

[Restricted]

[Commercially Sensitive]

Office of the Minister for Climate Change Issues

Chair

Cabinet Economic Growth and Infrastructure Committee

New Zealand Emissions Trading Scheme Review: Improving the ETS framework

Proposal

1. I am seeking your in-principle agreement to a package of four priority proposals on the New Zealand Emissions Trading Scheme (NZ ETS) to improve the credibility of the New Zealand carbon market and remove obstacles to us negotiating access to high quality international units.¹ These are to agree in-principle to:
 - introduce an auctioning mechanism to align the NZ ETS with our targets;
 - limit participants' use of international units, when the NZ ETS re-opens to international carbon markets. I am not seeking a decision on the level of this limit at this stage, so it could be as small or large as needed;
 - develop an alternative price ceiling for the NZ ETS; and
 - coordinate decisions on NZ ETS unit supply settings and volumes on a five year rolling basis.
2. Alongside these decisions, I am also proposing that Cabinet make several other commitments because of the importance of providing key industries with some certainty. These commitments re-confirm previously stated positions, through noting that:
 - free allocation will remain at current levels until the end of 2020 and any future phase out will be well signalled and consider competitiveness impacts, including coverage of carbon pricing internationally;
 - the current \$25 price ceiling will remain in place, until I am confident that other features to support stable price development are available, such as until auctioning or links with international markets are established;
 - surrender obligations for biological emissions from agriculture will remain outside the NZ ETS until
 - o there are economically viable and practical technologies available to reduce emissions
 - o New Zealand's trading partners make more progress on tackling their emissions in general
3. While officials need more time to develop advice on the future of free allocation and a price ceiling for the NZ ETS, it is my view that we cannot just stay silent on them when we make announcements about the NZ ETS. Making the above commitments will mean that industry knows we will not make changes in the near future while we continue to work through the options. I am proposing to come back to Cabinet in 2018 with options

¹

about the above issues, as well as the approach we should take on forestry accounting and operational improvements to increase the efficiency of the NZ ETS.

4. I think together these sets of decisions will signal that we are prepared to make necessary changes to the NZ ETS to ensure it plays its role in helping us reach our Paris Agreement commitments, while showing we will not be making dramatic changes that put at risk some of our key industries.
5. The in-principle decisions I am proposing follow stage II of the NZ ETS review and are the first step in a wider programme of climate change policy work. This includes the recently announced Productivity Commission inquiry into a lower net emissions economy and funding for costed, tested and modelled policy options for domestic action to meet our international emissions reduction targets under the Paris Agreement.

Executive summary

6. I seek your agreement to a priority package of in-principle decisions that will improve the credibility of the New Zealand carbon market and remove barriers to us negotiating access to high quality international units.
7. This package is made up of four proposals, which are to agree in-principle to:

- **introduce an auctioning mechanism to align the NZ ETS with our targets** - selling units into the NZ ETS by auction will provide the Government a way to manage the relationship between unit supply in the NZ ETS and New Zealand's emission reduction targets.
- **limit participants' use of international units in the NZ ETS** – the NZ ETS is currently domestic-only but New Zealand needs access to international emissions reductions in the 2020s to meet our 2030 target cost effectively.

Agreeing to manage participants' access to international units through a limit on their use will preserve these linking opportunities, and ensure New Zealand is best placed to obtain sufficient international units at reasonable cost, without buying too many.

- **develop an alternative price ceiling subject to further work on a preferred option** – the current price ceiling, the \$25 fixed price option, was designed to be a temporary feature and international prices during the 2020s are likely to rise above \$25. This means the fixed price option as currently operated at \$25 may not be sustainable for the long term. An alternative price ceiling needs to be developed, including assessment of a volume-limited price ceiling incorporated into an auctioning mechanism.
 - **coordinate decisions on NZ ETS unit supply volumes and settings on a five year rolling basis** - the strongest feedback from consultation was that increased policy predictability is needed for a well-functioning carbon market that allows businesses to judge the cost-effectiveness of their investment decisions. Coordinating unit supply decisions on a five year rolling basis will improve predictability and provide participants with a forward view of how the NZ ETS will operate, while maintaining sufficient flexibility for the Government.
8. My proposals will send a clear signal to the market and international partners that the Government is putting in place a credible market framework and rules for the operation of the NZ ETS in the 2020s. It is important to make these decisions for three key reasons:
 - **To put New Zealand in the best possible position to negotiate access to international carbon markets**

Officials are pursuing a range of linking options to reduce the cost of meeting our target for New Zealand businesses and households.

Alternative linking options are uncertain and likely to take years to develop.

- **Businesses and stakeholders have made it clear they want a well-functioning market with clear rules and a predictable framework in place by 2021**

The Government does not have the tools to manage the supply of units in the NZ ETS in a predictable and transparent way, which means the NZ ETS cannot be adjusted to ensure the effort it requires aligns with our climate change targets. As a result, necessary changes to settings have had to be made in a reactive and abrupt way, and this has undermined the credibility of the NZ ETS price signal and reduced businesses' confidence to invest in lower emissions technology or forestry. Stakeholders from all sectors, including emitters, industry representatives, foresters, and civil society groups, emphasised the importance of reducing policy uncertainty in consultation feedback.

- **It will take time to put these changes in place**

In-principle decisions on these proposals now will enable officials to undertake the work required to implement these decisions before the end of 2020. In particular, it will take time to get an auctioning mechanism developed and piloted.

9. Alongside these priority decisions, I also propose that Cabinet make several commitments to provide key industries with some certainty regarding settings that will remain in place for the meantime. These commitments relate to free allocation remaining in place at current levels until the end of 2020, the \$25 fixed price option remaining in place in the short term, and that agricultural emissions will remain outside the NZ ETS for the meantime.
10. Following further work, I propose to come back to Cabinet by 30 June 2018 on other issues assessed during stage II of the review. These are conditions, rates and timing of phasing out free allocation after 2020, decisions relating to NZ ETS forestry settings, including the approach we should take for NZ ETS forestry accounting, and operational improvements to the NZ ETS.
11. These decisions, both the priority proposals and the NZ ETS issues that need further work, sit within the wider climate change work programme. This work includes the Productivity Commission's inquiry and new Domestic Emissions Reduction work programme looking at policy options for reducing emissions within New Zealand, which will inform advice and decisions towards the end of 2018 on how ambitious New Zealand should be when seeking domestic emissions reductions to meet its 2030 target, as well as consequent decisions about how the NZ ETS reflects these choices.

Background

The New Zealand Emissions Trading Scheme

12. The NZ ETS is a regulatory market set up in 2008 by the Government to achieve climate change policy objectives. This means it is the Government's responsibility to set the market framework and rules for the operation of the NZ ETS.

13. The NZ ETS is New Zealand's key climate change policy tool, with the legislated objective to support and encourage global efforts to reduce greenhouse gas emissions by assisting New Zealand to meet its international obligations and reducing New Zealand's net emissions below business as usual levels.
14. The NZ ETS requires all sectors of New Zealand's economy to report their emissions and, with the exception of biological emissions from agriculture, surrender units to the Government for those emissions. The design is aligned with rules from the first commitment period of the Kyoto Protocol, which applied to New Zealand at the time the scheme was set up.
15. An evaluation of the NZ ETS completed in 2015 found that while the NZ ETS has assisted New Zealand to meet international obligations, it has not significantly impacted business investment decisions to reduce emissions.

The Paris Agreement changes the context

16. The Paris Agreement provides a new international context for New Zealand's action on climate change, and is fundamentally different from the Kyoto Protocol. It requires that all countries take domestic action to mitigate greenhouse gas emissions, including through taking progressively more ambitious targets over time. It also calls for Parties to work towards achieving net zero global emissions in the second half of this century.
17. This means we need to have a credible ETS that can be used to focus on long-term domestic decarbonisation, supplemented by purchasing international emission reductions as a contribution to global efforts.
18. As part of the Paris Agreement, New Zealand has adopted a target to reduce emissions by 30 per cent below 2005 levels over 2021-2030. This 2030 target provides New Zealand with a 'carbon budget'. To meet the target, any emissions above the carbon budget would need to be either reduced domestically or compensated for through domestic forestry removals and/or purchasing international emissions reductions.
19. Appendix 1 provides more information on New Zealand's 'carbon budget' and 'abatement task'.

Our access to international carbon markets will be different under the Paris Agreement

20. The NZ ETS is operating as a domestic-only market and has done so since mid-2015. New Zealand does not yet have access to international emissions reductions for the 2020s. Re-establishing access is a priority, as high-integrity international reductions are crucial to our ability to meet the 2030 target cost-effectively.
21. New Zealand had access to a centralised international carbon market under the Kyoto Protocol. However, under the Paris Agreement we will need to work bilaterally and plurilaterally with other countries to gain access to high-integrity international emissions reductions.
22. Officials are currently exploring international linking arrangements with a range of potential partners.

The review of the NZ ETS

NZ ETS review: scope and timing

23. The review of the NZ ETS was initiated in November 2015, in light of the Paris Agreement and New Zealand's new 2030 target. The objective of the review was to assess the overall operation and effectiveness of the NZ ETS, in order to:
 - ensure that it helps New Zealand meet its international obligations cost effectively;

- ensure the New Zealand economy is well-prepared for a strengthening international response to climate change, and potentially higher carbon prices; and
 - allow the NZ ETS to evolve with these changing circumstances, particularly with respect to the framework provided by the Paris Agreement.
24. The scope of the review included looking at transitional measures,³ the evolution of the NZ ETS, particularly with regards to unit supply and how the NZ ETS should adjust in response to the Paris Agreement, and operational and technical improvements.
25. Biological emissions from agriculture were excluded from the scope of this review. However, in parallel to the review, the Government established the Biological Emissions Reference Group (BERG) in collaboration with the primary sector to build a robust and agreed evidence base on what the sector can do on-farm to reduce emissions, and to assess the costs and opportunities of doing so, both now and into the future. The BERG's final report is due in late 2017, and the evidence base it develops will be necessary to inform any future actions or policies on how to reduce biological emissions from agriculture.

NZ ETS review: progress and findings

26. The review has been carried out in two stages. Stage I of the NZ ETS review concluded in May 2016 when Ministers agreed to phase out the one-for-two surrender transitional measure over a period of three years. The one-for-two transitional measure allowed participants from sectors other than forestry to surrender only one emissions unit for every two tonnes of emissions. It will be fully phased out on 1 January 2019.
27. Stage II of the review covered a number of issues relating to the broad operation, effectiveness and design of the NZ ETS. This included looking at unit supply settings, such as auctioning New Zealand Units (NZUs), access to international markets, and options for managing price stability. Other key issues included whether and how to phase out free allocation after 2020; NZ ETS forestry settings (accounting options and operational settings); and operational and technical issues.
28. Stakeholders submitted views on these issues through a public consultation, as outlined in paragraphs 101 - 104 of this paper. Consultation sought feedback on broad questions, rather than on specific policy proposals.

NZ ETS review: findings

29. Officials have provided me with advice on the findings of stage II of the NZ ETS review and this has concluded the review. The review identified several problems that mean that the NZ ETS will not effectively support New Zealand to meet its 2030 emissions reduction target under the Paris Agreement. I consider that this Cabinet paper and accompanying RIS, along with the submission summaries that were published on the Ministry for the Environment's (MfE) website following consultation, outline the key findings of the review, and I do not plan to publish a further report following the review.
30. Key findings include that:

- **The Government does not have the tools required to effectively manage the supply of units into the NZ ETS**

Current settings for the supply of units into the NZ ETS do not align with our 2030 target, both in terms of our carbon budget and our abatement task. The Government also does not have the tools to adjust unit supply in a predictable and transparent way

³ Transitional measures looked at during stage II of the review were whether to maintain or adjust the \$25 fixed price option, and conditions and timeframes for the continuation of free allocation for emissions intensive and trade exposed activities.

so that the NZ ETS reflects the target. This means the NZ ETS is not fit for the purpose of helping New Zealand meet the 2030 target cost-effectively.

Some current features of the NZ ETS are also barriers to linking with international carbon markets, [REDACTED]

- **Current settings and management of the NZ ETS create significant regulatory uncertainty for market participants**

The strongest theme from consultation was that ongoing regulatory uncertainty undermines the credibility of the NZ ETS and the carbon price signal, reducing their ability to influence investment decisions. There are several drivers contributing to this, including lack of clarity over the role of the NZ ETS in meeting our targets, enduring transitional measures⁴ and reactive (but necessary) adjustments made to the scheme in recent years.

Uncertainty over unit supply settings and future unit volumes means that businesses do not have information that enables them to make decisions about the value of carbon and the cost effectiveness of investments.

- **Operational and technical issues are causing administrative inefficiencies**

These include problems with the current compliance and penalties regime, market governance as well as a call from stakeholders for improved market information. A number of problems specific to the way forestry operates within the scheme were also identified.

Comment

A package of priority changes

31. I seek your agreement to a package of four priority decisions on the NZ ETS to improve the credibility of the New Zealand carbon market and remove obstacles to us negotiating access to high quality international units. This package of decisions is to:

- introduce an auctioning mechanism to align the NZ ETS with our targets;
- limit participants' use of international units, when the NZ ETS re-opens to international carbon markets;
- develop an alternative price ceiling for the NZ ETS; and
- coordinate decisions on NZ ETS unit supply volumes and settings on a five year rolling basis.

32. I have prioritised this package of proposals over other issues assessed during stage II of the review because they relate to the overall design of the NZ ETS and the market framework. These decisions will put in place the tools required for Government to manage unit supply settings, which are required to:

- **remove barriers to us negotiating internationally.** [REDACTED]

⁴ Enduring transitional measures include the \$25 fixed price option and the suspension on the phase out of free allocation for EITE activities

- **address the most pressing feedback received from businesses and participants, which was the need to increase regulatory predictability to ensure we have a well-functioning, credible market.**

These proposals will allow the Government to manage unit supply settings in a way that supports the credibility of the market. Previous decisions on unit supply settings have had to be made in a reactive and ad-hoc way. This lack of regulatory predictability has reduced businesses' confidence in the carbon market, and reduces the ability of the Government to manage economic and fiscal risks associated with the NZ ETS and meeting our international targets.

My proposals will put in place a credible framework and provide businesses with a clearer understanding about how the NZ ETS will operate in future. This is important for business investment decisions, especially for committing to long-term investments such as lower emissions technology and forestry.

33. These decisions are the first step in a wider package of climate change work that is underway, including the recently announced Productivity Commission inquiry and funding for a work programme looking at costed, tested and modelled policy options for domestic action to meet our 2030 target under the Paris Agreement.
34. This work will feed into decisions towards the end of 2018 for how New Zealand should meet its Paris target, which are required for later decisions on NZ ETS unit supply settings. These later decisions include how many units to be auctioned and the level of an international limit, and should reflect choices about how New Zealand meets its target. I will return to Cabinet towards the end of 2018 to seek further decisions on these issues.
35. Appendix 2 provides a timeline setting out the wider climate change work programme and how it aligns with NZ ETS decisions.

I. Introducing auctioning to align the NZ ETS with our targets

36. I propose to introduce auctioning into the NZ ETS to allow the Government to manage the relationship between units in the NZ ETS and New Zealand's emissions reduction targets particularly to allocate the carbon budget for New Zealand's 2021-2030 target to the market.

Analysis

37. A provision that enables regulations to be made to sell units by auction already exists in the Climate Change Response Act 2002 (CCRA), although this feature has not yet been implemented. Auctioning is a mechanism through which the Government can supply units into the NZ ETS at the market price. Auctioning mechanisms are a common feature of many ETSS internationally.
38. Projections show that a portion of New Zealand's carbon budget for the 2021 - 2030 period will not be allocated by the NZ ETS under current settings. This will result in placing more cost on the economy than necessary for meeting our 2030 target.⁵ Under the status quo, it is estimated that 43 million tonnes CO₂e of New Zealand's carbon budget will not be allocated.
39. Introducing auctioning will have a number of benefits. It will:

⁵ See Appendix 1 for more detail on New Zealand's carbon budget

- provide the Government with a tool to allocate to the market the portion of New Zealand's carbon budget that will not be allocated under current settings;
 - generate cash assets from the sale of these units, potentially in the range of \$0.73 billion to \$2.15 billion over the period 2021 to 2030;⁶
 - improve information available to participants about the future supply of units, and guarantee a minimum level of NZU liquidity in the market;
 - make the NZ ETS consistent with emissions trading schemes we might want to link with internationally;
 - create a mechanism through which the Government can distribute international units it purchases to the New Zealand carbon market, if required; and
 - provide the Government with an alternative option for a price ceiling to mitigate risks of extreme prices in the scheme, if desired.
40. Other options to allocate the unallocated portion of New Zealand's carbon budget to the market include expanding free allocation and selling units at a fixed price. These options have a number of disadvantages compared to auctioning, such as:
- introducing undesirable distortions, transaction costs or distributional impacts; and/or
 - undermining the market nature of the NZ ETS.
41. Setting up an auctioning mechanism for the NZ ETS will take time. An in-principle decision now means officials can begin work to put in place and pilot an auctioning mechanism, with the aim of developing it by 2020. This further work includes developing the regulations outlining how auctions will be conducted, and developing processes for providing advice on and coordinating decisions on auction volumes with other unit supply decisions as well as establishing the auctioning platform itself. A decision now would also remove a potential barrier to negotiations for international linking.

Stakeholder and Iwi views on this proposal

42. Introducing auctioning into the NZ ETS was broadly supported by emitters during consultation, as well as most NGOs and community and research groups that submitted. This included many of New Zealand's largest emitters, such as Methanex, Z Energy and Fonterra. These businesses support introducing auctioning to help improve liquidity, price stability and transparency in the carbon market.
43. Stakeholders that did not support auctioning in the NZ ETS included a number of submitters from the forestry sector. Many submitters who did not support auctioning, or who were unsure, signalled concerns about auctioning due to their perception that the Government would use auctioning as a tool to sell a large volume of NZUs in order to depress the carbon price. These concerns can be addressed by explaining that the primary role of introducing auctioning would be to enable the Government to manage the relationship between the NZ ETS and New Zealand's emissions reduction targets.
44. Appendix 3 provides a summary of selected firms' consultation responses on the four high priority proposals.

II. Putting a limit on participants' use of international units in the NZ ETS

45. I propose a limit be placed on participants' use of international units in the NZ ETS. This would mean participants are only able to use a certain quantity of international units to meet their individual NZ ETS obligation, and any remaining balance would need to be met using NZUs.

⁶ This estimate assumes the sale of 43 million NZUs at carbon prices of \$17 to \$50

46. I do not propose that the level of this limit be specified at this stage, so it could be as small or large as needed. This decision will follow further advice on costs and benefits of different levels, informed by wider work on how New Zealand should meet its 2030 target. I expect advice on this towards the end of 2018.
47. The future decision on the level of the limit will impact whether a limit on participants' use of international units in the NZ ETS increases economic costs. It is possible to set a limit that would allow NZ ETS participants to purchase 100 per cent of the international emission reductions needed for meeting the 2030 target, and keep the NZU price at the same level as international prices. It is also possible to use a limit on the use of international units as a tool to ensure the NZ ETS delivers a certain level of domestic emissions reductions.

Analysis

48. I consider introducing a limit on participants' use of international units in the NZ ETS necessary to put New Zealand in the best possible position to secure access to international emissions reductions. It will also provide the Government with a tool to manage risks we have previously experienced through the unlimited use of international units in the past.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Domestic risks

52. Previous experience of unlimited access and officials' analysis of how international carbon markets are likely to develop has also shown that there are also sound domestic reasons for limiting the use of international units in the NZ ETS. The benefits would include:
- reduced risk that participants purchase more international units than what is required to meet our 2030 target, therefore unnecessarily increasing costs on the economy;

- reduced risk that participants stockpile NZUs in private accounts, which would increase the NZ ETS liability on the Crown's balance sheet, as occurred previously; and
- providing the Government with a tool that could be used to ensure a certain level of domestic emission reductions are achieved through the NZ ETS, if desired.

Future decisions

53. As noted above, I am not proposing the level of this limit be specified at this stage. Advice to Ministers on options, costs and benefits of different levels for the limit, and details on how it could be operationalised and managed over time, will be informed by further work on the best balance of domestic, forestry, and international emissions reductions for New Zealand to meet its 2030 target. This is expected at the end of 2018.

Stakeholder and Iwi views on this proposal

54. During consultation, many stakeholders commented on the future use of international units in the NZ ETS. Submitters that supported quantity restrictions on international units represented a range of interests and included iwi/Māori, the waste sector, civil society groups, foresters and some business representatives, although few large industrial emitters were among this group.
55. Submitters that thought there should be no limits on the use of international units or thought there should only be restrictions on quality included many emitters. These stakeholders, including some of New Zealand's largest emitters (New Zealand Steel, Pacific Aluminium) often cited lowering businesses' NZ ETS costs as a key reason for preferring unlimited access. However, a limit on international units as I have proposed could facilitate much wider access to cost-effective international units from our potential linking partners. Appendix 3 provides a summary of selected firms' consultation responses on the four high priority proposals.

III. Developing an alternative price ceiling

56. I seek your agreement, in principle, to develop an alternative price ceiling for the NZ ETS. This will involve officials doing further work to develop a preferred option for an alternative price ceiling.
57. Given the uncertainty for market participants about future unit supply in the NZ ETS, I also propose we note that the current price ceiling will remain in place until other features to support stable price development are available, such as until auctioning or links to international markets are established.

Analysis

58. Price controls in ETSs, such as price ceilings, usually aim to limit unacceptably high or low prices, so are set at levels well outside of expected market prices. This is because if a price ceiling is struck, it could shift responsibility for meeting the target from emitters back on to the Government.
59. The NZ ETS currently has a price ceiling in the form of the \$25 fixed price option. This was introduced as a transitional measure in 2009. It allows participants to meet their NZ ETS obligations by paying the Crown \$25 instead of surrendering a unit. This guarantees that \$25 is the maximum cost of compliance per unit for participants. There is no limit on how much participants can use the \$25 fixed price option.
60. The \$25 fixed price option was designed to be a temporary measure. This means it has features that may not be compatible with linking, or sustainable for the long term.
61. Carbon prices in some countries are already above \$25 and it is also widely expected that international carbon prices will be above \$25 in the 2020s. See Appendix 4 for more detail on expected future carbon prices and an overview of carbon markets and prices

internationally. This means that the current price ceiling will be out of step with forecast international prices in the 2020s.

62. Features of a sustainable price ceiling that need to be explored through developing a preferred option include:
- the price level, and whether and how it should increase over time;
 - whether it should operate in a way that is volume-limited, as this would be more compatible for linking to other ETSs and for managing the risks a price ceiling creates for the Government; and
 - processes for how the Government could manage the price ceiling over time.
63. Options to be considered include a price ceiling similar to the existing fixed price option but set at a higher price and potentially updates to the price level over time, as well as a volume-limited cost containment reserve incorporated into an auction mechanism. The latter is likely to be more compatible for linking to other ETSs.
64. Developing an alternative price ceiling now will mean that when the time comes to change the \$25 fixed price option, we have a well-considered plan for doing so. [REDACTED]
65. As noted above, I also propose noting that the current \$25 fixed price option will remain in place in the short term. Given the uncertainty about future unit supply in the NZ ETS, this will assure market participants that they will be protected from unacceptably high prices until alternatives for containing costs become available.

Stakeholder and Iwi views on this proposal

66. Stakeholders who supported retaining a price ceiling in the NZ ETS, including a number of emitters that are NZ ETS participants, noted its role in managing uncertainty associated with future unit supply. Some of these submitters recognised that a price ceiling could be adjusted once auctioning or international units became available in the NZ ETS (Methanex, Fletcher Building).
67. Some stakeholders, including many from the forestry sector, did not think there should be a price ceiling in the NZ ETS. They often noted it was important that the market drives the price. Developing an alternative price ceiling that is clearly aimed at limiting unacceptably high price should help address this concern.

IV. Moving to a coordinated decision-making process

68. Lastly, I propose that the Government coordinates its decisions and announcements on NZ ETS unit supply volumes and settings on a five year rolling basis to balance regulatory predictability with flexibility. This would extend an existing provision within the CCRA that applies to auctioning and free allocation to other key unit supply settings, such as limits on international units and the price ceiling.

Analysis

69. I am conscious of how important the way NZ ETS decisions are made and communicated to the market is for overall predictability. In a government-established market like the NZ ETS, a lack of regulatory predictability flows through to increased risks for businesses, as well as extra costs and delays in reducing emissions.
70. The most consistent feedback from consultation was that greater clarity on the role of the NZ ETS and increased policy predictability is needed for it to work effectively. Businesses highlighted that they do not have the information they need to forecast prices and enable them to make good investment decisions.

71. I propose that the existing five year rolling period for auctioning be extended to other unit supply settings. This would mean that the Government announces all unit volumes and other key NZ ETS settings for five years into the future, with a requirement to make a one year extension of these settings each year. Figure 1 below illustrates how this could work.

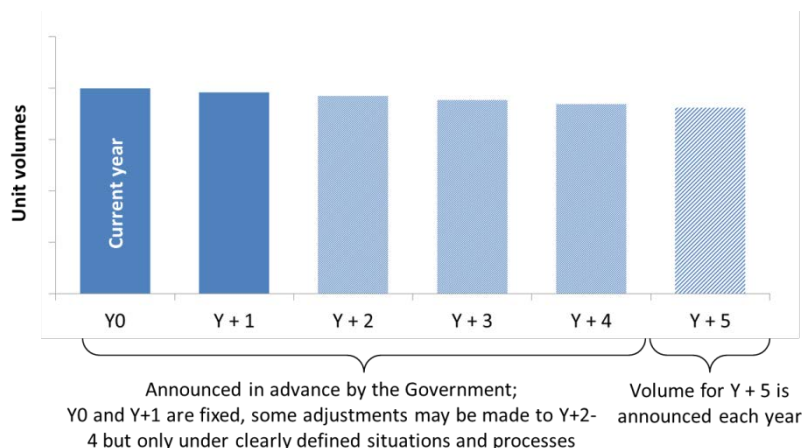


Figure 1: Illustration of how the five year rolling period could work

72. This proposal will consolidate decision-making requirements for the Government that relate to my other proposals. For example, decisions about how many units to auction and the level of the limit on international units in the NZ ETS will be considered alongside other unit supply settings, minimising the chances of unintended consequences.
73. In this way, market participants will always have five years' foresight of unit supply. It also provides flexibility for the Government to make adjustments over time, in a stable and orderly way. I consider that this approach would significantly improve the predictability and transparency of the Government's decisions about unit supply in the NZ ETS, improving confidence in the scheme and allowing participants to better manage their NZ ETS obligations.
74. Agreeing, in-principle, to coordinate these decisions on a five year rolling period now is important as it will allow officials develop a preferred proposal for how this approach could operate in conjunction with further work on the detailed design of auctioning, a limit on international units in the NZ ETS and options for an alternative price ceiling.

Stakeholder and Iwi views on this proposal

75. Consultation did not seek feedback on processes for coordinating decisions about unit supply settings. However, strong themes from submissions included that increased policy stability would help reduce uncertainty, feeding into enhanced long-term planning and decision-making. There were also calls for the release of more detailed or regular information about the NZ ETS by the Government. My proposal for coordinating and announcing unit supply settings will help address these concerns. Appendix 3 provides a summary of selected firms' consultation responses on the four high priority proposals.

Other commitments to make now while officials do further work

76. A number of other important issues about the future of the NZ ETS were looked at during stage II of the review. These included NZ ETS forestry settings, the free allocation of units for emissions intensive and trade exposed activities, and operational and technical improvements.
77. I do not propose that decisions are made on these issues now. This is because officials need to undertake further detailed work to better understand the costs and benefits of

any potential options for change. Decisions on these issues will be sought by 30 June 2018.

78. However, I am proposing that we signal our shorter term commitments now in order to provide some certainty. I am proposing that we commit to:

- free allocation remaining at current levels until the end of 2020 and that any future phase down will be well signalled;
- the \$25 price ceiling remaining in place until other features to support stable price development are available, such as until auctioning or links with international markets are established; and
- surrender obligations for agricultural emissions remaining outside the NZ ETS until
 - o there are economically viable and practical technologies available to reduce emissions
 - o New Zealand's trading partners make more progress on tackling their emissions in general.

Free allocation

79. The NZ ETS review included looking at the conditions, timing and rate of phasing-out free allocation. A one percent annual reduction in free allocation rates is contained in the CCRA. This one percent phase-out, however, has never been implemented as a suspension is in place. Once the one-for-two transitional measure has been fully removed (2019), this suspension can be removed through an Order in Council.

80. A lack of clarity about when the suspension will be removed is a source of regulatory uncertainty for free allocation recipients, particularly those that receive large allocations such as New Zealand Steel. That is why I am proposing that we commit to not remove this suspension or make any other changes to allocation that come into force before 2020, and that we will take into account competitiveness impacts, including coverage of carbon pricing internationally.

81. Free allocation is an important issue for the Government to consider. Units provided through free allocation have a direct cost to the Government (i.e. they are an expense on the Crown's accounts) and have opportunity costs (e.g. units that are provided for free cannot be auctioned).

82. The main purpose of free allocation in the NZ ETS is to prevent NZ ETS costs from harming the competitiveness of our emissions-intensive and trade-exposed businesses. Stage II of the review identified two factors relating to this which warrant further investigation. These are that:

- improvements in emissions intensity / productivity over time mean that it becomes increasingly likely that firms become over-allocated;⁸ and
- as carbon pricing coverage spreads globally, free allocation levels are increasingly likely to be more generous than necessary to protect competitiveness.⁹

83. The review has also identified a risk that continuing current levels of free allocation, coupled with exempting agricultural emissions, will use up an increasing share of New Zealand's carbon budget and may exceed future carbon budgets. These budgets are likely to reduce in future to enable New Zealand to satisfy expectations that its targets under the Paris Agreement become progressively more ambitious.

⁸ Business-as-usual emissions intensity improvements are typically around 1 per cent per annum. However it is unknown what the rate is in the specific sectors that receive free allocation.

⁹ Significant regional actors and large industrial countries now either have or are scheduled to implement carbon pricing (e.g. China, Korea, Singapore, Canada, California, Mexico, and the EU nations).

84. Given the importance of free allocation and the long-term nature of industrial investments, I want to balance the need to provide regulatory certainty as soon as we can with the need to ensure a decision is robust and defensible. This means that as well as committing not to remove this suspension or make any other changes to allocation that come into force before 2020, it is important for us to consider the conditions, timing and rate of a phase out.
85. To this end, I propose we direct officials to engage with free allocation recipients, and provide further advice in 2018 on the conditions, timing and rate of a phase out of free allocation.
86. Officials will consider both the one percent phase-out contained in the current legislation, and higher rates (noting that that one percent phase-out would not completely remove free allocation until the 2100s). Before providing further advice officials will attempt to develop a more thorough understanding of the international coverage of carbon pricing in relevant sectors;¹⁰ corroborate the rate of emissions intensity improvements in sectors receiving allocation; and engage with free allocation recipients.

Forestry improvements (accounting and operational settings)

87. NZ ETS forestry settings were assessed as a part of stage II to identify areas for improvement, focusing on operational settings and the accounting approach for post-1989 forests registered in the NZ ETS. The NZ ETS post-1989 forestry accounting approach determines how many NZUs can be received as forests grow and how many might need to be returned to the Crown if they are harvested or deforested.
88. A key issue under the current NZ ETS post-1989 accounting approach is the extent of liabilities at harvest. These liabilities act as a barrier to participation for some landowners and foresters, limiting the ability of the NZ ETS to encourage new planting. In addition, New Zealand will be applying a new averaging forestry accounting approach for these under the Paris Agreement. This provides an opportunity to change the NZ ETS accounting approach to improve NZ ETS incentives for forestry in a way that helps New Zealand meet its emissions reduction targets.
89. Two post-1989 accounting approaches that might address these issues were looked at during stage II of the review, applying an averaging accounting approach¹¹ and/or accounting for carbon stored in harvested wood products (HWPs) in the NZ ETS. Further analysis is required before a decision can be made on whether these accounting approaches should be introduced to the NZ ETS.
90. Stage II of the NZ ETS review also identified a range of improvements to forestry operational settings and how the NZ ETS aligns with other carbon forestry schemes, including bringing the administration of the Permanent Forest Sink Initiative under the CCRA. These improvements would reduce complexity of forestry participants and the Crown.
91. Decisions to amend the accounting approach in the NZ ETS and decisions to address forestry operational issues are linked, and there are benefits to making these decisions together. Analysis of NZ ETS accounting options will also need to be informed by a detailed understanding of the way in which forests will contribute towards meeting New Zealand's 2030 target. This will require confirmation of technical details of the averaging accounting approach to forestry that we will use under the Paris Agreement.

¹⁰ This is particularly important given the potential size and coverage of the Chinese national ETS. Details on this scheme are expected to emerge later this year.

¹¹ An averaging approach would mean post-1989 foresters could earn NZUs up to the 'long-term average' carbon stored in the forest. Following that, no further NZUs would be earned but there would be no harvest liability, provided the land remained in forest.

92. As a result, I am not yet proposing any changes to NZ ETS forestry settings. Officials from the MfE and the Ministry for Primary Industries (MPI) will report back to us on an integrated package of forestry decisions, including advice on potential NZ ETS changes, by 30 June next year.

Operational and technical improvements

93. Stage II of the review identified problems with operational and technical features of the NZ ETS that create administrative inefficiencies for both participants and the Crown.
94. These include that the current compliance framework requires modernising to ensure the integrity of the NZ ETS can be maintained into the future. The review identified areas for improvements to the overall market governance of the NZ ETS and the provision of information to participants. Increased information transparency is essential for a properly functioning carbon market because it enables participants to make appropriate decisions about their NZ ETS obligations and to judge the cost-effectiveness of investments in low emissions technologies or forestry.

Next steps and future work

95. In line with the Terms of Reference, the NZ ETS review has concluded with officials' advice on the findings from the stage II of the review.
96. Following decisions on my proposals, work will need to continue throughout 2017 and 2018 to develop detailed proposals for auctioning, limiting participants' use of international units, options for an alternative price ceiling, and for managing NZ ETS unit supply settings over a rolling five year period.
97. Officials will also provide me with advice by 30 June 2018 on the other issues that were assessed during stage II of the review. This includes addressing free allocation, forestry accounting and operational improvements, and a range of operational and technical improvements to the NZ ETS. I intend to also seek final decisions on these issues by the end of 2018.
98. I intend to seek final decisions on these priority proposals by the end of 2018, including options for their implementation, so that they can be in place before the Paris Agreement starts in 2021. These decisions will likely require regulatory or legislative change to be implemented. I expect to return to Cabinet ahead of these final decisions to seek approval to consult publicly on some matters, for example details of how an auctioning mechanism would operate.
99. This timeframe will ensure that decisions on NZ ETS settings are informed by wider climate change work that is currently underway, the Productivity Commission's inquiry and advice on policy options for how New Zealand could meet its Paris Agreement targets. I expect officials to provide me this advice as part of the wider package towards the end of 2018.

Consultation

100. The following agencies have been consulted on the development of this paper: the Treasury, the Ministry of Business, Innovation and Employment, the Ministry for Primary Industries, the Ministry of Foreign Affairs and Trade, the Ministry of Transport, Te Puni Kōkiri, and the Environmental Protection Authority. The Department of the Prime Minister and Cabinet has been advised of the proposals in this paper.
101. All agencies support the proposals in this paper.

Public consultation

102. Consultation on stage II of the NZ ETS review ran from 24 November 2015 to 30 April 2016. Consultation was undertaken through a series of meetings and a formal written

submission process. Stage II issues were raised at a high level and no policy proposals were put forward. Further informal feedback was received during a series of meetings held between 28 February and 10 March 2017 to share information on a range of options to address these issues with stakeholders.

103. There were 345 written submissions received in response to a public discussion document and two technical documents that included questions on stage II issues. A summary of these submissions was published on the Ministry for the Environment's website in October 2016. My proposals draw both on the written submissions and on the points raised during stakeholder meetings.

Consultation with Iwi/Māori

104. Six regional hui were co-hosted by the Climate Change Iwi Leaders Group (CCILG) and Ministry for the Environment officials. The focus of these hui were to seek feedback on review issues in relation to the interests of Māori and local iwi.
105. Officials have also engaged separately with the CCILG, including talking through options that informed the proposals set out in this paper.

Financial implications

106. I am not seeking changes to appropriations at this stage, as the decisions I propose are subject to further work on detailed proposals, including implementation options, and additional consultation. I will seek Cabinet approval for appropriation changes along with final policy and implementation decisions and drafting instructions by the end of 2018.
107. The accounting for the NZ ETS in the Crown's accounts is complex. Officials from the Treasury and the Ministry for the Environment have developed an accounting policy for the NZ ETS due to the absence of any specific guidance in generally accepted accounting practice. Before I seek any final decisions arising from the proposals set out in this paper, any fiscal impacts and the accounting policy used will be confirmed with auditors.
108. The Ministry for the Environment was provided with funding for the policy work required for NZ ETS supply management, including auctioning, through Budget 2015. This did not include the cost for the build or procurement of an auction platform.
109. There are a number of options available for establishing an auctioning platform, including outsourcing it to existing providers and a Government agency building an auctioning platform. If the cost of an auction platform cannot be absorbed in current baselines, a further Budget bid would be required (potentially in 2018 when more information about the preferred auction design is decided) to put this in place.

Human rights, gender implications and disability perspective

110. There are no implications arising from this paper. The proposal appears to be consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

Legislative implications

111. These proposals have no direct legislative implications at this stage.
112. Regulatory changes will be needed to implement these proposals. Drafting approval for these would be sought at the time of final policy decisions. Amendments to the CCRA may also be required to implement some final policy decisions.
113. I will report back to Cabinet in 2018 on final policy decisions, including legislative implications.

Regulatory impact analysis

114. The Regulatory Impact Analysis (RIA) requirements apply to the proposals in this paper and a Regulatory Impact Statement (RIS) has been prepared and is attached as Appendix 6.
115. The Regulatory Impact Analysis Team at the Treasury (RIAT) has reviewed the Regulatory Impact Statement (RIS) for the Improving the NZ ETS Framework for Unit Supply produced by the Ministry for the Environment and dated 19 June 2017. The review team considers that the RIS meets the quality assurance criteria for Regulatory Impact Statements, given the interim nature of the analysis at this stage.
116. The RIS clearly sets out how the issues considered fit into the larger programme of work on the ETS and on New Zealand's approach to climate change more generally. It acknowledges that further work on the approaches proposed will be needed before they are ready for final decision and implementation, and also that even if successful, they are not expected, on their own, to completely address the identified problems. Therefore, depending on how the work in the next stage turns out, it is likely that further measures will also be needed as well as, or even instead of, those proposed here.
117. RIAT notes that while the perspectives of external stakeholders from a range of sectors have been collected and considered, the views of other government agencies, some of whom will need to be closely involved in implementation of the proposed measures, have not been reflected. This should form part of any further work on the options.

Publicity

118. I propose to announce this package of decisions and proactively release this Cabinet Paper, including the attached Regulatory Impact Statement, with some redactions on the MfE's website.
119. It is important to signal these proposals to the public now to give greater confidence to businesses participating in the NZ ETS and the carbon market. This will support their ability to make better investment decisions and more effectively manage their NZ ETS obligations over the long-term.
120. I intend to communicate a series of messages to the market, based on the proposals I have set out in this paper. These key messages are included in Appendix 5.
121. In addition, the MfE, MPI and Environmental Protection Authority plan on releasing communication material alongside my announcement, and engaging with affected participants to discuss the implications of the proposals.

Recommendations

The Minister for Climate Change Issues recommends that the Committee:

1. note that stage II of the NZ ETS review assessed the overall operation and design of the NZ ETS, particularly in light of the Paris Agreement and New Zealand's target to reduce emissions by 30 percent below 2005 levels by 2030
2. note that stage II of the review identified that the current framework of the NZ ETS does not provide the Government with the tools to effectively manage the supply of units into the market, creates significant regulatory uncertainty for participants, and includes operational and technical features that could be improved
3. note that stage II of the NZ ETS review identified that the current framework of the NZ ETS is not compatible to support negotiations on linking internationally [REDACTED]

4. note that final policy and implementation decisions on NZ ETS settings can only be made once a wider package of climate change work across Government, including the Productivity Commission inquiry into a lower net emissions economy, has been completed
5. note that consideration of NZ ETS surrender obligations for biological emissions from agriculture was outside the scope of this review
6. note that surrender obligations for biological emissions from agriculture will remain outside the NZ ETS until
 - there are economically viable and practical technologies available to reduce emissions
 - New Zealand's trading partners make more progress on tackling their emissions in general

Immediate proposals

Auctioning

7. note that a provision that enables regulations to be made to sell units by auction already exists in the Climate Change Response Act 2002 (CCRA)
8. agree in principle, subject to further work, to introduce an auctioning mechanism into the NZ ETS to give the Government the ability to manage the relationship between units in the NZ ETS and New Zealand's emissions reduction targets, with the aim of establishing it by 2020
9. invite the Minister for Climate Change Issues to report back to Cabinet Economic Growth and Infrastructure Committee by the end of 2018 on the preferred design of an auctioning mechanism

Limiting the use of international units in the NZ ETS

10. note that New Zealand will require access to international emission reductions to meet its 2030 target cost effectively
11. note that New Zealand will need to negotiate with potential linking partners to secure access to high quality international emissions reductions and is currently pursuing a range of options for this
12. [REDACTED]

13. agree in principle, subject to further work, to limit participants' use of international units when the NZ ETS re-opens to international units
14. invite the Minister for Climate Change Issues to report back to the Cabinet Economic Growth and Infrastructure Committee (EGI) by the end of 2018 with options for an appropriate limit on the use of international units in the NZ ETS

An alternative price ceiling

15. note that the \$25 fixed price option will likely need to change so that carbon prices in New Zealand can stay broadly in step with international carbon prices
16. agree in principle, subject to further work, to develop an alternative price ceiling for the NZ ETS
17. invite the Minister for Climate Change Issues to report back to EGI by the end of 2018 on a preferred option for an alternative price ceiling, including assessment of a volume-limited price ceiling incorporated into an auctioning mechanism

18. note the \$25 fixed price option will remain in place, at least until auctioning or links with international markets are established

Coordination of NZ ETS unit supply decisions

19. note that the provision in the CCRA that enables regulations for the sale of units by auction requires that the Minister for Climate Change Issues sets NZU limits for five years into the future with a one year extension annually, to determine the volume of units that can be sold through auctions each year
20. agree in principle, subject to further work, that the five-year rolling period referred to in paragraph 19 should apply to Government decisions on settings for a limit on the use of international units in the NZ ETS and an alternative price ceiling, in addition to the volume of units that can be sold through auctions each year
21. invite the Minister for Climate Change Issues to report back to EGI by the end of 2018 with a preferred approach for applying the five-year rolling period to the Government's other unit supply decisions

Proposals for further work

Free allocation

22. note that that free allocation will be maintained at current levels until the end of 2020, as stated in the Government's discussion document for the NZ ETS review, published in November 2015
23. direct officials to engage with free allocation recipients and provide further advice on the conditions, timing and rate of a phase out of free allocation after 2020, taking into account competitiveness impacts, including coverage of carbon pricing internationally
24. invite the Minister for Climate Change Issues to report back to EGI in 2018, following work requested in paragraph 23, on the conditions, timing and rate of a phase out of free allocation after 2020

Forestry improvements

25. note that stage II of the NZ ETS review identified that current settings, including the accounting approach for post-1989 forests and a range of operational issues, could be improved to increase NZ ETS participation and enhance incentives for forestry investment
26. note that initial analysis has shown that providing an averaging approach for post-1989 forests in the NZ ETS will remove barriers to participation and improve NZ ETS incentives for afforestation
27. note that Ministers will be provided with advice on a package of forestry decisions by 30 June 2018, including advice on:
 - potentially introducing averaging and/or HWP accounting for post-1989 forests in the NZ ETS, and
 - making operational improvements to forestry settings in the CCRA, including options to align administration of the Permanent Forest Sink Initiative

Operational and technical improvements

28. note that stage II of the review identified a range of operational and technical changes that could improve the overall performance of the NZ ETS, including improvements to the compliance and penalty regime, market governance and how NZ ETS information is provided to the market
29. note that detailed advice on these operational and technical improvements will be provided to Ministers by 30 June 2018

Next steps

30. note that this paper, including the attached Regulatory Impact Statement will be made available, with some redactions, on the Ministry for the Environment's website
31. note that further work on improvements to the NZ ETS will be ongoing throughout 2017 and 2018, and that advice on final changes to the NZ ETS will be provided to Ministers by the end of 2018

Authorised for lodgement.

Hon Paula Bennett
Minister for Climate Change Issues

Appendix 1: Distributing New Zealand's carbon budget

NB: All numbers below are indicative and will change as projections are updated over time.

New Zealand's carbon budget (Figure 1.1)

1. New Zealand's NDC under the Paris Agreement is a target to reduce emissions 30 percent below 2005 levels by 2030. This can be translated into a 'carbon budget' for 2021 – 2030. This is the amount of CO₂e emissions that New Zealand does not need to reduce or compensate for to meet the target, i.e. what New Zealand can emit for free. Our provisional carbon budget is **594 MtCO₂e**.
2. Emissions projections indicate that with current policies, New Zealand's emissions will be higher than this budget, at **814 MtCO₂e** over 2021-2030.

Distributing the carbon budget (Figure 1.2)

3. It is the Government's role to determine how this carbon budget is shared out to the economy, both inside and outside of the NZ ETS.
4. Around half New Zealand's emissions are exempt from the NZ ETS (most notably from the agricultural sector). This **non-ETS volume** of emissions uses up part of the carbon budget.
5. The remainder of the carbon budget is available to sectors covered by the NZ ETS (whose emissions are labelled **ETS volumes** in Figure 1.2). For these sectors to benefit from their share of the carbon budget, the Government has to allocate a corresponding number of units to market participants, which it can do by giving them away (free allocation) or selling them.
6. **Free allocation** for emissions intensive and trade exposed activities uses up some of NZ ETS sectors' share of the carbon budget.
7. Under current NZ ETS settings, projections indicate that some of NZ ETS sectors' share of the carbon budget will not be distributed. This **unallocated carbon budget** could be distributed into the NZ ETS market by other means (e.g. sales by auction).
8. If this carbon budget volume is not allocated to market participants, more cost will be imposed on the economy than necessary for meeting the 2030 target.

The abatement task

9. The difference between the carbon budget and New Zealand's projected emissions is the abatement task – the emissions that New Zealand will need to reduce domestically or compensate for by funding emissions reductions overseas, if it is to meet its 2030 target. The projected abatement task is **220 MtCO₂e**.
10. The size of the abatement task is a key factor in determining of the cost of meeting our target. This cost depends on the amount of emissions reductions we need as well as the cost of reducing emissions domestically or purchasing emissions reductions internationally.
11. Undertaking emission reductions over and above our abatement task would represent more climate change benefits than required by our target, but also additional cost.

Figure 1.1 – New Zealand's provisional carbon budget

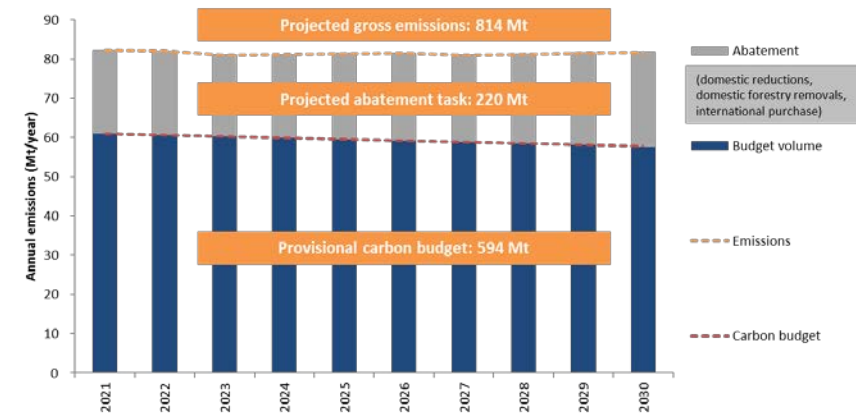
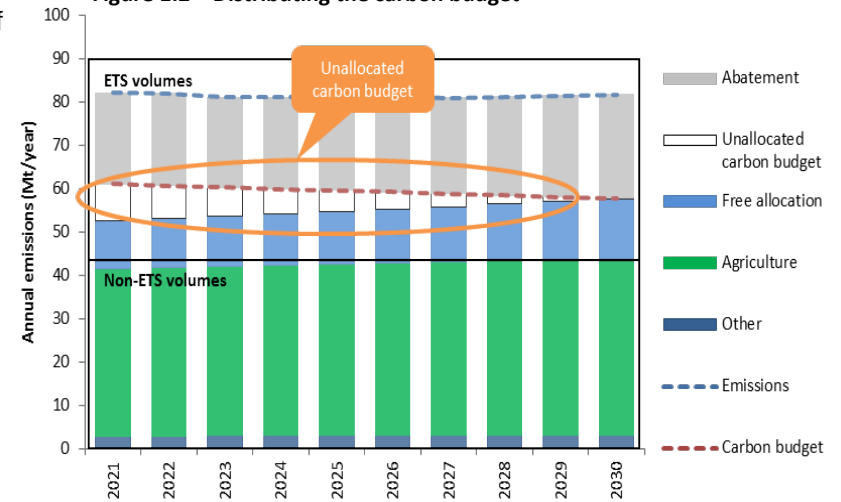
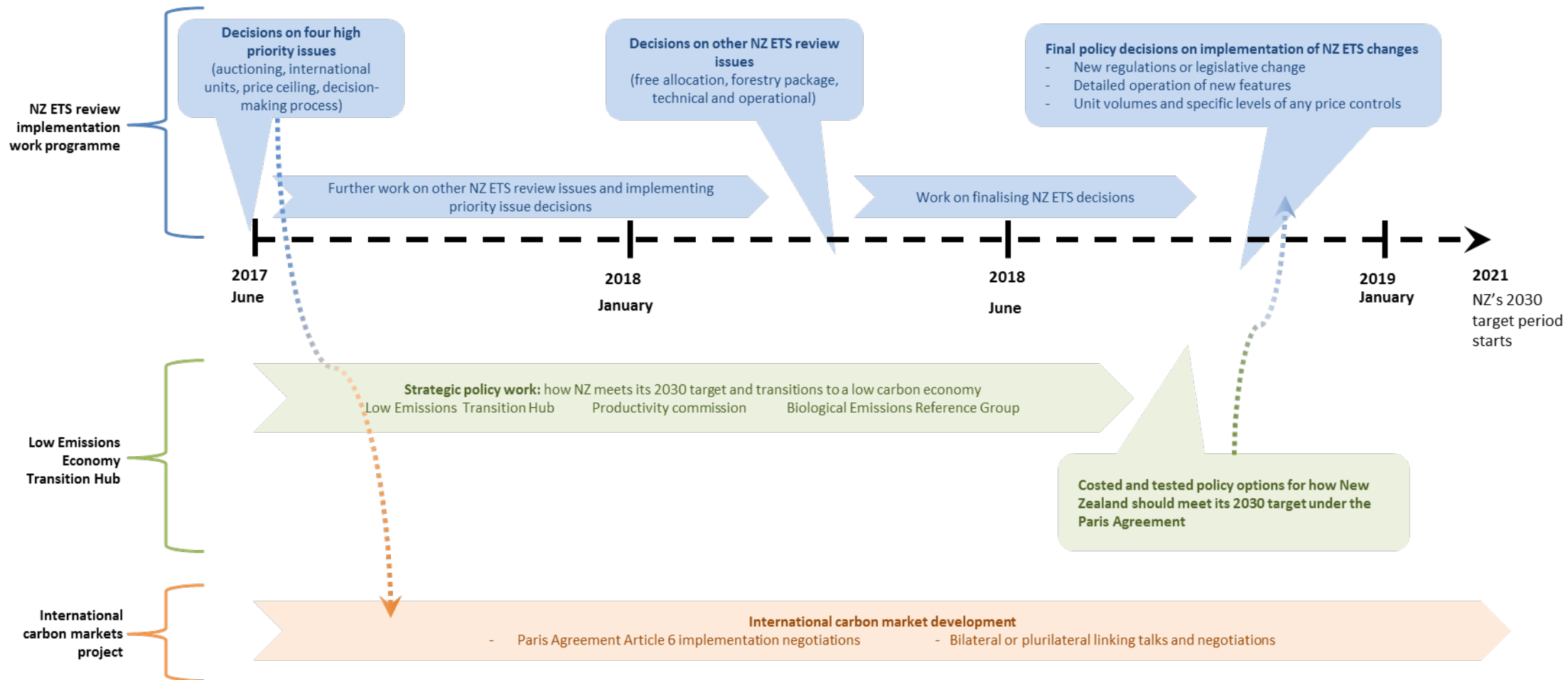


Figure 1.2 – Distributing the carbon budget



Appendix 2: Timeline of wider climate change work programme



Appendix 3: Summary of large emitters' submissions on the four high priority proposals

This table summarises selected consultation responses from large emitters and Business NZ on the four policy proposals in this paper, and their position on a potential phase out free allocation after 2020. Several of these firms did not support quantity limits on international units, often citing access to least cost units as a key reason. However, a limit as proposed could facilitate much wider access to cost-effective international units from our potential linking partners, as well as prevent NZ ETS participants from buying more international units than New Zealand needs for meeting its 2030 target.

	Company/ Organisation	Auctioning	Quantity limits on international units	Price ceiling	Co-ordinated decision making	Free allocation
Advocacy Group	Business NZ	Supports auctioning to improve liquidity Should not be used to manage price	Supports quantity limits; access to international units is vitally important.	Maintain \$25 fixed price option in line with international prices. Ideally, should not have price control mechanisms.	There was no specific question in consultation material about co-ordinating decisions. However, the strongest feedback received throughout consultation, including from these companies, was the need for improved policy predictability	All of these companies, including those that do not receive free allocation, submitted that the phase out of free allocation should consider the carbon price being faced by New Zealand firms' trade competitors.
Free allocation recipients	Ballance Agri-Nutrients	Supports auctioning to: - improve liquidity - align supply with target	Supports quantity limits which are driven by the Government's need to avoid over-delivery of international units	Maintain \$25 fixed price option, until: - auctioning has been developed		
	Fletcher Building	Supports auctioning to: - improve price stability - align supply with target	Does not support quantity limits Access to international units is vitally important.	Maintain \$25 fixed price option until: - NZU market value settles, or - when international units are available. Auctioning could be used as a price control mechanism.		
	Fonterra	Supports auctioning to: - improve liquidity - improve price stability - increase transparency	Supports some access to international markets	Maintain \$25 fixed price option, until increased: - policy alignment with competitors, - liquidity - policy certainty and transparency.		
	Graymont (lime)	Supports auctioning to: - improve liquidity - align supply with target - manage NZU prices	Supports quantity limits to avoid over-delivery of international units	Maintain \$25 fixed price option, until: - auctioning has been developed		
	Methanex	Supports auctioning to: - improve price stability - improve liquidity	Important to re-establish international linkages; emphasised importance of accessing least cost abatement.	Maintain \$25 fixed price option in short term. Auctioning could be complementary to or instead of fixed price option		
	NZ Steel	Needs to be considered alongside number of factors, including short and long term policy objectives.	Does not support quantity limits; emphasised importance of accessing least cost abatement.	Did not answer		
	OJI Fibre Solutions (wood processor)	Supports auctioning to: - improve liquidity - align supply with target - manage NZU prices	Did not answer	Maintain \$25 fixed price option, until: - auctioning has been developed		
	Pacific Aluminium (NZAS)	Did not answer	Does not support quantity limits; emphasised importance of accessing least cost abatement.	Maintain \$25 fixed price option		

	Refining NZ	Unsure, auctioning could play role in managing price volatility	Not supportive of quantity limits	No price control mechanisms, price should be set by viable international market.		
Liquid fossil fuels	BP	Supports auctioning to: - align supply with target - increase transparency	Restrictions should be aligned with international standards; some access is important to ensure the NZ ETS remains in sync with international pricing	Transition away from price control mechanisms		
	Z Energy	Supports auctioning to: - improve liquidity - align supply with target	Supports quantity limits, need to align with international carbon markets	Maintain \$25 fixed price option, until: - auctioning and/or international linkages have been developed		
Electricity	Genesis Energy	Supports auctioning to: - improve liquidity Should not be used to manage price.	Need access to international units to moderate the market power of NZ unit holders.	Maintain \$25 fixed price option until: - at least 2020. Ideally, should not have price control mechanisms.		

Appendix 4: Information on current and expected international carbon prices

Figure 3.1: Current international ETS prices (May 2017)

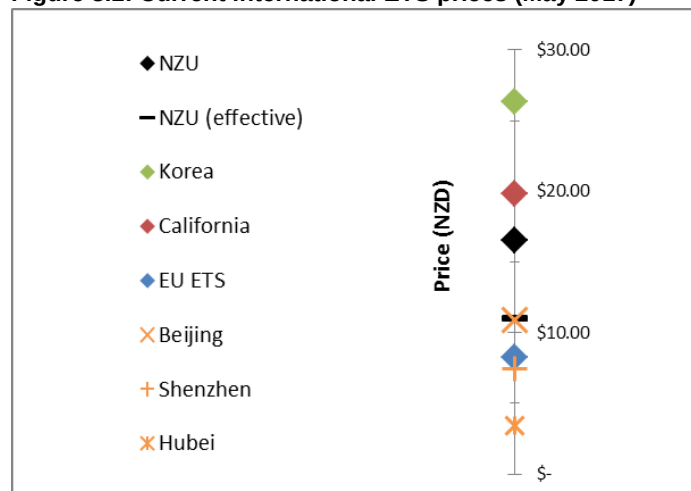


Figure 3.3: Carbon prices from IPCC and IEA WEO 2016 scenarios

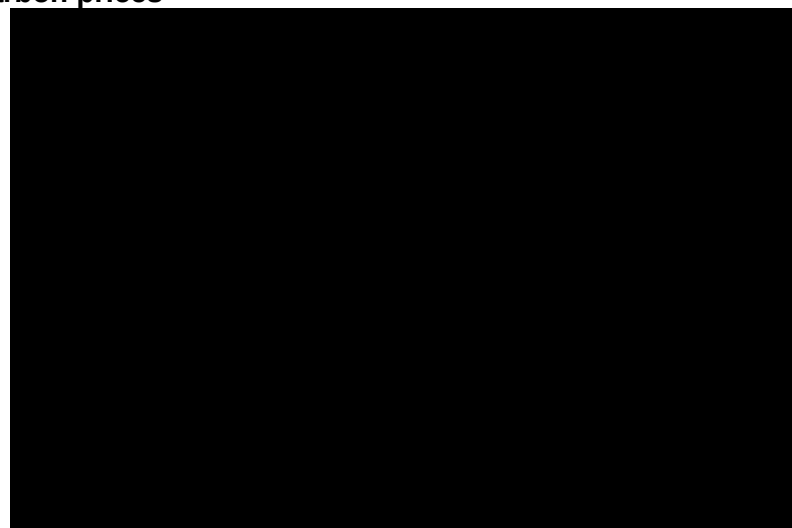
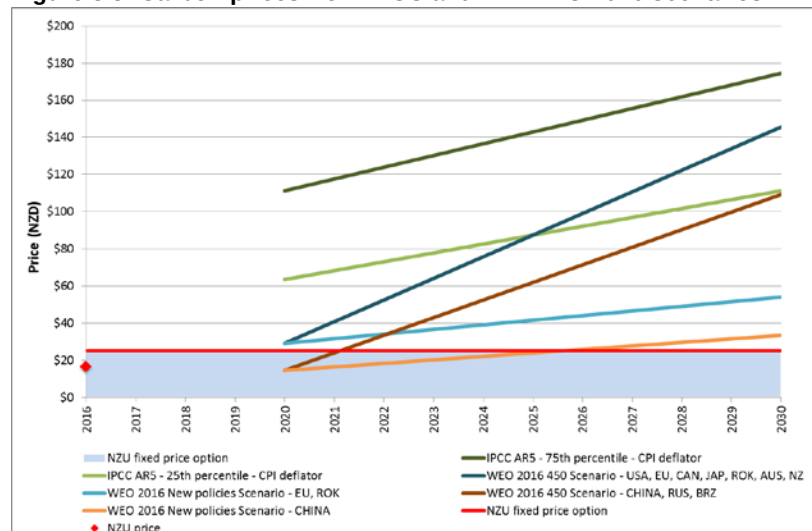
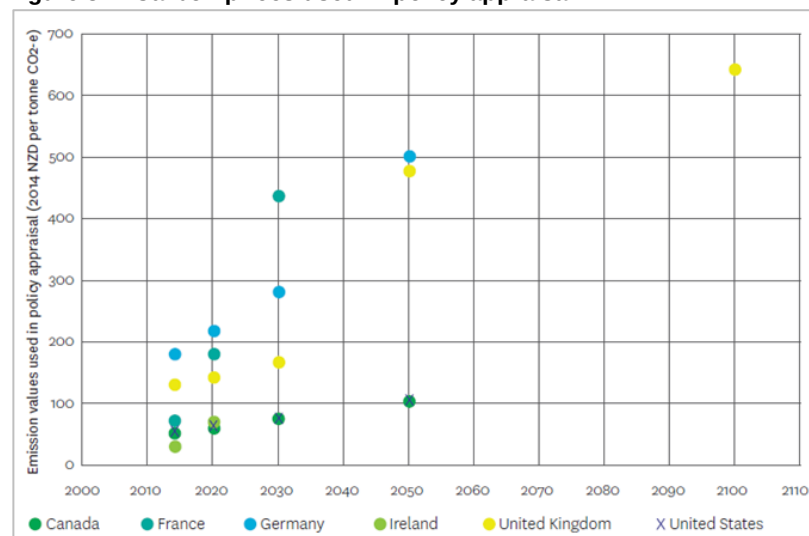


Figure 3.4: Carbon prices used in policy appraisal³



¹ [Redacted]
² [Redacted]
³ Sourced from *Net zero in New Zealand* by Vivid Economics (2017), see <http://www.vivideconomics.com/publications/net-zero-in-new-zealand>.

Table 1: Details of carbon pricing measures in place in key regions and countries⁴

Jurisdiction	Type of carbon pricing and main features	Current average price level (NZ\$)	Cap on emissions?	GDP (US\$) ⁵	Emissions (MtCO ₂ e), 2012 data or latest available	Emissions covered by carbon pricing (MtCO ₂ e)	Sectors covered ⁶	Expected future changes
New Zealand	- ETS in place since 2008 - NZ ETS is the main instrument to meet the 2030 target - No cap on domestic emissions - Domestic-only scheme since 2015	\$17.00 (effective price: \$11.50)	✗	\$173 billion	78 Mt	39.85 Mt (51% of New Zealand's emissions)	- Broad sector coverage, including forestry - Agriculture is excluded	- Gradual removal of the one-for-two between 2017 and 2019 - Ongoing ETS review for the 2020s
European Union	- ETS in place since 2005 - EU ETS is the main instrument for reducing emissions - Many EU Member States also have national carbon taxes	\$8.00	✓	\$16.3 trillion	4750 Mt	2131.84 Mt (45% of the EU's emissions)	Industry, power, aviation, industrial process emissions	- The EU ETS has been under review since 2012 - In 2019, the EU ETS will include a reserve to manage the supply of units in the ETS - Final decisions on the EU ETS are expected later this year
California (WCI)	- California has an ETS since 2013 - It is used as a backstop to reduce emissions if other policies fail. - California's scheme is linked internationally as part of the Western Climate Initiative	\$20.00	✓	\$2.6 trillion ⁷	444 Mt	377.69 Mt (85% of California's emissions)	Industry, power, transport, buildings, industrial process emissions	- California is part of the Western Climate Initiative, with Quebec. Ontario will join in 2018, and Mexico is considering joining. - Discussions are ongoing about how California will meet the 2030 target and extend the ETS after 2020.
Canada	- Four Canadian provinces have introduced a price on carbon: - ETs in place in Ontario and Quebec (they are/will be linked to California's ETS) - Alberta has a baseline and offset scheme⁸, and a carbon tax - British Columbia has a carbon tax	\$32.00 (Alberta and British Columbia) \$19.30 (Ontario) \$20.00 (Quebec)	✓ - Ontario and Quebec have a capped ETS	\$1.55 trillion	The four provinces emit 565 Mt: 260 (Alberta) 60 (British Columbia) 167 (Ontario) 78 (Quebec)	362.49Mt ⁹ (45% of emissions in Alberta, 70% in British Columbia, 82% in Ontario, and 85% in Quebec)	Large industrial operators, power generation, transport fuel distribution	- By 2018, a national carbon price will apply in all provinces, starting at NZ\$11 in 2018, and rising to NZ\$53 in 2022. - Provinces can put in place their own plans (ETS or carbon tax), or a 'default' hybrid carbon tax and trading system will apply
Republic of Korea	ETS in place since 2015	\$26.50	✓	\$1.377 trillion	669 Mt	452.91 (70% of the country's)	Industry, power generation, energy,	Korea intends to purchase international units to meet its

⁴ Unless specified, GDP and emissions data are based on data from the World Bank Group and Ecofys' report, *Carbon Pricing Watch 2017*, [here](#)

⁵ World Bank data (2015) [here](#)

⁶ Information from the International Carbon Action Partnership (ICAP) [here](#)

⁷ <https://www.bea.gov/regional/bearfacts/pdf.cfm?fips=06000&areatype=STATE&geotype=3>

⁸ A baseline-and-offset system sets a baseline of emission levels for individual emitters or groups of emitters. If they exceed their baseline emissions, they are required to purchase offsets to meet their compliance obligations.

⁹ Data for emissions coverage in Alberta, British Columbia, Ontario, Quebec

						emissions)	buildings, transport, waste	2030 target
China (8 pilot ETS projects)	China currently has 8 pilot ETS projects	Prices in the ETS pilot projects range from \$3.50 -10.50	✓	\$11.06 trillion	China's 8 regions/cities with pilot ETSS emit 2,504 Mt	1259.41 Mt (50% of emissions from the pilot regions; this is 10% of China's overall emissions)	power generation, petrochemicals, chemicals, building materials, steel, non-ferrous metals, paper and aviation	A national ETS expected in the second half of 2017. It will be the world's largest ETS. Coverage and prices are still unknown
Australia	Emission Reduction Fund with a safeguard mechanism (similar to a baseline and offset scheme as defined above for Alberta). It has been in place since July 2016, after the ETS was repealed.	n/a	n/a	\$1.34 trillion	762 Mt	380.84 Mt (50% of Australia's emissions are covered by the safeguard mechanism)	The safeguard mechanism applies to emissions from industry, power, and industrial process emissions	- Australia is currently reviewing its climate change policy. - Many stakeholders, including energy companies, farmers, and investor groups, have called for an intensity-based ETS for the power sector