Regulatory Impact Statement: Improving the NZ ETS Framework for Unit Supply

Agency Disclosure Statement

This Regulatory Impact Statement (RIS) has been prepared by the Ministry for the Environment. It provides an analysis of options to better align unit supply in the New Zealand Emissions Trading Scheme (NZ ETS) with New Zealand's 2030 emission reduction target and to improve the regulatory predictability of the scheme.

This RIS recommends a package of intermediate decisions that will narrow down options for further consideration and allow the development of more detailed proposals. The options analysis is limited to high-level options and a primarily qualitative assessment. Further work over the next year to develop a better evidence base and advice about how New Zealand will meet the 2030 target is expected to enable cost benefit analysis to be completed in 2018, before final NZ ETS policy decisions are made.

The problem definition related to misalignment of NZ ETS unit supply with the 2030 target, including the carbon budget available for NZ ETS sectors, depends on projections of emissions and unit flows in the 2020s. These projections are inherently uncertain. Variables such as economic and population growth, commodity prices, and seasonal changes such as variation in rainfall, can affect both energy and biological emissions.

The estimated economic costs of this misalignment are based on economic (CGE) modelling conducted for setting New Zealand's 2030 target. CGE analysis aims to show the broad direction and magnitude of changes in the economy, and is not a precise forecasting tool. It depends on a number of assumptions, including future economic conditions, which may not be borne out.

There is some uncertainty about the potential fiscal impacts of the options assessed in this RIS as the details of how New Zealand will account for its 2030 target are not yet finalised, and the nature of the international carbon markets that New Zealand might link to in future is unclear. This is partly because the operational details of the Paris Agreement are still being negotiated. These issues potentially have implications for the Government's financial accounting treatment of the 2030 target, and of NZ ETS unit transactions. The fiscal impacts outlined in this RIS are consistent with the Crown's current accounting practice, however this will need to be confirmed before final policy decisions are made.

Roger Lincoln – Director Climate Change, Ministry for the Environment

Date 27/06/17.

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Executive summary

1. This RIS outlines a package of four policy proposals to better align unit supply in the New Zealand Emissions Trading Scheme (NZ ETS) with New Zealand's 2030 emission reduction target and to improve the regulatory predictability of the scheme.

2. These proposals result from MfE's assessment of the operation and effectiveness of the NZ ETS for the NZ ETS review 2015/16. This found, among other things, that the NZ ETS unit supply framework and settings are not fit-for-purpose after 2020 due to two overarching problems:

   - a mismatch between unit supply volumes in the NZ ETS and New Zealand's target to reduce emissions by 30 per cent on 2005 levels by 2030 (the 2030 target)
   - regulatory uncertainty about future unit supply settings

3. The first problem means that the level of effort to reduce domestic emissions and/or fund abatement overseas that the NZ ETS transmits to the economy in the 2020s is likely to be higher or lower than what the 2030 target demands. As a result the NZ ETS could impose higher economic costs on New Zealand than necessary for meeting the 2030 target. Conversely, it could also fail to deliver enough emission reductions to meet the target. In that case if the Government wanted New Zealand to meet the 2030 target it would have to purchase international emission reductions itself, with costs borne by taxpayers rather than emitters.

4. The impact of the second problem, regulatory uncertainty, is that it undermines the credibility of the NZ ETS price signal and its ability to influence investment decisions. Private actors (primarily New Zealand businesses) do not have information enabling them to judge the fair value of emission units and the cost effectiveness of investments. This flows through to increased risks, costs and delays in reducing emissions.

5. The four preferred options, intended to reinforce each other as a package, are to:

   - introduce an auctioning mechanism to align the NZ ETS with our targets
   - limit participants' use of international units in the NZ ETS in the 2020s
   - develop an alternative price ceiling to the $25 fixed price option while keeping it in place in the short term
   - co-ordinate decisions on NZ ETS unit supply volumes and settings on a five year rolling basis

6. Withheld consistent with S9(2)(j) of the OIA [redacted] This will also enable the development of detailed proposals so that final policy decisions and implementation in the NZ ETS can take place well before 2021.

7. The proposals have been designed to leave flexibility to take into account evidence and potential future Government decisions resulting from the work of the Natural Resources Sector (NRS) low emissions economy transition hub, which over the next 12-18 months will develop advice on New Zealand's best options for meeting the 2030 target.

8. These proposals will not fully address the target misalignment and regulatory uncertainty problems. Other issues arising from the NZ ETS review, including whether to phase out

free allocation after 2020 and a forestry accounting and operational package, are expected to be considered in 2018 after further work has progressed. Uncertainty over the role of the NZ ETS in meeting the 2030 target may also be reduced in 2018 as a result of the low emissions economy transition hub work.

9. Nevertheless, this package of four high-level proposals are together expected to:

- move the NZ ETS towards a more durable and stable regulatory framework
- facilitate linking to international carbon markets
- provide market participants with an indication of the high level direction of the NZ ETS policy and a timeline for when more information will become available
- give the Government better ability to manage the costs and risks related to the NZ ETS and to meeting New Zealand's emissions reduction targets.

A. Context and overview

10. This RIS contains a package of four policy proposals relating to the highest priority issues resulting from stage II of the New Zealand Emissions Trading Scheme (NZ ETS) review. Due to the length and technical nature of this document, this section provides a high level outline of the key issues and recommendations.

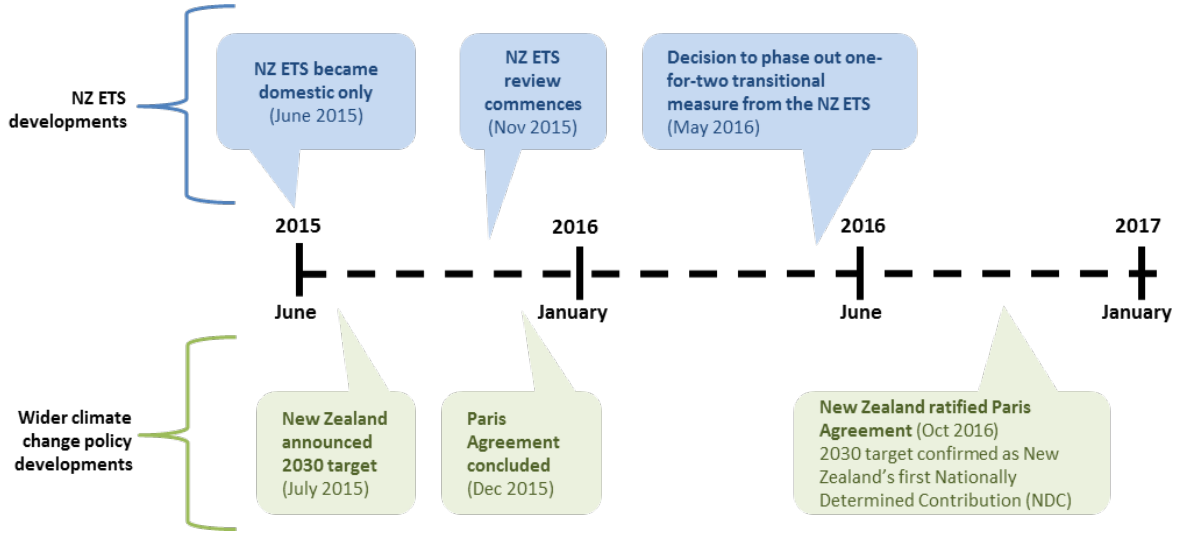
NZ ETS review 2015/16

11. In November 2015, the Government announced a review to assess the operation and effectiveness of the NZ ETS. In particular, the review's Terms of Reference highlighted the need to evaluate the implications for the NZ ETS of the new international climate agreement (the Paris Agreement) and New Zealand's 2030 emissions reduction target.[1]

12. The review was carried out in two stages. Stage I of the review considered how to bring NZ ETS unit demand into better alignment with New Zealand's 2030 target. This concluded in May 2016, with a decision to phase out the one-for-two transitional measure[2] over three years (2017-2019).[3]

13. Stage II of the review continued until mid-2017. The Government did not put forward any specific policy proposals as part of stage II of the review. Instead, broad questions about the operation and effectiveness of the NZ ETS were mandated for consideration. A public consultation sought feedback on issues including the role of international units, auctioning, forestry and free allocation; managing price stability; operational and technical issues; and barriers to the uptake of low emission technologies.

Figure 1: Timeline of recent NZ ETS and climate policy developments (2015 – 2017)



Scope and focus of proposals in this RIS

14. The scope of this RIS is limited to a package of four policy proposals arising from stage II of the NZ ETS review. The proposals relate to auctioning, international units, the $25

[1] To reduce emissions by 30 per cent from 2005 levels by 2030.

[2] One-for-two was an NZ ETS setting that allowed participants from sectors other than forestry to surrender only one unit for every two tonnes of emissions.

[3] This decision was given effect through a legislative amendment made in conjunction with Budget 2016. See Ministry for the Environment 2016b for MfE's analysis of the rationale for this change.

fixed price option price ceiling, and the process for Government decision-making about unit supply. This package has been prioritised over other issues from stage II of the review (to be considered by Ministers in 2018) because it is key for:

- supporting efforts to secure links to international carbon markets
- putting tools in place before 2021 so that the Government can manage economic and fiscal costs associated with the NZ ETS and with meeting the 2030 target
- responding to market participants' calls for improved regulatory stability and predictability.

15. Decisions are being sought from Ministers at this point to narrow the options under consideration and allow development of detailed proposals.
16. The analysis in this RIS is therefore limited to high-level options and does not attempt to outline the more detailed proposals that will eventually be needed for final policy decisions. It is a primarily qualitative assessment rather than a full cost-benefit analysis.
17. This level of analysis and decisions reflects that the NZ ETS review sits within New Zealand's overall climate change policy approach, which is also being reassessed and reframed in light of the Paris Agreement. Any proposals resulting from this review will have to integrate with this broader policy work.
18. The package of proposals in this RIS therefore aims to leave flexibility to accommodate decisions which may be taken at a later date, in particular about New Zealand's plan for achieving its 2030 target. The proposals seek to develop the tools needed to give the Government the ability to reflect decisions about this plan into the NZ ETS, without pre-empting the outcome of these decisions or excluding any options for meeting the target at this stage.
19. This wider climate policy work is also expected to develop a better evidence base over the next 12-18 months, to enable a cost-benefit analysis of detailed NZ ETS changes. This will occur through a related work stream looking at New Zealand's transition to a low emissions economy (see below for more information).

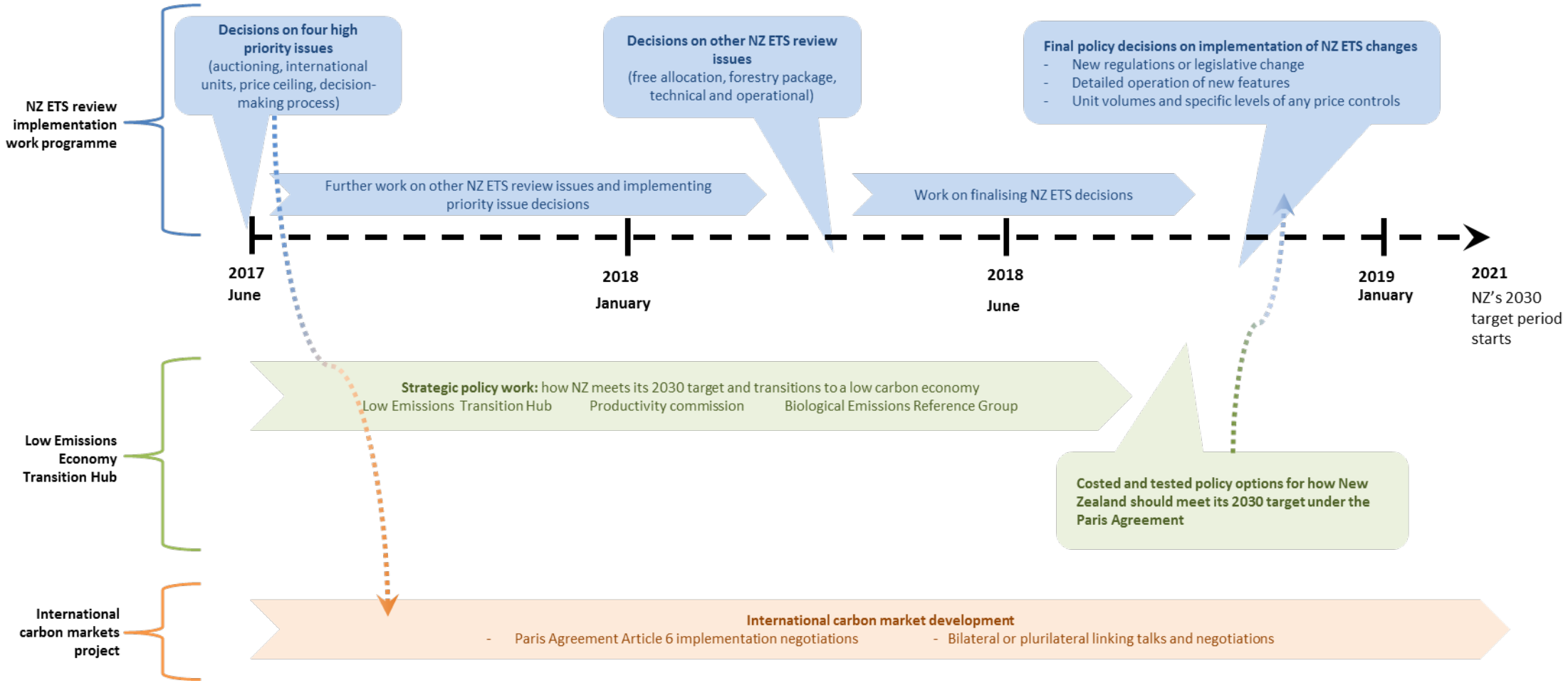
NZ ETS review within the broader climate change work programme

20. The other climate change work streams with strong links to the NZ ETS are the international carbon markets project and the low emissions economy transition hub work.
21. The international carbon markets project was established in 2016 to identify linking options and engage in discussions with potential partners, with a view to enabling New Zealand to source international emission reductions in the 2020s. Withheld consistent with S9(2)(j) of the OIA [redacted] Therefore decisions on the proposals in this RIS are important for supporting some of New Zealand's potential linking options.
22. The low emissions economy transition work programme is aiming to identify New Zealand's best options for meeting the 2030 target, through a balance of domestic, forestry and international emissions reductions. This work will be undertaken by bringing together Natural Resources Sector (NRS) agencies in a low emissions transition hub to develop evidence and advice over the next year. The evidence this will develop will be a

key input into later advice on specific details for implementing changes to NZ ETS supply settings, particularly unit volumes.

23. An outline is provided below of the expected timeline for how NZ ETS work will progress in tandem with the international markets and low emissions transition work over the next two years.

Figure 2: Timeline for NZ ETS and other relevant climate work programmes 2017-18



Problems, objectives and proposals

24. There are two overarching problems with unit supply in the NZ ETS that mean the current framework and settings will not be fit for purpose after 2020. These are:

    1. a mismatch between unit supply volumes in the NZ ETS and our 2030 target
    2. regulatory uncertainty about future unit supply settings

25. The first problem, misalignment with the target, means that the level of effort (to reduce domestic emissions and/or fund abatement overseas) the NZ ETS transmits to the economy in the 2020s is likely to be higher or lower than what the 2030 target demands. This would have negative economic and distributional impacts:

    - If the NZ ETS puts more effort on the economy than necessary, this would reduce New Zealand's economic growth by a greater extent than anticipated by the Government when it set the target.[4]
    - If the NZ ETS puts less effort on the economy than necessary, either New Zealand would not meet its target or the Government would have to take other measures so that the target is achieved. Practically, the latter would mean Government purchasing of international emission reductions, with costs borne by taxpayers rather than emitters.

26. The impact of the second problem, regulatory uncertainty, is that it undermines the credibility of the NZ ETS price signal and its ability to influence investment decisions. Uncertainty over unit supply settings and future unit volumes means that private actors (primarily New Zealand businesses) do not have information enabling them to judge the fair value of units and the cost effectiveness of investments. This is likely to flow through to increased risks, costs and delays in reducing emissions.

27. These two overall problems are interlinked, and there are a number of specific problems associated with particular elements of unit supply that contribute to them. The proposals in this RIS seek to directly address the following specific problems:

    - Projections indicate that fewer NZUs (permits) will be allocated to the market over 2021-2030 than the carbon budget available for NZ ETS sectors, which will impose more cost on the economy than necessary to achieve the target.
    - New Zealand is not connected to international abatement which is necessary for meeting the 2030 target at reasonable cost, and it is unclear how the NZ ETS will be linked to international markets in future.
    - The current NZ ETS price ceiling, the $25 fixed price option, is set at a relatively low price level that risks exceeding the carbon budget, which would shift responsibility for meeting the target from emitters on to the Government.
    - Government decisions relating to NZ ETS unit supply have been unpredictable and risk not being appropriately coordinated in future.

[4] In setting the 2030 target, the Government considered the need to contribute to global efforts on climate change and the economic cost of New Zealand's contribution, alongside New Zealand's national circumstances and capacity for emission reductions. The target chosen reflects the Government's view of the maximum achievable level of ambition at this time.

28. The proposals are also expected to help improve outcomes related to problems of uncertainty over the status of NZ ETS policy settings, lack of confidence in the NZ ETS price signal, and the unclear role of the NZ ETS in meeting the 2030 target.

29. Two other specific problems with NZ ETS unit supply are not covered by this RIS, but are expected to be considered in 2018 after further work has progressed. They are:

    - The current regime for free allocation to emissions intensive and trade exposed activities could result in more units being allocated than may be available in New Zealand's future carbon budgets (i.e. after 2030). These budgets are likely to reduce in future to enable New Zealand to satisfy expectations that targets under the Paris Agreement will be progressively more ambitious. There is also significant regulatory uncertainty over when and how free allocation rates will reduce over time.
    - The NZ ETS forestry accounting approach may be acting as a barrier to participation, weakening NZ ETS incentives for afforestation, and is different from the new approach New Zealand plans to apply for measuring progress towards meeting the 2030 target.

30. The objectives against which options were assessed, including the criteria used to judge whether objectives are met, are summarised below.

Table 1: Summary of objectives and criteria

Objectives	Alignment with 2030 target and progression of future NDCs	Improve regulatory certainty and predictability	Consistent with broader NZ ETS design policy intent
Criteria - how objectives are judged	- The NZ ETS is aligned with NZ's carbon budget and delivers the right amount of abatement to meet our target - Efficiently allocates risk, and burden sharing, between the Crown and NZ ETS participants	- The NZ ETS operates in a durable manner in the medium-to-long term[5] - Allows participants to form expectations about future market conditions - Builds confidence in the market	- Maintains market and environmental integrity - Minimises administrative burden and complexity - Price levels broadly in line with international prices, with stable price development - Avoids perverse incentives and unintended consequences[6] - Compatible for international linking

31. *Table 2* summarises the options considered, including both those that are preferred and not preferred. The key reasons that led to some options being discounted are noted.

[5] The concept of medium-to-long term assumes a timeframe of the next 10-15 years onwards

[6] Note it may not be possible to identify all perverse incentives or unintended consequences ex ante.

Table 2: Overview of options

Issue	*Allocate the carbon budget*	*Align international units with the abatement task*	*$25 fixed price option (FPO)*	*Decision-making about unit supply*
Status quo	NZ ETS is projected to under-allocate the carbon budget for New Zealand's 2030 target by 43 Mt CO_2e, imposing more cost on the economy than necessary to achieve the target.	New Zealand is not connected to international abatement and it is unclear how the NZ ETS will be linked to international markets in future.	$25 price level is lower than expected international prices in the 2020s, creating risk of exceeding the carbon budget and responsibility for the target shifting to the Government.	Discretionary statutory reviews and reactive actions to address new issues or changed circumstances lead to unpredictable and potentially uncoordinated decisions.
Preferred option/s, with key advantages	**Use an auction mechanism to sell NZUs at the market price.** - Can allocate full carbon budget to the market without creating perverse incentives, distortions or high transaction costs - Generates cash assets for the Crown	**A quantity limit on participants' use of international units.** - Facilitates international linking - NZ ETS more likely to deliver the right amount of international units - Supports market confidence	**Develop an alternative price ceiling at a higher price level.** Options, in order of most to least ability to control potential shift of cost to the Government, are: - A volume-limited auction cost containment reserve - FPO in regulations - Retain FPO in CCRA	**Manage key NZ ETS unit supply settings* using a rolling five-year period, with statutory reviews held at the discretion of the Minister.** - Balances predictability for participants with flexibility for the Government - Improves information for the market **auction volumes, price ceiling level and volumes, international units.*
Discounted options, with key disadvantages	**Expand free allocation** - If provided to businesses, creates opportunities for windfall profits; if provided to other groups, introduces high transaction costs - Time consuming and politically difficult to set up **Sell NZUs at a fixed price** - Government would set prices rather than market forces - Only allocates full carbon budget if fixed price is below the market price, but this would create potential for windfall profits	**Unlimited use of international units by NZ ETS participants** - Withheld consistent with S9(2)(j) of the OIA - Participants may buy more international units than NZ needs to meet the target, increasing costs on the economy and causing negative fiscal impacts. - No signals to market participants about expected domestic effort, undermines market confidence.	**Remove price ceiling entirely** - Current uncertainty about future NZ ETS unit supply volumes and settings, and likely continued volatility in international carbon markets, means no price ceiling would undermine market confidence and risk increasing price volatility - If extremely high prices eventuate, Government would be strongly pressured to make ad hoc interventions	**NZ ETS managed in phases with statutory reviews held at set timeframes** - Similar to the approach previously used in the NZ ETS, which was found to be unworkable.

Summary of recommendations and next steps

32. *Table 3* summarises more comprehensively the package of proposals, the problems addressed as well as the next steps needed to allow final policy decisions in 2018.

33. While these proposals will not completely address the target misalignment and regulatory uncertainty problems, together they are expected to:

- move the NZ ETS towards a more durable and stable regulatory framework;
- facilitate linking to international carbon markets;
- provide market participants with an indication of the high level direction of the NZ ETS policy and a timeline for when more information will become available; and
- give the Government better ability to manage the costs and risks related to the NZ ETS and to meeting New Zealand's emissions reduction targets.

Table 3: Overview of problems, desired outcomes, objectives, proposals and next steps

Overarching problems	Mismatch between NZ ETS unit volumes and our targets – both 2030 and future targets				Regulatory uncertainty undermines the carbon price's influence on investment decisions		
Specific problems	Projected volumes of permits to emit do not reflect the carbon budget	NZ not linked to cost-effective international abatement	$25 fixed price option is lower than expected international carbon prices	NZ ETS decision making processes have been reactive and unpredictable	Uncertainty over status of NZ ETS policy settings (transitional measures, international market access, auctioning)	Lack of confidence in the price signal of the NZ ETS	The role of the NZ ETS in meeting 2030 target is unclear
Desired outcomes	Full NZ ETS carbon budget is allocated to the market	Crown receives its desired amount of cost-effective international abatement through the NZ ETS	Any price ceiling in the NZ ETS is compatible with international markets and prices	Coordinated decision making across unit supply settings and a predictable basis for the decisions	Participants have an improved outlook over the status of NZ ETS policy settings	There is increased confidence in the NZ ETS price signal, so businesses factor it in investment decisions	The role of the NZ ETS in meeting the 2030 target and wider climate change policy is clear
Objectives	Alignment with 2030 target and progression of future NDCs			Improve regulatory certainty and predictability		Consistent with broader NZ ETS design policy intent	
Proposals	Introduce an auctioning mechanism to allocate the carbon budget.	A quantity limit on participants' use of international units Withh [redacted] This will reduce the cost of meeting the target, and manage the risk of the Crown receiving more international units than necessary and of a build-up of an NZU stockpile.	A higher price ceiling, potentially incorporated into the auction system and managed in a different way, would allow the Government to better mitigate risks from having a price ceiling. Keep $25 fixed price option in place until an alternative is available.	Coordinated process for unit supply decisions and announcements using a 5 year rolling period. This is an extension of current CCRA requirements applying to auctioning.	The four proposals to the left will give more clarity on the role of auctioning, international units and the price ceiling, as well as signal when final decisions on these settings are likely to be made.	The four proposals to the left will help build confidence due to more predictable decision-making processes and better information about the relationship between targets and units in the NZ ETS.	How New Zealand will meet the 2030 target is not in the review's scope. The package of four proposals in this RIS will put in place tools to allow the NZ ETS settings to reflect future Government decisions about how the target is met.
Next steps	In 2018, advice on auction mechanism design and establishment of regulations Build or procure auction platform Set NZU limits for five years, to determine the maximum amount of units that can be auctioned each year Aim for first pilot auction in 2019	In 2018 advice on the level of the quantity limit, drawing on evidence developed through the economic transition work and on any Ministerial decisions about desired levels of domestic versus international abatement. Further development of environmental integrity criteria for any units NZ uses towards its targets. When sufficient progress made on negotiating market access, advice on mode of purchase (i.e. Government or participant purchase of international units)	In 2018, advice on detailed proposals for how the price level will be set, updated and extended using the rolling five-year period Further evaluate auction cost containment reserve option, including the unit volumes that the reserve might contain Keep $25 fixed price option in place until alternative price ceiling is ready to implement or links to international markets are established	In 2018, advice on detailed proposals for how this approach could operate. This may include outlining possible rules and processes for adjustments within the five-year period, as well as institutional arrangements for providing advice to Ministers to support their decision-making on these settings.	See next steps outlined in columns to the left. Additionally, in 2018 advice on: - the phase out of free allocation - forestry accounting approaches in the NZ ETS	See next steps outlined in columns to the left.	The wider climate change work programme is looking at how New Zealand can best meet the 2030 target, advice is expected on this in 2018.

B. Background

34. This section recaps key background information relevant for the four proposals covered by this RIS. A more comprehensive overview of the history of the NZ ETS as well as information on stage I of the NZ ETS review can be found in the May 2016 RIS on the decision to phase out the one-for-two surrender obligation from the NZ ETS.[7]

The New Zealand Emissions Trading Scheme (NZ ETS)

35. The NZ ETS is New Zealand's key tool for reducing greenhouse gas emissions. It came into force in September 2008, with the Climate Change Response Act 2002 (CCRA) providing the legal framework for its implementation, operation and administration.

36. The statutory purpose of the NZ ETS is to support and encourage global efforts to reduce greenhouse gas (GHG) emissions by:

    - assisting New Zealand to meet its international obligations
    - reducing New Zealand's net emissions below business as usual levels.

The NZ ETS was originally designed to support efficiency under the Kyoto Protocol

37. The NZ ETS was designed to closely align with the rules applying to New Zealand under the Kyoto Protocol (KP), the international agreement under which New Zealand previously set its climate change commitments. The NZ ETS was intended to fully integrate with the KP carbon market. It did not have a separate domestic emissions cap, as it operated within the cap that the KP set on emissions permitted in developed countries.

38. The NZ ETS allowed unlimited surrenders of Kyoto-compliant international units[8] by NZ ETS participants, mirroring the KP rules that applied at the national level. This meant any increase in emissions in New Zealand could be offset by reduced emissions in other countries. This fully open link to the KP market also aimed at aligning the carbon price in New Zealand with the international price applying to other countries. Therefore, the NZ ETS was not designed to generate a price of its own, based on domestic conditions and abatement costs, but rather to deliver emissions reductions (both in New Zealand and overseas) that were cost effective under the international carbon price.

39. These settings meant the NZ ETS helped New Zealand meet its international emission reduction targets by delivering Kyoto units to the Crown through participants' unit surrenders. This contributed to New Zealand meeting its first Commitment Period (CP1) obligations under the KP, which ran from 2008-2012.

40. However, there were some adverse unintended consequences from this approach which were not foreseen when the NZ ETS was established. This included a dramatic drop in Kyoto unit prices which flowed on to the NZU price[9], and the Crown receiving many more Kyoto units than New Zealand needed for meeting its first Commitment Period target. The latter meant that the NZ ETS imposed a higher economic cost on

[7] Ministry for the Environment, 2016b.

[8] Such as Removal Units (RMUs) and units from the project-based flexibility mechanisms - Emission Reduction Units (ERUs) from Joint Implementation (JI), and Certified Emission Reductions (CERs) from the Clean Development Mechanism (CDM).

[9] See page 10 of the stage I RIS, Ministry for the Environment, 2016b.

New Zealand than necessary for meeting the CP1 target and also contributed to a very large stockpile of NZUs accumulating in private accounts.[10]

41. In 2012 New Zealand announced that it would take its 2020 target under the United Nations Framework Convention on Climate Change (UNFCCC), rather than through the second commitment period of the KP. Because of this and the large volume of Kyoto units already held by the Crown, Kyoto units were made ineligible for surrender in the NZ ETS from June 2015, effectively transitioning it to a domestic-only scheme.

42. New Zealand is on track to meet its 2020 emission reduction target to reduce net emissions by 5 percent below 1990 levels over 2013-2020, taking into account units carried over from the KP first commitment period. This means that meeting our 2020 target is not a major concern when considering NZ ETS unit supply settings.

The Paris Agreement and New Zealand's new emissions reduction target

43. In December 2015, a new climate change agreement was concluded at the 21st Conference of the Parties to the UNFCCC in Paris (the Paris Agreement). The Paris Agreement differs from the Kyoto Protocol in that it creates an expectation that all countries will take action to mitigate greenhouse gas emissions.

44. The Paris Agreement has established new international obligations for New Zealand. New Zealand's first Nationally Determined Contribution (NDC) under the Paris Agreement is to reduce greenhouse gas emissions (GHG) to 30 per cent below 2005 levels by 2030 (the "2030 target"). *Figure 4* on page 19 outlines what this target means for how much New Zealand can emit over 2021-2030 (our carbon budget[11]) and how much effort needs to be made to reduce emissions (our abatement task), according to our most recent emissions projections.[12]

45. All Parties to the Paris Agreement are expected to make a transition to a low-emissions future in accordance with their nationally determined strategies. Progressively more ambitious NDCs are intended to serve as milestones on each country's transition. This is consistent with New Zealand's long term target of reducing GHG emissions to 50 per cent of 1990 levels by 2050.[13]

46. Collective progress towards meeting the purpose of the Paris Agreement will be evaluated every five years, with the first "global stocktake" scheduled for 2023. The outcome is to be used as input for updating and enhancing Parties' NDCs, so that they continually reflect a country's highest possible ambition.

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[10] This stockpile was part of the problem considered in stage I of the NZ ETS review, addressed by the decision to phase out the one-for-two surrender obligation, see Ministry for the Environment, 2016b for further information.

[11] The carbon budget is calculated in accordance with current UNFCCC methodology and uses a trajectory from midway through the previous commitment period (2013 – 2020) to the end point of New Zealand's 2030 target. Changes to the inventory also change this trajectory. *Figure 4* on page 19 shows the most recent calculation of the carbon budget, based off New Zealand's Greenhouse gas inventory 1990-2015.

[12] The projected gross emissions in *Figure 4* are an update to New Zealand's emissions projections out to 2030, done in early 2017 to support NZ ETS review policy analysis. This is why they differ from the published emission projections published in 2016 as part of New Zealand's most recent Biennial Report to the UNFCCC.

[13] The 2050 Emissions Target was published in the New Zealand Gazette on 31 March 2011, see https://gazette.govt.nz/notice/id/2011-go2067

International carbon markets are changing

47. The Paris Agreement means the international carbon markets New Zealand may be able to use for meeting its target are much less centralised. In contrast to the Kyoto Protocol[14], the Paris Agreement does not establish a top-down international market system. While it provides for a centralised market mechanism, it also allows for other approaches outside of United Nations structures.

48. The Paris Agreement contains high-level requirements for international carbon trading, with Parties aiming to agree rules and guidelines for implementation in 2018. Nevertheless it remains unclear when and how the centralised market mechanism will be operationalised, and it might not be possible to rely on supply from this central mechanism for some years to come. In this context, New Zealand has established an international carbon market project focused on pursuing a broad range of options for bilateral and plurilateral trading with other Parties.

49. It is unclear what kind of international emission reductions will be available to New Zealand in the 2020s or what their price will be, and it appears that that international markets will be more diverse and fragmented than in the past.

[14] The Kyoto Protocol provided for three market flexibility mechanisms: International Emissions Trading (IET), the Clean Development Mechanism (CDM) and Joint Implementation (JI).

C. Status quo and problem definition

50. This RIS is focused on four priority proposals for improving the unit supply framework of the NZ ETS in light of the Paris Agreement and New Zealand's 2030 NDC, via options within scope of the NZ ETS review 2015/16.

51. The NZ ETS was designed to reflect the KP obligations which applied to New Zealand at the time the scheme was put in place. These circumstances have changed with the Paris Agreement. This means that the NZ ETS as currently designed is unlikely to deliver the most cost-effective and efficient abatement for New Zealand after 2020.

52. The NZ ETS's unit supply framework and settings are central to this. These are the elements of the NZ ETS policy that determine what type and how many units are available for compliance use by participants, which encompass rules relating to:

    - free allocation
    - any sales of units by the Government
    - forestry entitlements
    - access to units from international carbon markets, and
    - price controls (e.g. price ceilings and floors).

53. Together, these determine total unit supply which is a key driver of the carbon price and incentive to reduce emissions. If total unit supply is fixed, this means there is an cap on the scheme that ensures that emissions in sectors covered by the NZ ETS will not exceed a given limit. This feature is not currently present in the NZ ETS.

54. *Figure 3* overleaf provides a diagram of the unit supply system in the NZ ETS. It shows the relationships (or potential relationships) between New Zealand's targets, NZ ETS unit volumes, and Government decisions about who bears the effort of meeting targets.

Overarching problems with NZ ETS unit supply

55. There are two overarching problems with the status quo unit supply system in the NZ ETS that mean the current framework and settings will not be fit-for-purpose after 2020:

    1. **a mismatch between unit supply volumes in the NZ ETS and our 2030 target**
    2. **regulatory uncertainty about future unit supply settings**

56. There are a number of specific problems associated with individual unit supply settings[15] that contribute to these overall problems. In the review, the specific problems associated with allocating the carbon budget, international units, the $25 fixed price option price ceiling and the process for decisions about unit supply have been assessed as the highest priority for addressing because they:

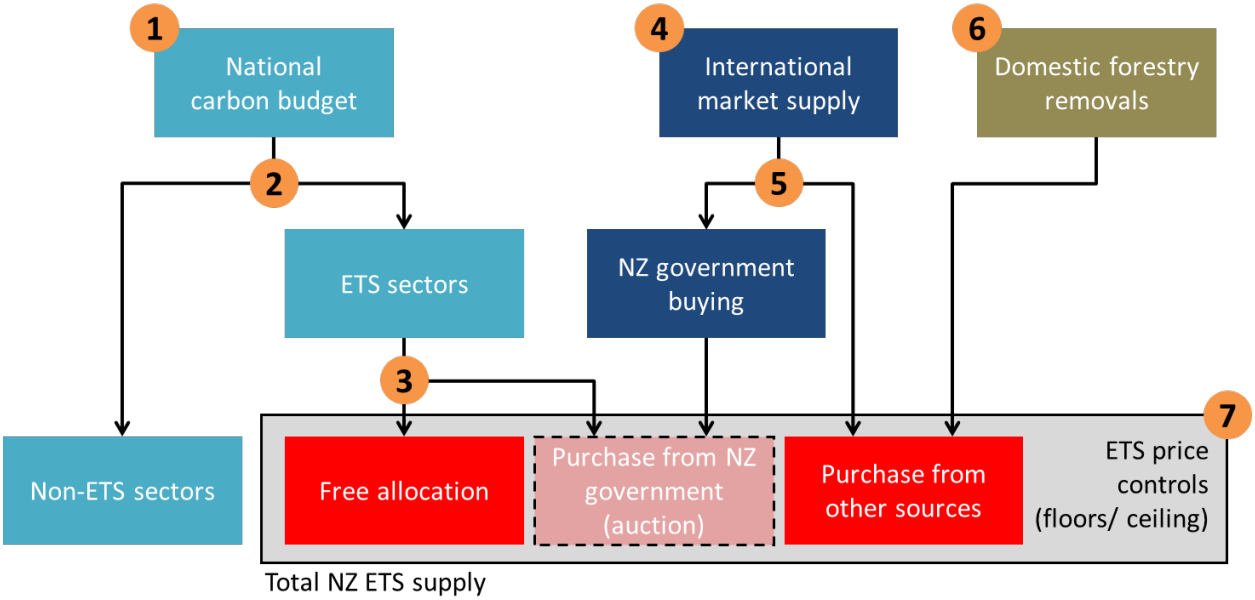
    - are central to a well-functioning market that provides a more stable regulatory environment for businesses
    - support our efforts to negotiate access to international carbon markets

[15] i.e. the price ceiling ($25 fixed price option), free allocation, international units, auctioning and forestry accounting.

- will put in place the tools needed for managing the costs and risks associated with the NZ ETS and with meeting the 2030 target
- require time to develop and implement in advance of 2021.

57. This is why this RIS contains only four proposals. The problems related to free allocation and forestry accounting are expected to be addressed in the first half of 2018.

Figure 3: Overview of NZ ETS unit supply system and key Government decisions



Key: Government decision points determining NZ ETS unit supply:

1. The Government's choice of target determines the national carbon budget.
2. NZ ETS coverage decisions determine the share of the carbon budget allocated to non-ETS sectors (in the status quo, this is primarily agriculture) versus covered sectors.
3. Eligibility criteria and baseline methodologies determine which activities receive free allocation, how much protection from NZ ETS costs is provided, and therefore how much of the carbon budget is used up for this purpose – with remaining carbon budget volume available for distribution through other means (e.g. sales).
4. Access to international carbon markets as well as quality and quantity criteria for international emission reductions to be used by New Zealand to help meet our targets.
5. Whether international units are made eligible for compliance use by participants in the NZ ETS, and/or the Government purchases international emission reductions that need to be reflected through adjustments to NZ ETS unit supply.
6. What forestry carbon accounting approach is applied to New Zealand's target as well as whether and how that accounting approach is devolved into forestry accounting rules for the NZ ETS.
7. Whether and what price controls are put in place to limit extreme prices.

Note that the numbering does not necessarily indicate the order in which decisions have been or may be made.

1. Mismatch between NZ ETS unit volumes and the 2030 target

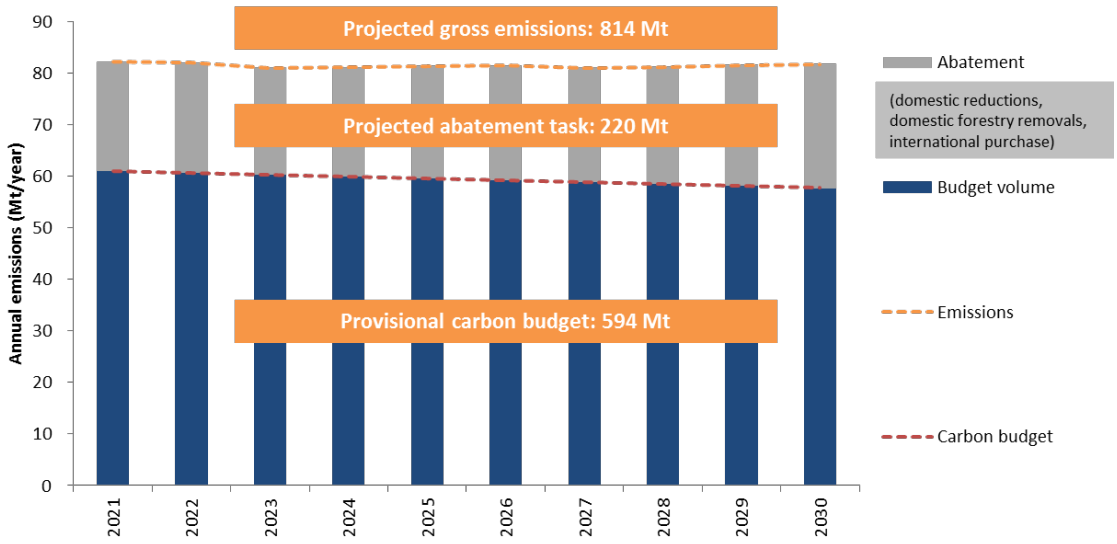
58. The contributions to this problem can be considered in terms of both the carbon budget and the abatement task:

- **Carbon budget:** the volume of non-forestry NZUs (which can be thought of as permits to emit or allowances) projected to be allocated to market participants is less than New Zealand's carbon budget over 2021-2030; however there is also a risk that the carbon budget will be exceeded due to use of the $25 fixed price option; in the longer term (post-2030) free allocation may also exceed future carbon budgets.
- **Abatement task:** the NZ ETS is not linked to cost-effective abatement from international carbon markets; New Zealand will also apply a new forestry accounting approach internationally when meeting its 2030 target, which is different from the one in place when the NZ ETS forestry accounting settings were developed.

The 2021-2030 carbon budget and its relationship to the NZ ETS

59. New Zealand's carbon budget is determined by the 2030 target to reduce emissions by 30 per cent on 2005 levels. It is the emissions that do not have to be reduced or compensated for to meet the target, i.e. what New Zealand can emit for free. Based on current data, the provisional carbon budget is estimated at 594 Mt CO_2e over 2021-30.

Figure 4: New Zealand's target for 2021-2030



60. It is the Government's role to determine how this carbon budget is shared out to the economy. With current policies, emissions exempted from the NZ ETS[16] are projected to use up about 70 per cent of the budget over 2021-2030. If NZ ETS surrender obligations for agriculture or other new policies to reduce these emissions are introduced, this share would change. However, these issues are not in the scope of the NZ ETS review.

61. This leaves about 30 per cent of the budget for NZ ETS sectors. For these sectors (and the New Zealand economy more broadly) to benefit from this carbon budget volume, the Government has to allocate a corresponding number of NZUs to market participants. It can do this either by giving them away (free allocation) or by selling them.

[16] Mainly from agriculture, as well as a relatively small amount of emissions from other sectors (e.g. non-municipal waste) exempt from the NZ ETS.

62. Currently there are two ways non-forestry NZUs (permits/allowances) can be distributed:

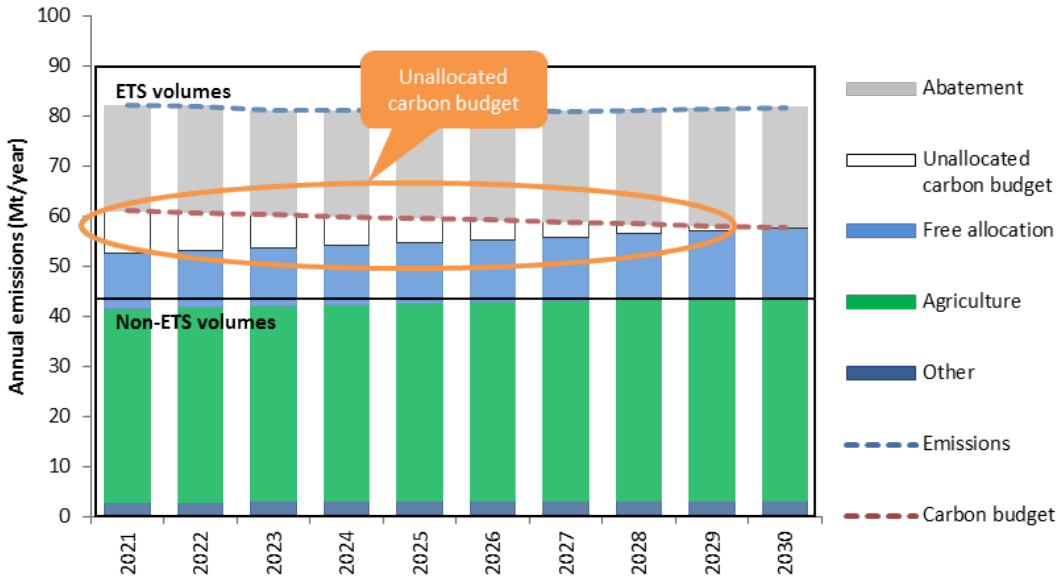
- **free allocation** to businesses undertaking emissions intensive and trade exposed (EITE) activities
- **the $25 fixed price option**, where participants purchase NZUs from the Government for $25 to meet their obligations.

63. These two methods operate independently of each other, and the volumes they distribute are not linked to New Zealand's carbon budget. This means the Government has no control over the allocation of the NZ ETS's share of the carbon budget.

NZ ETS is projected to under-allocate the carbon budget over 2021-2030

64. Projections under status quo settings indicate that the full carbon budget over 2021-2030 will not be distributed to the New Zealand economy, as shown by the white area in *Figure 5* below. The carbon budget volume remaining after emissions exempted from the NZ ETS and free allocation volumes are taken into account equates to around 43 million tonnes of CO_2 equivalent.[17]

Figure 5: Projected allocation of New Zealand's carbon budget over 2021-2030



65. This under-allocation means that the level of effort that the NZ ETS will impose on the economy will be more than necessary for meeting New Zealand's 2030 target. The effect of this is the same as if New Zealand took on a stronger target, as the economy is not able to make use of the unallocated carbon budget volume. This is akin to moving the carbon budget line downwards in the *Figure 5* graph, increasing the abatement task which determines the economic cost to New Zealand.

66. Not allocating 43 Mt CO_2e of the budget would be equivalent to increasing the abatement task from 220 Mt CO_2e to 263 Mt CO_2e. Economic modelling undertaken for setting the 2030 target suggests that this additional effort would reduce Real Gross

[17] There is a mismatch between the NZ ETS accounting for post-1989 forestry versus how forests will contribute to New Zealand's 2030 target that, depending on future policy decisions, may impact on the NZ ETS' share of the carbon budget. How this potential forestry misalignment impacts the carbon budget is a policy question that will need to be considered in the development of the package of forestry accounting and operational improvements.

National Disposable Income (RGNDI) by $1.5 billion to $4.3 billion more over 2021-2030 than necessary to achieve the target.[18]

The $25 fixed price option risks exceeding the carbon budget

67. At the same time, there is a risk that extensive use of the $25 fixed price option (FPO) causes more units to be allocated to the market than are available in the carbon budget. In this situation, if the Government wanted to make sure New Zealand met the 2030 target, it would have to purchase international emission reductions, with costs borne by taxpayers rather than emitters.

68. If the domestic-only status quo NZ ETS settings continue, the risk that the $25 FPO will be used extensively will increase as time goes on. This is because the annual supply of units into the NZ ETS is significantly smaller than demand and the current large stockpile of banked NZUs will deplete, causing NZU prices to rise.

69. The FPO could cause the carbon budget to be exceeded by a large amount, as it is not volume-limited and participants can use it for all their NZ ETS obligations. It cannot be reliably quantified but to give an idea of potential scale, over 2021-2030 annual surrenders from NZ ETS sectors (except forestry) are projected to be about 40 million units each year. If all these participants used the FPO, the entire unallocated carbon budget would be used in one year and significantly overshot if use continued.

70. If this occurs and the Government decides to buy international emission reductions so that New Zealand can meet its target, significant costs could be shifted from emitters onto taxpayers. If international emission reductions cost more than $25 per tonne (which could be the case in the 2020s[19]), the cost for the Government would be the price difference multiplied by the volume of reductions purchased.

Post-2030 free allocation to EITE activities risks exceeding the carbon budget

71. The current regime for free allocation to EITE activities also creates a risk of exceeding New Zealand's future carbon budgets after 2030, as New Zealand is expected under the Paris Agreement to take on more ambitious NDCs over time. There is also significant uncertainty about when and how free allocation rates will reduce over time. This is noted for completeness only, as how to address this problem is expected to be covered in further NZ ETS proposals to be considered in 2018.

New Zealand and the NZ ETS are not linked to cost-effective international abatement

72. The Government set the 2030 target with the expectation that New Zealand would need international emission reductions to meet the target at acceptable cost. Modelling for setting New Zealand's target suggested that even at a $300 carbon price[20] New Zealand would not be able to meet the 2030 target through relying on domestic action only, and this would double the economic cost of meeting the target.[21]

73. However, it remains unclear how much international abatement will be needed (or desired) and available to New Zealand.

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[18] See Daigneault A. 2015 and Infometrics. 2015.

[19] See paragraph 156.

[20] $300/t$CO_2$-e was the maximum price used in the modelling.

[21] See Daigneault A. 2015 and Infometrics. 2015.

74. Previously, the international units used by the Government to help meet New Zealand's emission reduction targets were obtained through NZ ETS participants' surrenders. However, since mid-2015 the NZ ETS has been domestic-only, with no international units eligible for surrender by participants.

75. The Paris Agreement has also significantly changed the landscape for international carbon markets. As outlined in the Background section, it does not establish a top-down market, and allows for other approaches outside of UN structures. This means that international carbon markets are likely to be more fragmented and diverse than in the past, and bilateral or plurilateral links between markets may be necessary to enable international carbon trading.

76. How NZ ETS will connect to international carbon markets in the future needs to be resolved, if the scheme is to help New Zealand to meet the 2030 target cost-effectively.

77. There are three parts to this problem:

    1. **Mode of purchase** – whether NZ ETS participants can purchase and surrender international units directly (i.e. the NZ ETS again becomes a mechanism for delivering international units to the Crown), or the Government purchases international emission reductions and allocates a corresponding number of units into the NZ ETS to adjust for its purchases.

    2. **Quality restrictions** – what environmental integrity or other criteria should apply to international emission reductions/units used to meet New Zealand's target, and to international units eligible for surrender in the NZ ETS.

    3. **Quantity restrictions -** whether there are any volume limits on the amount of international units that NZ ETS participants can use for compliance

78. The mode of purchase used to obtain international emission reductions is dependent to some extent on the international carbon market links that New Zealand is able to establish. Progress in this area, including in the multilateral negotiations considering the accounting rules that will apply to any international links, is not yet sufficiently advanced for any recommendations to be made on this issue.

79. Similarly, further work is required to develop a New Zealand position on environmental integrity criteria for international emission reductions before decisions can be made on quality restrictions.[22] This work is being advanced through the international carbon market project, rather than in the NZ ETS review.

80. Therefore this RIS only addresses the third element: **quantity restrictions**. This issue is important to address now, even though the establishment of international carbon market links may still be some time away.

81. This is because whether there will be quantity restrictions on international units in the NZ ETS in future has implications for the work of the international carbon markets project, Withheld consistent with S9(2)(j) of the OIA [redacted]

[22] It is clear that some quality criteria will have to apply, given that under the Paris Agreement New Zealand is responsible for ensuring the environmental integrity of any international reductions it uses against its target. This differs from the Kyoto Protocol where all units from the Kyoto flexibility mechanisms were deemed to be automatically compliant.

82. All other ETS in existence around the world are capped, i.e. there is a fixed amount of units available within them. Withheld consistent with S9(2)(j) of the OIA [redacted] A quantity limit on international units is a key component of a cap. For more information on this point, see page 34.

NZ ETS post-1989 forestry accounting is a barrier to NZ ETS participation and differs from New Zealand's intended international forestry accounting approach

83. The way carbon stored in post-1989 forests is accounted for in the NZ ETS determines how many NZUs foresters can earn as forests grow and how many must be returned to the Crown when forests are harvested or deforested.

84. The current NZ ETS forestry accounting rules reflect how New Zealand accounted for forestry for its Kyoto Protocol first commitment period target. It means that foresters can receive NZUs for carbon stock increases up to the full growth of the forest. At harvest, most of that carbon stock is accounted for as emissions.

85. This means that when post-1989 forests registered in the NZ ETS are harvested, there is a large liability for units that must be paid to the Government. Consultation feedback indicates that this accounting approach may be acting as a barrier to participation in the NZ ETS for some landowners, weakening the NZ ETS incentive for afforestation.

86. New Zealand will also apply a new forestry accounting approach to post-1989 forests for its 2030 target, referred to as 'averaging'. This approach has the effect of rewarding new forests up to their long-term average carbon stock only, on their first rotation. Subsequent growth and harvest of the forest incurs no further credits or debits provided the forest is replanted. This means that after 2020 the status quo NZ ETS forestry accounting settings (reflecting Kyoto CP1 rules) will not be aligned with the way forests will contribute towards meeting New Zealand's 2030 target.

87. Forestry is not addressed in this RIS. This is because forestry accounting options have strong links to a range of potential operational improvements to the administration of forestry in the NZ ETS that have been identified through the review. It has been proposed that these interconnected forestry issues be considered together in 2018, to help ensure a cohesive approach to forestry settings is taken.

2. Regulatory uncertainty about NZ ETS settings

88. Regulatory uncertainty for participants about NZ ETS settings means that the scheme is unlikely to deliver an effective long-term price signal that will drive efficient abatement over 2021-30 and the longer term. This is supported by the strongest theme from the NZ ETS review consultation: that policy uncertainty in the NZ ETS is adversely affecting long-term investment in low emissions technologies and forestry.

89. Regulatory uncertainty in ETSs undermines the credibility of the price signal. As government-established markets, the effectiveness of an ETS depends to an extent on market participants' understanding of and confidence in the government's commitment to the policy and to the emission reductions it is intended to achieve.

90. Extended periods of uncertainty mean that emitters do not have the information enabling them to judge the likely cost of carbon into the future. This makes investments in

reducing emissions more risky, which adds cost and delays to investments that would otherwise be cost-effective.

91. Several factors contribute to ongoing regulatory uncertainty in the NZ ETS, which together undermine market participants' confidence in the price signal. These factors can be grouped into three categories:

    - NZ ETS decision making processes have been reactive and unpredictable
    - Uncertainty over the status of NZ ETS unit supply policy settings (transitional measures, international market access, auctioning)
    - The role of the NZ ETS in meeting the 2030 target is unclear

Government decisions about NZ ETS settings have been reactive and unpredictable

92. The CCRA makes provision for regular statutory reviews of the NZ ETS, the timing of which is at the discretion of the Minister for Climate Change Issues.

93. In reality, a number of significant changes to unit supply settings and rules have been made outside of the regular review schedule. The changes were necessary to respond to changing international circumstances and to prevent harmful unintended consequences that were not foreseen when the NZ ETS was set up. However, some of these changes were sudden and unsignalled.[23]

94. Market participants have also perceived some of the Government's other actions (or delays in acting) as inconsistent. For example, some stakeholders consider that the Government failed to respond in a timely and appropriate way to market and regulatory failures in the Kyoto market which were behind the low carbon prices over 2011-15.[24] This has eroded confidence in the NZ ETS as an effective policy tool, and reduces participants' (particularly foresters') confidence that the current higher NZU price will endure.

Uncertainty over the status of some NZ ETS settings

95. In addition to broader uncertainty highlighted above, there are some specific NZ ETS unit supply settings whose status is unclear. These include enduring transitional measures and the role of auctioning in the NZ ETS.

96. In 2009, several transitional measures were introduced to reduce NZ ETS costs while the scheme was new and New Zealand was experiencing an economic downturn. They were originally introduced as temporary measures with specified timeframes. However, they were subsequently amended so the dates were removed. This includes no end date for the suspension of the phase out of free allocation or the $25 fixed price option, and no start date for introducing obligations for agriculture.

97. In 2012, the Government amended the CCRA to include a specific power allowing the auctioning of NZUs. This power has not yet been used, and although the Government has at times made statements about the potential role of auctioning in the scheme, it has not been made very clear what the role of auctioning would be in the scheme.

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[23] For example, there have been changes to the NZ ETS through legislation passed under urgency in conjunction with Budgets.

[24] These failures included that some Kyoto-compliant units had low environmental integrity.

The role of the NZ ETS in meeting the 2030 target is unclear

98. There are also broader questions about the scheme's role in the Government's wider response to climate change. As outlined above in relation to the problem that NZ ETS unit supply does not align with the 2030 target, this includes a lack of clarity over the roles of domestic abatement versus international reductions, and over the role of the NZ ETS versus non-ETS sectors and policies.

99. What this means for the NZ ETS at a practical level is that there is relatively little information available about NZ ETS unit supply and demand, including how they relate to the 2030 target. This makes it very difficult for participants to make judgements about both current and future carbon prices.

D. Objectives

NZ ETS review 2015/16 objectives

100. Three broad objectives for the current review of the NZ ETS are outlined in the Terms of Reference set by Ministers:

    i. ensure that the NZ ETS helps New Zealand to meet its international obligations cost effectively

    ii. ensure the New Zealand economy is well-prepared for a strengthening international response to climate change, and potentially higher carbon prices

    iii. allow the NZ ETS to evolve with these changing circumstances, and particularly with respect to the framework provided by the new climate change agreement.

101. Any preferred policy options for the unit supply issues covered in this RIS should meet or be compatible with these objectives.

Objectives for improving the NZ ETS framework for unit supply

102. To address the unit supply problems outlined in this RIS, three additional objectives have been identified that preferred options should meet. They reflect key principles for the efficient and effective operation of the NZ ETS for both the Government and participants:

    i. *Align with New Zealand's 2030 target and the progression of subsequent NDCs*

    Volumes of NZUs or other eligible units in the NZ ETS should have a clear relationship with New Zealand's carbon budget and abatement task within each NDC period. In addition, unit supply settings should allocate risk and burden sharing appropriately between the Crown and NZ ETS participants. They should also reflect the longer term view of New Zealand taking on progressively more ambitious targets and needing to transition to a low emissions economy. This will flow through to the NZ ETS generating a price signal that reflects the target and how New Zealand plans to meet it, so as to drive economically efficient outcomes.

    In this way this objective relates to the economic, fiscal and distributional impacts of NZ ETS unit supply settings.

    ii. Increase regulatory predictability by operating on a durable framework

Sufficient regulatory stability is needed to build businesses' confidence to invest in cost-effective domestic abatement opportunities (such as forestry). However, circumstances change and the Government will need to make adjustments to keep the NZ ETS resilient and fit-for-purpose. Any levers for this should be used in an orderly, signalled way to not undermine investor confidence, within an NZ ETS framework that is sustainable over the medium to long term.

iii. Be consistent with the policy intent of wider NZ ETS design and settings

Any preferred options should not undermine the function of other key features or attributes of NZ ETS. This includes the approaches taken in its design such as minimising administrative complexity and maintaining environmental integrity, as well as the principles underpinning the Government's choice of a carbon market as its main climate policy instrument. These include the economic efficiency benefits of a market instrument; its compatibility for linking to international mitigation efforts; as well as ensuring New Zealand's level of climate action and costs are in step with international levels.

103. A summary of these objectives, including their relationship with the identified problems and how they will be judged for examining options, is provided below.

Table 4: Objectives and how they are judged

NZ ETS review objectives	Ensure that the NZ ETS helps New Zealand to meet its international obligations cost effectively	Allow the NZ ETS to evolve with changing circumstances	Ensure the NZ economy is well-prepared for the strengthening international response to climate change and potentially higher carbon prices
Overarching problems with NZ ETS unit supply	Mismatch between NZ ETS unit volumes and our targets – both 2030 and future targets	Regulatory uncertainty undermines the carbon price's influence on investment decisions	
Objectives for unit supply	Alignment with 2030 target and progression of future targets	Improve regulatory certainty and predictability	Consistent with broader NZ ETS design policy intent
Criteria - how objectives are judged	- the NZ ETS is aligned with NZ's carbon budget and delivers the right amount of abatement to meet our target - Efficiently allocates risk, and burden sharing, between the Crown and NZ ETS participants	- the NZ ETS operates in a durable manner in the medium-to-long term[25] - Allows participants to form expectations about future market conditions - Builds confidence in the market	- Maintains the market and environmental integrity of the NZ ETS - Minimises administrative burden and complexity - Price levels broadly in line with international prices, with stable price development - Avoids perverse incentives and unintended consequences[26] - Compatible for international linking

[25] The concept of medium-to-long term assumes a timeframe of the next 10-15 years onwards

[26] Note it may not be possible to identify all perverse incentives or unintended consequences ex ante.

E. Addressing NZ ETS unit supply problems

Overview

104. As outlined above, there are two overarching problems with unit supply in the NZ ETS, which can be further divided into several specific problems created by various settings. Four of these specific problems are in the scope of this RIS.

105. This section considers each of these four specific problems in turn, outlining options, impact analysis, consultation, recommendations, and next steps for each. The issues are dealt with in the following order:

    1. Allocating the carbon budget
    2. Aligning international units with the abatement task
    3. $25 fixed price option
    4. Improving unit supply decision processes

106. Overarching information on consultation, conclusions and recommendations, and next steps to sum-up the package of preferred options at an NZ ETS-wide level are included later on in this RIS, in sections F, G, and H.

1. Allocating the carbon budget

107. This section focuses on how the Government can appropriately allocate the NZ ETS' share of the carbon budget to covered sectors. The risk that the carbon budget will be overshot due to participants' extensive use of the $25 fixed price option is addressed in *Part 2: $25 fixed price option*

108. As noted earlier, under the status quo, the NZ ETS is projected to under-allocate the carbon budget for New Zealand's 2030 NDC by about 43 Mt (see *Figure 5*). This would impose more cost on the New Zealand economy than necessary to meet the target.

Options

109. Three options were identified for allocating the carbon budget, as follows:

    1. **Expand free allocation:** the Government would gift NZUs equivalent to the unallocated carbon budget volume either to NZ ETS participants or to other entities or individuals, for example to New Zealand citizens or to groups considered to be adversely affected by the carbon price. A new system for determining who would receive the NZUs would have to be developed, in addition to the current free allocation regime which is restricted to EITE activities, and which by itself does not align permit supply with the carbon budget. This would require changes to the CCRA to implement.
    2. **Sell NZUs at a fixed price:** the Government would define a fixed price at which it would sell the amount of NZUs needed to align the NZ ETS unit supply with the carbon budget. This would require changes to the CCRA to implement.
    3. **Sell NZUs at the market price (auctioning):** the Government would sell the unallocated carbon budget as NZUs through a competitive bidding process. The

CCRA already contains a power to auction NZUs if regulations are made outlining how the auctions will be conducted.[27]

Impact Analysis

110. A summary of the largely qualitative analysis of the impacts of the three options against the status quo is presented in *Table 5*. This highlights the most significant expected outcomes against the three objectives.

111. Option 1 was discounted because of distributional impacts and transaction costs it would create that would be inconsistent with the Government's policy intent for the NZ ETS overall, particularly in terms of minimising complexity.

112. Expanding free allocation to NZ ETS participants would create opportunities for those participants to benefit from windfall gains[28] at the expense of consumers, as these non-EITE businesses would be able to pass on the marginal cost of carbon to customers despite receiving some units for free. This has occurred in, for example, the European Union's ETS (EU ETS) when free allocation was provided to sectors (e.g. electricity generation) not at risk of carbon leakage.[29] Some methods for determining which participants the Government provides free allocation to can also distort incentives for cost effective abatement.

113. Free allocation to individuals or social groups would avoid the distributional and distortionary effects noted above, and could be used to compensate groups adversely impacted by NZ ETS pass-through costs. However, it would instead create significant transaction costs and administrative complexities. The Government would have to deal with a potentially very large number of recipients, who may not have adequate knowledge and ability to make informed decisions about selling units received. These challenges are already encountered with small free allocation participants and small forestry participants in the NZ ETS.

114. Option 2 was discounted because it requires the Government to choose a price, and the carbon budget would only be fully allocated if the fixed price was at or below the market price (as the units would not sell if the fixed price was above the market price). Selling units at below market price would allow whoever is able to purchase them to benefit from windfall gains due to the price difference. It is also less fiscally beneficial than auctioning.

[27] In addition to requiring that the regulations outline practical details of how the auctions will be run, the power also requires that an overall NZU limit be set that takes into account the number of NZUs provided through free allocation and the number of units to be auctioned. The overall limit must be prescribed for each year, for five years into the future from the date specified in the regulations, and every year this must be extended by a further year. It serves to limit the maximum amount of units that can be auctioned each year.

[28] This term is used here to mean profits made from participation in the NZ ETS that do not result from emission reductions consistent with the goals of the NZ ETS.

[29] Carbon leakage is the displacement of production to countries with less stringent climate policies, increasing global emissions. Note that the current NZ ETS free allocation system minimises this potential impact through restricting free allocation only to emissions intensive and trade exposed activities (i.e. where NZ ETS costs cannot be passed on and create risks to international competitiveness).

Table 5: Options impact analysis for allocating the carbon budget

Options	Alignment with current and future NDCs	Improves regulatory certainty & predictability	Consistent with broader NZ ETS design policy intent
Status quo	The carbon budget is not fully allocated to the market, putting more cost on the economy than necessary to meet the 2030 target.	No link between the carbon budget and units in the NZ ETS, meaning future unit volumes and role of the NZ ETS in meeting the 2030 target are unclear	The purpose of the NZ ETS is to help NZ meet its international obligations and reduce net emissions below BAU. It is intended that participants can profit from reducing emissions but not for other reasons, and that the market determines the price; an important design principle has been to minimise administrative complexity.
1. Expand free allocation	**++** Economic: allocates full carbon budget to the market, changing supply/demand balance to reduce overall cost of meeting target. Fiscal: gifting more units would increase the NZ ETS appropriation. Distributional: recipients will be shielded from NZ ETS costs, at the expense of the Crown and potentially also consumers (if provided to NZ ETS participants). Could be used to compensate groups considered to be adversely affected by NZ ETS costs.	Depends on implementation details. All three options could be designed in a way that gives participants visibility of future unit volumes and forewarning of any changes. For example, the CCRA provisions on auctioning would improve visibility of future unit volumes, as they require that 5 years of information about unit volumes be provided to participants. The other options could also be designed in a way that provides similar information about future unit volumes.	**- -** Administration: processes for developing free allocation systems are very time consuming and politically difficult. Perverse incentives/unintended consequences: provides opportunities for windfall profits and distorted incentives for cost effective abatement, particularly if provided to businesses. These negative potential impacts could be avoided by allocating the units to individuals or groups in wider society; however, this would introduce a high level of transaction costs.
2. Sell NZUs at a fixed price	**+** Economic: only allocates full carbon budget if fixed price is at or below the market price, as units will not sell if offered above the market price. Fiscal: sales will most likely be below the market price, so less cash generated than auctioning (with cash foregone and a re-measurement loss below OBEGAL proportional to the difference between the fixed and market prices).		**- -** Market integrity: Government would drive prices rather than allow market forces to determine the efficient price. Administration: relatively simple to implement but choosing the level of the fixed price would be challenging. Perverse incentives/unintended consequences: provides opportunities for windfall profits, as those who can purchase the units would benefit from the price difference between the market and sale prices, at the expense of the Government and the rest of the economy.
3. Sell NZUs at the market price (auctioning)	**++** Economic: allocates full carbon budget to the market. Fiscal: auction transaction is fiscally neutral with no change in net worth, although the cash from sales would reduce net debt. Positive impact on both the operating statement and balance sheet when the units are surrendered, with cash generated for the Crown in the range of $0.73 – $2.15 billion over 2021-2030.[30]		**++** Administration: time and costs for establishing a mechanism are difficult to estimate at this point, but is likely to take 18–24 months with upfront capital costs of <$1 million. Development of the mechanism is a largely technical rather than political process. Once established, auctions would be routine. Price: supports greater transparency of the NZU price and guarantees a minimum amount of market liquidity. Perverse incentives/unintended consequences: minimal opportunities for windfall gains and risk of distortions. Linking: would provide a sales channel into the NZ ETS for any international emissions reductions bought by the Government.

[30] Given current projections that the carbon budget misalignment is 43 Mt and assuming a carbon price range of $17 - $50.

Consultation

115. Almost half (45 per cent) of submitters who addressed the issue of auctioning supported the introduction of an auction mechanism. Approximately 20 per cent of submitters were unsure, while around 30 per cent did not support auctioning. A common theme from consultation responses was that it would be important to make the objective, role and design of an auctioning mechanism clear.

116. Many of the responses that did not support auctioning were from the forestry sector and cited concerns that the Government would use auctioning to manipulate the carbon price. This concern seems likely to derive from previous Government messaging that auctioning would be used to ensure liquidity in the market.[31] Making it clear that the purpose of auctioning is to enable the NZ ETS to reflect the 2030 target will help alleviate these concerns from forestry participants, particularly if it is accompanied by a decision that there will be quantity restrictions on international units in future (as this was the previous cause of low prices in the NZ ETS).

Conclusions and recommendations

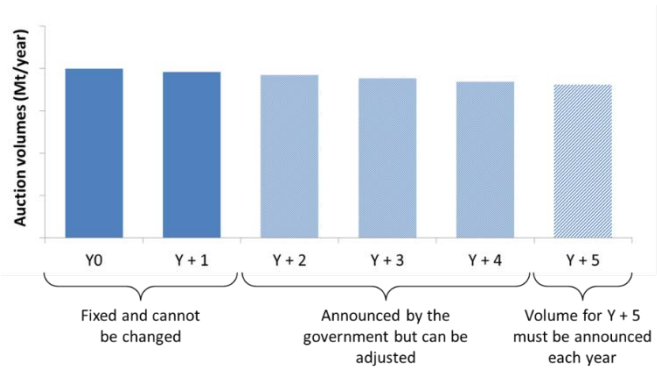
117. Option 3, an auctioning mechanism to sell NZUs at the market price, is recommended as it is the only option which can fully allocate the available carbon budget to the market, without introducing undesirable distortions, transaction costs or distributional impacts that undermine broader NZ ETS policy intent. The main role of the auctioning mechanism should be to manage the relationship between units in the NZ ETS and New Zealand's emission reduction targets.

Next Steps

118. Section 6A of the CCRA already provides a power to auction NZUs if regulations are made outlining how the auctions will be conducted. Further policy development and consultation will be required for the detailed policy design of the auction mechanism.

119. Section 30GA of the CCRA also requires that an overall NZU limit be specified in regulations, before any auctions can be held. The overall limit must be prescribed for each year, for five years into the future, with extension by a further year annually. It would take into account free allocation volumes, but would only limit the maximum amount of units that can be auctioned each year. This is illustrated graphically below.

Figure 6: NZU limit required for auctioning



[31] For example, *Decisions on Kyoto Protocol emission units,* 6 December 2013 www.beehive.govt.nz/release/decisions-kyoto-protocol-emission-units.

120. A process for the annual decision-making needed for setting and extending these NZU limits will need to be developed, drawing on emissions and unit projections and other issues the Minister must have regard to when setting these limits, as outlined in s30GA. Institutional arrangements for how, when and by whom this advice is developed and provided to the Minister may need to be considered.

121. In particular, to build confidence in the market and improve regulatory predictability for market participants, it would likely be desirable to clearly define the situations and processes for making any adjustments to volumes in years Y+2 – Y+4. Ministerial decisions on this NZU limit may also need to be coordinated with other decisions about unit supply settings.[32]

122. After regulations outlining the auction design are in place, the platform (likely to be online) for holding the auctions will have to be built or procured as a service. The time needed to develop both the auctioning regulations and platform has been estimated at 18-24 months at a minimum.

123. Funding for the policy work required for NZ ETS supply management, including auctioning, was already provided to MfE through Budget 2015. No estimates of the cost for the build or procurement of the auction platform were possible at that stage. A further Budget bid may be required (potentially in 2018 when more information about the preferred auction design is known), if the cost of the auction platform cannot be absorbed in current baselines.

2. Aligning international units with the abatement task

124. As noted previously, New Zealand expects to use international abatement to reduce the cost of meeting its 2030 target. Previously, participant surrenders in the NZ ETS were the mechanism for the Crown obtaining international emission reductions for meeting its targets, but the NZ ETS is currently domestic only. The unclear role of international units in the NZ ETS is also adding to regulatory uncertainty.

125. Therefore how the NZ ETS connects to international carbon markets in future needs to be considered. There are three elements to this issue:

    1. **Mode of purchase**
    2. **Quality restrictions**
    3. **Quantity restrictions**

126. This RIS only addresses the third element of **quantity restrictions**.

Options

127. Two high-level options have been identified for how NZ ETS participants' possible future use of international units could be regulated in terms of quantity:

    1. **Unlimited use of international units:** there would be no volume restrictions on how many international units NZ ETS participants could surrender to meet their NZ ETS obligations, i.e. they would be free to surrender 100 per cent international units

[32] This is discussed further in *Part 3: Unit supply decision processes.*

for compliance.[33] This is how the NZ ETS was linked to the Kyoto market over 2008-2015.

2. **A quantity limit on use of international units:** participants would only be able to surrender a certain proportion or specified number of international units for compliance with NZ ETS obligations. The remainder of participants' NZ ETS obligations would need to be met using NZUs.

   It should be noted that at this stage, the level of any limit is not being specified or considered. This is because it would depend on the desired balance of domestic (including forestry) or international reductions for meeting New Zealand's 2030 target, which the Government is expected to consider in 2018.

Impact Analysis

128. *Table 7* summarises the impact analysis of the two identified options against the objectives, compared to the status quo.

129. In the analysis, no attempt is made to quantify the costs of the two options or of different possible levels of a quantity limit. This is because an improved evidence base for New Zealand's optimal domestic versus international abatement effort is expected to be developed over the next year, which will allow this to be done before final decisions are taken. The direction of cost impacts is noted where possible. It is assumed that linking to international markets reduces economic costs overall out to 2030 compared to the current domestic-only status quo, as supported by previous modelling.[34]

130. The key differences in the two options that determine which is preferred hinge on two issues:

    1. **Equivalence:** whether NZUs and international units are likely to be viewed as equivalent by market participants, and therefore whether NZUs and international units trade at different prices, giving rise to arbitrage opportunities and risk of an NZU stockpile accumulating.
    2. **Compatibility for linking:** Withheld consistent with S9(2)(j) of the OIA [redacted]

Equivalence and NZU stockpile risk

131. The original design of the NZ ETS allowed for unlimited surrenders of Kyoto-compliant international units, in order to deliver the same cost of carbon in New Zealand as that faced by international competitors. This relied on the price of NZUs completely equalising with the price of Kyoto units, and it was recognised that ensuring NZU equivalence with Kyoto units was therefore critical. This was part of the reason why the NZ ETS design was so closely modelled on KP rules.

132. This approach operated as expected, until 2012 when New Zealand's access to the KP market changed after it announced that it would adopt its 2020 target under the UNFCCC rather than as part of the KP second commitment period. The price of NZUs

[33] There would still be qualitative restrictions on any units that are eligible for surrender in the NZ ETS.

[34] See Daigneault A. 2015 and Infometrics. 2015.

rose above that of the eligible Kyoto units, due to NZ ETS participants' expectations that the Government would eventually disallow use of Kyoto units.[35]

133. This resulted in participants overwhelmingly using international units over the 2012-2014 compliance years. For example in 2013, less than 1 per cent of units surrendered were NZUs, as participants banked their higher-valued NZUs as a better long-term investment. This lead to a large stockpile of NZUs in private accounts, which in June 2016 reached around 130 million units[36] and a value of $2.25 billion.[37] The Government also received more international units than necessary for meeting its targets, meaning an unnecessary cost was imposed on the New Zealand economy.

134. This shows that expectations about future eligibility of units can cause participants to view units as not equivalent, leading to price differences. Other issues, such as perceptions of environmental integrity or, potentially, expectations about new links to other carbon markets, could also cause unit price differences.

135. This is important for future NZ ETS settings because preferential surrenders of international units can lead to unnecessary economic costs from over-delivery of international units, as well as negative impacts for the Crown's balance sheet.

136. Delivering more international units than needed for meeting New Zealand's target would be inconsistent with the Government's policy intent, even though it may be seen as positive by some stakeholders. When it set the 2030 target, the Government considered the need to contribute to global efforts on climate change and the economic cost of New Zealand's contribution, alongside New Zealand's national circumstances and capacity for emission reductions. The target chosen reflects the Government's view of the maximum achievable level of ambition at this time.

137. Over-delivery of international units also has negative fiscal impacts. This is because when the Government allocates NZUs to foresters or through free allocation, it increases the NZ ETS liability on the balance sheet. This liability is a function of the number of NZUs held in private accounts multiplied by the market price of NZUs, and is reduced when NZUs are surrendered. If the Government gives away more NZUs than are being returned to it through participant surrenders, this liability grows more than it would have otherwise.

138. A quantitative limit on surrenders of international units would give the Government a lever to manage the potential fiscal risks from a growing NZU stockpile. This "stockpile risk" is judged to be higher in future, because international carbon markets are likely to be more fragmented, and because New Zealand's carbon market links or understanding of environmental integrity may change over time. These factors mean that it may not be possible for the Government to ensure the equivalence of NZUs with any eligible international units.

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[35] They were correct – in late 2013 the Government announced that from June 2015 the NZ ETS would become a domestic-only market.

[36] Banking units is important for participants' management of NZ ETS obligations, however this level of banking is large. For a scale comparison, prior to 2017 annual surrender obligations for sectors other than forestry were around 20 million units. An appropriate level of banking in the NZ ETS under current settings has been judged to be in the range of 30-60 million units (for further information see Ministry for the Environment, 2016b).

[37] See Crown, 2016. www.treasury.govt.nz/government/financialstatements/yearend/jun16

Compatibility for linking

139. The changing, fragmented nature of international markets under the Paris Agreement means that bilateral and plurilateral carbon market linkages will likely be more important to New Zealand than in the past. New Zealand is pursuing a range of options for international linking. Withheld consistent with S9(2)(j) of the OIA

140. Withheld consistent with S9(2)(j) of the OIA All ETS currently operating are capped, except the NZ ETS (see *Table 6*).

141. Withheld consistent with S9(2)(j) of the OIA Such a cap also allows the ambition of a scheme to be understood, Withheld W A quantity limit on international units is a key component of a cap.

142. While the establishment of links with these other markets is not assured, there will be more options for linking the NZ ETS internationally if its design is viewed as compatible by potential partners. This is why the impact analysis assumes design features that promote linking compatibility are desirable, where they are practical and do not undermine other NZ ETS objectives.

Table 6: All existing ETS internationally are capped, except the NZ ETS[39]

Capped ETS		**Uncapped ETS**
North America	Chongqing	NZ ETS
California (WCI)[40]	Fujian	
Ontario (WCI)	Guangdong	
Quebec (WCI)	Hubei	
Regional Greenhouse Gas Initiative (RGGI)[41]	Shanghai	
	Shenzhen	
Europe	Tianjin	
EU ETS	Japan – Saitama	
Switzerland	Japan – Tokyo	
Asia	Kazakhstan	
Beijing	South Korea	

W

39 Information sourced from ICAP: https://icapcarbonaction.com/en/about-emissions-trading/cap-setting

40 WCI refers to the Western Climate Initiative, through which the California and Quebec ETS are linked. Ontario's ETS is scheduled to link in with California and Quebec in 2018.

41 An ETS covering the electricity sector in nine states in north-eastern USA.

Table 7: Options impact analysis for aligning international units with the abatement task

Options	Alignment with current and future NDCs	Improves regulatory certainty and predictability	Consistent with broader NZ ETS design policy intent
Status quo: domestic-only ETS	NZ expects to use international abatement to help meet the 2030 target at acceptable cost; however, the NZ ETS is currently disconnected from international abatement. Modelling suggests a domestic-only approach to meeting the target significantly increases economic costs.	The Government has signalled to participants that international abatement is expected to be used to help meet the 2030 target, but it has not made it clear to participants when or how the NZ ETS will reconnect to international markets.	The Government chose the NZ ETS as its main climate policy tool partly because ETS are compatible for linking to international carbon markets, which helps to reduce the cost of meeting targets and keep prices broadly in line with international carbon prices.
1. Unlimited surrenders of international units	**+** Economic: international link likely to reduce costs for the economy, participants and households. However, this comes with a risk of delivering more international units than needed for meeting the target, meaning the NZ ETS costs the economy more than necessary to meet the target. Fiscal: likely significant risk that a large stockpile of NZUs could accumulate, resulting in an increased ETS liability on the balance sheet. The Crown would have no lever to manage this risk, which would be limited only by NZU supply.	**-** Information: no signal to market participants about expected domestic effort. Confidence: would undermine confidence and discourage investments by foresters and others impacted by the previous NZU price collapse (caused by unlimited access to international units). Open connection risks fully importing any market failures, which could be a significant issue if links are to fragmented and/or immature schemes. Carbon markets are still relatively new instruments and as government-established regulated markets, they are more susceptible to policy or other risks than normal commodity markets. Durability: little flexibility for the Government to fine-tune or control scheme outcomes over time as New Zealand's carbon price would be entirely driven by costs and policies in linked jurisdiction or scheme.	**-** Administration: implementation not complex and similar to previous NZ ETS rules. Price: as long as NZUs and international units are viewed as equivalent, the NZU price will be the same as or very similar as the cheapest international unit eligible for use in the NZ ETS. Price will be a function of which markets NZ has access to rather than any domestic conditions. Any volatility in linked markets would be fully imported into the NZ ETS. Linking: Withheld consistent with S9(2)(j) of the OIA New Zealand will have fewer options for linking to international carbon markets so may have more difficulty gaining access to international markets in the first place.
2. Quantity limit on surrenders of international units	**++** Economic: international link likely to reduce costs for the economy, businesses and households. The stringency of the limit will be the main determinant of whether costs will be higher or the same as if no limit was present. Volume of international units surrendered can be controlled so that it is in line with Government objectives for how NZ meets its target, and minimising risk of costs from over-delivery of international units. Fiscal: allows the Crown to limit the risk of a large NZU stockpile accumulating with a corresponding increase in liability.	**+** Information: once a limit is set, information will be available about the minimum volume of units and abatement that must come from domestic sources. This will facilitate the ability of participants and other businesses to forecast carbon prices and make more informed judgements about low carbon investments. Confidence: while the level of a limit would not be clear immediately as this is unlikely to be set until 2018, even an announcement about the future presence of a limit will build confidence in the NZ ETS, particularly among foresters, as it will provide reassurance that there will be continued demand for NZUs. Confidence in the market more broadly would be supported due to less exposure to volatility or failures in international markets Durability: a limit could be adjusted over time as Government priorities change and as opportunities for New Zealand to link to international carbon markets develop	**+** Administration: not particularly complex to implement, likely to be relatively simple from the perspective of most participants. The level of the limit would flow from any Government decisions made about desired levels of international versus domestic effort for meeting the 2030 target. Price: a generous limit that is not "binding" (used up) would lead to NZU prices being the same as equivalent international units. A tight limit could lead to higher NZU prices, reflecting domestic abatement costs. Less importation of price volatility from linked markets. Linking: more compatible for linking Withheld consistent with S9(2)(j) of the OIA

Consultation

143. Approximately 43 per cent of submitters who responded to this issue supported quantitative restrictions on international units. These submitters came from a wide range of sectors (iwi, civil society groups, waste, foresters and some business representatives), although few large industrial emitters were among this group. These submitters often suggested such restrictions would support domestic emission reductions, international units should be supplementary to domestic action, or expressed concern that international units would suppress the carbon price.

144. Around 30 per cent of submitters[42], including many emitters, thought there should be no restrictions or qualitative restrictions only. The importance of international units for lowering businesses' NZ ETS costs was a key reason cited for preferring unlimited access to these units. Communicating to businesses that a limit on international units will likely facilitate wider access to international carbon markets may help respond to these concerns.

Conclusions and recommendations

145. The preferred option is that if international units are once again made eligible for surrender in the NZ ETS in future, a quantity limit on participants' surrenders of these units should be imposed (option 2). This limit will allow New Zealand to benefit from the reduced costs that international market linkages can provide, while reducing some of the risks to the Government and the economy from linking.

146. It is also proposed that this limit be managed on a 5-year rolling basis similar to the NZU limits required for auctioning, to provide a balance of stability and flexibility. The reasoning for this is discussed in Part 3 on unit supply decision processes.

Next steps

147. If there is an in-principle decision to put a quantity limit in place further work will need to be done on the level of this limit. In broad terms there are two possible approaches for determining the level of the limit:

    1. to **limit risk to the Government** from a large NZU stockpile accumulating, i.e. the limit would be generous enough to allow the full projected abatement task of New Zealand's 2030 target to be achieved through international purchasing; or

    2. to **drive a desired level of domestic abatement**, to promote New Zealand's transition to a low carbon economy, i.e. the limit would be less that projected abatement task, to guarantee a specified level of domestic reductions.

148. Setting the limit is not necessary or desirable right now. More information on New Zealand's domestic abatement opportunities and costs would allow a better assessment of the impacts of different possible limit levels. The low emissions transition hub is expected to develop a better evidence base for this over the next year, and will aim to provide advice in the second half of 2018 on New Zealand's approach to meeting its 2030 target and transition to a low emissions economy. The appropriate level of the limit would flow from Government decisions about the desired balance of domestic versus international abatement for meeting the 2030 target.

[42] The remaining 27 per cent of submitters were unsure or provided unclear responses.

149. Whatever limit level is chosen, further policy development and consultation will be needed on implementation issues. There is an existing power in the CCRA to make regulations on the surrender of units, including limitations and restrictions.[43] However, it may be necessary to amend this section to include further details on the process and criteria for updating the level of the limit and how it will be managed over time. If the NZ ETS is linked to more than one market, there may also need to be sub-limits within an overall volume limit on international units.

150. Other issues that will require further consideration include, for example, whether it is desirable to implement different limits for different types of participants in the NZ ETS, taking into account any free allocation or NZU entitlements some participants receive.

151. Any re-opening of the NZ ETS to international units, whether in a limited or unlimited way, may require adjustments to MfE's NZ ETS forecast. This will be dependent on the specific level of limit chosen as well as how any international units received by the Government through NZ ETS surrenders are accounted for in the Crown's accounts. The financial accounting treatment of future international unit surrenders has not yet been determined, although work on this issue is underway.

152. Any regulations to make international units eligible in the NZ ETS and/or to put a limit on their surrender, or changes to the CCRA power to make regulations on unit surrenders, will need to be subject to a separate RIS at that time.

[43] Section 30G(1)(c)

3. $25 fixed price option

153. The $25 fixed price option (FPO) allows participants to pay $25 per unit to the Government to meet their surrender obligations.[44] It acts as a de facto price ceiling by guaranteeing maximum cost of compliance per unit for participants.

154. The $25 FPO was introduced in 2009 as a transition measure to protect firms from excessive costs. The 2011 NZ ETS review panel recommended that it be retained, but increased in steps up to $50 by 2017. Given uncertainties about the future of international carbon markets, in 2012 Cabinet decided to keep the $25 FPO in place. It is implemented through the CCRA, has no end date and its static $25 value means that in real terms the level of the FPO is decreasing.

155. To date the fixed price option has been used rarely as the market price of emission units has been lower than $25.[45] However, if status quo NZ ETS settings continue, the risk that it will be used extensively will increase as time goes on. This is because the annual supply of units into the NZ ETS is significantly smaller than demand and the currently large stockpile of banked NZUs will deplete, causing NZU prices to rise.

156. The current NZU price is broadly comparable with international ETS prices as shown in *Figure 7* on page 40. However, the static level of the fixed price option is below expectations of international carbon prices in the 2020s. This is indicated by forecasts and carbon prices used in scenarios or policy appraisal by international organisations and other countries, shown in *Figure 8* to *Figure 10* on page 40.

157. Carbon price forecasts tend to overstate the price rises that actually occur. However, some international carbon prices are already above $25 and current international momentum for climate action supports expectations that carbon prices may increase past $25 in the 2020s.

158. A fixed price option that is lower than international carbon prices creates significant risks. If a decision is made to reopen the NZ ETS to international units, and international prices are higher than $25 as predicted, it will incentivise NZ ETS participants to use the $25 fixed price option rather than surrender NZUs or eligible international units. Extensive use of the fixed price option creates three issues:

    1. **a shift of responsibility for meeting the target from emitters to the Government** - the fixed price option is not volume limited, so participants' extensive use of the FPO would cause a potentially large overshoot of the carbon budget. In this case, either New Zealand would not meet its target, or the Government could take additional measures if it wanted to make sure the target was met. In the latter case, the option most likely to be feasible would be for the Government to purchase international reductions. The cost to the Government from doing this would depend on the price of international reductions (with the cost borne by the Government proportionate to the difference between the international price and $25) and volume

[44] The $25 FPO can only be used when surrendering units. In practice, when a participant uses it, NZUs are issued by the Government to the participant but these NZUs are then immediately surrendered. It does not generate NZUs that can be held in the market.

[45] In 2011, 73,500 fixed price units were purchased, making up 0.4% of all surrenders that year. From 2012 to 2015, only 26 units were purchased by participants, to meet shortfalls in their surrender obligations, see EPA, 2016.

of reductions purchased (i.e. the amount that has been allocated over the carbon budget).

Extensive use of the fixed price option would also increase the NZ ETS liability on the Crown's balance sheet. This is because participants would hold, rather than surrender their NZUs, increasing the stockpile of NZUs held in private accounts. This would be worsened if the market price of NZUs increased above the value of the FPO[46], as the Crown would be foregoing cash from selling units below their market value causing a re-measurement loss after OBEGAL.

The extent to which the $25 FPO might be used if it remains in place cannot be forecast robustly. Current emissions projections of gross emissions covered by the NZ ETS and surrenders from forestry estimate maximum NZ ETS surrenders over 2021-2030 at 466 million units. If participants used the $25 FPO for a significant proportion of these surrenders, it would transfer a large amount of the responsibility (and potentially cost) for meeting the target back on to the Government.

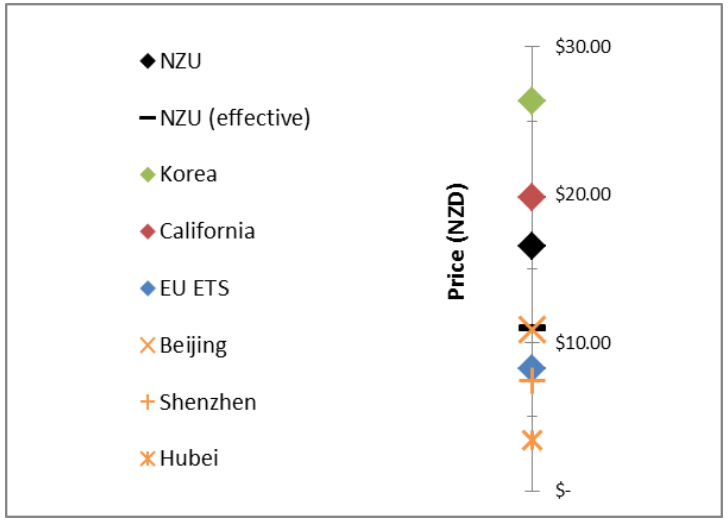
2. **the NZ ETS would be turned into a tax –** as the cost of carbon would be driven by the fixed price option instead of being determined by supply and demand. The market nature of the NZ ETS, which is fundamental to the Government's choice of this type of policy instrument, would be undermined.

3. **New Zealand's mitigation would not be efficient and comparable to international efforts –** the NZ ETS price signal would be limited to $25. This would undermine the ability of the ETS to contribute to the 2030 and subsequent targets efficiently by imposing a lower level of effort on the New Zealand economy than international efforts. New Zealand would not be "doing its fair share", which could undermine international efforts to prevent climate change (as it is a global coordination problem). The country may actually face higher costs over the longer term as the lower price will not incentivise emission reductions or removals that would occur with an internationally-comparable higher carbon price.

159. The way the $25 fixed price option is implemented also presents a potential barrier for linkages with other ETSs. Withheld consistent with S9(2)(j) of the OIA [redacted] The price is also static and its mode of operation is different from that of price controls in other markets, which are often incorporated into auctioning mechanisms.

[46] While the presence of the $25 FPO may have a role in setting market participants' NZU price expectations, and its extensive use would alter the supply / demand balance of the market and therefore affect the secondary market price, it will not necessarily prevent the NZU market price from surpassing $25. This situation could arise particularly if market participants expect that the Government may remove or increase the FPO (for example, if it becomes clear that the FPO is unsustainable due to higher international carbon prices).

Figure 7: Current international ETS prices (May 2017)



Withheld consistent with S9(2)(j) of the OIA

Figure 9: Carbon prices from IPCC and IEA WEO 2016 scenarios

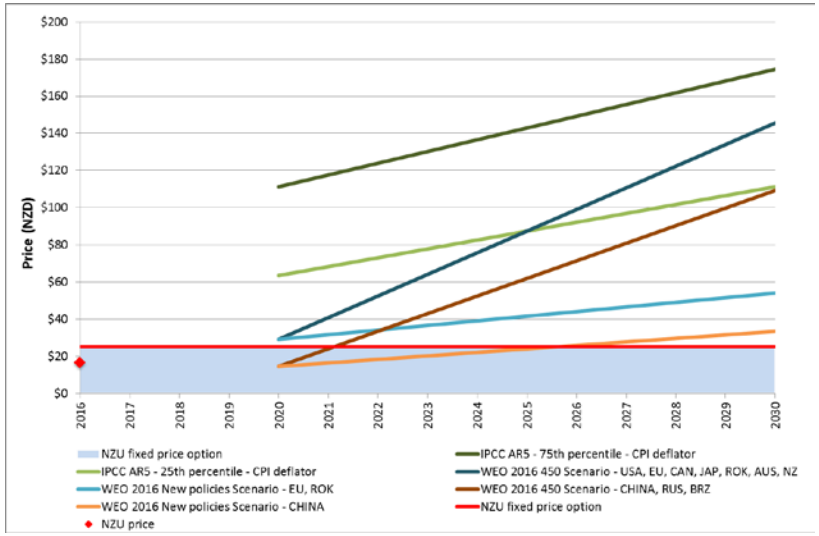
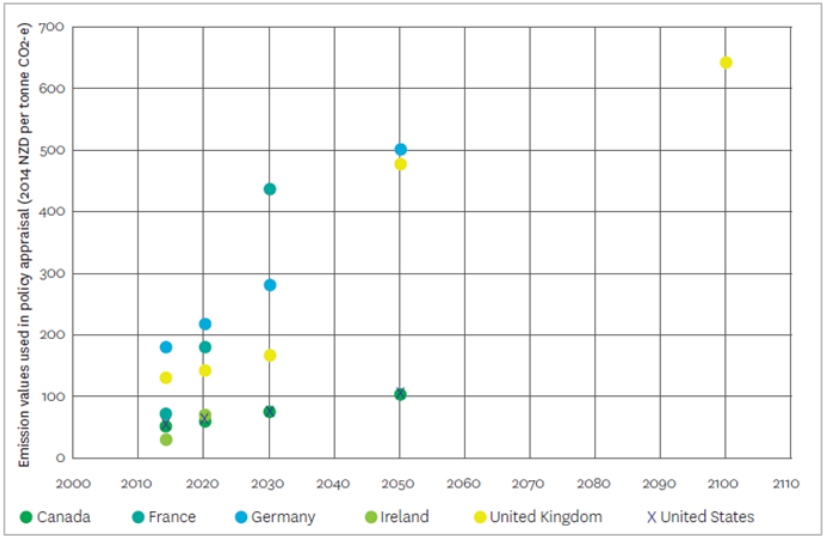


Figure 10: Carbon prices used in policy appraisal[49]



Withheld consistent with S9(2)(j) of the OIA

[49] Sourced from Vivid Economics (2017).

Options

160. Four options were identified to address the problems created by the $25 FPO, all of which would require amendments to the CCRA to implement:

1. **Remove the $25 fixed price option.** This would fully remove the fixed price option, leaving no price measures in the NZ ETS. A variation on this option is possible where the fixed price option is kept, but with a volume limit. This would set either an overall limit on the use of the option, or a limit for each participant. The impacts of this option are similar to removing the fixed price option entirely because once the limit is used up, it would no longer affect participants' compliance costs and price expectations.
2. **Retain the fixed price option in the CCRA, but increase its value.** This option would keep the same mechanism for the fixed price option as currently outlined in the primary legislation but would increase the value above $25.
3. **Retain the fixed price option, but move it into regulations and increase its value.** This option would keep the same mechanism for the fixed price option but move it into regulations and increase the value above $25. This would make it potentially easier to update the price ceiling over time, although it may be desirable to put some constraints or principles in the primary legislation to limit or specify how and when such adjustments could be made.
4. **Replace the fixed price option with an auction cost containment reserve, with a trigger price at a value higher than $25.** This is a different type of price ceiling which relies on the introduction of auctioning. It requires the Government to set aside a number of units which would only be released for sale to the market through auctioning if a specified trigger price is reached. The additional NZU supply would put downward pressure on price but would not necessarily prevent the NZU price from rising further beyond the trigger price. This would be a "softer" price ceiling compared to an FPO-style ceiling as it would not guarantee a maximum compliance cost per unit for participants. How much influence it would have on the market price of units would depend on the amount of units in the cost containment reserve.

Impact Analysis

161. A summary of the qualitative analysis is presented in *Table 8*.

162. In considering these options, it is important to be aware of relevant context in terms of the role of price controls in ETS, the state of international carbon markets as well as the current lack of announced unit supply settings and volumes for the NZ ETS in the 2020s.

163. Price controls in ETS such as price ceilings or floors usually aim to limit extremely high or low prices. In other ETS to date, they have been set at levels well above or below expected market prices. Most other ETSs have measures that limit upside price risk in particular, to ensure that prices do not reach unacceptably high levels for businesses and households. These features are often implemented by increasing unit supply through auctioning, when certain trigger price conditions are reached.

164. This approach recognises that as a regulated market created to achieve policy objectives, it may be appropriate for governments to set some bounds to ETS prices, to ensure the acceptability and durability of the policy. This differs from normal commodity markets, where such price interventions would usually be seen as inappropriate.

165. In the case of the NZ ETS, the current uncertainty for market participants about future unit supply volumes and settings creates a strong rationale for the continuation of some kind of price ceiling. It could be some time before this uncertainty is resolved to an extent where market participants have sufficient information to make informed judgements about the fair value of an NZU, based on market fundamentals.

166. A major element of this is the uncertainty around how and to what international carbon markets New Zealand may link, and whether these markets will function well. Due to the ambition of the 2030 target as well as relatively expensive domestic abatement opportunities, linking arrangements are likely to be a major determinant of any domestic carbon prices. It also seems likely that a cohesive, liquid international carbon market with one international carbon price or even convergence of carbon prices among various existing markets will not occur for quite some time. Therefore even after the Government announces future unit volumes and rules for the 2020s, there would still be value in maintaining a price ceiling.

167. However, as noted in Part 1 on international units, having an ETS that maximises linking opportunities is important for New Zealand being able to access international markets in the first place. The benefits to New Zealand from international linking are likely to exceed any benefits from the presence of a price ceiling in the NZ ETS. This is because use of international markets can contain the cost of achieving target overall, in contrast to ETS price ceilings which only contain costs for participants by shifting that cost on to government. Harmonisation of price controls will also be necessary for some types of links.

168. In the options analysis, this is why strong weightings have been given to compatibility for linking and to the ability of the Government to control the potential fiscal risks that a price ceiling can create. Option 4 (a cost containment reserve price ceiling as part of an auction mechanism) performs best against these criteria.

169. If the Government wishes to provide greater certainty about costs for businesses and is prepared to bear the higher risks for itself entailed in that, either option 2 or option 3 would still offer benefits compared to the status quo.

Table 8: Options impact analysis for $25 fixed price option price ceiling

Options	Alignment with current and future NDCs	Improves regulatory certainty and predictability	Consistent with broader NZ ETS design policy intent
Status quo – maintain $25 FPO	The $25 price level is lower than expected international carbon prices, creating risk of a carbon budget overshoot and cost shifting to the Government.	Participants have certainty that $25 is the maximum compliance cost per unit. However, there is still regulatory uncertainty associated with this feature as the $25 FPO was introduced as a transitional measure but has no end date.	There is a risk that NZU prices will rise to a level where the $25 FPO sets the carbon price, rather than supply/demand in the market The current design of the $25 FPO (i.e., unlimited volume, low and static price) is likely to be a barrier to linking.
1. Remove $25 FPO	**++** Fiscal: Removes risk of cost shifting to the Crown from a price ceiling allocating units above the carbon budget	**-** Information: participants have no certainty of maximum compliance cost per unit. Confidence: participants have no protection from extreme carbon prices, which could create volatility and reduce market confidence, particularly given lack of certainty over future NZ ETS unit supply and international carbon markets at this time. Durability: if extremely high prices eventuate, there would likely be strong pressure on the Government to make an ad hoc intervention.	**+** Market integrity: removes all price interventions from the ETS, so the NZ ETS would be a "purer" market system and the Government would not have to pick a price Administration: relatively simple change to the CCRA Price: risk of reduced liquidity in the market, especially while information about future unit supply volumes from international linking and auctioning are not available. This increases risk of volatility and extreme prices driven by regulatory uncertainty. Linking: more compatible for linking with other carbon markets
2. Retain FPO in CCRA, but increase its value	**+** Fiscal: If the price ceiling is struck, use of the FPO would cause allocation above the carbon budget. Due to the higher price level, this risk is lower than the status quo. Crown receives cash from the sales but if the market price rises above the value of the fixed price option, the Crown would forego cash from selling units below market price and also suffer a re-measurement loss below OBEGAL.	Information and confidence: Participants have certainty of the maximum compliance cost per unit. Durability: similar to status quo - little flexibility to adjust the FPO if circumstances change means increased risk of ad hoc interventions.	Market integrity, price, linking: same drawbacks as status quo. Administration: relatively simple change to CCRA, single decision about the price level, easy to implement with existing processes. Unintended consequences: still a risk of increasing the stockpile and liability for the Crown
3. Move FPO into regulations and increase value		**+** Information: participants have certainty of the maximum compliance cost per unit. Confidence: Government's ability to make changes to the price level over time could undermine market confidence. This could be mitigated by putting some constraints around the process and situations in which the Government could make adjustments. Durability: could be implemented through regulations and in a way that gives the Government the flexibility to adjust according to changing circumstances, e.g. to facilitate linking or as international prices increase.	**+** Administration: would require implementing regulations as well as decisions about the price level and any ongoing adjustments. Price: more flexibility than option 2 to manage risk of striking the price ceiling - price ceiling level could be made more dynamic/responsive (e.g. to increase over time, or regularly re-calculated with reference to international carbon prices). Linking: prevents the NZ ETS from being "capped" but easier to adjust/remove if it creates a barrier for linking.
4. Replace FPO with an auction cost containment reserve, triggered at a price higher than $25	**++** Fiscal: If the price ceiling is struck, release of additional units would cause allocation above the carbon budget but the extent to which this happens can be controlled by the Government. The higher price level also reduces risk of the ceiling being triggered, compared to the status quo. Impact of sale transactions (cash) would be the same as a normal auction transaction, as sales would be at the market price	**+** Information: provides participants with some information about the maximum cost of carbon, but less certainty than an FPO price ceiling. Confidence: gives participants some protection from extreme prices, but less than an FPO-style price ceiling. Government's ability to make changes to the price level over time could undermine market confidence. This could be mitigated by putting some constraints around the process and situations in which the Government could make adjustments. Durability: the Government would have flexibility to adjust the unit reserve volume and price trigger as circumstances change.	**++** Market integrity: as this operates on a volume basis, it is more "market-like" than an FPO which is solely price-based and if struck would turn the NZ ETS into a (complicated) tax. Administration: more complex to implement than other options as both the unit reserve volume and the price trigger need to be determined. Can be built into auctioning regulations. Price: if struck, the market price would be somewhat more likely to rise above the price trigger level as compared to an FPO. Linking: more compatible for linking as it allows the NZ ETS to be "capped" (even though the cap might be generous).

Consultation

170. The NZ ETS review consultation sought feedback on price stability mechanisms. Most respondents on this issue (approx. 65 per cent), including many emitters and NGOs, thought there should be measures to manage price stability. Approximately 25 per cent, including many from the forestry sector and business groups, did not think there should be measures to manage price, often noting it was important that the market drives the price. Therefore it will be important to highlight that the purpose of price control measures is to manage price shocks, and not to drive the carbon price under normal conditions.

171. Of respondents who expressed views on the type of price measures needed, approximately 50 per cent supported a price ceiling.[50] Many of these respondents were emitters who participate in the NZ ETS. Some submitters noted that having a price ceiling is important given the uncertainty over unit supply from auctioning and international markets. Others noted that any price ceiling should take international carbon prices into account. The proposal to develop an alternative price ceiling, and maintain the current $25 fixed price option until the alternative is developed, is generally consistent with feedback from these submitters.

Conclusions and recommendations

172. Three of the four options considered would meet objectives and provide benefits compared to the status quo. In order of the most to least control the options give to the Government to manage the risk that costs will shift to the Crown and of linking compatibility, they are:

- Option 4, replace the FPO with an auction cost containment reserve triggered at a price higher than $25.
- Option 3, retain the FPO but move it into regulations and increase its value
- Option 2, retain the FPO in the CCRA, at an increased value

Next steps

173. The current $25 fixed price option is implemented through s178A of the CCRA, so all options would require amendments to the CCRA and be subject to a further policy development, consultation and RIS processes.

174. Signalling to the market that there will be a change to the $25 FPO creates a risk that this will encourage participants to use the FPO. It is therefore important that communications about potential changes are carefully managed to signal that the fixed price option will not be removed until there are alternative cost containment measures available (either a new price ceiling or an international market link) to reduce the risk of extreme high prices.

175. Therefore in the short-term, the current $25 FPO should remain in place until either an alternative price ceiling is ready for implementation, or future NZ ETS connections to international markets are clarified. If necessary and feasible in terms of timing, a sunset

[50] This includes 30 per cent of submitters who supported both a price ceiling and a floor.

clause or option to remove the $25 FPO from the CCRA through a non-parliamentary process[51] could be added to s178a to facilitate its removal at an appropriate time.

176. Development and implementation of one option, an auction cost containment reserve, would have to occur in conjunction with design of the auction mechanism and development of processes for setting NZU limits. It is anticipated that the unit reserve volumes could form part of the annual NZU limits, and the trigger price and other operational details would most likely have to be outlined in the auctioning regulations.

177. An appropriate new level for an FPO or a trigger price and unit volumes for the cost containment reserve will require further work. Consideration will need to be given to whether and how the price could be set, increased and adjusted over time. For example, one option is a schedule outlining price increases over time taking into account inflation and the need for increasing abatement effort. Another would be to determine the price level using a formula based on a basket of international prices.

178. How the Government might react to any use of the price ceiling should also be considered. It may be prudent to treat any use or triggering of the price ceiling as a sign that unit supply settings may need adjustment as the market is not operating as expected. If the price ceiling is managed in a similar way to auction volumes, over a rolling five-year period (see Part 3 on unit supply decision processes for more information), the Government could make adjustments (either to the ceiling itself, or to other settings e.g. to loosen any limit on international units) through the predictable annual update and extension announcements.

[51] This could be similar, for example, to the current option for the Minister to remove the suspension of the phase-out of free allocation from the CCRA through Order in Council when full obligations are reached (see s85A of the CCRA).

4. Unit supply decision processes

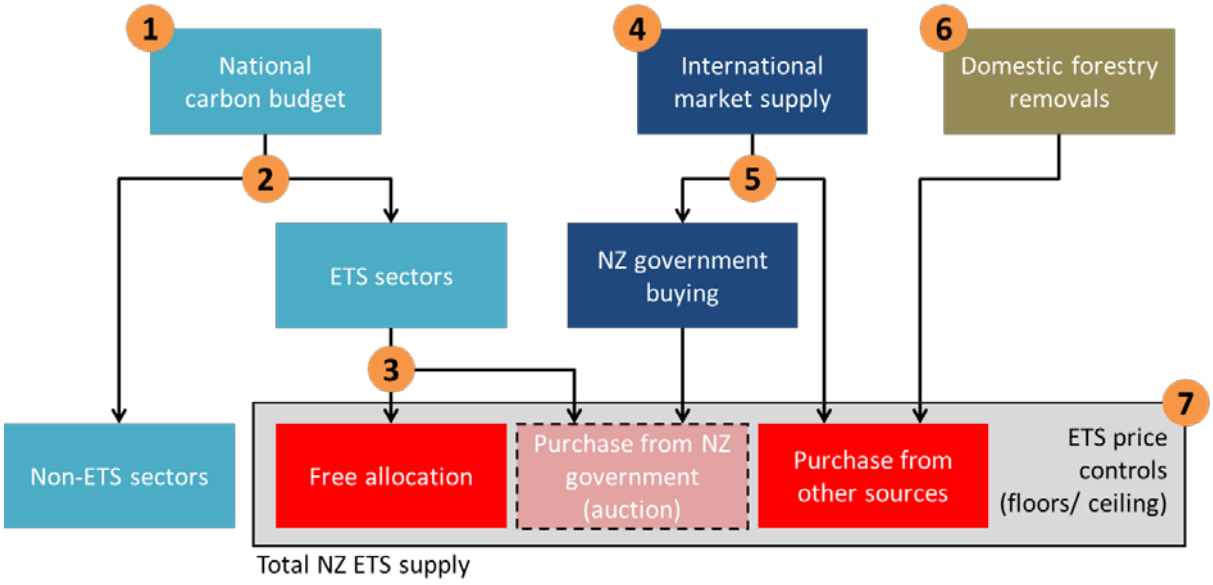
179. The current arrangements for Government decisions about unit supply include statutory reviews, the timing of which is at the discretion of the Minister, supplemented by reactive decisions when required to address new issues or changing circumstances.

180. Stakeholder feedback indicates that these arrangements are inadequate. The strongest theme from submissions to the NZ ETS review consultation has been that regulatory uncertainty is undermining the policy's effectiveness. Decisions about unit supply settings have been central to these concerns, with Government decisions perceived as inconsistent, ad hoc or unsignalled cited by a broad range of stakeholders.

181. The three proposals outlined earlier in this RIS also create new decision-making and implementation requirements. In particular, new processes will have to be put in place to support Ministerial decisions on the five-year rolling period for NZU limits required for auctioning. In making these decisions, the Minister must have regard to a number of factors.[52] How to integrate all these unit supply issues, including with broader NZ ETS reviews and new processes required by the Paris Agreement for updating existing and setting new targets, deserves consideration.

182. As context for what this involves, the relationships between New Zealand's target, NZ ETS unit supply volumes, and Government decisions determining who in the economy bears the effort of meeting the target are outlined in *Figure 11* (for a fuller version, see *Figure 3)* .

Figure 11: Overview of NZ ETS unit supply system and key Government decisions



183. Ideally, the Government would provide complete certainty on these unit supply settings and volumes to those affected by the NZ ETS. In reality, this is very difficult, not least because of uncertainties about the future. Over time there has been, and will likely continue to be, changes to: the scope of the NZ ETS; New Zealand's climate change targets; international carbon markets; technology (affecting abatement costs); economic forecasts; GHG emissions projections; and Government priorities. These developments

[52] For example, New Zealand's projected emission trends, targets to reduce emissions, and the emissions to which the NZ ETS applies. See s30GA(2) of the CCRA.

will change what NZ ETS settings and volumes may be appropriate for meeting the objectives of the Government of the day.

184. Furthermore, different elements of unit supply interact with each other, as shown in *Table 9.* Changes to any one of these elements will impact the other features, creating risks of unintended consequences.

Table 9: Interactions between unit supply features

	Free allocation	International units	Price controls
Auctioning	Alternative options for carbon budget allocation	Auction volumes can reflect Government purchasing	Price control features can be built into auctions
Free allocation		May create arbitrage opportunities	May create arbitrage opportunities
International units			May create arbitrage opportunities

185. Therefore the challenge is to find the right balance of improving regulatory certainty and predictability for market participants, ensuring any changes to unit supply are considered holistically, and allowing flexibility for the Government to make some changes as circumstances change.

Options

186. Two options have been identified to improve regulatory predictability and coordination of unit supply decisions. These are:

1. Manage key[53] NZ ETS unit supply settings and volumes in phases, with statutory reviews held at set timeframes.

This option would mean all unit volumes and price control levels would fixed in advance and set for a specified time period, with no or very limited ability to change them once the phase has started. The timing for reviews would be set in legislation, and could be scheduled to align with the Paris Agreement global stocktakes expected to occur every five years from 2023 onwards.

This is similar to the original design of the NZ ETS (albeit at that time the Kyoto Protocol was the relevant international agreement), before statutory timeframes for reviews were removed from the CCRA through amendments made in 2012. It is also similar to how the EU ETS is managed.

The time period for a "phase" could align with the time period of New Zealand's target, i.e. 2021-2030 or could be shorter e.g. five years. Settings and volumes for the next phase would have to be determined and announced by the Government well before (e.g. two years) the next phase begins.

[53] i.e. auction volumes, price ceiling levels and volumes, sources and volumes of international units.

2. Manage key NZ ETS unit supply settings and volumes using a rolling 5-year period, combined with regular statutory reviews held at the discretion of the Minister.

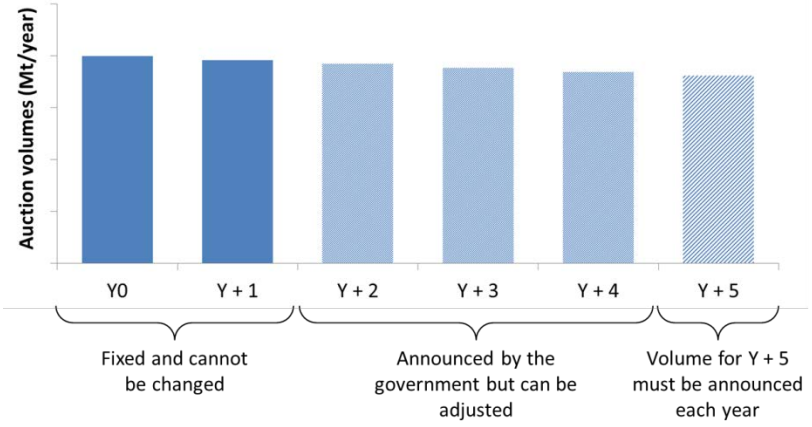
This option would extend the process outlined in the CCRA for setting the NZU limits required if auctioning is introduced into the NZ ETS (see paragraph 188 and *Figure 12* for further information). This approach could be used for ongoing management of key unit supply settings within specified parameters.

Full reviews of the NZ ETS would still be held under current arrangements, i.e. timing at the discretion of the Minister. The timing for future reviews could be signalled at the end of a review.[54] The annual announcements of the extensions to unit settings and volumes would then provide an opportunity for re-confirming this timing, or if necessary, advance signalling of any revision to plans.

187. The NZU limits required for auctioning set a ceiling on the maximum volume of NZUs that can be sold each year, and also include estimated free allocation volumes. According to s30GA of the CCRA, they must be set for five years into the future with annual extensions by one year. This gives market participants five years of foresight about future unit supply for both EITE free allocation and auctioning, but still allows the Government some flexibility to adjust auction volumes as long as sufficient notice is given.

188. This is process shown in *Figure 12* below. As noted in paragraph x about implementation of auctioning, it may be desirable to more clearly define in the auctioning regulations the situations and processes for making any adjustments to volumes in years Y+2 to Y+4. This would also likely be beneficial if a similar process were used for managing quantity limits on international units and any price control measures.

Figure 12: NZU limit required for auctioning



Impact analysis

189. A summary of the impacts of the two options against the status quo is presented in *Table 10* below.

[54] This is how the Government handled the timing of the current review. In 2012 when the Government actioned results of the 2011 review through legislative amendments, it was signalled that the next review would occur in 2015.

Table 10: Options impact analysis for unit supply decision processes

Options	Alignment with current and future NDCs	Improves regulatory certainty and predictability	Consistent with broader NZ ETS design policy intent
Status quo: reviews at Minister's discretion, reactive decision making	As significant decisions have been made outside regular statutory review processes, the links between these decisions, overall NZ ETS unit supply, and New Zealand's targets has not always been clear or well-coordinated.	The Government has made a number of reactive decisions to address new issues and changing circumstances, creating uncertainty for participants.	There has been some volatility in carbon price in response to Government announcements and changes to the NZ ETS, highlighting that some changes have been unexpected.
1. NZ ETS managed in phases	**+** Economic: Some risk that unit supply volumes will not fully align with the carbon budget and abatement task as intended, due to actual emissions and abatement costs turning out differently from the forecasts on which the Government made its volume and price decisions.	**-** Information and confidence: Provides participants with information about unit supply for the full phase, with a high degree of certainty that no changes will be made until the next phase. However, could create more uncertainty towards the end of a phase when the rules new phase are being worked out, as well as abrupt changes when a new phase starts. Durability: Unlikely to be durable as evidenced by previous NZ ETS experience. A system somewhat like this was in place previously, with the timing of statutory reviews specified in legislation. These sections were repealed in 2012 as Ministers considered that the review process was unnecessarily restrictive and did not allow flexibility to the Government to review the ETS at the most appropriate time.	**+** Administration: once settings and volumes are decided, they would not be changed except in very limited circumstances, if at all. This would make administration relatively simple from both the Governments' and participants' perspectives. Price: likely to reduce volatility through increased policy certainty throughout the phase. However, price volatility risk may be heightened around decision points for the settings and volumes for the next phase, particularly if any changes are expected to be significant. Perverse incentives/unintended consequences: If unintended consequences come to light during a phase, the Government would have little ability to address or manage them.
2. Five-year rolling period for managing key NZ ETS settings and unit volumes	**++** Economic: the Government would be able to make adjustments over time as new information becomes available, improving alignment of unit volumes with targets.	**+** Information and confidence: Provides participants with improved, comprehensive unit supply information over the next five years. Changes by the Government to announced volumes and setting would be possible, meaning less certainty than option 1 would provide. This could be mitigated to an extent by specifying relatively clear or defined situations and processes for making these adjustments, as well as making sure the annual updates and extensions are embedded as a regular process. Durability: Gives the Government flexibility to tweak unit supply in response to changing circumstances, and hold reviews when it considers appropriate.	**+** Administration: implementation would be more onerous than option 1 as new processes would have to be set up and undertaken each year. May make full reviews somewhat easier as evolution of settings could be more gradual. Price: More gradual, regular updates to settings are likely to promote smoother price evolution compared to less frequent but more dramatic changes. Perverse incentives/unintended consequences: Government has some scope to address or manage unintended consequences that may arise in the market.

Consultation

190. The formal NZ ETS review consultation did not seek responses on the specific issue of how the NZ ETS is reviewed or processes for coordinating decisions about unit supply settings. Nevertheless, strong themes from submissions included that increased policy stability would help reduce uncertainty, feeding into enhanced long-term planning and decision-making. Several responses also called for the release of more detailed or regular information about the NZ ETS by the Government, to allow businesses to more easily take the cost of emissions into account in investment decisions.

191. The recommended option for managing and announcing unit supply settings and volumes would help address these issues.

Conclusion and recommendation

192. The preferred option is that unit supply decisions relating to auctioning, free allocation, international units and price controls be managed and announced as a package using a rolling five-year period. This would extend the process currently outlined in the CCRA for Ministerial decision-making on the NZU limit to settings on price controls and international units.

193. This approach is expected to improve information, confidence and regulatory predictability for market participants, while allowing the Government some constrained flexibility to adjust settings to respond to changing circumstances.

194. The other option considered, managing the NZ ETS in phases, has some benefits in comparison to the status quo but was rejected primarily because it is similar to an approach previously used in the NZ ETS which was found to be unworkable.

Next steps

195. The current power in the CCRA (s30G(1)(c)) allowing regulations to be made in respect of surrender of international units is broad. It may be possible to manage quantity limits on international units over a rolling five-year period through regulations, without any changes to the primary legislation.

196. The situation is similar for implementing a cost containment reserve price ceiling through auctioning. It may be possible to make regulations outlining this feature under the current provisions in the CCRA prescribing what auctioning regulations may cover.

197. However, it may be desirable for regulatory predictability reasons to provide more detail in the primary legislation about how this approach to managing settings will operate. This is something that would have to be worked through as detailed proposals for auctioning, an alternative price ceiling, an international unit limit and an approach to managing these features over a rolling five-year period are developed.

198. As noted earlier, further consideration will need to be given to the extent to which it is desirable to constrain the situations and processes for extending and adjusting these settings over the five-year management period. It may also be useful to consider whether the Government could supplement the announced settings and volumes over the five-year period with a longer term, non-binding outlook for these issues over ten years or at least until the end of 2030 target period.

199. MfE and other agencies (e.g. EPA, MPI, the Treasury) with an interest will need to put processes in place to support the annual Ministerial decisions on these issues. These will need to link in to or coordinate with existing processes for preparing and publishing New Zealand's GHG inventories and emission projections. New institutional arrangements for developing and providing this advice may need to be considered.

F. Consultation

200. Consultation on stage II of the NZ ETS review occurred between 24 November 2015 and 30 April 2016. Given the technical nature of the NZ ETS, consultation focused on engaging technical experts and market participants alongside the broader public.

201. The review was publicly promoted and consultation material made available online. Targeted stakeholders were also contacted directly to discuss the review with officials. These included NZ ETS participants, key businesses and industry groups who would be affected by changes to NZ ETS settings. Key stakeholders included entities from the following sectors:

- Agriculture sector
- Business groups
- Electricity generators and retailers
- Forestry and wood processors
- Industrial processors
- Local authorities
- Liquid Fossil Fuels (transport)
- Market intermediaries
- Non-governmental organisations and community groups
- Research and tertiary organisations
- Stationary energy (coal and gas)
- Synthetic Greenhouse Gases
- Waste

202. MfE co-hosted six regional hui with the Climate Change Iwi Leaders Group and its advisors in January 2016. These meetings provided an overview of the issues being considered in the review. Approximately 78 people attended the hui.

203. There were also information meetings with targeted stakeholders in April 2016 to help inform submissions. These meetings were attended by approximately 180 stakeholders.

204. A further round of stakeholder meetings was held between 28 February and 10 March 2017, after the submission period had closed. The purpose of this round of meetings was to share information and seek informal feedback from stakeholders on the range of options identified. These meetings were attended by around 190 stakeholders.

205. Submissions were received from 345 individuals and organisations across the review. These included 105 (30 percent) responses from key stakeholder groups, 56 (16 percent) from the forestry sector, 12 (3 percent) from groups representing iwi/Māori, and 136 (39 percent) from the broader public (individuals). A summary of responses has been prepared which provides an overview of views expressed.[55]

[55] See Ministry for the Environment. 2016

206. The breakdown of submitter types highlights the diverse range of participation in the NZ ETS. There are around 2300 participants in the NZ ETS, of which over 2000 are voluntary participants from the forestry sector. The majority of the remaining participants are mandatory ETS participants, including large industrial emitters, fuel suppliers and coal and gas miners.

207. The interests of mandatory non-forestry participants and voluntary forestry participants are quite different. Mandatory participants are emitters who have annual NZ ETS obligations; whereas post-1989 foresters earn NZUs for carbon absorbed as their forests grow. These differences were reflected throughout consultation.

208. The strongest theme from consultation feedback was the need for regulatory predictability, and this was expressed across all sectors. The package of proposals in this RIS will start to address the many of the issues that create regulatory uncertainty in the scheme. Once implemented it will provide more information about the volume of units that will be available, allowing business to make more informed decisions.

209. Many of the mandatory NZ ETS participants wanted more certainty about future unit supply settings in the NZ ETS, to facilitate business planning and to have assurance that NZ ETS costs would not increase unreasonably. The proposals to introduce auctioning before 2021 and for the continued presence of a price ceiling in the NZ ETS are consistent with the views put forward by these participants. Quantity limits on international units may be seen negatively as many emitters consider that such limits would increase their NZ ETS costs. Clarifying that a limit on international units is likely to facilitate wider access to international abatement may help allay these concerns.

210. Similarly, the package also addresses some major issues raised by forestry submitters. One of the forestry sector's main concerns was to avoid a repeat of the low carbon prices experienced over 2011-2015, caused by unlimited use of international units. Indicating that there will be a quantitative limit on international units should provide some confidence that the conditions that led to the previous price collapse will not recur. Foresters have also been concerned about adding other sources of supply into the NZ ETS, and the continuation of $25 fixed price option. Signalling that the fixed price option is likely to change in the 2020s, and that the main purpose of auctioning is so that the NZ ETS can reflect New Zealand's target, should mitigate these concerns to an extent.

211. Therefore the proposals recommended in this RIS provide a balanced package that responds to most of the major issues raised by diverse NZ ETS participants and other stakeholders.

G. Summary of conclusions and recommendations

212. The Ministry recommends a package of four policy proposals, which together will help address the two overarching problems with NZ ETS unit supply settings (misalignment with the target and regulatory uncertainty).

213. The four preferred options are to:

- introduce an auctioning mechanism to align the NZ ETS with our targets
- limit participants' use of international units in the NZ ETS in the 2020s
- develop an alternative price ceiling to the $25 fixed price option while keeping it in place in the short term
- co-ordinate decisions on NZ ETS unit supply volumes and settings on a five year rolling basis

214. *Table 2* on page 11 summarises the key advantages of these preferred options, as well as the drawbacks of the other options considered.

215. The four preferred options are intended to work together as a package to:

- move the NZ ETS towards a more durable and stable regulatory framework;
- facilitate linking to international carbon markets;
- provide market participants with an indication of the high level direction of the NZ ETS policy and a timeline for when more information will become available; and
- give the Government better ability to manage the costs and risks related to the NZ ETS and to meeting New Zealand's emissions reduction targets.

216. These proposals will not completely address the target misalignment and regulatory uncertainty problems. This will require final policy decisions to be made on the detailed implementation of these proposals, as well as progress on other NZ ETS and climate change policy matters. Other issues arising from the NZ ETS review, including whether to phase out free allocation after 2020 and a forestry accounting and operational package, are expected to be considered in 2018 after further work has progressed. Uncertainty over the role of the NZ ETS in meeting the 2030 target may also be reduced in 2018 as a result of the low emissions economy transition hub work programme.

H. Next steps

The NZ ETS work programme

217. Further analysis and consultation on detailed options will be necessary before this package of four proposals can be implemented. This will occur over the next 12-18 months, coordinated with work on other issues arising from the NZ ETS review and the low emissions economy transition hub as outlined in *Figure 2* on page 8. Some further next steps specific to particular proposals are also noted in *Table 3* on page 13.

218. Implementation of these proposals will require amendments to the CCRA and/or its regulations. Details of the potential legislative implications of each specific proposal are discussed in the relevant earlier sections of this document.

219. These amendments to the CCRA are likely to occur alongside a broader set of CCRA changes likely to be made in 2018/19, to reflect policy decisions on other NZ ETS issues and on implementation of the Paris Agreement.

220. This timeline means these proposals could be implemented potentially from 2019 at the earliest. For the proposal related to auctioning in particular, implementation before 2021 would be beneficial to allow any operational challenges to be overcome and processes bedded in before the 2030 target period starts in 2021.

Stakeholder communications

221. Given feedback from the NZ ETS review consultation that the Government's provision of information on NZ ETS issues has not always been well-coordinated, particular efforts will be made to provide accessible and timely information to stakeholders.

222. MfE, working with the EPA and MPI, will develop a communications plan to support coordinated messaging to stakeholders on the proposals contained in this RIS. This plan will consider risks to the market from the release of information about the proposals, and how these can be mitigated.

223. Communications will likely include a Ministerial press release, website material, and a newsletter update to all NZ ETS account holders. This material will outline what the package means for market participants, next steps for developing more detailed proposals and implementation, and how other issues arising from the NZ ETS review will be progressed.

224. Opportunities will be explored to coordinate communications with other areas of the Government's climate change work programme, such as the low emissions economy transition hub and the international carbon markets project.

I. Monitoring, evaluation and review

225. This RIS provides recommendations on intermediate decisions only, so there is limited ability to evaluate the impact until final decisions have been made. However, it will be important to monitor the market response to the intermediate decisions to ensure there are no unintended consequences and so reactions can feed into the further policy development process.

226. NZU holdings and transactions are recorded by the New Zealand Emissions Trading Register (NZ ETR) operated by the EPA. The EPA regularly reports on aggregated unit flows in several formats, including monthly reports provided within Government and public reports available on the EPA website. MPI undertakes regular deforestation intentions surveys which gather NZ ETS-relevant information, as well as forecasting of expected forestry unit entitlements and surrenders for five years into the future. NZU prices and some information on trading volumes are also available from sources such as OMF Commtrade and Carbon Match.

227. These information sources provide a good base on which to monitor the impacts of these decisions, through monthly assessments of banked NZU holdings, trends in market behaviour, and any significant effects on liquidity. Both MfE and MPI are working to improve analysis and modelling of this data to provide a better understanding of NZ ETS supply and demand.

J. References

Withheld consistent with S9(2)(j) of the OIA

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Glossary

$25 fixed price option	The setting that allows NZ ETS participants to meet their surrender obligations by paying the Government $25 per NZU. This acts as a price ceiling in the NZ ETS.
2030 target	The target, tabled with the United Nations as New Zealand's Nationally Determined Contribution (NDC), to reduce emissions by 30 percent below 2005 levels by 2030.
Afforestation	The direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.
Arbitrage	The practice of taking advantage of a price difference between two or more markets.
Carbon budget	The cumulative amount of GHGs emissions a country is permitted to emit over a certain period while staying under an emissions limitation or reduction target. It is normally measured in CO_2e.
CCRA	Climate Change Response Act 2002.
CO_2e	Carbon dioxide equivalent. The quantity of a given greenhouse gas multiplied by its global warming potential, which equates its global warming impact relative to carbon dioxide (CO_2).
Deforestation	The conversion of forest land to another use, such as grazing. In the NZ ETS land that is cleared (e.g. harvested) and not replanted in, or regenerated into, forest species within set time periods is also considered deforestation. It does not include harvesting where a forest is replanted as this is part of normal plantation forestry activities.
EITE	Emissions intensive and trade exposed
Emission unit	One emission unit represents one tonne of carbon dioxide equivalent. There are two broad types of emissions units: • units giving the right to emit a tonne of CO_2e, sometimes termed permits to emit or allowances • units representing emission reductions or removals, also referred to as carbon credits or offsets.
Emissions	Greenhouse gases released into the atmosphere from human activity.
EPA	Environmental Protection Authority

EU ETS	The European Union Emissions Trading Scheme, which operates in the EU's 28 countries as well as Iceland, Liechtenstein and Norway.
First commitment period (Commitment Period One or CP1)	The period from 2008 to 2012 over which developed (Annex 1) countries who ratified the Kyoto Protocol had to achieve emission limitation or reduction commitments.
Free allocation	Free allocation is the mechanism currently used to protect firms whose international competitiveness may be at risk from NZ ETS costs. The Government gifts NZUs to firms undertaking activities that are both emissions intensive and trade exposed (EITE), to prevent displacement of production or investment to areas not subject to carbon pricing ('carbon leakage').
Greenhouse gases (GHGs)	The atmospheric gases responsible for causing global warming and climate change. The GHGs covered under the UNFCCC are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).
Gross emissions	Gross emissions include emissions from agriculture, energy, industrial processes and product use (e.g. cement production, refrigeration) and waste. Emissions and removals from land use, land use change and forestry (LULUCF) are excluded.
Nationally Determined Contribution (NDC)	The Paris Agreement requires all countries to put forward Nationally Determined Contributions to the global effort to address climate change. New Zealand's 2030 target was tabled in 2015 as a provisional Initial Nationally Determined Contribution (INDC). It was confirmed as a final Nationally Determined Contribution (NDC) when New Zealand ratified the Paris Agreement.
Kyoto Protocol (KP)	A protocol to the UNFCCC that includes emissions limitation or reduction commitments for ratifying developed (Annex 1) countries.
LFF	Liquid fossil fuels
MfE	Ministry for the Environment
MPI	Ministry for Primary Industries
Mt	Mega tonnes
Net emissions	Net emissions include emissions and removals from the land use, land use change and forestry (LULUCF) sector, as well as those from agriculture, energy, industrial processes and product

	use, and waste.
NZ ETS	New Zealand Emissions Trading Scheme.
NZ ETS participants	Participants include emitters of greenhouse gases that have obligations under the NZ ETS to report on emissions and to surrender eligible NZUs to cover these emissions. Those engaged in removal activities such as forestry can also choose to become NZ ETS participants and receive NZUs for removals.
New Zealand Units (NZUs)	The main unit of trade in the NZ ETS, which can be surrendered by participants to meet their obligations. NZUs are issued by the Government and transferred to participants either for removal activities such as forestry, or as allocations for emissions intensive and trade exposed (EITE) activities.
One-for-two obligation	An NZ ETS setting that allowed participants from the liquid fossil fuels, industrial processes, stationary energy and waste sectors to surrender only one emission unit for every two tonnes of emissions (i.e. a 50 per cent surrender obligation). It is currently being phased out, meaning all participants will be subject to full (one-for-one) obligations from 2019 onwards.
Paris Agreement	An agreement within the framework of the UNFCCC to address climate change after 2020.
Pre-1990 forests	Forest established before 1 January 1990 on land that remained in forest and was predominantly exotic species on 31 December 2007. See section 4 of the CCRA.
Post-1989 forests	New forest established after 31 December 1989 on land that was not forest at that date. These forests are eligible to earn NZUs under the NZ ETS. See section 4 of the CCRA.
UNFCCC	United Nations Framework Convention on Climate Change
WCI	The Western Climate Initiative, an initiative of US state and Canadian provincial governments that aims to develop a joint strategy to reduce greenhouse gas emissions via a regional Cap-and-Trade program.