost abatement options and the large emissions of the transport sector make a regulatory package a priority for early action.

The Ministry of Transport considers that the proposed measures will complement the ETS

133. The measures proposed in this paper will work with the ETS to lower emissions from light vehicles. The clean car standard and the clean car discount scheme will both address substantial market failures and barriers other than the insufficient pricing of carbon, which the ETS is intended to address.

134. The significance of these failures is evident in their estimated negative marginal abatement costs. Negative marginal abatement costs means that a policy would deliver a net economic benefit for each tonne of carbon avoided. The Ministry of Transport’s cost benefit analyses estimate that the vehicle fuel efficiency standard has a marginal abatement cost of -$469 per

tonne of carbon avoided. Feebates are estimated to have a marginal abatement cost of -$266 per tonne of carbon avoided.

135. Key among the failures that the measures will address, is that a relatively less fuel efficient selection of vehicles is made available to our vehicle market compared to other countries' markets. The ETS cannot address this problem as the decisions of overseas vehicle suppliers are unlikely to be influenced by New Zealand's carbon price.

136. Alongside this barrier, consumers significantly discount future fuel costs in their vehicle purchase decisions. Part of the reason for this is that people find it hard to assess the benefits of fuel efficiency relative to other vehicle attributes like price, size, and performance[31]. The discounting of fuel costs effectively mutes the price signal of the ETS and this has contributed to an increasing supply of heavier light vehicles into the market. Heavier vehicles require more fuel to move and emit more CO_2.

137. In the absence of the clean car standard and the clean car discount scheme, very large increases in the carbon price would be needed to achieve change in the vehicle fleet. Modelling by Infometrics estimates that even with a carbon price of $100 per tonne, transport emissions are only likely to decline by 11 percent. Significantly greater reductions are needed if the transport sector is to make a contribution to our 2030 Paris target.

138. As well, without the proposed measures the barriers that they address would remain in the vehicle market. This would forego the opportunity to unlock more cost-effective abatement than simply relying on a high emissions price.

Initial consultation with industry

139. In developing the options to be included in the consultation document, the Ministry of Transport has engaged with directly affected stakeholders in the motor vehicle industry. Specifically, the Ministry has discussed options with the Motor Industry Association for new vehicle importers, and the Imported Motor Vehicle Industry Association for used vehicle importers.

Financial implications

140. There are no immediate financial implications from the proposal to consult on the clean car standard and the clean car discount scheme. The options proposed in this paper would have financial implications, should they be implemented. I will report back to Cabinet with more information on financial implications after the consultation.

141. Crown funding would be required to establish the cash reserve for the vehicle purchase feebate scheme.

Gender and human rights implications

142. There are no gender or human rights implications from this proposal.

Legislative implications

143. There are no immediate legislative implications from this proposal to consult. However, I have made a legislation bid for the Climate Change Response (Transport Emissions) Bill, which

[31] Green, D 2010, *Why the Market for New Passenger Cars Generally Undervalues Fuel Economy*, Joint Transport Research Centre Discussion Paper No. 2010-6, Oak Ridge, United States.

could be used as the vehicle to implement these proposals if Ministers subsequently agree to progress them.

144. Following public consultation and final policy decisions in late August 2019, legislative drafting can commence. I anticipate bringing a LEG paper in December 2019 seeking agreement for the introduction of the Climate Change Response (Transport Emissions) Bill into Parliament. The Bill holds a priority 4 – to be referred to Select Committee in 2019. The Bill would be considered by Select Committee early in 2020 and progress through the normal Parliamentary process over 2020.

145. System and other operational changes will be needed for implementation. My expectation is that the clean car standard and clean car discount scheme would come into effect from 1 January 2021.

Regulatory Impact Analysis

146. The Ministry of Transport has conducted an initial regulatory impact analysis of the clean car standard and the clean car discount scheme. A draft regulatory impact statement is attached. It will be finalised following public consultation.

Publicity

147. I propose to make a media announcement on the release of the consultation document. The document, this cabinet paper, and the associated social impact assessment, cost benefit analyses and the draft regulatory impact statement will be published on the Ministry's website, with questions and answers. The Ministry will meet with sector groups and interested parties and receive electronic submissions.

148. I propose a six-week consultation period to ensure sufficient publicity. The consultation will include discussions with groups representing those on lower incomes as they are potentially affected. As well as the vehicle industry and consumers. This includes the Automobile Association, the Motor Industry Association, and the Imported Motor Vehicle Importers Association.

Proactive Release

149. I propose publicly releasing this cabinet paper at the time the consultation document is released. A due diligence process would be undertaken before proactive release. This material would be released on the Ministry's website.

Recommendations

The Associate Minister of Transport recommends that the Committee:

1. **agree** to the Ministry of Transport releasing the attached public consultation document on introducing a vehicle fuel efficiency standard for new and used light vehicles entering the fleet, and a vehicle purchase feebate scheme for new and used light vehicles sold for the first time in New Zealand

2. **agree** that public consultation occur for a six-week period over 24 June to 5 August 2019

3. **note** the feebate schedules in Appendix A that I propose including in the consultation document and the intention that rebates only be available for vehicles with a retail price of up to $80,000

4. **invite** the Associate Minister of Transport to report back to the Cabinet Economic Development Committee on the outcome of the consultation and on final proposals for the clean car standard and the clean car discount scheme by the end of 2019

5. **note** that I have asked the NZ Transport Agency to progress in 2019 a voluntary vehicle scrappage scheme potentially in Auckland, and I will report back to Ministers as the work progresses for agreement to proceed with the scheme and for funding, if required

6. **note** that I intend to replace the previous Government's EV target of 64,000 EVs by 2021 and I will bring a proposal for a new target to the Cabinet Economic Development Committee

7. **note** that the Ministry of Transport is working with the Financial Inclusion Industry Forum on a social leasing model that will include the consideration of leasing second-hand EVs to lower socioeconomic households

8. **note** that to improve air quality, the Ministry of Transport is investigating introducing the Euro 6 exhaust emissions standard for vehicles entering the fleet with the intention of including this change in the 2019/20 Transport Rules Programme

9. **agree** to this Cabinet Economic Development Committee paper being proactively released at the time the attached consultation document is released.

Authorised for lodgement

Hon Julie Anne Genter
Associate Minister of Transport

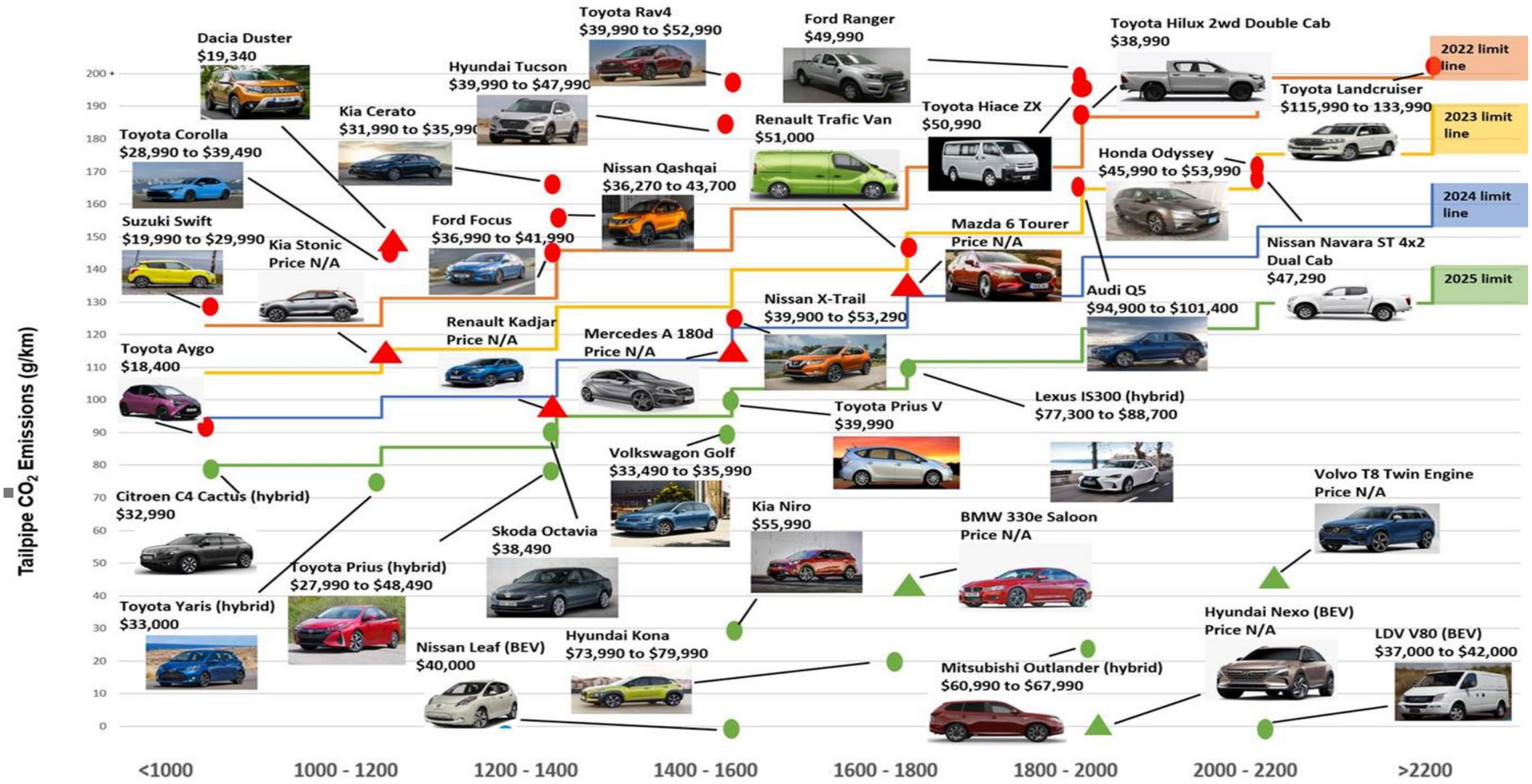
Appendix A: Example feebate schedule for new vehicles and near-new vehicle imports of up to 3 years old

	NEW VEHICLES: CO_2 Emissions Band (gCO_2/km)																
	Hyundai Kona VW eGolf LDV EV80 van	Toyota Prius Prime (PHEV) Kia Niro (PHEV) Mitsubishi Outlander (PHEV)	Mini Countryman (PHEV) BMW 225xe (PHEV)	Toyota Prius (hybrid)	Toyota Camry (hybrid) Lexus CT200h (hybrid) Audi A1 (P)	Suzuki Swift (P) Lexus IS300 (hybrid)	VW Golf (1.4 P) Kia Rio (P) Nissan X-trail (D)	Suzuki Vitara (D) Ford Fiesta (1.5P) BMW 3 Series (P)	Toyota Corolla Ford Focus Suzuki Jimny Mazda CX-3	Mazda 6 Nissan Qashqai Audi Q7 (D)	Kia CERATO Mazda CX-5 Audi Q5 (P) Outlander (D) Outlander (P)	Mitsubishi ASX Ford Endura Honda Odyssey	Kia Sportage (P) Hyundai Tucson (P)	Mitsubishi Triton 4x4(4WD) Toyota RAV4 4x4	Toyota Hilux 4x4 Mazda CX-9 (AWD)	Ford Ranger 4x4 Holden Colorado 4x4 BMW 8 Series V8	Range Rover Nissan Patrol Toyota LandCruiser
Emissions	**0 to 4**	**5 to 49**	**50 to 69**	**70 to 89**	**90 to 105**	**106 to 120**	**121 to 130**	**131 to 140**	**141 to 150**	**151 to 160**	**161 to 170**	**171 to 180**	**181 to 190**	**191 to 200**	**200 to 225**	**226 to 250**	**over 251**
YEARS	Rebates									Zero			Fees				
2021	$8,000	$6,800	$5,800	$4,800	$3,800	$2,800	$1,800	$800	$600	$0	$0	$0	$2,000	$2,250	$2,500	$2,750	$3,000
	Rebates								Zero			Fees					
2022	$7,200	$6,200	$5,200	$4,200	$3,200	$2,200	$1,200	$600	$0	$0	$0	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
	Rebates							Zero			Fees						
2023	$6,500	$5,600	$4,700	$3,800	$2,900	$2,000	$1,100	$0	$0	$0	$1,500	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
	Rebates						Zero			Fees							
2024	$6,300	$5,200	$4,100	$3,000	$1,900	$800	$0	$0	$0	$1,250	$1,500	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
	Rebates					Zero			Fees								
2025	$6,000	$4,700	$3,400	$2,100	$800	$0	$0	$0	$1,000	$1,250	$1,500	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
	Rebates				Zero			Fees									
2026	$5,600	$4,100	$2,600	$1,100	$0	$0	$0	$750	$1,000	$1,250	$1,500	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
	Rebates				Zero			Fees									
2027	$4,500	$3,300	$2,100	$900	$0	$0	$0	$750	$1,000	$1,250	$1,500	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000
	Rebates			Zero			Fees										
2028	$4,200	$2,500	$1,600	$0	$0	$0	$700	$750	$1,000	$1,250	$1,500	$1,750	$2,000	$2,250	$2,500	$2,750	$3,000

Appendix A: Example feebate schedule for used vehicle imports

USED VEHICLES: CO_2 Emissions Band (gCO_2/km)																	
	Nissan Leaf Mitsubishi MiEV	Holden Volt (PHEV) Mitsubishi Outlander (PHEV) Toyota Prius (PHEV)	2016 BMW 740e (PHEV) 2016 Mercedes C350 (PHEV)	Porsche Cayenne (PHEV) Toyota Yaris/Vitz (hybrid)	Toyota Prius (hybrid) Honda Insight (hybrid) Fiat 500 (P) 2016 Renault Megane (D)	Toyota Camry (hybrid) Ford Fiesta (P) Hyundai i30 (D)	Lexus GS300 (hybrid) BMW 318(D) Skoda Fabia (P)	Citroen C3 (1.4P) BMW 116 (P) BMW 3 (hybrid)	Ford Focus (D) Holden Cruze (D) Lexus RX450 (hybrid)	Mitsubishi Outlander (D) Honda Jazz (1.5P)	Holden Cruze (P) Ford Modeo (D) Nissan Pulsar (P)	Corolla (P) Skoda Superb (P) Mazda CX-5 AWD (P) Mitsubishi Outlander (P)	Camry (P) Nissan Tiida (P) Mazda 3 (P) Ford Kuga (P)	Ford Focus (P) Kia Sportage (D) Nissan X-trail (D) Nissan Dualis (P)	Ford Falcon 6 Holden Commodore SV6 Honda Odyssey	Ford Territory (D) Holden Colorado (D)	Holden Commodore V8 Range Rover Toyota LandCruiser
Emissions	**0 to 4**	**5 to 49**	**50 to 69**	**70 to 89**	**90 to 105**	**106 to 120**	**121 to 130**	**131 to 140**	**141 to 150**	**151 to 160**	**161 to 170**	**171 to 180**	**181 to 190**	**191 to 200**	**200 to 225**	**226 to 250**	**over 251**
YEARS	Rebates									Zero			Fees				
2021	$2,600	$2,300	$2,000	$1,700	$1,400	$1,100	$800	$500	$200	$0	$0	$0	$1,100	$1,200	$1,300	$1,400	$1,500
	Rebates								Zero			Fees					
2022	$2,400	$2,100	$1,800	$1,500	$1,200	$900	$600	$300	$0	$0	$0	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
	Rebates							Zero			Fees						
2023	$2,200	$1,900	$1,600	$1,300	$1,000	$700	$400	$0	$0	$0	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
	Rebates						Zero			Fees							
2024	$2,200	$1,900	$1,600	$1,300	$1,000	$700	$0	$0	$0	$800	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
	Rebates					Zero			Fees								
2025	$2,100	$1,700	$1,300	$900	$500	$0	$0	$0	$700	$800	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
	Rebates				Zero			Fees									
2026	$2,100	$1,700	$1,300	$900	$0	$0	$0	$600	$700	$800	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
	Rebates				Zero			Fees									
2027	$2,100	$1,600	$1,100	$600	$0	$0	$0	$600	$700	$800	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500
	Rebates			Zero			Fees										
2028	$2,100	$1,600	$1,100	$0	$0	$0	$500	$600	$700	$800	$900	$1,000	$1,100	$1,200	$1,300	$1,400	$1,500

Appendix B – Selected vehicle makes and models by tare weight and limit lines 2022–2025 – New vehicles



LEGEND

- The vehicle is imported in New Zealand. Its emissions level is above the 2025 limit line.
- The vehicle is imported in New Zealand. Its emissions level is below the 2025 limit line.
- The vehicle is not imported in New Zealand. Its emissions level is above the 2025 limit line.
- The vehicle is not imported in New Zealand. Its emissions level is below the 2025 limit line.

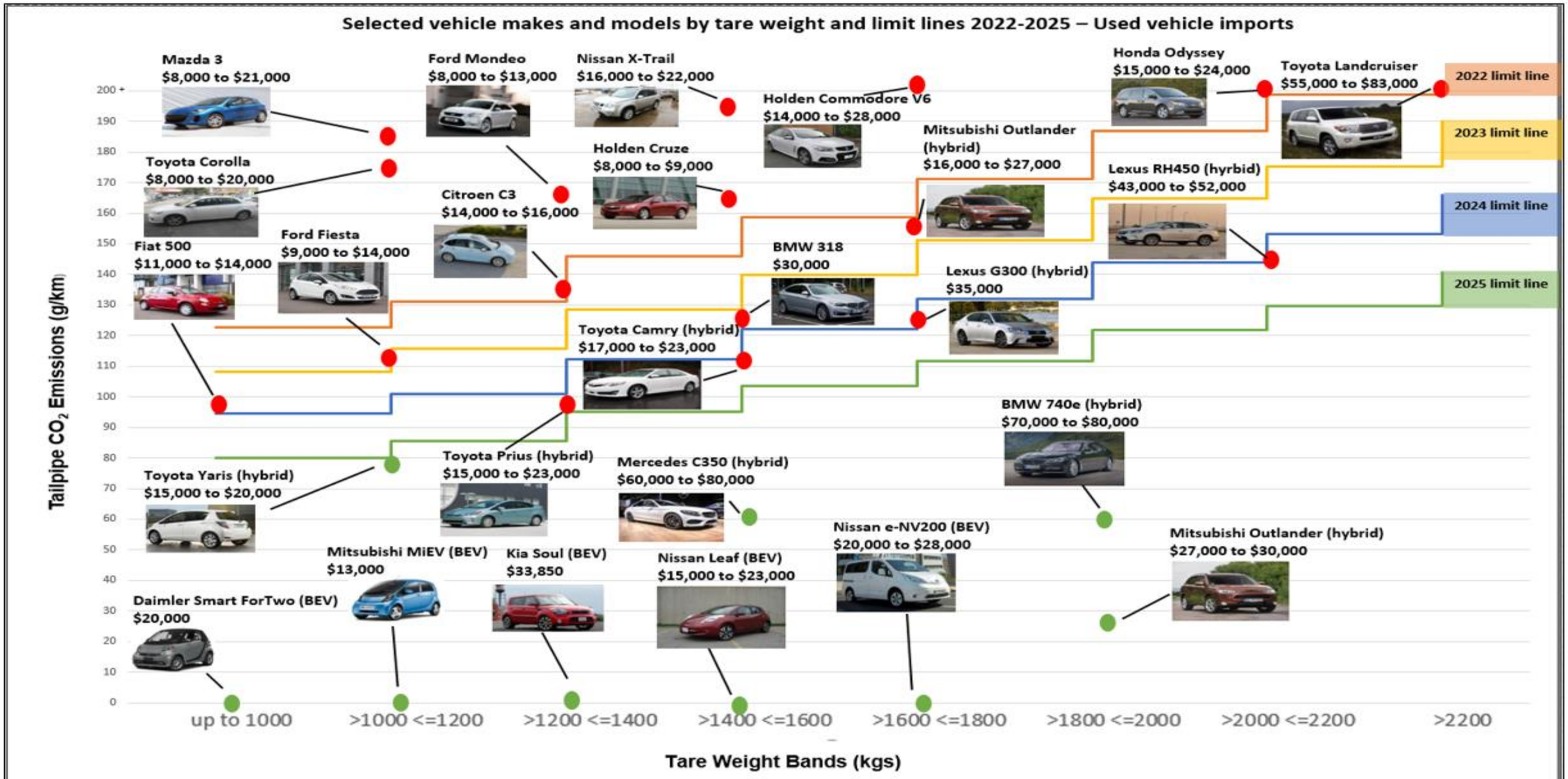
NOTES

This diagram shows a sample of new vehicles makes and models relative to the fleet-wide, sales-weighted limit lines for 2022-2025. In practice, a vehicle importer could import a mix of vehicles such that its imported fleet's sales-weighted average emissions meet the requirement for the average tare weight of its fleet.

SOURCES

Vehicle price data was obtained from manufacturers' website or from the Automobiles Association New Zealand for vehicle models less than 3 years old.

Appendix B Selected vehicle makes and models by tare weight and limit lines 2022–2025 – Used vehicle imports



LEGEND

The vehicle is imported in New Zealand. Its emissions level is above the 2025 limit line.

The vehicle is imported in New Zealand. Its emissions level is below the 2025 limit line.

NOTES

This diagram shows a sample of used vehicles makes and models relative to the fleet-wide, sales-weighted limit lines for 2022-2025. In practice, a vehicle importer could import a mix of vehicles such that its imported fleet's sales-weighted average emissions meet the requirement for the average tare weight of its fleet.

SOURCES

Vehicle price data was obtained from Trademe.co.nz for ICE vehicle models manufactured in 2013. In the case of EVs and Hybrid vehicles, the price is for models manufactured in 2016. Cheaper prices than the ones shown may be obtained for older vehicles, vehicles with higher mileage or vehicles in poor condition.

Appendix C – How a selection of new vehicles would be affected by the Clean Car Discount

Vehicles eligible for a rebate in first year of scheme (2021) | **Zero band – zero fees** | **Vehicles that attract a fee in first year of scheme (2021)**

CO_2 Emission Bands																	
0 to 4	5 to 49	50 to 69	70 to 89	90 to 105	106 to 120	121 to 130	131 to 140	141 to 150	151 to 160	161 to 170	171 to 180	181 to 190	191 to 200	200 to 225	226 to 250	Over 251
Rebates									Zero Band			Fees				
$8,000	$6,800	$5,800	$4,800	$3,800	$2,800	$1,800	$800	$600	$0	$0	$0	$2,000	$2,250	$2,500	$2,750	$3,000
VW eGolf $65,990 	Mitsubishi Outlander $55,990 to $66,990 	Mini Countryman PHEV $59,990 	Toyota Prius h $27,990 to $48,490 	Audi A1 $39,400 to $47,900 	♥ Suzuki Swift $19,990 to $29,900 	VW Golf $33,490 to $35,990 	Vitara $28,790 to $37,990 	Ford Focus $36,990 to 41,990 	Mazda 6 $45,995 to $56,995 	Kia Cerato $31,990 to $35,990 	Mitsubishi ASX $36,690 to $45,990 	Hyundai Tucson $39,990 to $47, 990 	Land Rover Discovery (TD) $79,990 	Toyota Hiace Van $41,000 	♥ Holden Colorado $52,490 to $66,990 	Range Rover $167,900 to $320,000 
Hyundai Kona $73,990 to $79,990 	Kia Niro $55,990 	BMW 225xe $69,880 		Toyota Camry h $41,490 to $49,490 	Toyota Lexus IS300h $77,300 	Kia Rio $22,490 to $26,990 	Ford Fiesta $25,490 	Suzuki Jimny $25,990 to $27,500 	Nissan Qashqai $36,270 to $43,700 	♥ Mazda CX-5 $40,995 to $61,495 	Ford Endura $53,490 to $69,990 	♥ Toyota Hilux $43,490 to $56,990 	♥ Toyota RAV4 $39,990 to $52,990 	Mazda CX-9 $59,695 to $67,895 	BMW 8 $181,900 	Nissan Patrol $107,500 to $127,500 
Hyundai Ioniq $59,990 to $65,990 	Toyota Prius Prime $48,490 			Toyota Lexus CT200h $51,690 to $62,690 	Nissan X-Trail Hybrid Price N/A 	Nissan X-Trail $39, 900 to $53,290 	♥ Toyota Corolla $28,990 to $39,490 	Mazda CX-3 $31,395 to $41,690 	Renault Trafic Van $51,000	Mitsubishi Outlander $43,990 to $54,490	Honda Odyssey $45,990 to $53,990	♥ Kia Sportage $35,990 to $45,990	♥ Ford Ranger 2wd single cab $37,990-$43,490	♥ Mitsubishi Triton $51,990 to $59,490	♥ Ford Ranger 4wd double cab $55,990-$84,990	Toyota Land Cruiser $115,990 to $133,990
BMW i3 $77,200	Hyundai Ioniq $53,990			Toyota Prius C/ Aqua H $21,990 to $27,990	Honda Jazz $21,990 to $26,790	Toyota Avalon Hybrid Price N/A			Honda HR-V $29,990 to $39,990	♥ Nissan Navara 4x2 $27,990 to $40,990	Toyota RAV4 Hybrid $38,990					
LDV EV80 van $69,990	Audi A3 e-tron $69,900					Toyota Estima 7 seater Hybrid Price N/A										
LDV EV80 chassis cab $64,990																
Renault KangooZE $77,900																
Nissan Leaf EV expected August $59,990																

Key

Writing in Green – Pure electric vehicle

Writing in Blue – Plug-in hybrid electric vehicle

Writing in Brown – Hybrid

Writing in Black – Internal combustion engine

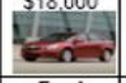
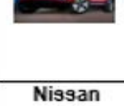
EVs and hybrids available in Japan but not [yet] sold 'new' in New Zealand

♥ = *Top 10 Models – 2018*

Model	Units sold
Ford Ranger	9904
Toyota Hilux	8086
Toyota Corolla	7300
Toyota RAV4	4964
Mitsubishi Triton	4720
Holden Colorado	4583
Mazda CX-5	3695
Nissan Navara	3655
Kia Sportage	3289
Suzuki Swift	3034

Appendix C – How a selection of used import vehicles new to the fleet would be affected by the Clean Car Discount

Vehicles eligible for a rebate in first year of scheme (2021) | **Zero band – Zero fees** | **Vehicles that attract a fee in first year of scheme (2021)**

CO_2 Emission Bands																
0 to 4	5 to 49	50 to 69	70 to 89	90 to 105	106 to 120	121 to 130	131 to 140	141 to 150	151 to 160	161 to 170	171 to 180	181 to 190	191 to 200	200 to 225	226 to 250	Over 251
Rebates									Zero Band			Fees				
$2,600	$2,300	$2,000	$1,700	$1,400	$1,100	$800	$500	$200	$0	$0	$0	$1,100	$1,200	$1,300	$1,400	$1,500
Nissan Leaf $15,000 to $23,000 	Holden Volt PHEV $25,000 to $30,000 	BMW 740e PHEV $70-80,000+ 	Toyota Yaris H $15,000 to $20,000 	Toyota Prius H $14,000 to $23,000 	♥ Mazda Demio $9,000 to $13,000 	♥ Nissan Tiida $6,000 to $10,000 	Citroen C3 $14,000 to $16,000 	Ford Focus $8,000 to $15,000 	♥ Toyota Wish $7,000 to $14,000 	Holden Cruze $8,000 to $18,000 	Honda Odyssey $15,000 to $24,000 	Toyota Camry $7,000 to $16,000 	Ford Focus $8,000 to $25,000 	Mitsubishi Outlander $16,000 to $27,000 	Ford Territory $15,000 to $31,000 	Commodore V8 $23,000 to $50,000 
Mitsubishi MiEV $13,000 	Mitsubishi Outlander PHEV $27,000 to $30,000 	Mercedes C350 PHEV $60-80,000+ 		Toyota Prius 7 seater H $16,000 to $27,000 	Toyota Camry H $17,000 to $23,000 	♥ Suzuki Swift $6,000 to $11,000 	BMW 116 $13,000 to $22,000 	Holden Cruze $8,000 to $9,000 		Ford Mondeo $8,000 to $13,000 	Mazda CX-5 $15,000 to $30,000 	Ford Kuga $14,000 to $25,000 	Kia Sportage $23,000 		Holden Colorado $17,000 to $35,000 	Range Rover $52,000 to $95,000 
Nissan e-NV200 $11,000 to $20,000 	Toyota Prius PHEV $25,000			Honda Insight H $10,000 to $15,000	Toyota Estima PHEV $9,000 to $25,000	♥ Honda Fit $5,000 to $7,000 	BMW 3 H $25,000 to $35,000 	Lexus RX450H $43,000 to $52,000		Nissan Pulsar $6,000 to $15,000			Nissan Dualis $8,000 to $15,000 		Mazda MPV $10,000 to $22,000	Land Cruiser VX $55,000 to $83,000
Mitsubishi Minicab MiEV $13,000 to $20,000				Fiat 500 $11,000 to $14,000	Hyundai i30 $11,000 to $17,000	Skoda Fabia $15,000 to $19,000	Toyota Corolla $8,000 to $20,000						Subaru Legacy $7,000 to $17,000		Toyota Hiace $15,000 to $29,000	
Kia Soul $33,850					Toyota Vitz/Yaris $5,000 to $14,000	Lexus GS300 H $35,000										
Smart ForTwo $20,000																

Key

Writing in Green – Pure electric vehicle
Writing in Blue – Plug-in hybrid electric vehicle
Writing in Brown – Hybrid
Writing in Black – Internal combustion engine
♥ most popular vehicles for low-income households (July 2015 to June 2018)