

Submission

By

**THE
NEW ZEALAND
INITIATIVE**

To the Ministry of Transport

on

Transport Emissions: Pathways to Net Zero by 2050

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For the first time since it was introduced in 2008, we will actually be able to cap emissions covered by the [ETS]. This limit is likely to reduce steadily over time in line with the emissions budgets set under the zero carbon bill. This will create a predictable sinking lid on climate pollution.

– Hon James Shaw, Minister for Climate Change, 5 November 2019, First Reading of the Climate Change Response (Emissions Trading Reform) Amendment Bill¹

The most cost-effective way to reduce greenhouse gas emissions is for there to be a price on those emissions that reflects the true cost that pollution imposes on future generations and is sufficient to induce investment in and adoption of cleaner alternatives. That is what this bill aims to achieve. Once this bill passes, our emissions trading scheme (ETS) will be one of the most efficient and effective tools that we have for meeting our climate targets.

– Hon James Shaw, Minister for Climate Change, 2 June 2020, Second Reading of the Climate Change Response (Emissions Trading Reform) Amendment Bill²

1. INTRODUCTION AND SUMMARY

- 1.1 Thank you for the opportunity to submit on “Transport Emissions: Pathways to Net Zero by 2050,” a green paper by the Ministry of Transport (“MoT”).
- 1.2 This submission is made by The New Zealand Initiative, a think tank supported primarily by chief executives of major New Zealand businesses. The purpose of the organisation is to undertake research to contribute to the development of sound public policies in New Zealand to help create a competitive, open, and dynamic economy and a free, prosperous, fair, and cohesive society.
- 1.3 The New Zealand Initiative supports the government’s emissions targets, including the Paris climate agreement and net zero emissions of long-lived greenhouse gases from 2050. The question now is how to deliver these targets.
- 1.4 MoT proposes a target of zero gross emissions from transport. MoT’s strategy does not contribute towards our emissions targets:
 - 1.4.1 **Transport is covered by the ETS.**³ The ETS caps emissions. Transport is within the cap. Lower transport emissions does not mean lower overall emissions.
 - 1.4.2 Given transport’s size and role in the New Zealand economy, **a zero gross emissions target risks substantial costs and threatens national emissions targets.** MoT should be aware of the risk of doing too much to reduce transport’s emissions at the expense of national targets.
- 1.5 The government’s emissions strategy gives each sector of the economy responsibility for reducing emissions. This strategy depends on two factors. First, on understanding the relationship between sector emissions and national emissions which is intermediated by the ETS. Second, that diminishing returns means there is a risk that a sector does “too much” to

¹ Hansard is available [here](#).

² Hansard is available [here](#).

³ MoT’s strategy excludes international aviation.

reduce emissions in the sense that far greater reductions could be achieved elsewhere for the same cost.

1.6 We think the key question for MoT is its treatment of offsets.⁴ MoT targets zero gross emissions by treating offsets as if they do not exist. However, offsets do exist. They will almost certainly have some role in reducing net emissions and should cap willingness to pay for gross reductions in emissions. MoT will therefore need a more nuanced position on offsets.

1.7 We suggest two principles should guide MoT's treatment of offsets:

1. **Offsets are a matter of government policy which MoT takes as given.** MoT should not form its own view on offsets since co-ordination between sectors is not supported by each sector deciding its own offsets policy.

2. **Offsets cap abatement costs in transport.** MoT will not support policies that reduce transport emissions for a higher cost than available offsets over an appropriate time horizon.

1.8 These principles help to align efforts to reduce emissions in each sector with our national targets.

1.9 Our submission proceeds as follows:

- Section 2 argues co-ordination is a key issue which MoT acknowledges in its green paper but does not resolve.
- Section 3 opposes sectors adopting national emissions targets as their own.
- Section 4 shows a target of zero gross emissions in transport is not compatible with national emissions targets.
- In section 5 we argue a carbon price solves co-ordination and sequencing problems.
- Section 6 suggests principles to guide MoT's efforts to reduce emissions.
- In section 7 we argue MoT does not consider the consequences of the ETS for its strategy, and
- Section 8 concludes.

1.10 In the Appendix, we reply to MoT's questions, respond to common concerns about the ETS, and provide indicative estimates of the effects of the ETS at current prices.

2. A SECTOR-BASED EMISSIONS STRATEGY MUST CO-ORDINATE WITH OTHER SECTORS

2.1 Co-ordination has different meanings, but perhaps the most important for successful delivery of our targets is co-ordination on costs.

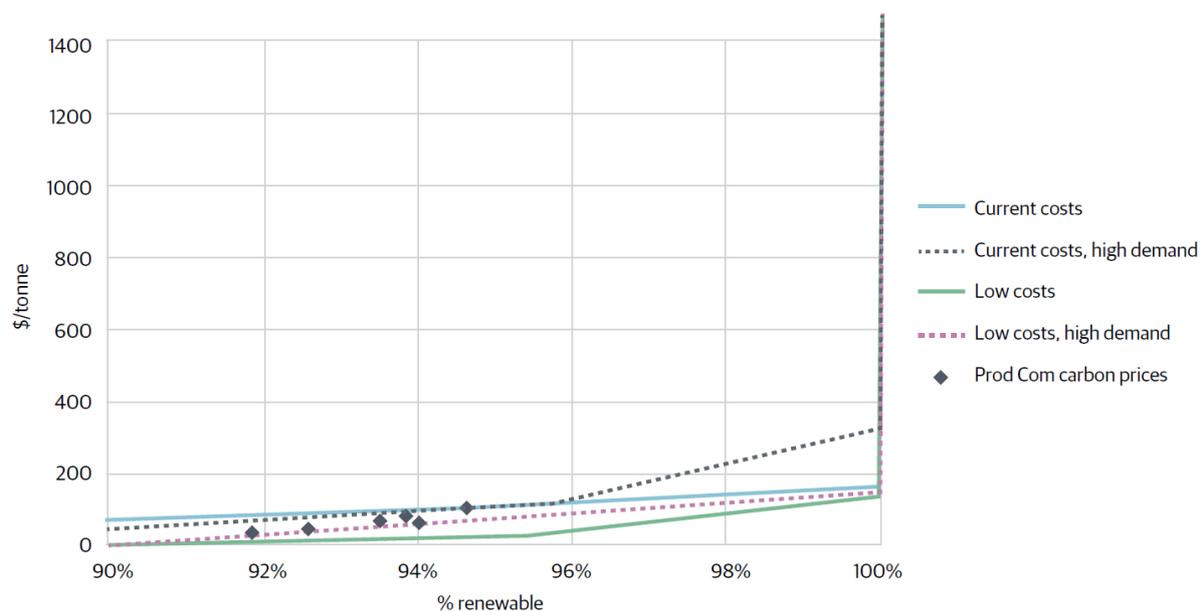
2.2 Diminishing returns make cost-effectiveness critical to the successful delivery of our emissions targets. For any technology, fuel, activity or sector, there comes a point at which further reductions in emissions from a source reaches diminishing returns. Once this point is reached, further emissions reductions can become prohibitively difficult. We call this the '80/20 problem.'

2.3 The 80/20 problem can dramatically affect the performance of climate change policies. For example, studies of the government's 100% renewable electricity policy show sharply

⁴ We use the term offsets to refer to negative emissions technologies in all forms including carbon capture by forests.

diminishing returns as the share of renewables approaches 100% (Figure 1).⁵ The government could cut many times more emissions for the same cost as the 100% renewables policy if it left the last thermal generators in place and reduced emissions from other more effective sources instead.⁶

Figure 1: Diminishing returns on the government's 100% renewable electricity policy as renewables' share approaches 100%



Source: New Zealand Initiative (2019), *Switched On!*, Figure 10.

- 2.4 Given the severe penalties that diminishing returns can impose on emissions policies, delivering our emissions targets will require an approach that is sensitive to diminishing returns. Policies must not attempt to force further emissions reductions from sources after diminishing returns have set in. This is why co-ordination between sectors on a principle of cost minimisation is important.⁷
- 2.5 The decision rule that minimises exposure to diminishing returns is to equalise the marginal cost of abatement across sectors. This decision rule is what we mean by co-ordination between sectors.
- 2.6 While MoT refers to co-ordination throughout its green paper, it does not define the term, or discuss diminishing returns, or propose a mechanism to deliver co-ordination. MoT's proposed zero gross transport emissions target implies a siloed approach that in principle removes the need for co-ordination between transport and other sectors. Zero gross emissions means MoT can target any or all transport emissions regardless of opportunities for far greater reductions in other sectors.

⁵ For example, see the analysis by the Interim Climate Change Committee in 2019 available from [here](#).

⁶ Diminishing returns can set in long before 100% in other sectors.

⁷ Diminishing returns also explain why emissions targets for sectors can be counterproductive. Targets are rarely set with diminishing returns in mind.

3. INDIVIDUAL SECTORS SHOULD NOT ADOPT NATIONAL EMISSIONS TARGETS

- 3.1 Sectors should not adopt national emissions targets as their own. This approach pre-empts co-ordination and sequencing of efforts to lower emissions in different sectors.
- 3.2 Not all sectors are equal. Sectors subject to high innovation rates could plausibly make a greater contribution to emissions targets by leaving their contribution until later. Transport may be one of those sectors. If transport has high abatement costs currently but lower expected costs in the future then MoT and the government should be open to the possibility that transport makes its contribution later than other sectors. MoT considers timing with respect to policy targets and vehicle lifetimes but we think the analysis should also include costs and innovation rates relative to other sectors.
- 3.3 MoT can better support national emissions targets by considering the timing of transport's contribution.

4. ZERO GROSS EMISSIONS IS NOT COMPATIBLE WITH EMISSIONS TARGETS

- 4.1 MoT's proposal to target zero gross emissions from transport is not consistent with national emissions targets. In a large capital-intensive sector like transport, a zero gross emissions target is almost certainly counterproductive:

- Zero gross emissions enables MoT to target every emissions source in transport regardless of cost or disruption.
- In principle, removes any obligation to prioritise emissions reduction efforts within transport or to co-ordinate with other sectors.
- Given the size of the transport sector, could lead to substantial, possibly ruinous, costs due to the 80/20 problem, threatening our emissions targets, and
- Will not reduce overall emissions.⁸

- 4.2 MoT's justification for zero gross emissions is unconvincing. MoT says (p106):

While the Government has committed to reducing all GHG emissions (excluding biogenic methane) to net zero by 2050, it is still unclear to what extent carbon offsetting will help to achieve this target. This means that we do not know the extent to which we may or may not be able to offset Aotearoa's transport emissions going forward. Other sectors in Aotearoa may find it harder or take longer to reduce emissions in comparison to transport, and therefore may be prioritised over transport when it comes to carbon offsetting. Given this uncertainty, these pathways explore what could be required to take us as close to zero transport GHG emissions as possible.

- 4.3 While uncertainty about the availability of offsets is a challenge, it is not clear how zero gross emissions represents a proportional or reasonable response to that uncertainty.
- 4.4 Offsets are significant as a yardstick for the minimum performance of emissions policies, measured by cost per tonne of abated emissions. It will not generally be in a country's

⁸ A zero gross emissions strategy has no overall emissions benefits because a) the extra reduction in emissions from transport due to zero gross emissions target could have been achieved in another sector at lower cost (unless every other sector also pursues zero gross emissions), and b) the ETS caps emissions and transport is in the cap. We consider the latter point in section 7.

interests to spend more than \$1,000 to reduce each tonne of emissions if offsets can do the same job⁹ for less than \$100.¹⁰

4.5 We think the key question for MoT is its treatment of offsets, specifically the interaction between transport and offsets. Offsets will almost certainly play some role in delivering our emissions targets. This was made clear in the analysis by the Climate Change Commission.¹¹ MoT will therefore need a position on offsets that is more nuanced than its current position of ignoring offsets. MoT should treat offsets in a way that means transport best contributes to national emissions targets.

4.6 We think two principles should guide MoT's treatment of offsets:

1. Offsets are a matter of government policy which MoT will take as given. MoT should recognise it does not need to take any position on access to, or the merits of, offsets. New Zealand can make more progress towards emissions targets with a single, consistent position on offsets. Accordingly, the treatment of offsets appropriately determined by Cabinet rather than government agencies.

2. Offsets cap the cost of abatement in transport. MoT will not support any policy that reduces transport emissions for a higher cost than can be achieved with available offsets.¹²

4.7 Once the government of the day has formed a view on the available quantity and type of offsets, officials in each sector should take that view as given and treat offsets as a cap on willingness to pay for emissions reductions in each sector on a cost per tonne basis. This need not be a hard rule, but the onus would rest with officials to show why spending more to reduce emissions than can be achieved with offsets is justified.

4.8 The two principles we propose would organise the relationship between offsets and emissions policies simply, rationally and predictably. Regardless of whether MoT accepts our suggested principles, MoT needs some position on its treatment of offsets.

5. A CARBON PRICE SOLVES THE CO-ORDINATION PROBLEM

5.1 A carbon price co-ordinates efforts to reduce emissions within and between sectors. Whether in the form of an ETS or a carbon tax, a carbon price works by raising the cost of emitting greenhouse gases. Under the ETS, the carbon price rises to whatever level is necessary to bring overall emissions within the cap set by the government.

5.2 Using a carbon price to reduce emissions, as opposed to command and control, has the advantage of avoiding, or minimising exposure to, the 80/20 problem. For any given carbon price, sources that can reduce emissions for less than the carbon price will do so. Other sources will pay the carbon price, since that is cheaper than reducing emissions. Thus, using prices to reduce emissions has in-built protection against diminishing returns.

⁹ Under the Climate Change Response Act and the Paris climate agreement, each tonne of reductions and removals contributes equally to emissions targets.

¹⁰ Throughout this submission, offsets only refers to robust removals recognised by the ETS and consistent with government policy.

¹¹ Climate Change Commission (2021), "Ināia tonu nei: a low emissions future for Aotearoa," p78.

¹² Over an appropriate time horizon, and not limited just to the short run.

- 5.3 Carbon prices also solve the related problem of sequencing emissions reduction efforts by sector. Given differences between sectors in abatement costs and innovation rates, there may be emissions benefits as well as economic and social benefits if some sectors wait to reduce emissions while others go early. Carbon prices can exploit benefits from sequencing emissions-reduction efforts in different sectors.
- 5.4 MoT should be open to the possibility that the ETS may be doing more work than MoT thinks. There may be information contained in the limited apparent effects of the ETS in transport so far. The limited ETS effects in transport likely reflects fundamentals – that there is value in transport’s contributions to lower emissions coming later. *If* the ETS is sequencing transport’s contribution for later, then MoT should be aware of the risk that overriding the ETS detracts from rather than supports New Zealand’s track to net zero emissions.
- 5.5 Of course, sequencing transport’s emissions reductions is likely to raise other concerns, such as how a sector can credibly promise future reductions as other sectors reduce emissions now. However, given what is at stake, the sequencing question is worth further investigation.

6. SUGGESTED ALTERNATIVE PRINCIPLES

- 6.1 MoT lists seven guiding principles at pages 10-11 of their green paper. Principles 1 and 2 do not support New Zealand’s emissions targets. Other principles appear vague or irrelevant. We suggest the following alternative principles in their place:

1. **Reduce emissions at least cost, within the constraints set by Parliament and local councils.**
2. **Co-ordinate with other sectors by equalising marginal abatement costs.** MoT will not force emissions reductions from transport when the same quantity of emissions can be reduced or removed from other available sources for a lower cost.
3. **No policy recommendations without cost-benefit analysis.** MoT will only recommend policies after a cost-benefit analysis. Any analysis must include the effects of the ETS. Emissions policy is hard. Analysis is essential to identify effective emissions policies.
4. **All analysis takes into account the effects of the ETS.**
5. **A level playing field** supports discovery of the most effective ways to reduce emissions. As far as possible, MoT should be technology- and fuel-neutral because that best supports lower emissions.
6. MoT will take **a rules-based approach** to reducing transport emissions. As far as possible, MoT will avoid ad hoc policies, recognising the value of predictable, credible emissions policies especially in a major sector such as transport. If climate policy substantially depends on the whims of political leaders then New Zealand will miss its targets. The emissions problem is well defined, so use systems.
7. **Offsets are a matter of government policy which MoT will take as given.**

- 6.2 We were pleased to see passing references to some of these principles in MoT’s green paper.

7. THE ETS NEUTRALISES ALL COMPLEMENTARY POLICIES OPERATING WITHIN ITS CAP

Carbon pricing broadly follows two forms: a carbon tax or a cap and trade approach. Twelve years ago, New Zealand opted for a cap and trade scheme. But previous Governments left out one crucial part: the cap. We got a cap and trade system

without a cap, meaning that emissions permitted under the scheme were, in effect, unlimited... [This bill] include[s] a cap on the total emissions allowed in the ETS.

– Hon James Shaw, Minister for Climate Change, 2 June 2020, Second Reading of the Climate Change Response (Emissions Trading Reform) Amendment Bill¹³

- 7.1 Up until now, we have ignored the highly significant fact that the ETS caps emissions and transport is within the cap. As the quote from the Minister for Climate Change makes clear, the ETS cap is government policy and, since June 2020, the law.¹⁴ If the ETS caps emissions then it is not clear how MoT's emissions strategy lowers emissions.
- 7.2 MoT does not seem to realise the effect of the ETS cap on the emissions benefits of its strategy. Nor does MoT consider the risk that if its strategy overrides a properly-functioning ETS then it detracts from our emissions targets. The crucial question for the merits of MoT's strategy is whether the ETS works.
- 7.3 MoT should be aware that the neutralising effect of the ETS probably applies under quite general conditions. The ETS neutralises other policies whenever its cap is 'binding' i.e. low enough to force emissions below what they would be without the cap.¹⁵ The cap is binding whenever the ETS price is materially above zero. In 2020, the government introduced a minimum ETS price of \$20. In effect, the government's policy is that the ETS is always binding. Thus, MoT's strategy is always neutralised.^{16,17}
- 7.4 We recommend MoT read [our primer on the ETS](#) which provides a more detailed explanation of why a binding ETS neutralises complementary emissions policies.
- 7.5 While it may be passé by now to say complementary emissions policies cannot reduce emissions under a binding ETS, officials have not persuasively rebutted the point. Before the government commits to policies costing billions of dollars, it would seem important that it first establish the foundation for its strategy by showing how it can reduce emissions under a binding ETS emissions cap. We seek a step-by-step explanation before the government tables its Emissions Reduction Plan in Parliament later this year.
- 7.6 As it stands, MoT's strategy appears likely to only raise the cost of achieving our emissions targets without contributing to lower overall emissions.

¹³ Hansard is available [here](#).

¹⁴ https://www.parliament.nz/en/pb/bills-and-laws/bills-proposed-laws/document/BILL_92847/climate-change-response-emissions-trading-reform-amendment

¹⁵ A "binding" ETS means the ETS constrains overall emissions from the areas it covers. For example, if the economy produces 100 tonnes of emissions, an ETS cap of 50 tonnes would be binding since emissions must fall to 50 tonnes. An ETS cap of 200 tonnes would not be binding and emissions would remain unchanged at 100 tonnes.

¹⁶ International aviation is outside the ETS. MoT's strategy does not include international aviation.

¹⁷ We note that the ETS's limited effects on transport so far does not prevent the ETS from neutralising MoT's strategy. We further note that the test for whether complementary policies reduce emissions is that the ETS is binding, not whether the ETS is enough on its own to reach our emissions targets. Political constraints could prevent the ETS price from rising enough to achieve emissions targets. Even then, it is not clear whether the combination of ETS and complementary policies would reduce emissions by more or less than the ETS alone. Like the ETS, complementary policies burn political capital too. If the basis for complementary policies is political constraints that could affect the ETS, the government must state its argument, explaining the combination of events which must occur for complementary policies to lower emissions.

8. CONCLUSION AND RECOMMENDATIONS

- 8.1 The New Zealand Initiative supports the commitment to lower emissions and our national emissions targets.
- 8.2 MoT's strategy to reduce transport emissions is incompatible with national targets. A target of zero gross emissions in a large, capital-intensive sector such as transport risks ruinous costs for no emissions benefit, threatening our emissions targets. MoT has not established how its strategy lower emissions under a binding ETS.
- 8.3 Diminishing returns mean MoT should be concerned about doing too much to reduce emissions in transport. MoT should aim to optimise rather than maximise transport's contribution to national emissions targets. Rapid innovation in low-emissions transport technologies should lead MoT to consider the timing of transport's efforts to lower emissions.
- 8.4 We urge MoT to:
- Reconsider its proposal to target zero gross emissions from transport.
 - Form a view in principle about the relationship between transport emissions policies and offsets.
 - Recognise how the ETS could neutralise MoT's strategy, and
 - Investigate the performance of the ETS, recognising this is critical for MoT's strategy.
- 8.5 Thank you for reading this submission. Our responses to questions follow.

9. RESPONSES TO QUESTIONS

We respond to selected questions below.

1. Do you support the principles in Hīkina te Kohupara? Are there any other considerations that should be reflected in the principles?

No. MoT's principles do not appear to be consistent with New Zealand's emissions targets. We suggest alternative principles for MoT on page 7.

2. Is the government's role in reducing transport emissions clear? Are there other levers the government could use to reduce transport emissions?

The government should consider the possibility that emissions reduction may be better served by using fewer levers.

3. What more should Government do to encourage and support transport innovation that supports emissions reductions?

We urge the government to recognise carbon prices promote innovation. It is well-established in the academic literature that a carbon prices have supported innovations in emissions reductions.¹⁸

¹⁸ For examples and citations see Appendix 2 of New Zealand Initiative (2019), *Switched On!*, Wellington.

The government should then consider how further encouragement for innovation in transport can lead to lower emissions under a binding ETS. The government has not established a pathway from complementary policies to lower overall emissions under a binding ETS.

4. Do you think we have listed the most important actions the government could take to better integrate transport, land use and urban development to reduce transport emissions? Which of these possible actions do you think should be prioritised?

No. It is not clear how the actions can contribute to New Zealand's emissions targets.

5. Are there other travel options that should be considered to encourage people to use alternative modes of transport? If so, what?

No. Please refer to our answer to question 3.

6. Pricing is sometimes viewed as being controversial. However, international literature and experiences demonstrate it can play a role in changing behaviour. Do you have any views on the role demand management, and more specifically pricing, could play to help Aotearoa reach net zero by 2050?

We suggest MoT focus on the on consequences of a carbon price under the ETS. The ETS almost certainly has both demand- and supply-side effects which are relevant to MoT's emissions strategy.

We support the government progressing congestion charging as transport demand management. Congestion leads to higher emissions. Congestion charging is worthy on its own grounds, as our submission to the consultation on Auckland congestion charging made clear. It would also allow the government to reduce the overall emissions cap more quickly, if it chose to. Of course, the government could choose to reduce the ETS cap more quickly regardless of whether congestion charging were in place.

7. Improving our fleet and moving towards electric vehicles and the use of sustainable alternative fuels will be important for our transition. Are there other possible actions that could help Aotearoa transition its light and heavy fleets more quickly, and which actions should be prioritised?

MoT has not established that "improving our fleet" and "moving towards electric vehicles" and "sustainable alternative fuels" are important under a net emissions targets. We urge MoT to allow discovery of optimal solutions in transport and elsewhere, and be wary of the emissions penalty and other dangers of favouring a few technologies. We encourage MoT to take a more analytical approach under the principles we suggested earlier in this submission.

8. Do you support these possible actions to decarbonise the public transport fleet? Do you think we should consider any other actions?

No. It is unclear how these actions contribute to New Zealand's emissions targets under a binding ETS.

MoT has not established its proposed actions are competitive with alternative ways to reduce emissions in transport and other sectors. It is not clear whether MoT has recognised its actions may be vulnerable to diminishing returns. We urge MoT to propose a mechanism for managing the 80/20 risks in its approach. In view of diminishing returns, the emissions problem is not just a question of 'which technology?' but also 'how much?' Again, we urge MoT to be aware of the risk that it could inadvertently impose huge costs on the New Zealand economy for no emissions benefit.

9. Do you support the possible actions to reduce domestic aviation emissions? Do you think there are other actions we should consider?

No. Domestic aviation is covered by the Emissions Trading Scheme. We support the inclusion of international aviation in the ETS.

We encourage MoT to concentrate on removing unnecessary barriers to the introduction of lower-emission fuels and technologies.

MoT should be aware of the risk that forcing those developments through regulatory mandates could increase the overall cost of reducing emissions.

10. The freight supply chain is important to our domestic and international trade. Do you have any views on the feasibility of the possible actions in Aotearoa and which should be prioritised?

No. Please refer to our answer to question 3.

11. Decarbonising our freight modes and fuels will be essential for our net zero future. Are there any actions you consider we have not included in the key actions for freight modes and fuels?

MoT has not established that "[d]ecarbonising our freight modes and fuels will be essential for our net zero future." Freight can emit greenhouse gases at the same time as net emissions are zero.

We encourage MoT to develop an alternative view about transport emissions and offsets. Under what circumstances should positive gross emission from freight be tolerated? In our view, MoT should answer that question in the way that best support's New Zealand's progress towards our net emissions targets.

We refer to the two principles suggested earlier a) MoT take the government's offsets policy as given and b) treat the cost of available offsets as an upper bound on abatement costs in transport.

12. A Just Transition for all of Aotearoa will be important as we transition to net zero. Are there other impacts that we have not identified?

Yes. We ask MoT to estimate the out of pocket costs of its strategy for average and especially low-income New Zealand households. It is possible that MoT's strategy based on a target of zero gross transport emissions could cost households thousands of dollars each year. We urge MoT to be transparent about the effects on households, and consider more affordable ways to reduce emissions.

13. Given the four potential pathways identified in Hīkina te Kohupara, each of which require many levers and policies to be achieved, which pathway do you think Aotearoa should follow to reduce transport emissions?

MoT has not shown how any of the pathways can reduce emissions. We suggest MoT adopt a principle that it will reduce emissions at least cost.

14. Do you have any views on the policies that we propose should be considered for the first emissions budget?

We strongly urge MoT, before any decisions or recommendations are made, to subject all of its recommendations and policies to cost-benefit analysis, taking into account the effects of the ETS on the emissions benefits of those policies. Emissions reduction is very difficult. Policies often fail. That is why we think analysis of each proposed policy is critical.

APPENDIX 1: RESPONSE TO CRITICISMS OF THE ETS

MoT does little more than acknowledge the ETS exists. MoT does not make a case for complementary policies alongside the ETS. MoT merely asserts complementary policies are necessary but without being clear why.

Officials argue for complementary emissions policies on various grounds. These include:

The ETS price is not high enough to reduce emissions from a sector.¹⁹

This argument is particularly relevant to transport. Many see the ETS as having too-limited effect on the cost of petrol.

The limited effects of the ETS on petrol prices is a non-problem. The ETS treats each tonne of greenhouse gas emissions equally (after adjusting for their effectiveness as a greenhouse gas). ETS effects in any one sector, or on any one product, says little about the effects of the ETS on net emissions overall.

Concerns about effectiveness of the ETS seem to be based on either an inference that weak ETS effects in one place means weak effects everywhere, or perhaps as a by-product of a determination that emissions should come down from a particular technology or fuel regardless of the merits.

If the government's goal is to reduce national net emissions, the lack of a response to the ETS in any one place is a non-problem *provided* this is the product of the ETS reducing emissions elsewhere in the economy for a lower cost.

Since the ETS selects for least-cost emissions reductions, using policy to override a functioning ETS a) does not reduce overall emissions and b) raises the cost of delivering our targets.

MoT should recognise the benefits for emissions and prosperity of allowing the reduction in emissions from transport according to transport being the next most effective way to reduce emissions. Instead, MoT's strategy forces emissions reductions from transport regardless of merit. This approach jeopardises our emissions targets due its potentially very large emissions penalty.

The government's siloed emissions strategy divides the economy into sectors and has each sector planning how to emissions should come down in that sector. That strategy is massively wasteful if it leaves no room for 'overs and unders' between sectors according to the costs and difficult of reducing emissions. MoT should recognise rising transport emissions is consistent with a functioning, effective ETS and with New Zealand's track to its emissions targets. After adjusting for population growth, gross emissions including agriculture have fallen 13% since 2008; net emissions have fallen 8%.

Firms are myopic or do not prioritise sustainability. Even if this is true, the ETS still reduces emissions and complementary policies cannot affect overall emissions. Mistakes by businesses and consumers (e.g. a consumer's failure to buy an EV when it is in their interests) leads to a higher carbon price, but emissions still come down. We explain why [here](#).

Barriers prevent the ETS from reducing emissions. It is important to distinguish between a) regulatory barriers which inadvertently prevent uptake of new technologies, and b) costs.

¹⁹ We infer from MoT's statements that it sees the ETS price as too low to have sufficient effect on transport emissions. At page 9, MoT says, "All users of fuel for vehicles pay an Emissions Trading Scheme levy, approximately 9 cents per litre for petrol, and 10 cents per litre for diesel. This is a fuel tax, but it is very low."

We support the removal of regulatory barriers as this is consistent with a level playing field. However, we oppose the use of policy to overcome “barriers” that are costs. Costs inform where emissions can be most effectively reduced or removed.

MoT does not seem to understand how overriding costs in the name of removing barriers likely jeopardises our emissions targets. MoT says the government “need[s] to focus on mitigating the most significant barriers to the purchase of low emission vehicles... [including] high upfront purchase costs, range anxiety, and the availability and cost of relevant infrastructure.” (p67). MoT should recognise these barriers as information about the merits of EVs as an emissions reduction technology relative to alternatives elsewhere in the economy. MoT should realise the danger of its “barriers” approach is that it likely forces spending on lower emissions into high cost channels for no emissions benefit. The same resources applied elsewhere in the economy, harnessing costs as a guide rather than overriding them, could reduce far more emissions.

Complementary policies are needed to prevent further investment in high-emissions assets. This is questionable for three reasons.

- Such investments do not raise emissions if the ETS caps emissions. The cap is the cap.
- A functioning ETS deters investment in high-emissions assets and supports investment in low-emissions alternatives.
- If investors’ ignore the ETS – which requires they calculate the ETS-exclusive price of products and services, then respond to that calculated price – they make malinvestments at their own expense not the public’s.

Officials should understand how a credible carbon price can influence investment. In order to deter investment in high-emissions assets, carbon pricing must be credible. That is, investors must be convinced that future governments will continue to support a policy of putting a price on carbon, whether via the ETS or another mechanism. Officials should also recognise that even with a carbon price, some high-emissions assets will still be built if they add sufficient value and there is no available low-emissions alternative. The government should investigate the effects of the ETS on investment before it commits to further policies.

Stranded assets justify complementary policies. In its recent consultation document on process heat, the Ministry for the Environment said, “The establishment of new fossil fuel assets is likely to increase the costs of transitioning and the risk of stranded assets, and make it significantly harder to achieve New Zealand’s emissions reduction targets”.²⁰

As we have already noted, a credible ETS ameliorates stranding. Furthermore, complementary policies also risk stranding assets. MoT’s decision to pursue zero gross transport emission in less than 30 years has clear stranding risks.

Any case for complementary policies based on stranding must show a) complementary policies are a lesser risk and carbon pricing, and b) rule out the alternative of strengthening the ETS’s credibility as a better way to manage stranding risks.

While we recognise the losses from stranding can be acute, the government’s emissions strategy should consider all costs not just costs from stranding.

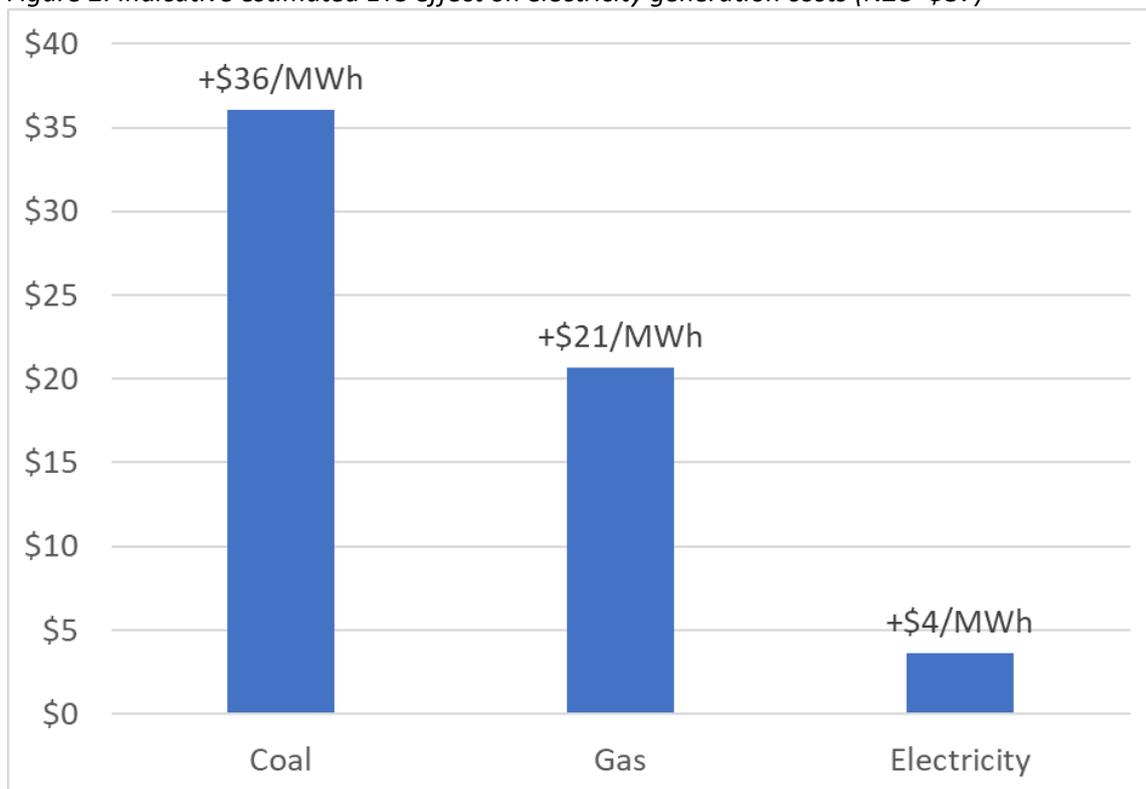
²⁰ Ministry for the Environment (2021), *Phasing out fossil fuels in process heat: national direction on industrial greenhouse gas emissions consultation document*, Wellington, p.16.

APPENDIX 2: EFFECTIVENESS OF THE ETS

At a New Zealand Unit (“NZU”) price of \$37, the ETS has only a moderate effect on the retail price of petrol as MoT correctly notes. This is not the result of any special treatment for petrol, but because the carbon content of petrol per dollar is low due to excise and costs besides petrol.

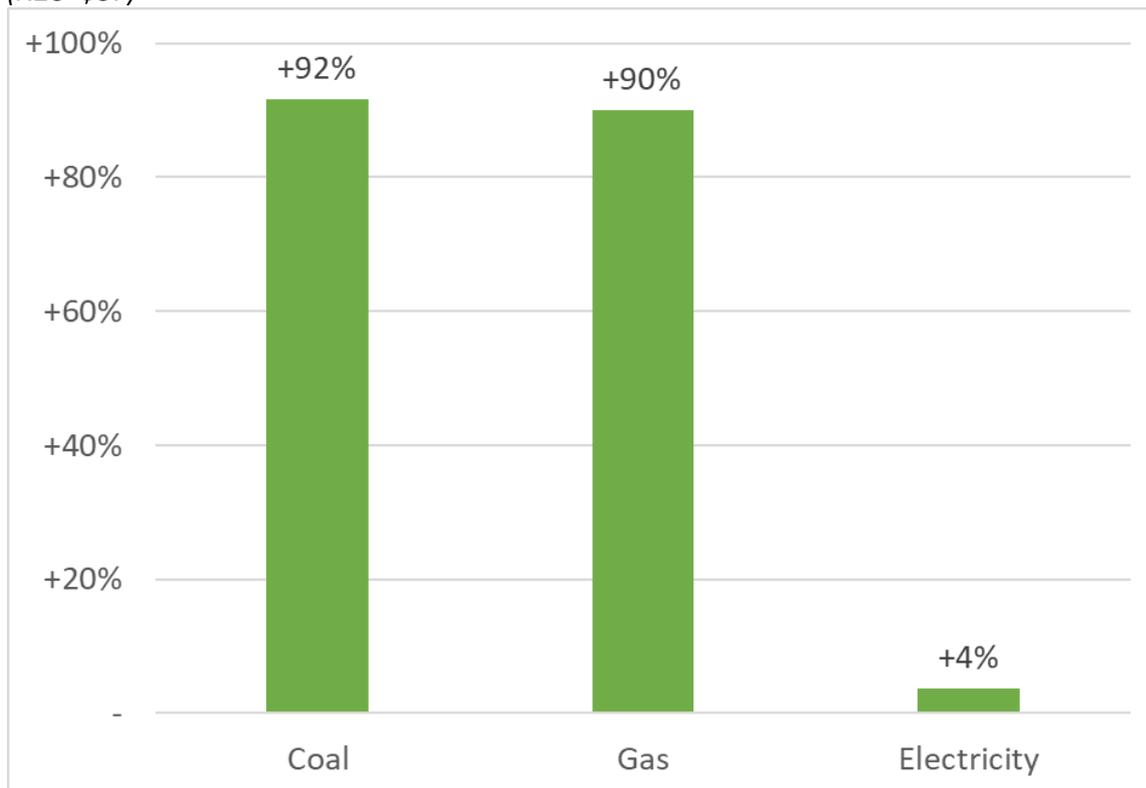
However, MoT should be aware the ETS has more pronounced effects in other sectors. For example, the ETS has a substantial effect on the costs of generating electricity with gas and especially coal. By contrast, the ETS has only a muted effect on the wholesale cost of electricity reflects, which reflects the high share of renewables in the electricity system (see Figure 2 and Figure 3).²¹ These costs differences encourage substitution.

Figure 2: Indicative estimated ETS effect on electricity generation costs (NZU=\$37)



²¹ Our estimates of the percentage change in the wholesale cost of each fuel is relative to the average 5-year cost of each fuel type. Estimates should be treated as indicative only.

Figure 3: Indicative estimated ETS effect on wholesale costs of each fuel per megawatt-hour (NZU=\$37)²²



At a wholesale level, analysis suggests at NZ\$37 the ETS nearly doubles the cost of coal and natural gas. This is based on average wholesale prices over five years. Anecdotally, the ETS is having a substantial effect on investment decisions in the energy sector.

These indicative estimates suggest the effects of the ETS on the cost of petrol do not reflect its effects elsewhere in the economy. MoT should have some confidence that:

- The ETS is reducing emissions in other sectors.
- The limited apparent effects of the ETS in transport, so far, usefully informs transport's relative merits as a source of lower emissions, and is not any failure of the ETS, and
- Accordingly, overriding the ETS to promote transport's contributions to lower emissions may detract from New Zealand's emissions targets by displacing emissions reductions from more affordable sources. MoT's strategy may do no more than rearrange the merit order of emissions reductions.

It is not necessary to make any assumptions about the ETS's effectiveness. The performance of the ETS can be tested. We suggest MoT urgently seek testing, specifically the effects of the ETS on overall emissions, and on investment and consumption decisions in every sector. Testing must be independent, expert and fully transparent. Since a functioning ETS removes all of the emissions benefits of MoT's emissions strategy, MoT has reason to be interested understanding whether the ETS works.

²² The proportional effect of the ETS on gas is comparable to coal because although gas is less emissions-intensive per unit of energy, the average wholesale price for gas is approximately half of coal.