

NZ ETS unit supply and price control setting regulations

Advising agencies	Ministry for the Environment
Decision sought	Approval
Proposing Ministers	Hon James Shaw, Minister for Climate Change

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Summary: Problem and Proposed Approach

Problem Definition

What problem or opportunity does this proposal seek to address? Why is Government intervention required?

The New Zealand Emissions Trading Scheme (NZ ETS) is the Government's key policy tool to reduce greenhouse gas emissions.

In 2017, the Government took an in-principle decision to introduce an overall limit, or 'cap' on emissions within the NZ ETS. It was taken as part of a package of amendments to improve the NZ ETS and enable it to align with New Zealand's emissions targets. The decision was confirmed in December 2018.

The reforms to the NZ ETS are being implemented through the Climate Change Response (Emissions Trading Reform) Amendment Bill. The Bill proposes various changes to the architecture of the scheme, including the introduction of auctioning emissions units, consequential forestry improvements, industrial allocation settings, and penalties and compliance.

The key structural reform implemented through the Emissions Trading Reform Bill will allow an overall limit to be set on the emissions covered by the scheme. In the NZ ETS, emissions are traded through New Zealand Units (NZUs), which represent the right to emit one tonne of carbon dioxide equivalent (CO₂-e) emissions. Over time the cap will be gradually reduced, rationing the supply of NZUs within the emissions trading scheme and constraining emissions in New Zealand. As these units are tradeable they have monetary value determined by supply and demand within New Zealand's carbon market. This allows the NZ ETS to impose a price on emissions and incentivise emissions abatement.

This Impact Statement assesses the specific NZ ETS settings regulations for the first emissions budget period set under the Zero Carbon Act (2021 to 2025). These settings will give effect to the provisions in the Emissions Trading Reform Bill to cap the emissions covered by the NZ ETS. They will also enable the use of price controls to help the Government manage unacceptable NZU prices over the first emissions budget.

Underpinning the decisions on the NZ ETS settings will be a provisional emissions budget (PEB). The PEB sets a pathway for how New Zealand's emissions will track out to 2025. This represents the first step in a long-term process to reduce net emissions to meet the domestic and international emissions reduction targets New Zealand has agreed to. The PEB will be superseded in 2022 when the Government sets its first full emissions budget, following advice from the Climate Change Commission.

The proposals in this Impact Statement will determine the PEB and set the interim NZ ETS settings. The analysis here will inform decisions on:

- the volume of the PEB
- unit supply settings for the NZ ETS, including the volume of the NZ ETS cap and the annual number of NZUs the Government will auction over the provisional emissions budget period; and
- price control settings, including the levels of the auction reserve price floor and cost containment (CCR) price triggers, and the volume of NZUs in the CCR

The Impact statement also considers some outstanding decisions to operationalise auctioning in the NZ ETS, including the auction start date and frequency.

Summary of Preferred Option or Conclusion (if no preferred option)

How will the agency's preferred approach work to bring about the desired change? Why is this the preferred option? Why is it feasible? Is the preferred approach likely to be reflected in the Cabinet paper?

The proposals in this RIA will give effect to Cabinet's earlier decisions on capping the emissions covered by the NZ ETS, and the price controls that will operate over the first emissions budget period.

Setting the volume of the PEB

The PEB sets the volume of emissions that can be produced in New Zealand over the period 2021-2025. The PEB will be set at a level less than the volume of emissions currently forecast for this period. These forecasts have been updated to consider the impact that COVID-19 may have on emissions. If subsequent emissions budgets also reduce in volume over time, New Zealand will make steady progress towards the future targets.

It is proposed that the PEB volume of net emissions will remain level from 2021-2023 and then reduce each year in a straight-line trajectory towards the 2050 target set under the Zero Carbon Act. Over the five years of the PEB period this results in an overall emissions budget of 354 Mt CO₂-e.

NZ ETS unit supply settings

After setting the PEB, several connected steps are taken to reach the volume of the cap on the NZ ETS and the proposed volume of NZUs that will be available to auction annually within the NZ ETS:

1. Remove from the PEB volume the forecast emissions that are currently outside the NZ ETS (i.e. the emissions from sectors without NZ ETS surrender obligations). This provides the volume of emissions covered by the scheme and therefore included in the cap.
2. Make technical adjustments to the volume of the cap if necessary.
3. Determine the volume of NZUs that will be auctioned over the PEB by first accounting for free allocation volumes by removing them from the NZ ETS cap.
4. Address the oversupply of NZUs in the New Zealand's carbon market by managing the supply of units auctioned into NZ ETS.
5. Set limits on the use of international units in the NZ ETS for the PEB.
6. Calculate the remaining final auction volume for the PEB.

Table 1 outlines the proposed calculations to determine the NZ ETS cap and final auction volume of NZUs the Government can auction over the 2021-2025 period. The final auction volume and the international units limit are the only unit supply settings actually set in regulations.

Table 1: Sequential calculations used to determine the final auction volume for the PEB

Proposed calculation	2021–25 volume (Mt CO ₂ -e/million NZUs)
PEB volume	354
1. Remove the forecast volume of net emissions not covered by the NZ ETS from the proposed PEB (194 Mt CO ₂ -e).	$354 - 194 = 160$
2. Make technical volume and forestry adjustments. No technical volume or forestry adjustments are proposed at this point.	$160 - 0 = 160$
Proposed volume of the NZ ETS cap	160
3. Remove forecast free allocation volumes (43 Mt CO ₂ -e) from the NZ ETS cap to calculate initial auction volume.	$160 - 43 = 117$
4. Calculate oversupply reduction volume (27 Mt CO ₂ -e) and remove it from the initial auction volume.	$117 - 27 = 90$
5. Set limit on international units. It is proposed that no international units will be allowed in the NZ ETS over the PEB period.	$90 + 0 = 90$
6. Proposed final auction volume.	90

Price control settings

Price controls will be implemented through the new NZ ETS auctioning system, providing the Government with the tools to manage unacceptably high or low NZU prices. The Emissions Trading Reform Bill replaces the current fixed price option with a CCR, and enables an auction reserve price floor.

The auction reserve price floor will set a minimum price at which the Government can sell NZUs. The price floor will be set at \$20 in 2021 and will increase by five per cent plus inflation for each subsequent year of the PEB.

A CCR is a mechanism that releases additional NZUs onto the market, which have been held in reserve by the Government, if auction prices become unacceptably high. The CCR will operate within a scheduled auction. If the clearing price at a scheduled auction goes above the level of a price trigger (or triggers), a pre-established volume of NZUs will be released from the CCR into the auction to meet demand.

It is proposed that the CCR will be activated by a single price trigger that will be set at \$50 in 2021 and will increase by five per cent plus estimated inflation for each subsequent year. The volume of the CCR over the entire period will be set at 35 million NZUs, with annual volumes specified within this. The volume will be comprised of the stockpile reduction volume, plus an additional volume of units equal to 5 per cent of the NZ ETS cap.

Outstanding operational decisions for auctioning in the NZ ETS

Cabinet has agreed to the operational rules for auctioning in the NZ ETS. However, there are two outstanding decisions that need to be made on the auction start date and frequency. It is now proposed that auctioning will begin on 17 March 2021. A quarterly auction schedule

will be followed, with subsequent auctions held on 23 June 2021, 1 September 2021, and 1 December 2021.

Section B: Summary Impacts: Benefits and costs

Who are the main expected beneficiaries and what is the nature of the expected benefit?

The key beneficiaries and benefits are outlined here for the proposals.

Participants in the NZ ETS

Auctioning will help provide a stable and predictable source of unit supply to meet surrender obligations. A well-functioning auction system will ensure efficient price discovery, and auctioned units will be sold at fair market value. The methods that are taken to deal with current NZU market oversupply will improve the efficiency of NZ ETS market, which will improve participation.

Price controls will help protect participants from unacceptable NZU prices. Units supplied into the scheme through auctioning will fall within an emissions price pathway that avoids imposing intolerable compliance costs. The proposed CCR settings should help keep NZU prices at or below \$50 per unit.

Low emissions investors and forestry

Stable NZU prices will help participants understand the costs associated with being in the NZ ETS. Predictable prices will also help investors to make efficient decisions for investing in low-emissions technologies or afforestation. This is particularly important for forestry participants who need a stable NZU price to invest in afforestation projects and generate reliable returns from their land.

Businesses outside the NZ ETS

Some businesses that do not participate in the NZ ETS can be indirectly affected by an emissions price (such as through higher fuel and electricity prices). Price controls will help manage the indirect cost impacts of changing NZU prices throughout the PEB.

Government

The NZ ETS is the Government's principal tool to mitigate domestic greenhouse gas emissions. The proposals here provide the necessary settings to effectively manage the supply of units into the scheme and help reduce national emissions in line with targets.

The proposed NZ ETS settings will encourage higher levels of abatement over the PEB. Greater domestic progress towards our Nationally Determined Contribution under the Paris Agreement

would reduce the potential fiscal costs of having to procure offshore mitigation (such as buying international units) of meeting this target.

With an unknown future price of emission units, a mid-range value between the auction price floor and CCR trigger price has been used to determine fiscal impacts on cash received from the NZ ETS under the proposals, compared to a continuation of current settings. Table 2 shows the projected fiscal impacts of the proposed settings.

Table 2: Projected fiscal impacts of proposed NZ ETS settings compared to current settings

	\$M – increase/(decrease)				
Consolidated funding	2020/21	2021/22	2023/23	2023/24	2024/25
<i>Cash</i>	\$333	\$672	\$685	\$661	\$618

The introduction of the NZ ETS would impact non-tax revenue. Although fewer emission units will be surrendered, this would be offset by an expected increase in the value of each emission unit. Table 3 below uses the same emission unit price forecast method as above.

Table 3: Projected impact of proposed NZ ETS settings on non-tax revenue

	\$M – increase/(decrease)				
Vote Environment Minister for Climate Change	2020/21	2021/22	2023/23	2023/24	2024/25
Crown Revenue – Non-Tax Revenue	\$134	\$275	\$300	\$307	\$285

Auctioning will ensure that the NZ ETS remains an ongoing source of revenue to the Crown. The proposed auction volume for the PEB is 90 million NZUs. This would equate to auction proceeds of \$1.8 billion if the entire volume was sold at the proposed auction price floor of \$20 per unit. It is likely, though, that auctions will clear above the auction price floor, and the Government would consequently receive greater levels of revenue.

The Government could also earn revenue from auctioning units from the CCR. The CCR is composed of two volumes of NZUs: the stockpile reduction volume of units removed from the final auction volume to address oversupply in the NZ ETS, and a separate reserve volume outside the NZ ETS cap. The proposed CCR volumes for the PEB are 27 million and 8 million units respectively (total volume 35 million NZUs). This would equate to CCR revenue of \$1.35 billion and \$400 million at the proposed CCR price trigger level of \$50. It should be noted that the second volume of reserve units creates a liability for the Crown when sold, as the Government has to back those units by buying an equivalent volume of emissions reductions. Addressing this liability could offset some of the revenue from selling reserve units.

Public

Achieving emissions reductions is the key goal and benefit of the reformed NZ ETS and chosen settings, which will benefit everyone who sees a reduction in the negative impacts associated with climate change.

Where do the costs fall?

The costs of the proposed settings will fall among NZ ETS participants; businesses that do not participate in the scheme but may face indirect costs from higher emissions prices; households; and the Government.

Participants in the NZ ETS

Decisions on the proposed unit supply and price control settings will affect the value of NZUs sold through auctioning. They will also impact the value of NZUs traded on the secondary market created by the NZ ETS. It is generally expected that NZU prices will increase over the PEB, increasing the compliance costs for NZ ETS participants buying and surrendering units.

The proposed price controls settings indicate the range of New Zealand's emissions price for the 2021-2025 period. For the RIA, \$50 is used to estimate the potential cost impacts if the emissions price increased to the upper limit of the NZU price range (\$50 is the proposed CCR price trigger level in 2021). It should be noted there is no expectation prices will invariably rise to \$50. Rather, price movement should fall within the range set by the price controls.

Estimating changes in compliance costs is difficult. These costs depend on a range of factors, including the emissions intensity of the activity which has obligations in the NZ ETS. Firms that are highly emissions intensive (i.e. produce a large amount of emissions per unit of product they sell) have greater NZ ETS costs, but some receive free allocation to compensate for this. Of NZ ETS participants, the production of iron and steel and aluminium smelting would experience the most significant cost impacts if NZU prices increased over the PEB.

Businesses that participate in the NZ ETS but do not receive free allocation will also have higher compliance costs. While we expect most firms to be able to pass on these costs through the products they sell, there will be at least some participants that cannot do this. There is some anecdotal evidence from submitters to the NZ ETS settings consultation that a much higher emissions price could affect the profitability of smaller participants. There is also some risk that a higher emissions price could increase other business costs, such as electricity and fuel. However, we estimate the impact of higher prices on some of these commodities would be relatively small.

Entities participating in auctioning

The main costs for participating in auctioning include buying NZUs and providing collateral. These costs will depend on the size of bids made by participants and the auctioning clearing price. Cabinet has agreed there will be a minimum bid size of 500 NZUs. This means that the minimum cost for entities to buy units at auction, at the proposed \$20 auction price floor, will be \$10,000. Bidders will be required to provide collateral equal to 25 per cent of their bid. This would mean that the minimum cost of collateral would be \$2,500. At the CCR price trigger level of \$50 the minimum cost to buy units would be \$25,000 and require collateral of \$6,250.

Business

Businesses that do not participate in the NZ ETS may face indirect costs from a rising emissions price. This would occur when participants in the scheme pass on their NZ ETS costs to other businesses. We estimate the cost impact of a higher emissions price on electricity, petrol and natural gas to be relatively small. This means the indirect cost impacts on businesses will be minimal.

Households

Households could experience marginally higher costs from the higher pass through costs associated with higher NZU prices. If emissions prices were to rise from \$25 to \$50, this would increase weekly costs for middle-income households by \$3.40 (0.3%).

Government

New Zealand has set a target to reduce emissions by 30 per cent of 2005 levels by 2030 under the Paris Agreement. The proposed NZ ETS settings will not achieve enough domestic abatement to meet this target. Accordingly, there is an implied cost to the Government of having to meet our 2030 Paris target by procuring offshore mitigation (i.e. buying international units). This cost cannot be estimated at this point as we do not know how much offshore mitigation could be needed to meet the 2030 target, the sources of international units available to the Government, and the prices of procuring overseas emissions reductions.

There are similar costs to the Crown from having to 'back' units from the CCR when the annual budget in each year has been exceeded. The Emissions Trading Reform Bill requires the Government to purchase equivalent emissions reductions for every reserve unit sold that exceed the NZ ETS cap. This would likely involve the Crown buying international units. The costs of backing the CCR are unknown, as they will depend on whether units sold from the CCR will cause the annual cap to be exceeded and also on the price of international units at the time that they might be purchased.

Some of the proposed price control settings create an opportunity cost for the Government from lost auction proceeds. A \$50 CCR would contain the price NZUs can be sold at auction, when secondary markets are at or near this price level. The opportunity cost comes from not adopting a higher CCR price trigger that allows NZUs to be sold at prices above the \$50 trigger price. The proposed \$50 price trigger constrains the revenue the Crown could receive from auctioning. This fiscal opportunity cost has to be balanced against the wider economic cost of allowing auctions to clear above \$50 if the CCR were set at a higher value.

What are the likely risks and unintended impacts? How significant are they and how will they be minimised or mitigated?

Risks

If the PEB was set incorrectly this would be translated into the NZ ETS settings and could result in the scheme being over or undersupplied. Supplying the market with more units than required could cause demand for NZUs to drop. This could lead to significant declines in NZU prices, reducing the effectiveness of the NZ ETS in reducing emissions. It could also encourage further unit stockpiling, which undermines the integrity of the NZ ETS market. Alternatively, undersupply can cause prices to increase significantly and have flow-through impacts to the economy.

Another risk is that the price control settings could be set at inappropriate levels. A stable and predictable emissions price pathway is required to drive the right amount of abatement needed to meet New Zealand's emissions reduction targets. Incorrectly set price controls could distort this pathway, which would risk New Zealand not sufficiently reducing domestic emissions in the 2021-2025 period.

There is also some risk that inappropriately set price controls could lead to unacceptable compliance costs in the NZ ETS. This would be NZU prices that are either too low and do

not reflect the expected long-term value of NZUs, or too high and impose unreasonable costs on participants surrendering units.

Lastly, the auction price floor will affect the minimum price the Government can sell units through auctioning. If this control is not set appropriately, the Government risks selling units below their true market value, and not receiving an appropriate level of revenue.

These risks are largely associated with significant uncertainties related to emissions projections and the economy, which have been accentuated by the impacts of COVID-19.

Inappropriate settings may impair the reputation of the NZ ETS and limit future ability for international linkage with other carbon markets.

Mitigation

There are a number of ways these risks could be mitigated. The proposed settings are based on a five-year rolling process that allows settings to be adjusted over time. There is some scope in the later years of the PEB for the Government to change the NZ ETS unit supply and price control regulations if they are found to be incorrectly set.

If price controls are reached, i.e. units are auctioned at the reserve price or the CCR trigger price is reached, the Emissions Trading Reform Bill allows for these settings to be reviewed. This provision could be applied in 2021 in the event either price control is used.

The settings proposed in this document are provisional and will be superseded by the Commission's recommendations in 2022. The first official emissions budget will be based on up-to-date emissions forecasts, and will be able to more accurately account for the actual impacts of COVID-19 on emissions and the economy.

Section C: Evidence certainty and quality assurance

Agency rating of evidence certainty?

How confident are you of the evidence base?

We are confident in the evidence base used in this RIA to assess the regulatory options for the NZ ETS settings. The analysis has drawn from a large body of evidence (including current emissions forecasts, available economic data, and public submissions on the proposals) to assess the impacts of different proposals. Moreover, there has already been some analysis of the economic impacts of different emissions prices. This includes marginal abatement cost curve analysis undertaken by the Ministry for the Environment in 2019.

We acknowledge that there are uncertainties associated with emissions projections data, which plays a key role in calculating the emissions budgets and developing the associated NZ ETS settings.

Modelling the impacts that unit supply will have on NZU price also has significant challenges and uncertainties associated with it.

Acronyms

Acronym	Definition
CCC	Climate Change Commission
CCR	Cost containment reserve
CCRA	Climate Change Response Act
CO ₂ -e	Carbon dioxide equivalent
EAF	Electricity allocation factor
ETR Bill	Emissions Trading Reform Bill
FPO	Fixed price option
LULUCF	Land use, land use change and forestry
MAC	Marginal abatement cost curve
NDC	Nationally Determined Contribution under the Paris agreement
NZ ETS	New Zealand emissions trading scheme
NZU	New Zealand ETS emissions unit
PEB	Provisional emissions budget
ZCA	Climate Change Response (Zero Carbon Act) Amendment Act

To be completed by quality assurers:

Quality Assurance Reviewing Agency:

Ministry for the Environment

Quality Assurance Assessment:

*The Regulatory Impact Assessment Panel at the Ministry for the Environment has reviewed the “Regulatory Impact Statement on NZ ETS Unit Supply and Price Control Settings” produced by the Ministry for the Environment and considers that it **meets** the quality assurance criteria.*

Reviewer Comments and Recommendations:

The RIA contains the required information, and clearly sets out the problem definition, objectives and criteria. There is evidence of efficient and effective consultation on the proposals, and consideration of the feedback from that consultation. There is a good evidence base for the analysis and alternative options have been considered. Implementation risks have been identified, including the significant uncertainties related to emissions projections and the economy, accentuated by the impacts of COVID-19. It is recognised that mitigation will be contingent on more accurate emissions forecasts over time.

Impact Statement: NZ ETS unit supply and price control settings

Section 1: General information

1.1 Purpose

This RIA provides analysis on the impacts of different provisional emissions budgets and NZ ETS unit supply and price control settings.

The Ministry of the Environment is solely responsible for the analysis and advice set out in this Regulatory Impact Statement, except as otherwise explicitly indicated. This analysis and advice has been produced to inform final decisions to be taken by or on behalf of Cabinet to progress NZ ETS regulations related to New Zealand emissions unit (NZU) supply and price control settings.

1.2 Key Limitations or Constraints on Analysis

We are confident with our scoping of the problem, the evidence base, the range of options considered, the criteria used to assess options, and the underlying assumptions and quality of data.

Scope of analysis

The Impact Statement assesses a provisional emissions budget (2021-2025) and NZ ETS unit supply and price control regulations. It does not revisit Cabinet's earlier decisions on enabling a cap on emissions covered by the NZ ETS. This includes any of the previous high-level decisions on implementing auctioning in the NZ ETS, implementing new price control mechanisms, and establishing a coordinated decision making process for making unit supply and price control settings.

The scope of this analysis also does not consider future New Zealand emissions reduction targets set by the Zero Carbon Bill or the Paris Agreement Nationally Determined Contribution (NDC).

The proposed PEB and NZ ETS settings will apply for the period 2021-2025. As a transitional step towards the emissions budgets the Climate Change Commission will recommend for 2022-2025, 2026-2030 and 2031-2035. The Impact Statement therefore does not consider settings for these future emissions budgets.

The Impact Statement also does not assess settings for 2020. While the Government did originally consult on some settings for 2020 (including the overall volume of emissions for 2020 and holding a trial auction in late 2020), auctioning will now not begin until 2021. Therefore no settings are proposed for the current year.

During consultation on the NZ ETS settings, the Government proposed increasing the level of the fixed price option (FPO) from \$25 to \$35 for activities covered by the NZ ETS in 2020. The FPO allows participants to surrender cash directly to the Government to meet their surrender obligations, instead of surrendering NZUs. This proposal is not assessed in the Impact Statement. Changes to the FPO are being progressed through a separate

process to amend the CCRA. As this is not part of the package of regulatory changes being considered here, the FPO policy change will be analysed in its own RIA.

Cabinet has already agreed to the regulations setting the operational rules for auctioning in the NZ ETS. Some of these decisions have implications for the proposals assessed in this Impact Statement, particularly the rules defining how price controls will operate within the auctioning system. The impacts of the auctioning regulations are assessed in the RIA: *Rules for Auctioning in the NZ ETS*. Further decisions on the role of the auction monitor will be considered in 2020 and 2021.

Unit auctioning will be managed by an external auction platform operator. A request for tender process was conducted, and the final appointment of this operator is currently taking place. Implementation of an auction monitor is also planned, and increasing the scheme transparency with all participant emissions being published, enabled through the ETR Bill. The Environmental Protection Agency manage the NZ ETS Register, informing participants of their obligations and producing annual scheme reports.

The Government has agreed in principle to price emissions from the agriculture sector through the NZ ETS from 2025. This means agricultural emissions, which currently make up almost 50 per cent of New Zealand's gross emissions, could be covered by the NZ ETS cap in 2025, affecting both the cap and final auction volume. Price controls would affect the NZ ETS costs facing the agricultural sector. These impacts will be assessed later when the Government reviews the agriculture policy in 2022.

Evidence base

There is a substantial body of evidence to draw from to assess the impacts of the proposed NZ ETS settings. The key sources of evidence include:

- Marginal abatement cost curve (MACC) analysis undertaken by the Ministry for the Environment (this report was published in January 2020 and is available at <https://www.mfe.govt.nz/publications/climate-change/marginal-abatement-cost-curves-analysis-new-zealand-potential-greenhouse>);
- Analysis on the NZ ETS impacts undertaken by Treasury
- The experience of overseas carbon markets capping emissions and applying price controls; and
- Submissions provided from NZ ETS participants, interested stakeholders, and the public through the NZ ETS settings consultation process

The NZ ETS was introduced in 2008. While this means there is over a decade of data on the impacts of the emissions trading scheme, it can be difficult to draw meaningful insights from this evidence to assess the impacts of the proposed settings. This is because for most of its operation, prices in the NZ ETS have been low and had minimal impact on emissions and the economy. Only recently have NZU prices increased to a level high enough to meaningfully affect emissions reducing behaviour in the economy.

Moreover, a cap on emissions has not previously been used in the NZ ETS. Following these ETS reforms, for the first time, supply of units within the scheme will be limited and constrained. The auction price, floor and the CCR are new regulatory mechanisms. Accordingly, there is no evidence within the domestic context that can be used to support these aspects of the analysis. Because of the novelty of the proposals, we have relied on the criteria in Section 2 of this Impact Statement to assess the proposed NZ ETS settings.

1.3 Responsible Manager (signature and date):

Matthew Cowie

NZ ETS Policy

Climate Change Directorate

Ministry for the Environment

06/05/2020



Section 2: Problem definition and objectives

2.1 What is the current state within which action is proposed?

New Zealand transition to a low-emissions economy

New Zealand is committed to taking action on climate change. In 2016, New Zealand ratified the Paris Agreement, creating an expectation for all countries to reduce domestic emissions and transition to a low-emissions future. Under the Paris Agreement, our Nationally Determined Contribution (NDC) commits New Zealand to reduce net emissions by 30 per cent of 2005 levels by 2030.

In late 2019, the Government amended the Climate Change Response Act (CCRA) through the Climate Change Response (Zero Carbon) Amendment Bill 2019 (Zero Carbon Act). The Zero Carbon Act provides a framework for New Zealand to develop and implement clear, stable and enduring climate change policies that contribute to the global effort to limit the global average temperature increase. It specifically sets new 2050 emissions reduction targets (net zero emissions of long-lived greenhouse gases and 24 to 47 per cent reduction below 2017 biogenic methane emissions by 2050), establishes five-yearly emissions budgets that act as stepping stones towards the long-term target, and establishes an independent Climate Change Commission with advisory and monitoring functions.

The NZ ETS reforms

The NZ ETS is the Government's key tool that supports New Zealand to meet both domestic and international emission reduction targets. If set appropriately, the NZ ETS can play a critical role in signalling the Government's ambition to reduce emissions and transition to a low-emissions economy.

However, the 2015/16 review of the NZ ETS found that, without changes, the scheme would not effectively assist New Zealand to meet its emission reduction target under the Paris Agreement. It found the Government did not have the tools to manage the supply of units in the NZ ETS, and that the operation of the scheme created significant regulatory uncertainty. The review led to four in-principle decisions to strengthen the framework of the scheme:

- introduce auctioning of NZUs to align the supply of units in the NZ ETS with emission reduction targets
- limit participants' use of international units if the NZ ETS reopens to international carbon markets
- develop a different price ceiling to eventually replace the fixed price option
- coordinate decisions on the supply settings in the NZ ETS over a five-year rolling period

Consultation on the NZ ETS unit supply framework took place in August and September 2018.

In 2019, Cabinet agreed to a first tranche of amendments to improve the NZ ETS and ensure it was credible and fit-for-purpose. One of the key decision was to enable an overall limit or 'cap' on the emissions covered by the NZ ETS by establishing a unit supply

decision-making framework. This entailed implementing four in-principle decisions following the NZ ETS 2015/16 review. Cabinet specifically agreed to:

- implement auctioning of NZUs using a sealed-bid, single-round, uniformly priced format; with auctions to be held monthly or quarterly; and open to all participants with accounts in the Zealand Emissions Trading Register;
- set a volume limit on the use of international units in the NZ ETS if it reopens to overseas carbon markets
- replace the fixed price option with a cost containment reserve (CCR) incorporated into auctioning
- implement a coordinated decision making process to make annual regulatory updates to set the supply of units into the NZ ETS on a five-year rolling basis

A second tranche of amendments to the CCRA were agreed to in mid-2019. Among the key decisions, Cabinet agreed to enable an NZU price floor through the NZ ETS auctioning system.

The NZ ETS unit supply and price control regulations

The coordinated decision-making process allows for the making of regulations to set the overall limit on NZUs supplied into the NZ ETS (the cap), the number of NZUs to be auctioned annually, the number of international units permitted to be used in the NZ ETS, the volume of units held within the CCR, and the levels of the auction price floor and CCR price triggers. These decisions will be announced annually by the Government and apply to the upcoming five years.

Through this process, the NZ ETS settings for the first two years are fixed unless there are special circumstances that require a change. NZ ETS settings for the three years following are set and announced, but can be adjusted. This methodology helps provide a projected pathway of settings to increase confidence and predictability for participants, while allowing the Government some flexibility to continue to align the scheme with emissions budgets and targets and respond to changing circumstances.

The tranche one and two amendments to the CCRA are currently being progressed through the Climate Change Response (Emissions Trading Reform) Amendment Bill.

Work on the NZ ETS settings regulations has occurred in parallel to the passage of the Emissions Trading Reform Bill, and concurrently with the development of the NZ ETS auctioning regulations, NZ ETS forestry proposals regulations, and the review of the Electricity Allocation Factor.

A discussion document outlining the Government's proposals for NZ ETS settings was released in December 2019. This included proposals for a provisional emissions budget (PEB), a cap on emissions, and specific NZ ETS unit supply and price control settings. Consultation on the NZ ETS settings took place between December 2019 and February 2020. This consultation received 133 submissions from a wide range of stakeholders.

2.2 What regulatory system(s) are already in place?

Climate Change Response (Zero Carbon) Amendment Act and Climate Change Commission

The Zero Carbon Act amended the CCRA to establish five-yearly emissions budgets to track New Zealand's progress in meeting new emissions reduction targets set under the CCRA. New Zealand's emissions budgets will determine the volume of the NZ ETS cap and the volume of units that the Government can auction.

The Zero Carbon Act also establishes an independent Climate Change Commission, which will provide expert advice to future Governments and monitor progress towards emissions budgets, the 2050 target, and the success of New Zealand's emissions reduction plan. It will provide recommendations on the NZ ETS settings for each of the emissions budget periods set under the Act.

Paris Agreement and New Zealand's NDC

The PEB sets what New Zealand will do domestically in the short-term to reduce emissions and is a first step towards our 2050 target. Emissions reductions in the PEB period will also count towards New Zealand's 2030 target set under the Paris Agreement. However, unless there are significant reductions in the second emissions budget period (2026-2030), New Zealand will need to find additional emissions abatement to meet its NDC. If the PEB continued on the straight-line pathway towards the 2050 target (as proposed), an additional 87 Mt CO₂-e of abatement would be required to meet the Paris Agreement Contribution budget of 601 Mt CO₂-e between 2021 and 2030.

Changes to the fixed price option (FPO) for 2020 surrenders

The FPO will be replaced by a CCR implemented through auctioning. However, the Government has decided the FPO will remain in place for surrender obligations for the 2020 NZ ETS compliance period¹. This is because the CCR cannot be operationalised before 2020 as auctioning is expected to commence in early 2021. As part of the consultation on the NZ ETS settings, the Government has proposed increasing the FPO from its current level of \$25 per tonne of emissions to \$35. A decision is being sought in a separate Supplementary Order Paper to amend the Emissions Trading Reform Bill.

Auctioning rules and auction monitor

In March 2020, Cabinet agreed to the operational rules for auctioning in the NZ ETS. Regulations will be implemented by late 2020 that will govern how the new auctioning system operates. The regulations set the auction schedule and how auction volumes will be managed within a year; operationalising price controls within auctioning; preparing for auctions, publishing auction notices, registering bidders and processing collateral; setting bidding rules for auctions; and defining the approach to settle successful bids and report on auction results.

Regulations to appoint a monitor to provide independent oversight of auctions will be considered in late 2020 and early 2021.

¹ NZ ETS compliance period begins in June and ends in May following year.

Review of industrial allocation and the electricity allocation factor (EAF)

In late 2019, Cabinet agreed to a review of industrial allocation in the NZ ETS, beginning with a review of the EAF. The EAF is an important industrial allocation policy that affects the amount of free allocation some emissions intensive and trade-exposed firms receive for their indirect emissions from electricity use.

It was planned that the Government would consider updating the EAF in mid-2020; however, due to the impacts of COVID-19 this has been delayed. If the EAF is changed it could significantly affect the amount of free allocation provided to some NZ ETS participants over the PEB. An updated EAF would change the forecasts for industrial allocation and, in turn, affect the determination of the NZ ETS settings.

The existing secondary market for NZUs

The proposed NZ ETS settings could have a profound impact on the existing secondary market for spot trading of NZUs. Auctioning represents a significant new source of units supplied into the secondary market, potentially affecting liquidity and the market price of NZUs. However, this additional supply of NZUs will be managed to ensure that some of the units required to meet surrender obligations will have to be purchased from the stockpile units held in private accounts, ensuring this overall volume reduces over time (the management of this process is described in more detailed in Section 4, Unit Supply Settings). Additionally, the auctioning price controls will provide an important signal to the market of the value of NZUs.

2.3 What is the policy problem or opportunity?

Begin auctioning in 2021

Decisions are required now on proposals to set a PEB and regulations establishing the interim NZ ETS unit supply and price control settings until the Climate Change Commission provides recommendations in 2021. These regulations are needed to implement the new unit supply framework for the NZ ETS established by the Emissions Trading Reform Bill. Without these settings, the Government will be unable to cap the emissions covered by the NZ ETS, and drive the right level of abatement to meet New Zealand's emissions reduction targets. These settings are necessary to signal the early transition pathway New Zealand will take towards meeting the 2050 target.

If auctioning does not begin in 2021, it is likely that use of the FPO will be extended for another year. This could further increase the stockpile if it sees a high level of use to meet obligations, rather than participants surrendering NZUs.

Establish a provisional emissions budget

The PEB provides a quantitative basis for decisions on NZ ETS settings. This will help businesses begin to make decisions on investments to reduce their emissions. The primary purpose of the PEB is to determine how quickly New Zealand aims to reach the 2050 target.

Decide NZ ETS setting regulations

Deciding on the NZ ETS settings regulations is required in order to allow auctioning to begin in 2021. This requires setting the amount of units the Government can sell in that

year. The volume of units supplied through auctioning will be carefully managed so it is consistent with the cap on emissions covered by the NZ ETS. It will also help the Government achieve other climate change objectives, such as reducing oversupply in the NZ ETS caused by stockpiled NZUs.

To implement auctioning, the NZ ETS price control settings also need to be determined as the conditions under which NZUs are able to be sold.

Achieving the PEB

In order to begin tracking towards the 2050 target, net emissions will need to be held to the volume of the PEB. It is proposed to set this volume at 354 Mt CO₂-e for 2021-2025. As net emissions are forecast to be greater than the PEB over the same period (369 Mt CO₂-e) a substantial amount of 15 Mt CO₂-e of emissions reduction will be necessary to keep domestic emissions within the PEB.

To deliver 15 Mt CO₂-e of abatement will require a range of abatement options to be adopted between now and 2025. These include:

- a faster phase out of fossil electricity generation through a combination of building new renewables and deploying energy efficient technologies
- increasing the uptake of energy efficiency improvements and fuel switching in industrial processing plants
- additional fuel switching away from natural gas, liquefied petroleum gas (LPG), and coal to electricity or biomass for space and water heating
- faster uptake of EVs and fuel-efficient light vehicles
- accelerated efficiency improvements in agriculture and/or additional emissions reductions on farms
- reducing landfill emissions through faster uptake of clean technologies and/or reducing the volume of degradable waste sent to landfill
- increased levels of carbon sequestration through forestry

Greater levels of afforestation could play a role in the longer term, but are unlikely to make much difference to net emissions in the period 2021–2025 as forests planted now will take some years before they begin sequestering significant amounts of carbon, and the conversion of non-forest land to forestry results in a short-term loss of carbon soil.

Setting New Zealand's emissions price pathway for the PEB

For the NZ ETS to deliver the abatement needed to meet the PEB, New Zealand's emissions price will need to change. The Fourth Biennial Report projects only 5.6 Mt CO₂-e of abatement will be achieved by 2025 with an emissions price of \$25 in 2020, rising to \$26.88 by 2025. It will be important the proposed NZ ETS settings establish a range of emissions prices that are sufficient to incentivise a level of abatement required to meet the PEB.

An emissions price pathway to achieve the PEB can be set by the price controls. The auction price floor and CCR price trigger set the lower and upper bounds of New Zealand's emissions price. While NZU prices are expected to fall within this range, they can still be traded below the price floor or above the CCR trigger price on the secondary market.

It is challenging to predict the market response to an emissions price. We are unable to identify an exact range of prices that would lead to the level of abatement needed to meet the PEB. However, we can assess when specific abatement options become cost-effective and are likely to be adopted using marginal abatement cost curve analysis.

The marginal abatement cost curve analysis found that up to 100 Mt CO₂-e of abatement could be achieved at a carbon cost² of between \$20 and \$50 per tonne of CO₂-e between 2020 and 2030. If NZU prices increase within the emissions price pathway set by the proposed price controls settings, a range of abatement options will become economical. This is because it will be increasingly cheaper for businesses participating in the NZ ETS to adopt different abatement options (such as a factory fuel switching, or a landowner planting trees etc.) than to pay a progressively higher emissions price.

2.4 What do stakeholders think about the problem?

Consultation on the PEB and NZ ETS settings took place between December 2019 and February 2020

The Ministry for the Environment published a discussion document in December 2019 that proposed a PEB, a cap on emissions, and specific NZ ETS settings. Consultation was supported by a webinar and four public information sessions in Auckland, Wellington, Rotorua, and Christchurch in February.

A total of 133 written submissions were received, expressing a range of views. The largest proportion of submissions were from individuals, followed by business/industry groups, the electricity sector, and NGOs. Submitters held a variety of views on setting the volume of the PEB, how to address oversupply in the NZ ETS, and the levels of the auction price floor and CCR price triggers. Proposals for technical volume adjustments, steps and calculations to reach the final annual auction volumes, and the proposed approach for release of NZ ETS settings information, were less controversial among submitters. A short summary of submissions is included in Appendix 1.

The NZ ETS settings consultation did not consider whether the CCR should be activated by a single price trigger or multiple price triggers. Rather, views were sought on this specific setting through the consultation on the operational rules for the NZ ETS auctioning system, which took place in late 2019. A brief summary of views on the number of price triggers setting is included in Appendix 1.

Iwi/Māori

Iwi/Māori have a significant interest in the NZ ETS. This is due to the fact that Māori are likely to be over represented in low-income households and therefore face higher relative costs from any emissions price increases. Māori also have substantial investments in forestry and renewable energy assets, which would benefit financially from higher emissions prices.

A series of regional hui were held throughout New Zealand in February 2020 to discuss a range of the Ministry for the Environment's work programmes with Māori/iwi groups. The

² The carbon cost is defined as the cost to an individual, business or organisation to reduce emissions by 1 tonne. It should not be conflated with an emissions price, which is the cost an individual, business or organisation pays to emit 1 tonne of emissions.

NZ ETS setting consultation was included on the agenda at these hui and was discussed with attendees.

Iwi/Māori were invited to participate in consultation on these proposals alongside other stakeholders and notice of the consultation was included in a regular Ministry iwi newsletter.

2.5 What are the objectives sought in relation to the identified problem?

Overall objections

The overall objective of the proposals considered in this Impact Statement is to align the NZ ETS unit supply and price control settings with a PEB that proposes a level of domestic abatement consistent with meeting New Zealand's 2050 emissions reduction target.

The NZ ETS is one of the most important tools available to drive emissions reduction in New Zealand. Specifying an emissions budget provides a foundation to set a cap on the emissions traded within the NZ ETS. From this, the Government will be able to regulate the units supplied into the NZ ETS and manage the abatement occurring in New Zealand. Setting an overall limit on the NZ ETS will flow through to influence NZU prices and generate a price signal that reflects the target and drives economically efficient emissions reduction outcomes.

NZ ETS secondary objectives

In addition to the overall objective, some proposals have specific objectives that will need to be met. This includes the important objective of addressing oversupply in the NZ ETS is to reach a level of stockpiled NZUs that is effective for the long-term functioning of New Zealand's carbon market.

A key objective of price controls is to mitigate the risk associated with emissions budgets being set too high or too low, resulting in unacceptable emissions prices. Price controls should allow the Government to manage unacceptably low or high prices in the NZ ETS, contributing to a stable and predictable emissions price pathway in New Zealand.

An important secondary objective of price controls is to signal to the market expectations of future emissions prices. This will help businesses' develop long-term expectations of their NZ ETS costs to better inform their investment decisions and business planning.

Section 3: Option identification

3.1 What options are available to address the problem?

This Impact Statement sets out proposals for a PEB and NZ ETS settings for the period 2021-2025. These settings are divided into three groups of sequential decisions:

1. the volume of the PEB
2. the NZ ETS unit supply settings
3. price control settings

We propose a sequential decision-making process for the NZ ETS settings. Each step in the process represents a logical progression to determine the various settings.

Decisions are also needed on the auction start date and frequency. As Cabinet will consider these decisions alongside the NZ ETS settings, the impact analysis has been included in here, as opposed to the RIA for the rules for auctioning in the NZ ETS.

Setting the volume of the PEB

The first step is to calculate the volume of the PEB. The PEB allows for the overall limit on emission covered by the NZ ETS to be determined, as the cap is the remaining volume of the PEB once emissions outside the scheme have been removed.

It is proposed to set the PEB so it tracks towards a direct path – or straight line trajectory – from emissions levels in 2021 to the 2050 target in the Zero Carbon Act. This will require 15 Mt CO₂-e of additional domestic emissions reductions below current projected levels. This results in a PEB of 354 Mt CO₂-e.

The NZ ETS unit supply settings

Several connected steps are then needed within unit supply settings to determine the final annual auction volumes, including removing free allocation and the stockpile reduction adjustment.

It is proposed to determine annual NZU supply through the following six steps:

1. set the NZ ETS cap
2. make technical volume and forestry adjustments
3. account for free NZU allocation volumes
4. address oversupply in the NZ ETS
5. set the international unit limits
6. calculate the final annual auction volumes

The volume of NZUs the Government can auction is calculated from the PEB. However, it can only be taken from the unallocated portion of the budget. The final auction volume is determined by removing units from the NZ ETS cap volume that either cannot be auctioned (such as free allocation) or the Government chooses not to auction (such as units removed to reduce the stockpile of NZUs held in private accounts).

Setting the NZ ETS cap

The overall NZ ETS cap is the volume of New Zealand's emissions covered by the scheme i.e. the emissions from sectors with obligations under the NZ ETS. It is calculated by removing the forecast emissions in sectors that are not covered by the scheme from the PEB.

The volume of remaining emissions covered by the NZ ETS cap is 160 Mt CO₂-e.

Technical volume and forestry adjustments

A range of technical and forestry volume adjustments are considered, including:

- adjustments to the NZ ETS cap where NZ ETS participants have been non-compliant or accounts have closed
- voluntary offsetting (the retirement or cancellation of NZUs to reduce or offset emissions)
- differences in accounting internationally and within the NZ ETS
- uncertainty in projections of emissions that are not covered by the NZ ETS
- forestry accounting misalignment
- uncertainty in projections of forestry emissions

No technical adjustments are proposed to the cap at this time.

Account for free NZU allocation volumes

In the NZ ETS, some NZUs are freely allocated through industrial allocation and negotiated greenhouse agreements. Once a unit is freely allocated it cannot also be auctioned by the Government.

The volume of NZUs forecast to be allocated through industrial allocation and negotiated greenhouse agreements will be removed from the volume of NZUs available to auction and set aside for the purpose of protecting the competitiveness of emissions-intensive trade-exposed participants.

The current forecast is for 43 million NZUs to be freely allocated over the PEB. When removed from the NZ ETS cap volume the auction volume will be 117 Mt CO₂-e.

Addressing oversupply in the NZ ETS market

The ability of NZ ETS participants to hold or 'bank' NZUs has led to considerably more NZUs accumulating in private accounts than is needed for participants to meet their obligations. This has resulted in an oversupplied scheme with a large stockpile of NZUs. There are a range of options to reduce the stockpile and address oversupply in the NZ ETS:

- reduce annual auction volumes over the PEB period
- vintage NZUs supplied to the market through auctioning
- a government buyback of NZUs held in private accounts

The Government could also decide not to try and reduce the stockpile in any way.

It is proposed to address oversupply by reducing the annual auction volumes over the PEB, therefore requiring a proportion of units need for participants to meet their surrender obligations to be purchased from the secondary market stockpile.

Setting the unit oversupply reduction volumes

There are three options for the size of the auction volume reduction to address oversupply in the NZ ETS:

- 15 million NZUs
- 27 million NZUs
- 54 million NZUs

It is proposed that 27 million units are removed from the auction volume.

Setting the limit on international units

The limit on the volume of international units that can be used in the NZ ETS over the 2021–2025 period will be set at zero. This setting reflects the fact that the NZ ETS is currently closed to international carbon markets. As the international unit limit is zero, no units are removed from the auction volume.

Calculating the final annual auction volumes

Following these steps, the resulting final auction volume over 2021-2025 is to be set at 90 million units.

Price control settings

Price controls are considered last as these settings should reflect the abatement task proposed under the PEB. Price control settings relate to an auction reserve price, CCR trigger price and the additional volume of units to be released onto the market if the trigger price is reached.

There are a number of decisions that need to be made for the NZ ETS price control settings.

Setting the level of the auction price floor

The level of the auction price floor is the minimum price the Government will sell NZUs at auction. The auction price floor can initially be set at:

- \$0
- \$10
- \$20

It is proposed the auction price floor be initially set at \$20.

A second decision is required as to whether the level of the auction price floor should increase over the PEB:

- set the price floor at \$20 for each year of the PEB
- set the price floor at \$20 for 2021 and increase by Treasury's currently forecast rate of inflation for each subsequent year of the PEB
- set the price floor at \$20 for 2021 and increase by 5 per cent plus inflation for each subsequent year of the PEB
- set the price floor at \$20 for 2021 and increase by 15 per cent plus inflation for each subsequent year of the PEB

It is proposed the price floor is set at \$20 for 2021 and increases by five per cent plus inflation for each subsequent year of the PEB.

Single or multiple price trigger CCR

The CCR will be activated if the clearing price of an auction in the NZ ETS meets or exceeds a level specified in regulations. This level is known as the CCR price trigger.

The CCR can be activated by either a single price trigger that releases all the reserve volume to the market, or multiple triggers that release tranches of the CCR.

It is proposed that a single price trigger is used to activate the CCR.

Setting the level of the CCR price trigger

There are four options to set the initial level of the CCR price trigger:

- \$40
- \$50
- \$75
- \$100

An initial price trigger of \$50 is proposed.

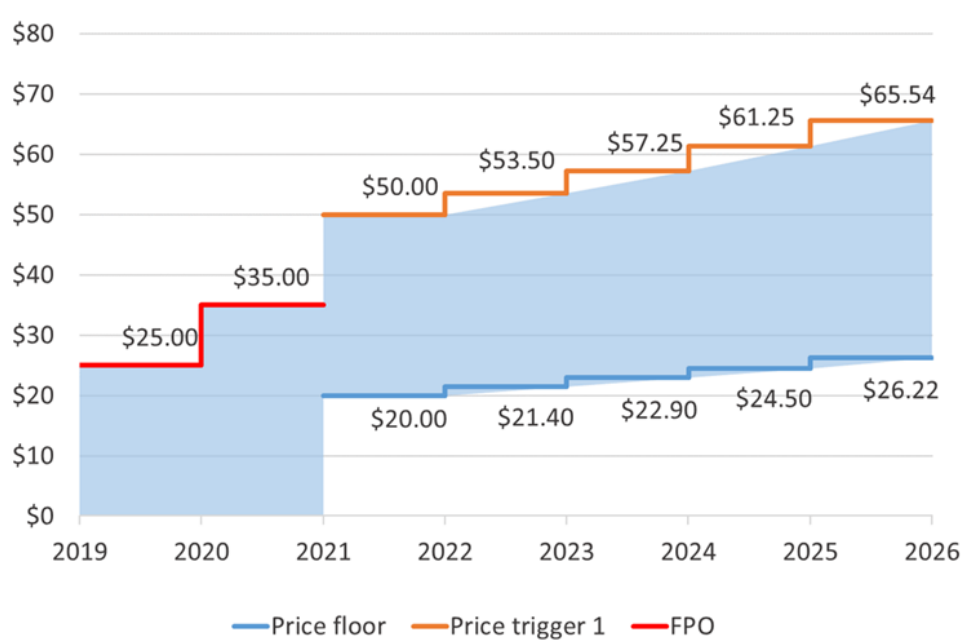
A second decision is required as to whether the level of the price trigger should increase over the PEB:

- set the price trigger at \$50 for each year of the PEB
- set the price trigger at \$50 for 2021 and increase by Treasury's currently forecast rate of inflation for each subsequent year of the PEB
- set the price trigger at \$50 for 2021 and increase by 5 per cent plus inflation for each subsequent year of the PEB
- set the price trigger at \$50 for 2021 and increase by 15 per cent plus inflation for each subsequent year of the PEB

It is proposed the CCR price trigger is set at \$50 for 2021 and increases by five per cent plus inflation for each subsequent year of the PEB.

Figure 1 shows the emissions price pathway set by the price control levels (including the fixed price option) proposed in the RIA.

Figure 1 the proposed NZ ETS emissions price pathway



Setting the volume of the CCR

The volume of the CCR is the number of units held in reserve by the Government over the PEB period. Two methodologies are assessed to set the volume of the CCR:

- 90 per cent of the difference between the net emissions covered by the NZ ETS, and the units supplied by free allocation and auctioning
- the stockpile reduction volume plus an additional volume based on five per cent of the NZ ETS cap

It is proposed that the stockpile reduction and additional 5 per cent volume methodology is used to determine the volume of the CCR. This results in a CCR volume of 35 million NZUs.

Outstanding auction operational settings

There are two outstanding decisions needed to operationalise the NZ ETS auctioning system. These decisions relate to the auction schedule and affect how auction volume will be distributed across each year of the PEB.

The first decision is on the auction start date. It is proposed that auctioning should begin on 17 March 2021.

The second decision is on the auction frequency. Auctions can be held monthly or quarterly. A quarterly schedule is proposed. In 2021, auctions will be held on 17 March, 23 June, 1 September, and 1 December.

3.2 What criteria, in addition to monetary costs and benefits have been used to assess the likely impacts of the options under consideration?

Five criteria will be used to judge the extent to which the proposed NZ ETS settings support the overall objective of aligning the scheme with the PEB, as well as the objectives for the stockpile reduction and price controls. The unit supply and price control regulations should:

1. support alignment with New Zealand's emissions reduction targets
2. allocate risks, costs and benefits appropriately among those affected by an emissions price
3. improve regulatory certainty and predictability
4. be consistent with broader New Zealand climate change and Government policy
5. improve compatibility with overseas carbon markets for international linking

Supports alignment with New Zealand's emissions reduction targets

The NZ ETS should align with the emissions budgets set under the Zero Carbon Act and help deliver the abatement required to meet New Zealand's emissions reduction targets and transition to a low emissions economy.

Allocates risks, costs and benefits appropriately among those affected by an emissions price

To support the efficient alignment of the NZ ETS and emissions budgets, the scheme should allocate risks, costs and benefits appropriately among the Crown, NZ ETS participants, households, and other groups affected by an emissions price. Where possible, the settings should avoid imposing excessive and disproportionate costs on affected groups and the wider economy.

The analysis does not attempt to weigh the respective costs and benefits to different groups, such as households versus the Crown. This should not be interpreted to mean that where costs/benefits are measured in the Impact Analysis they are considered equal. We have specifically avoided weighing different costs and benefits to allow decision-makers to use their own judgement when assessing these outcomes. Our assessment of the costs looks at whether they could be considered acceptable/unacceptable to specific affected groups.

Improves regulatory certainty and predictability

The NZ ETS should operate in a transparent and durable manner that allows participants to form expectations about future market conditions. Regulatory stability is needed to build confidence in the NZ ETS market and encourage investment in cost-effective domestic emissions abatement opportunities.

Consistent with broader NZ climate change and Government policy

The proposed settings should not undermine the function of other key features or attributes of wider Government policies and climate change work programme. This includes maintaining the market and environmental integrity of the NZ ETS, minimising administrative costs and complexity, and avoiding perverse incentives and unintended consequences.

Compatible for international linking

The NZ ETS settings should support efforts to allow linking with overseas carbon markets. This includes an effective cap on unit supply within the market, maintaining the integrity of units, and keeping NZU prices in line with international prices.

Considerations for the NZ ETS settings

The Emissions Trading Reform Bill sets out the requirements for the considerations the Minister must make when setting unit supply and price control regulations. The considerations are:

- emissions budgets and the Paris Agreement Contribution
- projected trends in greenhouse gas emissions
- the proper functioning of the NZ ETS (such as supporting efficient functioning of the market to helping the NZ ETS in meeting its objectives)
- international climate change obligations and contracts with other carbon markets
- recommendations of the Commission, including a desirable carbon price path (if available)
- forecasts on the availability and costs of ways to reduce greenhouse gas emissions

There are additional considerations for the price control regulations:

- the range of acceptable emissions prices that will be required to achieve the required volume of emissions reductions
- impacts of emissions prices on New Zealand households, businesses and the economy
- the level and trajectory of international prices
- the forecast availability and cost of ways to reduce greenhouse gas emissions that may be needed for New Zealand to meet its targets for the reduction of emissions
- the expectation that the Commission will provide further advice on the medium-term price path in early 2021

While these considerations are not criteria to assess the proposals, they have been applied throughout this Impact Statement where relevant.

3.3 What other options have been ruled out of scope, or not considered, and why?

Broader changes to the architecture of the NZ ETS that would require further amendments to the CCRA are out of scope. This includes changes to either the unit supply framework established in the Emissions Trading Reform Bill, or the type and operation of price controls to be used in the scheme. For example, the RIA does not assess alternative price control measures (such as a hard price cap) to prevent unacceptably high prices in the scheme.

In addition to the NZ ETS, the Government plans to implement policies during the PEB period to support emissions reductions in line with meeting the 2050 target. Complementary measures will help move New Zealand towards 100 per cent renewable electricity and reduce industrial emissions, decarbonise transport, support agriculture to

improve productivity and sustainability, and encourage afforestation. The emissions forecasts used to determine the PEB include the abatement expected from complementary measures. This means we are able to account for complementary measures when assessing the NZ ETS settings. However, this RIA does not assess individual complementary measures, or provide impact analysis for these policies.

The measures proposed in this RIA are intended to help New Zealand meet the 2050 target under the Zero Carbon Act. Options required to meet the New Zealand's more ambitious 2030 target set under the Paris Agreement are not considered. Nonetheless, progress made towards the 2050 target in the first and second emissions budget period will count towards New Zealand's NDC.

Most of the proposals assessed in the Impact Statement are the same or close to those that were consulted on by the Government earlier in the year. In light of COVID-19 and the complexity of the subject matter, it was decided against considering a broader range of NZ ETS settings. This approach avoids creating uncertainty for participants and stakeholders. The new proposals that are assessed here were either signalled during consultation, or are qualitatively similar to the consultation options.

Section 4: Impact Analysis

Marginal impact: How does each of the options identified in section 3.1 compare with taking no action under each of the criteria set out in section 3.2?

Setting the volume of the provisional emissions budget

The purpose of the provisional emissions budget (PEB)

The PEB is the total volume of net emissions the Government intends to limit over the period 2021-2025. The PEB will be set at a level less than the volume of emissions currently forecast for this period, and will start to align emissions with the emissions reduction targets set under the Zero Carbon Act. A key consideration of an emissions budget, as detailed by the Emissions Trading Reform Bill (ETR), is that it should be set in accordance with our emissions reduction targets.

A PEB is needed until the first emissions budget is set by the Commission and their recommendations regarding NZ ETS settings can be set. A PEB will guide NZ ETS settings and wider government climate change policy decisions, while providing businesses with confidence on the direction of travel of NZ ETS settings and NZU prices. The PEB will be superseded by the first emissions budget.

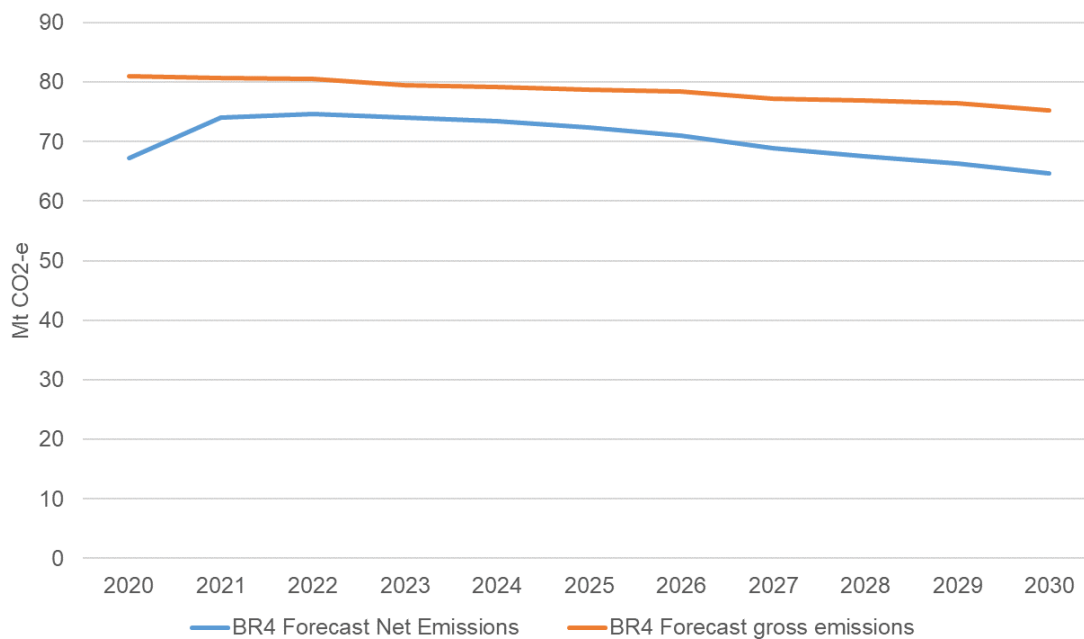
The PEB itself is not set in regulations, but the Emissions Trading Reform Bill requires the Crown to set and notify a PEB in the New Zealand Gazette.

Emissions trends

The key factor used to base the volume of the PEB is New Zealand's total forecast net emissions and the additional abatement sought to be achieved. Net emissions comprise greenhouse gas emissions from all sectors including energy, transport, agriculture, industrial processes and land-use, land-use change, and forestry (LULUCF). The next section of the Impact Analysis on NZ ETS unit supply settings discusses which of these emissions sectors are covered by the NZ ETS.

Figure 2 shows current emissions forecasts published in the Fourth Biennial Report (BR4) in January show gross emissions gradually reducing from 2020 to 2030, however the projections show a significant rise in net emissions from 2020-2021. This is due to changes in forestry harvesting cycles and a significant reduction in sequestration based on forestry activities.

Figure 2: Fourth Biennial Report Gross and Net emissions forecasts 2020-30



The impact of COVID-19

The COVID-19 pandemic is likely to have an impact on the economy and emissions. The impact (and uncertainty) from COVID-19 has short-, med- and long-term consequences. While the economy remains at Level 3 and 4, the emissions from many sectors will be substantially suppressed in the short-term (such as transport). In the medium-term, it is likely to take time for some sectors to come back to normal, particularly if some physical distancing rules are kept in place. In the longer-term, there may be material changes to the structure of the economy – for example, if any major industrial facilities close and/or international tourism fails to rebound.

The Ministry for the Environment and other agencies have produced a range of potential emissions scenarios for the impacts of COVID-19 for 2020-25. These examples come with some important caveats:

- there is substantial uncertainty at this stage about both the duration and severity of the COVID-19 impact
- while agencies have well-developed understandings about emissions within their sectors, this expertise is not able to overcome the overall COVID-19 duration and severity uncertainty
- the high impact scenario should not be viewed as a 'worst-case' scenario

Figure 3 and Table 1 show the BR4 net emissions projections compared to three potential COVID-19 impact scenarios.

Figure 3: Projected net emissions based on New Zealand’s fourth biennial report and COVID-19 impact scenarios

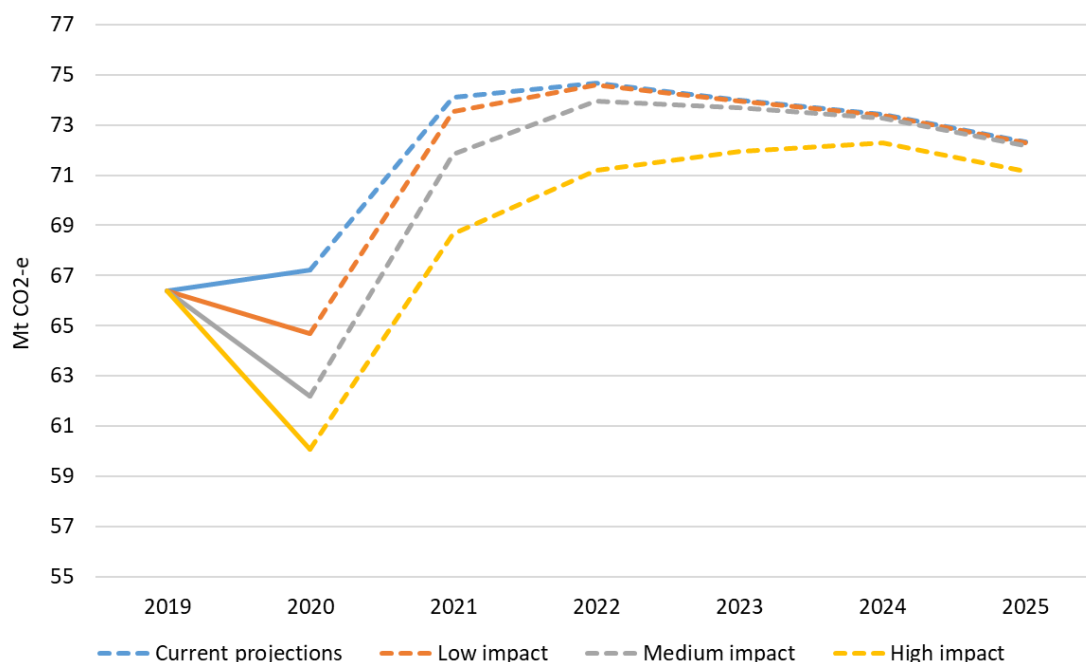


Table 1: Projected net emissions based on New Zealand’s fourth biennial report and COVID-19 impact scenarios (Mt CO2-e)

	2021	2022	2023	2024	2025	Total
BR4 projections	74.1	74.7	74.0	73.4	72.3	368.5
Covid-19 low impact scenario	73.5	74.6	74.0	73.4	72.3	367.7
Covid-19 medium impact scenario	71.8	74.0	73.7	73.3	72.2	364.9
Covid-19 high impact scenario	68.6	71.2	71.9	72.3	71.2	355.2

We have determined four potential options for the PEB volume to assess within this RIA.

Option 1: consultation proposal

The PEB originally proposed was based on holding net emissions steady in 2021 and 2022 at projected 2020 levels, and then tracking directly towards the 2050 Zero Carbon Act target. This approach required steadily increasing annual abatement. The approach was based on three key considerations:

1. the emissions budget should be set in a way that is consistent with long-term emissions reduction targets
2. New Zealand’s gross emissions have risen over the past 30 years and net emissions are projected to increase in the short-term, therefore turning that trend around will be challenging

3. Emissions reductions need to begin now to ensure that process is made towards domestic and international targets.

This methodology resulted in a volume of 354 Mt CO₂-e over the PEB period, and required a total abatement of 13 Mt CO₂-e (based on the draft projections).

Option 2: original consultation proposal volume with revision of annual allocations

Because of the impacts of COVID-19 that have become apparent since the original proposal was consulted on, we believe that it is appropriate to develop a PEB option that considers the likely changes this will have on future emissions and the economy.

Option 2 would keep the originally proposed volume of 354 Mt CO₂-e for the PEB but with adjusted annual volumes to accommodate the projected impacts of COVID-19.

Option 3: reduction in overall budget

Under Option 3, the overall volume of the PEB would be reduced from what was originally proposed during consultation. This reduction could be founded on several factors such as:

- a smaller PEB would help achieve more of the ambitious volume of emissions reductions required to achieve the 2030 NDC target, rather than being structured around the 2050 targets
- a smaller PEB could better account for the emissions reductions that will likely occur over the whole PEB period because of COVID-19

Option 4: increase in overall budget

The fourth option would be to increase the overall volume of the PEB from the consultation proposal, which would allow for an increase in the overall limit of emissions within the NZ ETS, and reduce the amount of additional abatement required to achieve it.

Other considerations

Within Options 3 and 4, there are considerations that can also be made around the annual volumes within the PEB and the trajectory that these could take. A larger or smaller PEB volume could both be arranged around a steadily reducing annual volume, a slower start that increases over time, or a more ambitious start in reductions that decreases over time. An example of this is shown in Figure 4. However, for the initial assessment of Options 3 and 4, the impacts will be considered on the total volumes of the period of the PEB.

Figure 4: Example pathways of emissions reductions

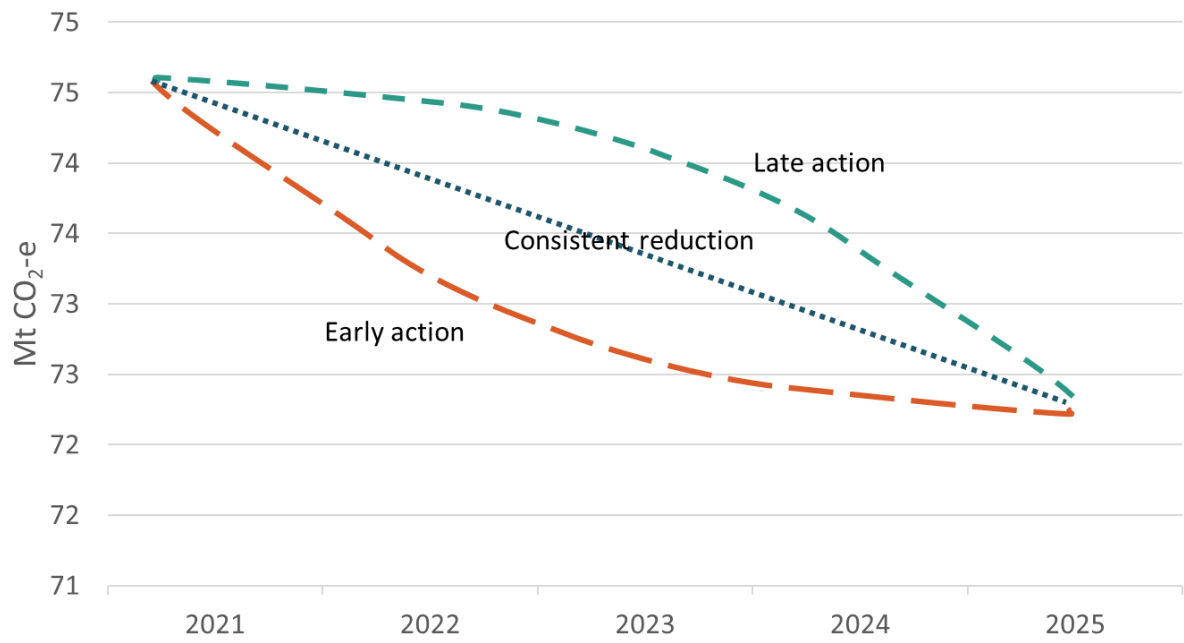


Table 2: Impact analysis of options to set the PEB

	Option 1: volume originally proposed in consultation	Option 2: Same PEB volume as original proposal but with revised annual allocations	Option 3: PEB volume below original proposal	Option 4: PEB volume above original proposal
Supports alignment with New Zealand's emission reduction targets	0	+	++	-
		Moderate level of ambition that is aligned with 2050 target	Increases ambition of PEB, leading to more abatement over 2021-2025 period, in line with 2050 target and closer alignment to NDC	Decreases ambition of PEB, leading to less abatement over 2021-2025 period.
Appropriately allocates risks, costs and benefits	0	++	--	+
		A rearrangement of annual volumes considers the impacts of COVID-19 and balances emissions reductions with impacts on participants and the economy	More ambitious PEB requires higher levels of abatement, increasing costs on NZ ETS participants and the economy Smaller PEB reduces auction volume, decreasing auction proceeds to the Crown A more ambitious PEB reduces likelihood of having to purchase international units to meet NDC target	Less ambitious PEB requires lower levels of abatement, decreasing costs on NZ ETS participants and the economy Larger PEB increases auction volume, potentially increasing auction proceeds to the Crown A less ambitious PEB increases likelihood of having to purchase international units to meet NDC target
Improves regulatory certainty and predictability	0	++	+	+
		Maintaining the same overall volume as originally proposed enhances confidence in stability and predictability of settings	Setting PEB in 2020 for following five year period provides predictability to market	Setting PEB in 2020 for following five year period provides predictability to market
Consistent with broader New Zealand climate change policy	0	+	+	-
		Maintains the integrity of New Zealand's carbon market by minimising the risk of oversupplying the NZ ETS	Maintains the integrity of New Zealand's carbon market by minimising the risk of oversupplying the NZ ETS	Increased risk of oversupplying the NZ ETS could undermine efforts to reduce stockpile
Supports linking	0	0	0	0
Overall assessment	Option two is preferred because it maintains a balance between emission reduction ambition, without risking excessive stress on the NZ ETS market			

Analysis

Option 1 does not account for the potential impacts of COVID-19.

Option 2 has been developed as it maintains the volume of the original PEB, but with revised annual allocations. This reflects that emissions are most likely to be reduced in the short-term based on the impacts of COVID-19. The updated distribution of volume helps to reduce the possibility of oversupplying the market through auctions in the early part of the period

Option 3, to reduce the overall PEB volume, would be more in line with the updated projections associated with COVID-19. The increased ambition would also help lead to earlier progress towards emissions reduction targets. However, a smaller PEB would place pressure on the economy at a time when there is significant risk from COVID-19. A smaller PEB implies more abatement has to occur over the 2021-2025 period. Businesses would face higher costs in having to reduce more of their emissions than under Options 1 and 2. This could drive up NZU prices in the short-term by increasing demand on the secondary market. This is because a smaller PEB would end up reducing the amount of units supplied into the NZ ETS through auctioning. Less auction volume would also reduce auction proceeds, resulting in a fiscal cost to the Crown.

Option 4, increasing the volume of the PEB, does not support alignment with emissions targets. Increasing the PEB volume would likely over-compensate for the potential impacts of COVID-19. The PEB volume could be greater than the actual business as usual emissions for the 2021-2025 period, providing no significant incentives to increase emissions efficiency. This would mean less abatement over the PEB period, which in the long-run will make it harder for New Zealand to meet domestic and international emissions reduction targets. However, a larger PEB could reduce pressure on households and businesses during the challenging economic conditions caused by COVID-19 by reducing NZU prices and, as a consequence, the costs of participating in the NZ ETS.

Options 3 and 4 may also be perceived as ad hoc interventions in the NZ ETS in response to COVID-19. This could undermine regulatory certainty and the ability of participants and stakeholders to form expectations about New Zealand's emissions pathway and NZU prices. In response to the Global Financial Crisis, the Government amended the CCRA in 2010 and 2012, moderating some of the NZ ETS settings. This caused the NZU prices to fall sharply in this period. While this had the effect of reducing NZ ETS compliance costs, it undermined the financial incentive for participants to reduce emissions. As a consequence, the NZ ETS was unable to effectuate emissions mitigation. We assess that a similar ad hoc intervention in response to COVID-19 could have the same undesirable impacts.

Recommendation

Option 2 is preferred because it is based on a clear methodology that balances emissions reduction ambition with economic considerations that have largely been tested with the public, with only small modifications that are justifiable based on the expected impacts of COVID-19.

Option 2 will maintain a level volume of emissions from 2021-23 based on the 2021 projections of the medium-impact COVID-19 scenario. Emissions will then reduce on a straight-line trajectory towards the 2050 target. This option is very similar to that which was consulted on. Responses to the PEB in the consultation document were very mixed, and often strongly opinionated. Despite the differing views, there was generally agreement regarding the overall goal of making a contribution towards reducing New Zealand's emissions and the importance of setting an NZ ETS cap that can help to achieve this. There was generally support of the suggestion of a straight-line emissions reduction

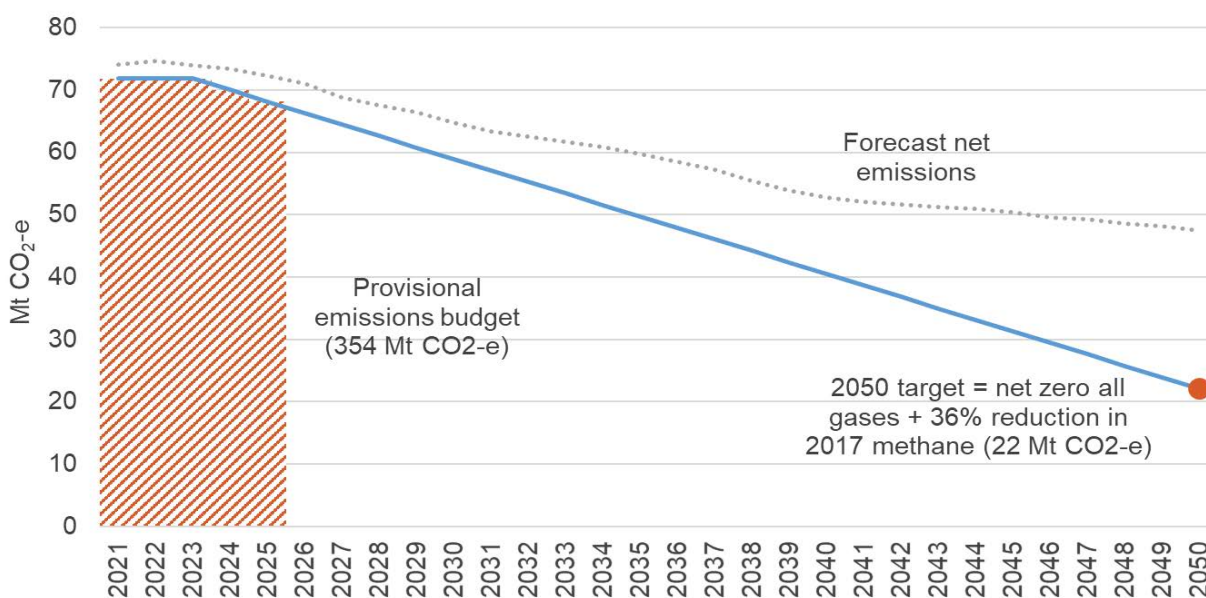
towards emissions targets, however there was some concern that the PEB was not aligned with the NDC.

Table 3 shows the original PEB volume put forward in consultation and the proposed changes of Option two. Figure 5 shows the proposed trajectory of the PEB.

Table 3: Original and proposed distribution of emissions across the PEB (Mt CO₂-e)

	2021	2022	2023	2024	2025	Total
Original distribution	73.1	73.1	71.2	69.4	67.6	354
Proposed distribution	71.8	71.8	71.8	70.0	68.1	354

Figure 5: Proposed trajectory of the PEB



Uncertainties associated with setting the PEB

There are a number of uncertainties that affect setting the volume of the PEB.

The PEB is based on the best available emissions forecasting at the time. Actual emissions will inevitably differ from these estimates particularly as forecasts become less accurate the further in the future they go. They are also affected by technological changes and uptake, or potential closures of high emitting industrial businesses.

For some sectors it can difficult to forecast emissions with high degrees of accuracy. The level of uncertainty associated with forestry emissions is expected to increase over the PEB period as a larger proportion of the post-1989 forest estate nears harvest maturity.

These uncertainties can be somewhat mitigated by setting an interim emissions budget that will be replaced by the first emissions official budget in 2021 which will use the most up-to-date emissions data and detailed research that the Commission has been able to undertake.

NZ ETS unit supply settings

Decision-making process for determining the NZ ETS settings

Having set the PEB, we propose taken several connected and sequential steps to determine the NZ ETS cap and volume of NZUs to be auctioned in the scheme:

1. set the volume of emissions that fall under the NZ ETS cap
2. make technical volume and forestry adjustments
3. account for free NZU allocation volumes
4. address oversupply in the NZ ETS
5. set the international unit limits; and
6. calculate the final annual auction volumes

This approach sets out a logical series of calculations that allows for the auction volume to be determined from the unallocated volume of the PEB. These are the same steps described in the consultation document which received support, and no recommendations for other steps that needed to be made.

Most of these calculations are not policy decisions, but rather necessary steps in a sequential process to determine the final unit supply settings. We assess the proposed decision-making for the PEB remains the correct way to determine the NZ ETS cap and auction volume. However, step 2, which allows for technical and forestry volume adjustments, provides a range of alternative unit supply adjustments that could be considered in the RIA. Ultimately, we found that there was no need to adopt any of these potential, additional adjustments (which we outline in the next step). It may be appropriate when the first emissions budget is set to reconsider some of the technical adjustments, which would then change the general unit supply decision-making process.

1. Set the volume of emissions that fall under the NZ ETS cap

The volume of the PEB is the primary driver of the volume of emissions available under the NZ ETS cap. The cap is the volume of New Zealand's emissions covered by the scheme i.e. the emissions from sources with obligations to surrender NZUs. Approximately 55 per cent of the volume of the PEB falls outside of the NZ ETS cap, shown in Figure 6.

Table 4 shows the sources of uncovered emissions in New Zealand.

Table 4: Sources of emissions uncovered from the NZ ETS

Agricultural emissions	On-farm emission (biogenic methane from ruminants and nitrous oxide) are excluded from the NZ ETS. Agricultural processors as well as importers and manufacturers of fertilisers are required to report emissions within the NZ ETS, but do not have to surrender NZUs for these emissions.
Waste	The emissions from wastewater treatment and cleanfills, and other greenhouse gases from landfills and other methods of waste disposal (such as CO ₂ from waste decomposition) are not covered by the NZ ETS.

Synthetic GHGs	Importers of HFCs and PFCs contained in goods and motor vehicles face an emissions price through the synthetic greenhouse gas levy. These emissions are not covered by the NZ ETS.
Forestry	Post-1989 forestry participate in the NZ ETS on a voluntary basis. Approximately 52 per cent of New Zealand's total post-1989 forestry estate is not in the NZ ETS. The emissions from deforestation and harvesting, and the removals for sequestration from post-1989 forests not registered in the scheme are uncovered. This means they do not receive units for storing carbon, or have to surrender units for the emissions from harvesting or deforestation.

The overall NZ ETS cap is calculated by removing the forecast emissions in sectors that are uncovered from the proposed PEB. The remaining volume of the PEB are the emissions covered by the scheme.

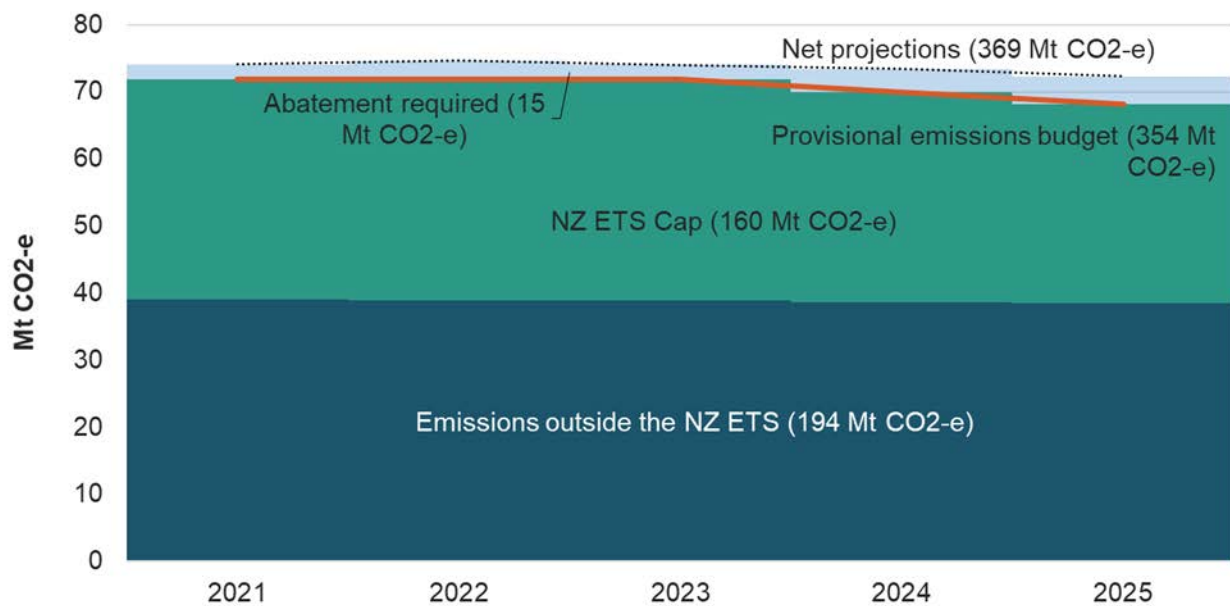
The process we consider in the RIA does not determine what is, and is not, inside the NZ ETS. Covered emissions are specified in Schedule 3 and 4 of the CCRA. This means there is very little flexibility to develop an alternative set of calculations.

These calculations are set out in Table 5 and illustrated in Figure 5.

Table 5: Volumes of emissions uncovered from the NZ ETS (Mt CO₂-e)

Emissions	2021	2022	2023	2024	2025	Total
Proposed PEB	71.8	71.8	71.8	70.0	68.1	353.6
Agriculture emissions projections	37.7	37.4	37.2	36.9	36.7	185.8
Waste outside of the NZ ETS	2.7	2.7	2.7	2.7	2.7	13.7
SGG levy	0.7	0.7	0.7	0.7	0.7	3.7
Forestry not registered in the NZ ETS	-2.1	-2	-1.7	-1.7	-1.6	-9.1
Total emissions outside of the cap	39.0	38.9	38.9	38.7	38.5	194.1
Remaining emissions covered by the NZ ETS cap	32.8	32.9	32.9	31.3	29.6	159.5

Figure 5: Overall limit on units available with the NZ ETS cap on emissions



Recommendation

It is proposed to determine the overall limit, or cap, on the NZ ETS by removing the volumes of emissions not covered by the scheme. The remaining, unallocated PEB volume is the emissions covered by the scheme.

Based on the previously proposed PEB, this proposal results in an NZ ETS cap volume of 160 Mt CO₂-e.

2. Technical and forestry adjustments

Technical adjustments may be necessary to account for factors that could affect the volume of emissions covered by the NZ ETS cap. Several potential adjustments were consulted on:

- Adjustments for non-compliance: this relates to emissions normally covered by the cap because participants have obligations to surrender NZUs; however are uncovered because a participant has failed to surrender units. As these emissions are outside the NZ ETS they could also be removed from the cap.
- Voluntary offsetting: in New Zealand entities can offset their emissions on a voluntary basis by ‘cancelling’ NZUs in the NZ ETS Register, which removes the unit from further use. As these units cannot be counted towards New Zealand’s emissions reduction targets they may have to be accounted for in the NZ ETS settings. This would likely mean removing cancelled units from the volume of the cap.
- Differences in non-forestry accounting internationally and in the NZ ETS: the cap could be adjusted to account for material differences in the ways emissions are accounted for in the NZ ETS and how they are reported internationally in the national inventories.
- Uncertainty in projections: the PEB is based on projected future levels of emissions. Actual emissions will inevitably differ from these estimates. Forecasts of forestry emissions are particularly sensitive to a range a factors, and could substantially differ from actual emissions. The cap could be adjusted over time to reflect actual emissions.

- Forestry accounting misalignment: differences in how forests are accounted for within the NZ ETS and internationally can create volume misalignments. The Government has decided that any new forestry registrations within the NZ ETS will need to use the same accounting approach that we use internationally ('averaging'), but many existing forests will remain on the previous 'stock change' accounting system. This will create misalignments between the forestry volume of the PEB and the number units supplied in the NZ ETS for forestry emissions and removals. The misalignment could be resolved by adjustments to the auction volume.

Issues related to non-compliance are unlikely to have a measurable impact on emissions as it is rare for obligations to remain unmet for any significant length of time. Non-compliance will likely remain rare over the PEB as a stricter penalties and compliance regime will be introduced through the Emissions Trading Reform Bill. This will create stronger incentives for liable entities to comply and surrender eligible NZUs.

An adjustment cannot be made for voluntary offsetting at this time because the demand for voluntary offsetting in future is hard to predict and a method for making a suitable adjustments has not yet been developed. Work is needed to develop a mechanism to provide for robust voluntary offsetting from 1 January 2021 onwards.

Uncertainties in emissions projections and forecasts could lead to material errors when determining the volume of the PEB and NZ ETS settings. For example, it is difficult to forecast levels of industrial allocation as it affected by the operational decisions of individual firms. Historically, these projections have been off actual levels of industrial allocation by some margin. Nonetheless, the proposed settings are based on the best available forecasting. It is difficult to adjust these for potential errors in advance. However, they can be addressed through reviewing the actual emissions results and adjusting future settings. The coordinated decision process allows for the NZ ETS settings in the later years of the PEB to be updated with new emissions data and more accurate forecasts. Moreover, the proposed settings are provisional. The first emissions budget and related settings will be based on more up-to-date data.

There is currently no consistent methodology to account for differences between domestic and international accounting standards. This makes it difficult to apply an appropriate technical adjustment. The forestry misalignment issue is particularly complicated and does not currently have a suitable methodology to address it. The Ministry for the Environment intends to carry out more work on these issues so that suitable options are available by the time the first emissions budget is formulated in 2021.

Recommendation

It is proposed that no technical volume adjustments are made as they are either unnecessary or cannot be implemented at this time. The majority of submitters agreed in principle with this decision. However, technical adjustments should be revisited when the first emissions budget is recommended by the Climate Change Commission.

3. Account for free allocation

Industrial allocation is provided to businesses that are considered emissions-intensive and trade exposed to protect their competitiveness. Highly emissions intensive firms receive an allocation equivalent to 90 per cent of their NZ ETS costs, while moderately emissions intensive firms receive a 60 per cent allocation. The Emissions Trading Reform Bill implements a phase-out of industrial allocation. Over the course of the PEB, the rate of allocation will be reduced by 1 per cent per annum.

The Crown also has one negotiated greenhouse agreement with Refining NZ. Under this agreement the firm receives full exemption from emissions surrender obligations in the NZ ETS and receives NZUs for indirect costs that it incurs from the NZ ETS. This agreement is set to end in 2022.

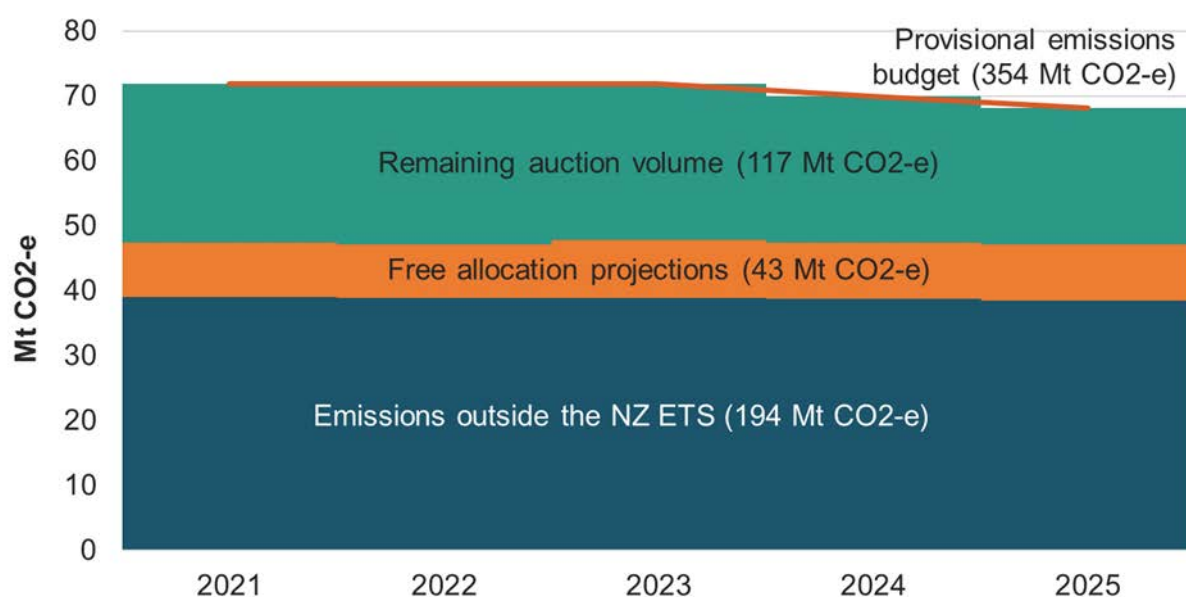
To determine a final auction volume, it is necessary to remove free allocation from the cap/auction volume. This is because free allocation represents a portion of the PEB set aside for the purpose of protecting the competitiveness of emissions-intensive trade-exposed firms. Units that are freely allocated by the Government cannot also be sold through auctioning.

Table 6 shows the forecast free allocation volumes per year, and Figure 6 shows how this volume fits within the PEB and cap volumes.

Table 6: Current projections for free allocation volumes (million NZUs)

	2021	2022	2023	2024	2025	Total
Projected free allocations	8.4	8.2	8.9	8.7	8.7	42.9

Figure 6: Remaining NZU auction volume remaining after removal of forecast free allocation



Recommendation

It is proposed the forecast free allocation volume for the PEB is removed from the NZ ETS cap to determine the final auction volume. This is because free allocation represents a portion of the PEB set aside to protect the competitiveness of industries that are trade-exposed. As the volume is allocated by the Government for this purpose, it cannot also be auctioned.

This results in an interim auction volume of 117 Mt CO₂-e.

4. Address oversupply in the NZ ETS by reducing the auction volume

The NZ ETS is currently oversupplied with a stockpile of over 130 million units. This means there is too much supply of NZUs in the market, which dampens demand and prices.

New Zealand's carbon market is oversupplied for two reasons:

1. When the NZ ETS was fully open to international markets, participants were able to purchase and surrender an unlimited volume of international units at a price lower than the NZU, resulting in a stockpile of NZUs being held in private accounts in the Register
2. Recent use of the FPO, which gives participants the choice of meeting their obligations by paying cash directly to the Crown in place of surrendering NZUs

Oversupply is an issue because it limits the effectiveness of the NZ ETS. Participants can use stockpiled NZUs to meet their future surrender obligations; however, stockpiled NZUs are not included in emissions budgets and will not contribute towards meeting future emissions reduction targets. Furthermore, surplus NZUs will reduce the stringency on the NZ ETS cap and may dampen New Zealand's emissions price.

While the problem of oversupply needs to be resolved, there is some risk that the NZ ETS could actually be undersupplied if overly-aggressive actions are taken to constrain unit supply over the PEB. It is likely that demand for NZUs will increase sharply in the next few years. Not only is free allocation being phased-out, but the removal of the fixed price option should generate higher levels of demand from participants requiring units to meet their individual surrender obligations. There may also be fewer forestry removals in the early part of the PEB. Without additional sources of unit supply being made available to participants, the risk of undersupplying the scheme could become material. Both auctioning and the CCR mitigates this risk. The key is to provide enough new unit supply to maintain liquidity in the NZ ETS, but at levels that progressively require market participants to draw on other sources of units, specifically the NZU stockpile.

To address oversupply, it is proposed to reduce the stockpile to a level that supports the long-term functioning of the scheme.

Analysis of the NZU stockpile

There are currently 132 million stockpiled units in the NZ ETS. This is approximately four times the number of NZUs surrendered in 2019.

NZUs within the stockpile are held for a variety of purposes across different sectors. There are three categories of stockpiled units:

1. NZUs held by post-1989 forest owners against future harvest liabilities. We estimate that there are approximately 51 million units held for this purpose.
2. NZUs held by non-forestry participants to cover future surrender obligations. Some emitters will pre-purchase NZUs at the same time as they fix their prices with their customers to manage their NZU price risk. The extent to which NZ ETS participants engage in such hedging activities will vary both by sector and company, but it can vary from hedging 6 months to up to 3 years in advance. We estimate there are 27 million units held for this purpose.
3. We estimate that there are 54 million NZUs held by entities with no direct obligations in the NZ ETS. These NZUs are not specifically held for purposes of meeting future surrender obligations and can be traded on the secondary market.

During consultation, a range of submitters expressed that insufficient analysis had been done to determine the number of units in the registry that are 'surplus'. These estimates are based on conservative assumptions about the behaviour of NZ ETS participants. It is likely the portion of the

stockpile held by entities with no direct obligations has been under-estimated (which would suggest the liquid portion of the stockpile is actually much larger).

Furthermore, a more in-depth analysis is not currently possible as there is limited information available about the volume of units in specific NZ ETS participants' accounts, or intentions for their unit holdings, due to commercial confidentiality. The Climate Change Commission suggested in their consultation submission that future consideration should be given to how a better evidence base on market participant's behaviour could be developed to inform these adjustments, such as surveying holders of units about their intentions.

The current breakdown of the type of units held within the stockpile is shown in Table 7.

Table 7: Breakdown of NZU stockpile by different purposes for holding units

Category	Total NZU holdings as at 30 June 2019 (millions of units)
Post-1989 forestry participants	51 (39%)
Non-forestry participants	27 (20%)
No direct surrender obligations	54 (41%)
Total	132

There are a number of options to reduce the stockpile and address the risk of oversupply.

Option 1: reduce the volume units supplied into the NZ ETS through auctioning

During consultation, the Government proposed shrinking the NZU stockpile by reducing the auction volume supplied over the PEB. By constraining units supplied into the scheme through auctioning, participants would be required to purchase and surrender more NZUs from the stockpile to meet their obligations. Although auctioning adds NZUs to the market, this is required to maintain liquidity at a time when unit demand is expected to increase. There is also some risk that without auctioning the current holders of units will be able to control supply and manipulate prices.

However, there are additional options that could be used to reduce the stockpile. Submitters proposed several alternative options to reduce the stockpile. The Impact Statement assesses two of these proposals: vintaging units and a government buyback of stockpiled NZUs.

Option 2: vintage units sold through auctioning

The Government could add vintaging conditions to NZUs sold through auctioning. This would require entities holding these units to surrender them within a certain time period (such as one or two years). As vintaged units cannot be banked for an indefinite period, it is likely they would be purchased for compliance purposes only.

Option 3: compulsory Government buyback of stockpiled NZUs

Under this option, entities holding stockpiled units would be required to sell them back to the Government. The Government would either buy them at their current market value, or the price they

were originally purchased. This option would allow the Government to reduce the size of the stockpile to whatever level it deemed appropriate.

These options are assessed against the counterfactual where no actions are taken to reduce the stockpile.

Table 8: Impact analysis of options to reduce the NZU stockpile

	Option 1: Reduce auction volume over the PEB	Option 2: Vintage NZUs sold through auctioning	Option 3: Government buyback of stockpiled NZUs	Option 4. Status quo
Supports alignment with New Zealand's emission reduction targets	+	+	++	0
	Encourages stockpiled units to be purchased and surrendered	Reduces the risk of NZUs sold through auctioning adding to the stockpile	Removes NZU stockpile and prevents the surrender of NZUs that cannot be counted towards targets	
Appropriately allocates risks, costs and benefits	+	0	--	0
	Reduces auction proceeds but acceptably distributes costs between the Crown and participants	Potentially reduces the value of auctioned NZUs as they cannot be banked	Significant fiscal cost to the Crown of buying back stockpiled units	
Improves regulatory certainty and predictability	0	0	-	0
			May be perceived as an ad hoc intervention in the market	
Consistent with broader New Zealand climate change policy	+	-	-	0
	Simple and transparent intervention in NZ ETS market	Vintaging auctioned units is inconsistent with the treatment of other NZUs	Significant and potentially disruptive intervention in NZ ETS market	
	+	-		
	Easy to implement through NZ ETS settings	Difficult and costly to administer		
Supports linking	0	0	0	0
Overall assessment	Option 1 is preferred as it supports alignment with New Zealand's emission reduction targets at acceptable costs to the Crown and participants.			

All the options strongly support alignment with New Zealand's emission reduction targets compared to the status quo. Option 1 would encourage participants to purchase and surrender stockpiled units by reducing the annual auction volume from what would otherwise be available under the NZ ETS cap. This would steadily reduce the stockpile, gradually aligning supply in the NZ ETS with our emissions targets.

Option 2 would force units sold through auctioning to be surrendered within two years, preventing them from contributing to the stockpile. With fewer units adding to the stockpile, its volume should slowly decrease as it is drawn down. Option 3 could be used to remove the stockpile entirely. This option would require participants to sell stockpiled units back to the Government, which would then be cancelled. Not only would this comprehensively address oversupply in the NZ ETS, it would prevent the surrender of NZUs that cannot be counted towards New Zealand's emissions reduction targets.

There are radically different costs associated with the options to reduce the stockpile. Option 1 would result in less/lost auction proceeds as the volume of NZUs sold at auction would be reduced. Nonetheless, there would be no additional administrative costs to the Crown from implementing Option 1, nor would it impose any costs on NZ ETS participants. We consider this an appropriate balance of the costs of reducing the stockpile.

Option 2 would also not impose significant additional costs on the Crown³ or participants. However, there is a risk it would create a class of currently held NZUs that become less valuable to participants than when they originally purchased them.

Option 3 would result in significant fiscal costs to the Crown. Table 9 shows the fiscal cost of the Government buying back different portions of the stockpile with no direct surrender obligations. A carbon price of \$25 per NZU is assumed. This fiscal risk could potentially be reduced if the Government purchased the units at the price they were originally paid for (assuming they were acquired when NZU prices were much lower than they are currently). However, there may be significant legal challenges with implementing a forced buyback of stockpiled units.

Table 9: Potential cost of Government buyback of stockpiled NZUs (\$25/NZU)

Percent of stockpile with no direct surrender obligations	Buyback costs
100%	\$1.35 billion
50%	\$675 million
25%	\$337.5 million

Option 3 would represent a significant and unprecedented intervention in New Zealand's carbon market. Not only are such interventions inconsistent with free market dynamics of the NZ ETS market, it could result in unforeseen and disruptive long-term impacts.

Recommendation

Option 1 remains the preferred option as proposed in the consultation. The majority of submitters who commented on the proposal to address the NZ ETS unit stockpile agreed with the general approach to reduce the annual volume of NZUs available to auction. This support came from a range of submitters including electricity companies, forestry groups, NGOs, agricultural groups, and individuals.

Option 1 is assessed as being consistent with New Zealand's broader climate change policy. Reducing the auction volume would be a simple and transparent way to manage the stockpile volume and would encourage market participants to draw from the stockpile over the PEB period. Furthermore, as it is a unit supply setting it could be adjusted through the coordinated decision making process to ensure sufficient reductions are occurring.

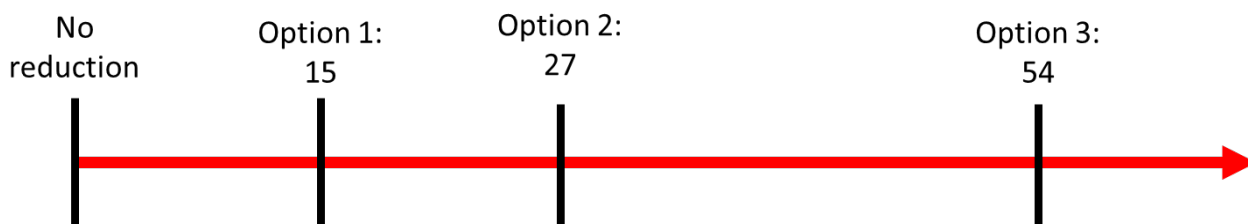
Setting the auction volume reduction

³ There would be some additional administrative costs for the EPA to track NZUs that have been vintaged.

It is proposed to reduce the annual volume of NZUs available by auction to require participants to use NZUs from the stockpile to meet their obligations. Three options for the size of the reduction are assessed:

1. 15 million NZUs
2. 27 million NZUs
3. 54 million NZUs

Figure 7: Range of auction volume reduction options (millions of units)



The Government consulted on reducing the stockpile by 54 million NZUs by 2030 through a steady reduction in the number of units available for auction annually. This equates to the units in the stockpile not held for purposes of meeting future surrender obligations. Over the PEB period, this resulted in a removal of 27 million NZUs from the total auction volume (i.e., Option 2).

Options 2 and 3 reflect smaller and larger stockpile reductions than the base reduction of Option 1. Option 2 is approximately half of Option 1, while Option 3 is the estimated liquid portion of the NZU stockpile estimated to have no direct surrender obligations.

There are trade-offs associated with the size of the stockpile reduction. A larger reduction may be more effective at encouraging market participants to draw down on the stockpile. However, it creates greater fiscal risk from lost auctioning proceeds. A smaller reduction would be less effective at reducing the stockpile, but also involve less fiscal risk to the Crown.

Table 10: Impact analysis of options for the size of the stockpile reduction

	Option 1: Reduce auction volume by 15 million units over the PEB	Option 2: Reduce auction volume by 27 million units over the PEB	Option 3: Reduce auction volume by 54 million units over the PEB
Supports alignment with New Zealand’s emission reduction targets	- Smaller auction volume reduction likely to be less effective at encouraging market participants to draw down on the stockpile +	+ Sufficient reduction in auction volume to encourage market participants to draw down on the stockpile -	++ Could encourage significant draw down of the NZU stockpile -- Very little auction volume supplied into the market, risks undersupplying the NZ ETS over the PEB
Appropriately allocates risks, costs and benefits	+ Smaller reduction of auction volume increases	0 Some risk of undersupplying the market from reducing auction volume by 27 million NZUs	--

	<p>potential auction proceeds for the Crown</p> <p>+</p> <p>Ensures large auction volume supplied into the market, could dampen NZU prices and reduce compliance costs</p>	<p>Reduced auction volumes would result in less auction revenue for the Crown</p> <p>-</p> <p>Undersupplying the primary and secondary markets could increase NZU prices, leading to higher compliance costs</p>	<p>Significant fiscal cost to the Crown from reduced auction proceeds</p> <p>--</p> <p>Undersupplying the NZ ETS would likely drive up NZU prices, increasing compliance costs</p>
Improves regulatory certainty and predictability	0	0	0
Consistent with broader New Zealand climate change policy	0	+	++
Supports linking	0	0	+
Overall assessment	Option 2 is preferred		

It is challenging to assess the options for the size of the stockpile reduction. The stockpile reduction should be large enough to effect a meaningful and sustained reduction in the stockpile, without removing so much unit supply from market that it becomes undersupplied.

The size of the stockpile reduction determines its ability to address oversupply. A large stockpile reduction would reduce the units supplied into the market through auctioning. By constraining this specific source of supply, market participants would have to purchase and surrender more units from the stockpile to meet their obligations. We therefore assess that Option 3 would be most effective at drawing down the stockpile in the least amount of time, as 54 million units would be removed from auctioning, and thus need to be purchased from the stockpile on the secondary market.

However, a rapid reduction in the volume of the stockpile is not necessarily preferable. During consultation the Government proposed reducing the stockpile by 27 million units over the period 2021-2025. This was considered an appropriate length of time to reduce the stockpile and steadily address the risk of oversupply. It is therefore not necessary to aggressively draw down the stockpile in the first budget period.

There are also undesirable cost and unit supply impacts of an aggressive stockpile reduction. Any reduction in the auction volume reduces the potential auction proceeds. Option 3 presents a far greater fiscal risk to the Crown as it results in a total auction volume of only 65 million NZUs. Options 1 and 2 would see much smaller reductions PEB auction volumes, preserving the potential auction revenue the Crown would receive.

While it is important the stockpile is reduced over time, it still provides essential liquidity for the NZ ETS market. The stockpile can ostensibly function as a safety valve to moderate NZU prices, particularly if the price controls are not appropriately set. An immediate and significant draw down on the stockpile undermines this function.

A related risk is that a significant reduction in the PEB auction volume could undersupply New Zealand's carbon market. Auctioning 54 million fewer NZUs would prevent these units from being supplied into the scheme. This could increase demand in the secondary market, driving up NZU prices and the compliance costs for those participants intending to use auctioned units to meet surrender obligations, and giving greater market control to participants already holding units. As Options 1 and 2 would see smaller reductions PEB auction volumes, the risk of undersupplying the market is markedly reduced.

Both Option 2 and 3 would improve the integrity of New Zealand's carbon market by addressing oversupply. They would help with the removal of NZUs from the stockpile that do not represent genuine emissions reductions and cannot be counted towards New Zealand's targets. Both options would also stimulate demand in the market.

Recommendation

It is proposed that 27 million units are removed from the final auction volume over 2021-2025 to encourage market participants to draw down the NZU stockpile, as originally proposed in consultation.

Although a majority of submitters supported the stockpile reduction proposal, a number raised concerns that reducing auction volumes would contribute to NZU prices increasing. While this could happen with a very large stockpile reduction, we assess there is less risk with the modest reduction that is proposed.

5. Setting the limit on international units

A limit is proposed on the amount of international units that can be surrendered in the NZ ETS over the PEB. Although the scheme is currently closed to international carbon markets, it is important the settings take into account how international units would be included if it were to reopen to international carbon markets in future.

The Government has learned from previous experiences engaging in international markets created by the Kyoto Protocol. Under the Kyoto Protocol, the NZ ETS was fully integrated into international carbon markets. This resulted in some undesirable consequences on the NZ ETS. The price in the NZ ETS dropped significantly due to the oversupply of low-cost units, increasing the stockpile, and reducing the incentive for participants to reduce their own domestic emissions. There were also issues with the environmental integrity of some units and whether they accurately represented genuine emissions abatement.

A limit on international units would prevent these outcomes from happening again. It would allow the Government to manage the impact of any international units on the NZ ETS market and ensure the maintenance of the incentives to make domestic emissions reductions. Controlling the environmental integrity of international units will ensure any future use of offshore mitigation delivers real environmental benefit, while retaining the strong incentives for abatement.

It is proposed the limit on the volume of international units that can be used in the NZ ETS will be set at zero for the 2021-2025 period. This setting reflects the fact that the NZ ETS is currently closed to international carbon markets, and will likely remain so for the early part of the PEB. Unless this changes, we are unable to robustly assess other options that would allow a limited volume of international units to be surrendered in the NZ ETS. This is because we do not know the quantities of international units that will be available to New Zealand, the price domestic participants would pay for these units, nor the demand for international units in the scheme. Without more information on these

variables – which the Ministry could only receive once a linking agreement has been progressed – it is difficult to analyse other options for international units.

This decision should be revisited if New Zealand gains access to international carbon markets. We have included this step in the decision-making process as it is probable that sometime in the future international units will be used in the NZ ETS. It is important to establish an international unit limit in this process for future budgets, as it will affect unit supply settings. Limiting the use of international would also focus New Zealand’s climate change response on domestic abatement. It is important that we meet as much of our NDC and 2050 target as possible through domestic emissions reductions, rather offshore mitigation. This begins with efforts to further decarbonise the economy in the PEB period. The more international units that are allowed in the NZ ETS, the less domestic abatement has to be achieved through the scheme.

Opinions on the international unit limit varied among submitters, with business/industry groups tending to support the ability to use high integrity international units and individuals/NGOs/community groups being opposed.

Recommendation

It is proposed that an international unit limit for the PEB of zero.

6. Calculating the final auction volume

The final step in reaching the proposed final auction volume is to combine all the previous steps into a summary calculation to reach the remaining annual NZU auction volumes.

Table 11 shows the calculations taken to reach the proposed total NZU auction volumes over the period 2021–2025.

Table 11: Final calculations to determine the total NZU auction volumes for the PEB

Proposed calculation	2021–25 volume (Mt CO₂-e/million NZUs)
Proposed PEB volume	354
1. Remove the forecast volume of emissions not covered by the NZ ETS from the proposed provisional emissions budget. This includes emissions outside the NZ ETS and facing an equivalent carbon price (190 Mt CO ₂ -e)	354 - 194 = 160
2. Make technical volume and forestry adjustments. No technical volume adjustments are proposed at this point.	160 - 0 = 160
Proposed volume of the NZ ETS cap	160
3. Remove forecast free allocation volumes (43 million NZUs) from the NZ ETS cap to calculate initial auction volume.	160 - 43 = 117
4. Calculate oversupply reduction volume (27 Mt CO ₂ -e) and remove it from the initial auction volume.	117 - 27 = 90

5. Set limit on international units. It is proposed that no international units will be allowed in the NZ ETS over the provisional emissions budget period.	90 + 0 = 90
Total proposed auction volume (2020-2025)	90

Recommendation

It is proposed a sequential decision-making process is followed to determine the final auction volume for the PEB. The proposed final auction volume will be 90 million NZUs, as shown in Figure 8, with the annual auction volumes in Table 12

Figure 8: Proposed NZU auction volume

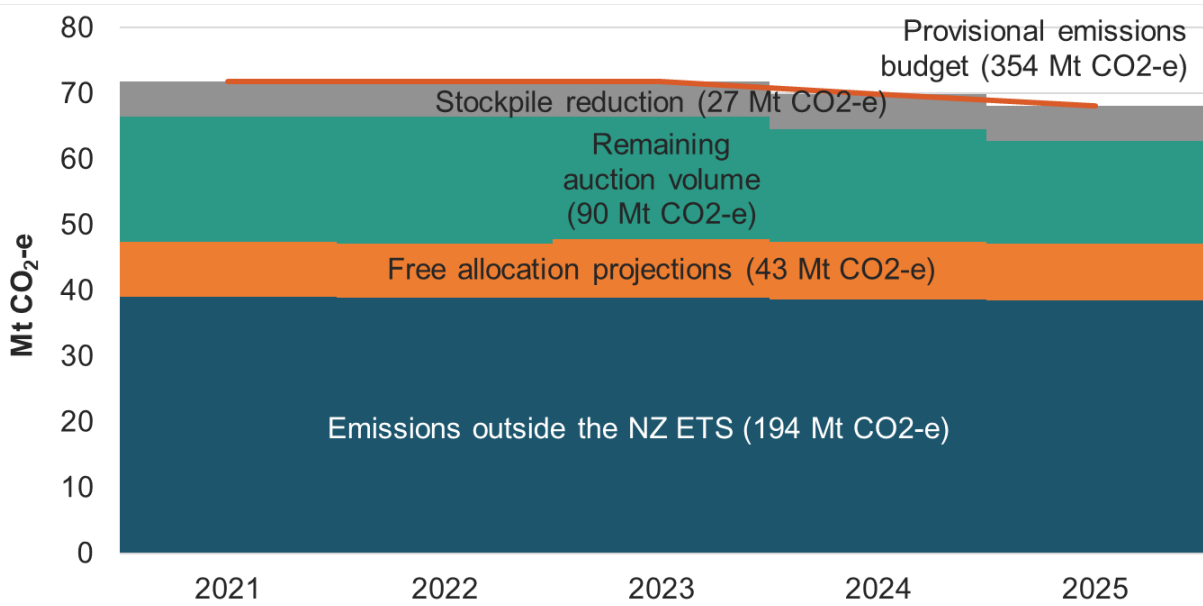


Table 12: Proposed annual auction volumes

	2021	2022	2023	2024	2025	Total
Annual auction volumes	19.0	19.3	18.6	17.2	15.5	89.6

Uncertainties

The forecast emissions outside the NZ ETS may not reflect actual levels of emissions. This risks the volume of the NZ ETS cap being incorrectly calculated and not equalling the emissions covered by the scheme. As a sequential decision-making process has been used to determine the NZ ETS settings, an inaccurate cap volume would affect the stockpile reduction and final auction volume. There is very little that can be done to mitigate this uncertainty, as the forecasts are currently based on the best available information.

There are similar uncertainties associated with the free allocation projections. It is challenging to forecast industrial allocation as it is provided on an output basis. This means an eligible firm's allocation changes every year based on their annual levels of production. It is almost impossible for the Government to predict how levels of production will change for individual firms over the PEB. The Government's forecasts are based on a series of general assumptions about how eligible firms are expected to behave in the future, and how their output could change over time. These forecasts are particularly sensitive to changes in the output of the four largest recipients of industrial allocation that receive over 60 per cent of total annual allocations⁴. If production for any of these firms change, even by a modest amount, actual levels of allocation could materially differ from the forecasts.

It is also uncertain how effective the stockpile reduction will be. The proposal is based on an assumption that participants will use stockpiled units if supply has been constrained by reducing annual auction volumes. During consultation a number of submitters were sceptical that this would work. We assess there is some risk that other sources of unit supply could replace the auction volume that has been removed, and negate the effect of the stockpile reduction. Forestry, for instance, could supply more units than currently projected if levels of afforestation are substantially higher. This risk could be mitigated by implementing a larger reduction of the auction volume.

Price control settings

The Emissions Trading Reform Bill includes provision for price controls in the NZ ETS that will assist the Government to manage unacceptably low or high domestic emissions prices. All international emissions trading schemes currently include some price control measures. Price controls can be thought of as 'safety valves' to manage the risk of the PEB being set too low or high. Two price controls will operate during the PEB period:

1. An auction price floor that will set the minimum price the Government will sell NZUs at auction
2. A cost containment reserve (CCR) that will work to contain NZU prices if the clearing price at an auction exceeds a specified price trigger

Both mechanisms will operate as part of the NZ ETS auctioning system. It is therefore necessary that auctioning is up and running in 2021 to operationalise the new price controls.

The CCR will replace the current price ceiling mechanism within the NZ ETS, the fixed price option (FPO). The FPO allows participants to pay cash at a specified level (currently \$25 per tonne of carbon) instead of surrendering units. The CCR is a qualitatively different type of measure to limit very high prices in the NZ ETS. It increases the supply of NZUs in the market if prices are too high, creating downward pressure on demand and unit price. It is not a strict price ceiling, as NZUs will still be able to be sold by auction at a higher price than the price trigger. However, if the additional supply of volume from the CCR is functioning as expected, prices should be contained at or near the price trigger level.

To this point, a price floor has not been used within the NZ ETS. NZU prices have seen significant variations since it began, including dropping to below \$2 in early 2013, whilst it was open to international markets. Figure 9 shows changes in NZU prices since 2010.

⁴ New Zealand Aluminium Smelter, New Zealand Steel, Methanex and Refining New Zealand. Refining New Zealand do not currently receive free allocation, but are expected to when they enter the NZ ETS in 2023.

Figure 9: NZU prices between early-2010 and mid-2019



Price controls only have a direct effect on NZUs sold at auction. Their impact on prices in the secondary market is indirect. The CCR contains NZU prices by releasing additional units into the market to increase supply. This should reduce demand and dampen prices. The auction price floor, on the other hand, constrains unit supply by restricting the supply of NZUs into the market through auctioning. This should increase unit demand on secondary market and drive higher prices

Although prices are predominantly influenced by supply and demand of units, price controls provide a secondary function of signalling to the market expectations of future emissions prices. The price floor and CCR price trigger help develop businesses' long-term expectations of the costs of their emitting activities to better inform their investment decisions and business planning.

Auction price floor

The auction price floor sets the minimum price NZUs will be sold at auction. Bids made below the auction price floor will not be accepted by the auction operator.

There are two major decisions for setting the auction price floor:

1. the initial level of the price floor;
2. the rate at which the price floor changes over the PEB period

Setting the level of the auction price floor

Option 1: Set the auction price floor at \$0

Option one is an auction price floor of \$0. This is used as the counterfactual status quo as there is no price floor currently used in the NZ ETS.

Option 2: Set the auction price floor at \$10

Option two is a price floor of \$10. This means that NZUs could not be sold below \$10 at auction. This is considered a low level as prices within the NZ ETS have not been at this level since 2015.

Option 3: Set the auction price floor at \$20

During consultation the Government proposed setting the level of the auction price floor at \$20 in 2021 (and maintaining this level over the whole PEB period). This would mean NZUs could not be sold below \$20 at auction.

Other alternatives

A price floor higher than \$20 is not considered feasible at this time, as this is too close to the current NZU price of approximately \$25 (\$24.50 on April 21, 2020). Price controls are intended to be set outside the range of expected NZU prices, so that they act as safety valves rather than price determinants. A floor above \$20 could not be considered outside the range of expected NZU prices, as the criteria of the price floor requires, and could risk being higher than the price of NZUs in the secondary market. Figure 10 outlines the range of options for setting the initial level of the auction price floor.

Figure 10: Range of initial auction price floor levels

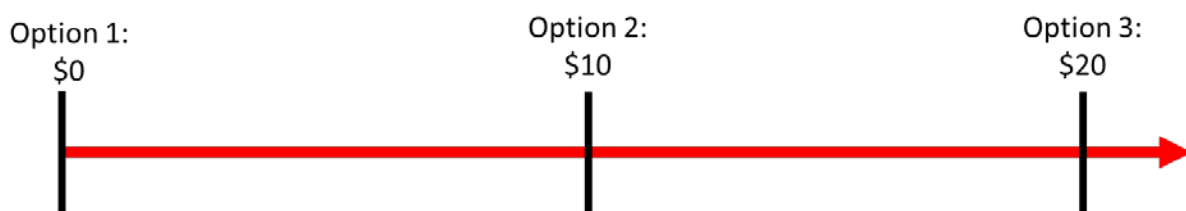


Table 13: Impact analysis of options for the initial level of the auction price floor

	Option 1: Status quo - set auction price floor at \$0 for each year of the PEB	Option 2: Set auction price floor at \$10	Option 3: Set auction price floor at \$20
Supports alignment with New Zealand's emission reduction targets	0	- Risks NZUs being auctioned below prices needed to meet emissions reduction targets - A lower price floor provides less certainty to foresters about the minimum price they could earn through selling NZUs, potentially reducing forest planting	+ Ensures NZUs supplied through auctioning are at the minimum price needed to meet emissions reduction targets
Appropriately allocates risks, costs and benefits	0	- Greater fiscal risk to the Crown from lower auction proceeds if NZUs are sold significantly below their long-term market value + Allows for low NZU prices, minimising compliance costs for NZ ETS participants, and pass through costs for consumers	+ Helps ensure auction proceeds at a level consistent with the long-term value of NZUs
Improves regulatory certainty and predictability	0	+ Provides certainty to auction participants of the minimum price they will have to pay for NZUs	+ Provides certainty to auction participants of the minimum price they will have to pay for NZUs
Consistent with broader New Zealand climate change policy	0	- Low price signal could dampen NZU prices on the secondary market	+ Supports market integrity by sending a clear price signal, helping to ensure NZUs on the secondary market are traded at least at \$20
Supports linking	0	0 A minimum \$10 NZU price may be seen as too low by our linking partners	+ An assurance of a minimum \$20 emissions price could make the NZ ETS more attractive for linking partners
Overall assessment	Option 3 is preferred because it ensures a minimum NZU price at auction in line with meeting New Zealand's 2050 target		

Both Options 2 and 3 are preferred to an auction price floor set at \$0. A minimum NZU price level is necessary to increase confidence in the NZ ETS. It will encourage investment in low-emissions technologies and practices – particularly afforestation by indicating the minimum revenue landowners would receive for units earned for carbon storage. Businesses wanting to decrease costs related to emissions pricing can use the price floor as a basis for calculating the likely minimum costs of NZ ETS compliance and assessing potential investments in low-emissions technologies or practices.

The auction reserve price is also now a particularly important safety valve in light of COVID-19 pandemic potentially causing an economic recession. The auction reserve price will ensure that the Government does not sell NZUs substantially below their likely long-term value. If the Government sells units for substantially less than their expected future value, this could result in locking-in expected additional fiscal costs if the Crown then needed to either purchase higher-priced international units or directly fund additional domestic abatement in the future. We assess Option 3 to be advantageous in this regard as a minimum NZU price of \$20 is less likely to incur an unacceptable financial loss from selling NZUs significantly below their long-term value.

An auction reserve price of \$20 is also preferred as it best supports alignment with New Zealand's emissions reduction targets. NZUs supplied through auctioning would be at a minimum price that is at or above the lower bound of New Zealand's emissions price pathway. Option 2 creates some risk that auctioned units could enter the NZ ETS at a level outside this pathway. Any auctioning of NZUs significantly below \$20 could make it difficult to meet our emissions reduction targets.

There is also some risk that Option 2 could signal to the market that the Government sees \$10 as an acceptable minimum NZU price. Such a signal could drive down prices on the secondary market, undermining its integrity. Option 3 is preferred because the price signal it sends is consistent with the expected long-term value of NZUs.

36 submitters were in favour of the proposed auction reserve price of \$20. Support for an auction reserve price of \$20 came from a range of submitters, including business groups and foresters who described the business certainty a minimum price on emissions provides. 34 supported a higher auction reserve price but considered that it should be set at a higher price. Submitters who advocated for a higher auction reserve price were concerned that the cost to businesses of reducing emissions was considered, but no account was being taken of the cost of actual removals and the social cost of carbon.

Recommendation

We propose setting the initial level of the price floor at \$20.

Setting the rate the auction price floor rises over the PEB period

Option 1: Set the auction price floor at \$20 for each year of the PEB

The Government proposed during consultation that the auction price floor would be set at \$20 for the PEB and that this rate would not change from year to year.

Option 2: Set the auction price floor at \$20 in 2021 and increase by inflation for each subsequent year of the PEB

This option would see the price floor increase by two per cent per annum based on the forecast rate of inflation. The rate used is the forecast CPI inflation from Treasury based on the Half Year Economic

and Fiscal Update published in December 2019, prior to the onset of COVID-19. The forecast is 2 percent for 2022-2024, with 2025 to be confirmed. While the COVID-19 economic scenarios recently developed by Treasury⁵ suggest inflation rates lower than previously forecast, these rates have not been selected from one of these scenarios as it is unclear which would be most appropriate to use at this stage.

Option 3: Set auction price floor at \$20 in 2021 and increase by five per cent plus inflation for each subsequent year of the PEB

Option three assesses a rate of 5 per cent plus the annual rate of inflation. This is the method currently used by the California emissions trading scheme for their price controls.

Option 4: Set the auction price floor at \$20 in 2021 and increase by 15 per cent plus inflation for each subsequent year of the PEB

Option four proposes a more significant rate of 15 per cent plus inflation increase. This is approximately equal to the rate of increase for NZU prices between 2015 and 2016.

Other alternatives

As the options to increase the level of the price floor are on a scale, there are essentially infinite rates of increase that could be assessed. These four options have been chosen to give an indication of the impacts of rates that differ significantly.

Figure 11 shows these options on a scale, and Table 14 shows the resulting price floor levels based on the initial price floor value of \$20 proposed in the previous section.

Figure 11: Scale of price floor increase options

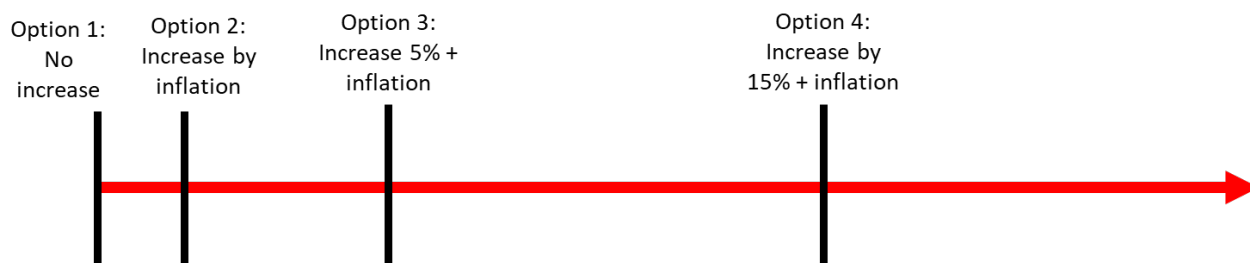


Table 14: Auction price floor rates

	2021	2022	2023	2024	2025
Option 1	\$20.00	\$20.00	\$20.00	\$20.00	\$20.00
Option 2	\$20.00	\$20.40	\$20.81	\$21.22	\$21.65
Option 3	\$20.00	\$21.40	\$22.90	\$24.50	\$26.22
Option 4	\$20.00	\$23.40	\$27.38	\$32.03	\$37.48

⁵

Figure 12 shows the change in the level of the price floor under the options assessed here.

Figure 12: Auction price floor rates

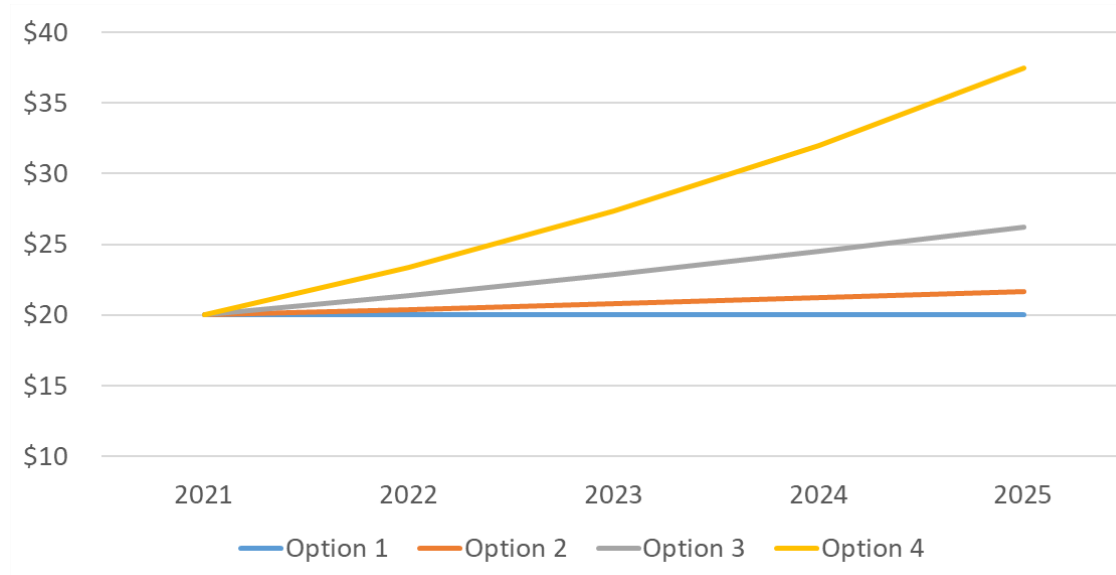


Table 15: Impact analysis of options to increase the level of the auction price floor

	Option 1: No increase	Option 2: Inflation	Option 3: Five per cent + inflation	Option 4: 15 per cent + inflation
Supports alignment with New Zealand's emission reduction targets	- Some risk that NZUs could be auctioned below their long-term value at the end of the PEB	+ Allows for a minor increase in the price floor over time to reflect inflation. This prevents the value from decreasing over time	++ Price floor increases over time in line with emissions price pathway needed to meet targets	++ Ensures price floor increases in line with emissions price pathway needed to meet targets
Appropriately allocates risks, costs and benefits	- Auction proceeds may not reflect actual long-term value of NZUs if sold at \$20 over the PEB, creating fiscal risk for the Crown + Ensures costs for auction participants remains the same throughout the PEB	0 Would slightly increase auction proceeds over the PEB 0 Would minimally increase the cost of buying units at auction	+ Would increase auction proceeds to the Crown over the PEB period + Escalating price floor could increase prices on the secondary market, which would benefit foresters, free allocation recipients and entities holding units - Higher costs for auction participants to buy NZUs in later years of PEB - Would likely drive up NZ ETS compliance costs at the end of the PEB	++ Very high auction proceeds for the Crown over the PEB period ++ A very high minimum NZU price would benefit foresters, free allocation recipients and entities holding units -- Very high costs for auction participants to buy NZUs in later years of PEB -- Would drive up NZ ETS compliance costs to untenable levels at the end of the PEB
Improves regulatory certainty and predictability	+ Flat rate of \$20 provides certainty of minimum emissions price at auction	0 Slightly less certainty in long-term price floor level as future rates of inflation can be hard to predict	0 Slightly less certainty in long-term price floor level as future rates of inflation can be hard to predict	0 Slightly less certainty in long-term price floor level as future rates of inflation can be hard to predict

Consistent with broader New Zealand climate change policy	0	0	+ Higher NZU prices at the end of the PEB could encourage afforestation, low-emissions technological changes	++ Higher NZU could encourage high levels of afforestation, low-emissions technological changes - A very high minimum auction price could discourage participation, undermining the integrity of the auctioning system
Supports linking	0	0	+ Some assurance for prospective linking partners that New Zealand's emissions price will increase over time. This could make the NZ ETS more attractive	++ Stronger assurance for prospective linking partners that New Zealand's emissions price will increase over time. This could make the NZ ETS more attractive
Overall assessment	Option 3 is preferred because it allows for the minimum NZU price to increase over time at a rate that aligns New Zealand's emissions price pathway, while appropriately allocating costs to the Crown and participants.			

Although Option 2 allows the level of the auction price floor to increase year to year, it arrives at similar annual auction price floors to Option 1. This is because the current average rate of inflation of 2 per cent over the PEB period provides for a minimal rise in the auction price floor.

The main justification for Option 2 is that adjusting for inflation helps to fulfil the requirements within section 30GC(6)(c) of the Emissions Trading Reform Bill that requires the Government to consider inflation when setting price controls. Adjusting for inflation prevents the value of the price floor decreasing in real terms over the PEB.

We assess that Options 3 and 4 more strongly support alignment with New Zealand's emissions reduction targets. An escalating auction price floor would increase NZU prices during the PEB. Units supplied through auctioning would have a progressively greater value, particularly if auctions routinely cleared close to the price floor. Moreover, both of these options signal to the secondary market the Government's expectation that prices should increase over time. These are both important effects to maintain an emissions price pathway necessary to drive the abatement needed to meet our targets. Under the first two options this signal is muted because the price floor is static or increases at a minimal rate.

However, there are different costs associated with the options. Options 3 and 4 would increase the price of NZUs sold at auction. While this would result in greater proceeds for the Crown, it would also increase the costs for entities participating in auctioning. Under Option 4, this increase would be substantial and likely make auctioning a prohibitively expensive source of unit supply. If this happened it could discourage some entities from participation in auctioning. To support the integrity of the auctioning system it will be important for auctioning to be sufficiently attended. Option 4, in particular, risks this.

Assuming an escalating price floor also drives up prices on the secondary market, Option 4 would lead to much higher and likely unacceptable compliance costs in the NZ ETS, particularly in the later years of the PEB. Option 3 would also result in higher compliance costs over the PEB, although these costs would reflect the recent historic changes in NZU prices. Such an increase in compliance costs would likely occur anyway, if New Zealand's emissions price follows current trends. There would be reduced cost impacts under Options 1 and 2, as their respective impacts on NZU prices should be comparably modest.

Higher NZU prices, however, would benefit businesses that earn NZUs from carbon removals by increasing the value of these units on the secondary market. This could encourage afforestation (and discourage deforestation) and investment in low-emissions technological changes. An escalating price floor could provide confidence for foresters, as there would be greater certainty the value of their units will increase over time.

It is likely that an escalating price floor rate would better support linking. Options 3 and 4 would provide an assurance to our potential linking partners that prices will increase over time by, at least, the minimum amount set by the price floor. Other jurisdictions may look more favourably on the NZ ETS if prices in the scheme increase at a comparable rate to their own allowances.

Recommendation

It is proposed that the auction price floor will be set to increase by 5 per cent plus inflation. This is different than what was originally proposed within the consultation document. However, there are several factors that make Option 3 preferable:

- It fulfils section 30GC(6)(c) of the Emissions Trading Reform Act that requires the Government to consider inflation when setting the level of the price floor
- Supports alignment with New Zealand's emissions reduction targets by increasing the lower bound of New Zealand's emissions price pathway over the PEB
- Ensures higher auction provides for the Crown and increases the value of units earned through sequestration, while avoiding the unacceptably high cost impacts of a minimum auction price that rises by a large amount every year
- Better supports linking with overseas carbon markets

The cost containment reserve (CCR)

A CCR releases a specified volume of additional NZUs into the NZ ETS if a pre-determined price trigger level is reached during an auction. By adding units to the auction volume, the CCR can help meet the demand driving higher NZU prices.

The price trigger level will be set outside the expected cost of emissions abatement for meeting our targets, and should therefore be used rarely, if at all. The price trigger signals the upper extreme of expected and acceptable prices in the NZ ETS.

Units sold from the CCR that exceed the first emissions budget will have to be backed by the Government procuring equivalent emissions reductions. This maintains the integrity of the NZ ETS cap. The likely source of emissions reductions are international units.

In March 2020, Cabinet agreed to the operational rules for the CCR. The reserve will activate if a scheduled auction clears above the price trigger, or the first price trigger in a multiple trigger design. In that event, units from the CCR will be added to the auction volume. The auction clearing price will be recalculated and units sold at either the price trigger level or the level of the final bid met by the combined auction and CCR volumes. This means that units supplied into the market through auctioning will be effectively capped at or near the level of the price trigger.

The CCR could be activated by a single price trigger that releases the entire volume of the reserve. Under this option, the full CCR volume would be available for sale if an auction clearing price was above the single price trigger. Alternatively, multiple price triggers could be used to activate portions of the CCR. A tranche of units could be released if an auction cleared above the first price trigger. Additional tranches would be released if ascending triggers were struck. The full volume would only be released if the highest price trigger was reached.

There are four key decisions for setting the CCR:

1. Whether the CCR is activated by a single price trigger or multiple triggers
2. The initial level of the CCR price trigger or triggers
3. Whether the level of the CCR price triggers should increase over the PEB period
4. The volume of the CCR

Single price trigger versus multiple trigger CCR design

Option 1: A single price trigger CCR

During consultation on the rules for auctioning, the Government proposed using a single price trigger to activate the CCR. Under this option, the full CCR would be released if the clearing price of a scheduled auction met or exceeded the level of the price trigger.

The single trigger proposal assessed here would use a large volume of units that includes volume that would exceed the NZ ETS cap and therefore need to be backed by equivalent emissions reductions.

Option 2: A multiple price trigger CCR

The single trigger proposal is assessed against a two-price trigger CCR.

NZUs would be added to the auction volume from difference sources at the first and second price trigger. At the first price trigger the Government would make units available from the volume of the stockpile reduction. These are the NZUs removed from the annual auction volumes to address oversupply in the NZ ETS. This would mean that units released through the first tranche would fall within the overall NZ ETS cap.

At the second price trigger, the Government would release units from the CCR itself. These units would be outside the cap and would need to be backed.

Table 16: Impact analysis of a single versus multiple price trigger CCR

	Option 1: Single price trigger CCR	Option 2: Multiple price trigger CCR
Supports alignment with New Zealand's emission reduction targets	0 Some risk a single, large tranche of reserve units could oversupply the NZ ETS when released	+
Appropriately allocates risks, costs and benefits	- Greater fiscal risk as a portion of CCR units has to be backed to support the integrity of the cap	+
Improves regulatory certainty and predictability	0	- Less certainty of the overall volume of reserve units available at auction, as the activation of different tranches depends on bidding behaviour and auction clearing price, which is unknown before an auction commences
Consistent with broader New Zealand climate change policy	+	- More complex, harder for participants and stakeholders to understand

	<p>Simpler for participants and stakeholders to understand, builds confidence in the CCR</p> <p>+</p> <p>Single trigger provides a clear and definitive signal to the market of the maximum emissions price</p>	<p>-</p> <p>Multiple triggers send different price signals to the market, less definitive and potentially more confusing</p> <p>-</p> <p>Some risk of strategic bidding to drive up the clearing price to ensure more volume can be released based on higher price triggers</p>
Supports linking	0	0
Overall assessment	Option 1 is preferred because of the simplicity that it provides and the clearer price signal it sends	

We assess that the decision on a single versus multiple price trigger design is finely balanced. Both options could mitigate the risk of the PEB being set incorrectly, resulting in unacceptably high emissions prices.

The key difference between the options has to do with how a single and multiple tranche design impacts auction price discovery. Option 1 is more consistent with the intended operation of the CCR. Offering the full reserve through a single tranche would substantially increase supply available in a scheduled auction. This could be more effective at containing the auction clearing price at or close to the level of the price trigger.

Multiple tranches would be better suited to a CCR intended to smooth price increases over time. If NZU prices continue to rise then a steady supply of reserve units would be released to the market. Smoothing prices is not the main purpose of the CCR. The intention is to set the price trigger well above the expected range of prices, with a large volume of units available. We assess then that Option 2 is less consistent with the intended operation of the CCR.

A single price trigger would be easier for participants to understand. A simpler CCR design would build confidence in the operational and effectiveness of the price control mechanism and the wider NZ ETS. Option 1 would also provide a clear and definitive signal of what the Government sees as the upper extreme of expected and acceptable prices in the NZ ETS.

There some risk in a more complex, multiple price trigger design that the price signal would be inconclusive. Multiple triggers would send multiple signals to the market of the upper bound of New Zealand’s price pathway. For market participants it would be less clear as to what constitutes unacceptably high emissions prices. This could undermine an important secondary effect of the CCR, and be less effective at influencing price movement on the secondary market.

The analysis suggests a multiple price trigger design could better support alignment with New Zealand’s emissions reduction targets and more appropriately allocate the fiscal risk associated with the CCR. Option 2 would allow for the graduated release of reserve units, first from the stockpile reduction and then from the CCR. Tranches of reserve units would only be supplied into the NZ ETS as required/necessary to contain prices at different levels. This could reduce the risk of the CCR oversupplying the market when activated. A single price trigger design risks oversupply as units are supplied into the scheme through one large tranche. Under Option 1, the Government has less ability to manage the release/dispersal of reserve units into the market.

There is some fiscal risk to the Crown with both options, as the Government would have to back units released from the CCR with real and equivalent emissions reductions. This would likely involve procuring offshore mitigation. However, Option 2 presents less risk because the units released in the first tranche are from the stockpile reduction and do not have to be backed (as they come from within the cap). Under this option, only units released at the second tranche would have to be backed. There would only be a cost to the Crown in the event auction prices met or exceeded the second higher price trigger. Option 1 would be more costly as the Government would have to back the portion of the reserve that exceeds the cap released from the single, large tranche.

It should be noted that there are no expected difference in the costs of operating a single price trigger CCR versus a multiple trigger design. The administrative burden of implementing either option would be similar because the process of rerunning an auction with multiple tranches would be relatively simple for the auction operator.

Despite Option 2 not making a more operationally complicated auction process than Option 1, it is potentially a more complex structure to understand for participants. Having one price trigger provides a clear and simple message to participants that the price is outside of the expected range of NZU prices. A cost containment reserve with multiple price triggers is more complex in design and conceptually more difficult to comprehend. One of the roles of the price trigger is provide a clear price signal, and it is crucial that participants have confidence in this.

Consultation regarding the use of single or multiple trigger prices was largely addressed within the auctioning regulations consultation released in October 2019. The majority of submitters on this consultation supported a single price trigger, which was considered the simplest way to activate the CCR and send a clearer signal to the market of the maximum emissions prices. The NZ ETS settings consultation document proposed a single price trigger, but did not discuss that multiple triggers was another option.

Recommendation

The decision on a single versus multiple price trigger CCR is finely balanced. We assess that a single price trigger is marginally preferable because it is simple and provides a more definitive signal of the upper bound of New Zealand's emissions price pathway. It is also consistent with the operational format of the CCR that the Government has already decided on.

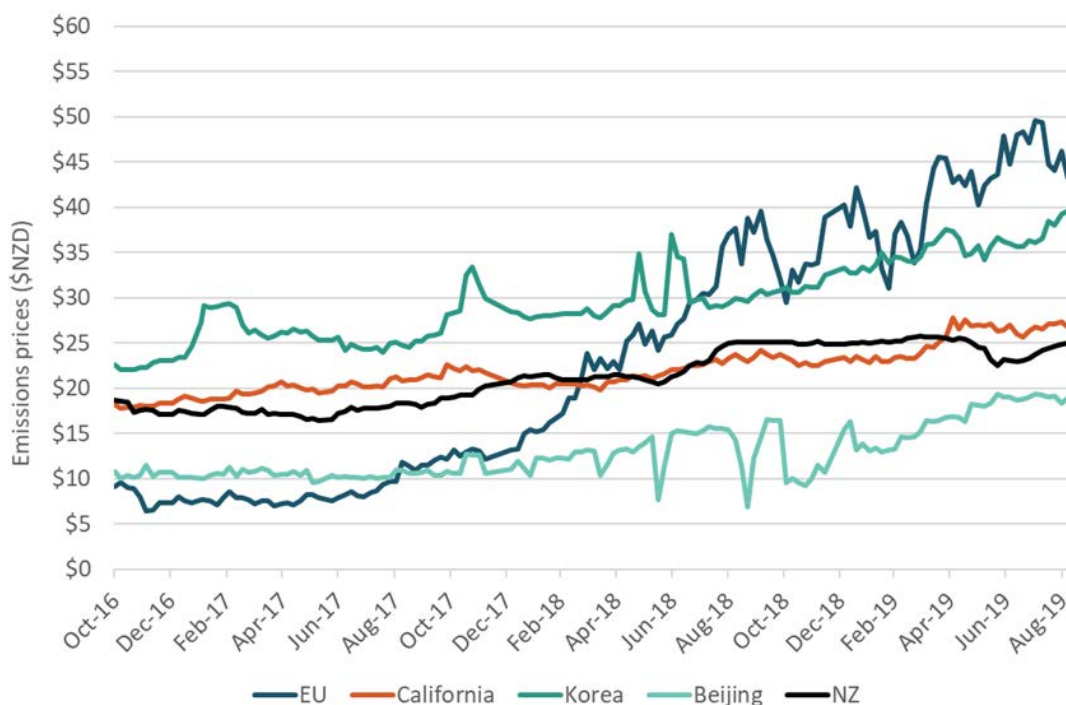
Setting the level of the CCR price trigger

The level of the price trigger is an auction clearing price deemed to be unacceptably high. If the clearing price meets or exceeds this level the CCR is activated and additional supply is made available within the auction. In a single price trigger design there would only be one level; however, in a multiple trigger CCR each trigger would have its own level.

The level of the price trigger (or first price trigger) should be set as the upper bound of the emissions price pathway for the PEB. The price trigger should be set as a back-up mechanism to ensure NZUs do not reach a level that would have a severe negative impact on households and the economy.

The CCR should help maintain NZU prices in line with other countries. This will prevent New Zealand's emissions price from exceeding those in our potential linking partners and some of our major trading partners. Figure 13 shows trends in international carbon markets over the past three years. International emissions prices are likely to rise significantly above current levels within the next 10 to 15 years to bring forward sufficient emissions abatement options to meet the 1.5°C warming target.

Figure 13: Historical price trends in international emissions prices



Option 1: Set CCR price trigger at \$40

A price trigger of \$40 is assessed. This is a price close to, but still above, the current \$25 FPO. A \$35 FPO is expected to be implemented for 2020 emissions.

Option 2: Set the CCR price trigger at \$50

A price trigger of \$50 was proposed during consultation. This is comparable to prices in the EU ETS and the Korean carbon market. The EU ETS scheme reached \$49.59 (NZD) in August 2019, while prices in the Korean emissions trading scheme hit \$55 (NZD) in March 2020.

Option 3: Set the CCR price trigger at \$70

A price trigger of \$70 is considered. This would allow the clearing price to clear well-above the level proposed in consultation.

Option 4: Set the CCR price trigger at \$100

A price trigger of \$100 is also assessed. We consider this to be at the very high end of potential trigger levels for the PEB. Option 4 would set the price trigger well outside the expected level of NZU prices.

A higher price trigger of \$70 to \$100 was suggested by several prominent submitters during consultation. Figure 14 shows the range of price triggers levels assessed in the Impact Statement, and the current and proposed 2020/21 FPO levels.

Figure 14: Range of CCR price trigger levels



Table 17: Impact analysis of CCR price trigger level

	Option 1: Set CCR price trigger at \$40	Option 2: Set CCR price trigger at \$50	Option 3: Set CCR price trigger at \$70	Option 4: Set CCR price trigger at \$100
Supports alignment with New Zealand's emission reduction targets	- Sets the upper bound of NZ's emissions price path below the level needed to align with emissions target	+ Sets upper bound of New Zealand's emissions price path in line with emissions targets	++ Sets higher upper bound of New Zealand's emissions price path, leading to greater levels of abatement	+ Sets a high trigger price, allowing for high NZU prices over the PEB. This could lead to higher levels of abatement - Sets upper bound of New Zealand's emissions price pathway at a level likely higher than needed to achieve targets
Appropriately allocates risks, costs and benefits	++ Contains emissions price at level that mitigates severe economic impacts + Contains NZU prices at auction, reducing compliance costs for participants using auctioned units to meet NZ ETS obligations - Contains NZU prices at auction at \$40, reducing potential auction proceeds for the Crown	+ Contains emissions price at level that mitigates severe economic impacts + Appropriately balances the fiscal risk to auction participants and the Crown presented by the CCR	- High emissions prices could lead to some negative economic impacts - Allows for higher prices at scheduled auctions, increasing the cost for auction participants to buy NZUs + Higher auction prices would increase auction proceeds for the Crown	-- Very high emissions prices could lead to severe economic impacts -- Allows for very high prices at scheduled auctions, increasing the cost for auction participants to buy NZUs ++ Allowing for significantly higher auction prices could increase auction proceeds for the Crown + Greater auction proceeds could offset the costs of backing units from the CCR + Higher emissions price could spur investment in low-emissions industries and technology

Improves regulatory certainty and predictability	0	0	0	0
Consistent with broader New Zealand climate change policy	- Lower price trigger increases the chance of the CCR being activated – which is inconsistent with the intended operation of the CCR	0 Lower price trigger level increases the chance the CCR will be activated, which would be inconsistent with a the reserve being activated rarely	+	++ Substantially reduces the likelihood of the CCR being activated, as it is set well above expected prices at auction
Supports linking	- Capping domestic emission price at below \$50 for PEB may make the NZ ETS a less attractive linking partner	+	+	+
Overall assessment	Option 2 is preferred because it allows the emissions price to increase over the PEB, in line with meeting our emissions reduction targets, while appropriately balancing costs to participants and the Crown of using the CCR			

The price trigger options assessed here set the level where the CCR is triggered and contains NZUs prices. The higher the price trigger is set, the more prices at an auction are allowed to rise before the reserve supply is released. It also signals a higher price for units, which could encourage prices on the secondary market to increase.

Option 1 does not support alignment with New Zealand's emissions reduction targets. Auction prices would only be allowed to increase to \$40 before the CCR was triggered and costs were contained. This would set the upper limit of New Zealand's emissions price pathway too low to drive adequate levels of emissions reductions. It is probable that NZU prices will need to be able to rise above \$40 over the PEB for net emissions to reduce in line with achieving the 2050 target.

We assess that Options 2 and 3 support alignment with New Zealand's emissions reduction targets. Setting the CCR price trigger at \$50 or \$70 would establish the upper bound of the emissions price pathway at a high enough level to effect an amount of abatement needed to meet our targets. Under Option 4, auction prices would be able to rise to \$100 before the CCR activates. This could precipitate significant levels of abatement over the PEB. However, this setting could be too high, and allow an emissions price higher than what is required to achieve the 2050 target, whilst opening up risks to participants and households.

The four options differ in how they allocate the costs and benefits of the CCR. Allowing for a higher emissions price could increase costs throughout the economy. The price of commodities affected by a price on carbon, such as fuel, electricity, industrial products (steel, aluminium etc.) and agricultural products, could rise in response to higher NZU prices where companies are able to pass higher carbon costs onto their customers. Under Options 1 and 2, NZU prices cannot increase to the same extent, mitigating the economic impacts of a higher emissions price.

However, under Options 3 and 4 there is greater risk of the emissions price increasing to unsustainable levels. This could impose unacceptable costs on households and businesses. For those firms with limited ability to pass on high NZ ETS costs, a high NZU price would be untenable, particularly in the economic environment created by COVID-19. These two options could also lead to higher NZ ETS compliance costs. Some participants intend to use NZUs acquired through auctioning to meet their surrender obligations in the emissions trading scheme. Implementing a higher price trigger level would allow these units to clear at higher prices.

Allowing for higher auction prices could benefit the Crown by increasing the potential auction proceeds. Options 3 and 4 would allow auctions to clear at a higher price, increasing the revenue received from auctioning units. This revenue could be used by the Crown to pay for the additional emissions reductions required to back reserve units.

A clear advantage of a higher price trigger level is that it reduces the likelihood of the CCR being activated. Option 4 would allow auction prices to reach \$100 before the reserve is triggered, whereas under Option 1 the reserve would activate at a much lower clearing price of \$40. The Government intends that the CCR should be set outside the expected cost of emissions abatement for meeting our targets, and therefore used rarely. This is more likely to be achieved with a higher price trigger. By reducing the chance of the reserve being triggered, Options 1 and 2 also reduce the Crown's fiscal exposure from having to back reserve units that are auctioned.

During consultation, a large number of submitters supported a price trigger level above \$50. They argued that the price on emissions needs to increase to adequately incentivise low emissions investment decisions. Very few submitters advocated for a price trigger below the \$50 consultation proposal.

Recommendation

It is proposed that the CCR price trigger is set at \$50 as proposed in consultation. This level will allow the emissions price to increase over the PEB, in line with meeting our emissions reduction targets, but also mitigates the fiscal risk associated with allowing NZUs to rise to unacceptable levels and imposing severe costs on the economy.

Rate of increase of the cost containment reserve price trigger

Like the auction price floor, the level of the CCR price trigger could remain the same over the PEB or increase every year. We assess different options for increasing the level of the price trigger from year to year.

For each option we start with a price trigger level of \$50 in 2021.

Option 1: Set the CCR price trigger at \$50 for each year of the PEB

Option one proposes setting the CCR at \$50 for each year of the PEB. This is the option that the Government consulted on.

Option 2: Set the CCR price trigger at \$50 for 2021 and increase by inflation for each subsequent year of the PEB

This option would see the CCR price trigger increase by two per cent per annum based on the forecast rate of inflation. The rate used is the forecast CPI inflation from Treasury based on the Half Year Economic and Fiscal Update published in December 2019.

Option 3: Set the CCR price trigger at \$50 for 2021 and increase by five per cent plus inflation for each subsequent year of the PEB

Option three assesses a rate of 5 per cent plus inflation. This is the method currently used by the California emissions trading scheme for their CCR price trigger.

Option 4: Set the CCR price trigger at \$50 for 2021 and increase by 15 per cent plus inflation for each subsequent year of the PEB

Option four proposes a more significant rate of 15 per cent plus inflation increase.

Table 18 shows the rates of the CCR price trigger for each option (the shape of the rise increase is the same as represented in Figure 12).

Table 18: Rates of the CCR price trigger for each option

	2021	2022	2023	2024	2025
Option 1	\$50.00	\$50.00	\$50.00	\$50.00	\$50.00
Option 2	\$50.00	\$51.00	\$52.02	\$53.06	\$54.12
Option 3	\$50.00	\$53.50	\$57.25	\$61.25	\$65.54
Option 4	\$50.00	\$58.50	\$68.45	\$80.08	\$93.69

Table 19: Impact analysis of price trigger rate options

	Option 1: Set price trigger at \$50 for each year of the PEB	Option 2: Set price trigger at \$50 in 2021 and increase by inflation each subsequent year of the PEB	Option 3: Set price trigger at \$50 in 2021 and increase by 5% + inflation each subsequent year of the PEB	Option 4: Set price trigger at \$50 in 2021 and increase by 15% + inflation each subsequent year of the PEB
Supports alignment with New Zealand's emission reduction targets	- Some risk with a flat rate that NZUs could be auctioned at a level outside price pathway, particularly at the end of the PEB	0 Allows price trigger to increase by inflation, preventing the value from decreasing over the PEB	++ Allows the price trigger to increase over the PEB in line with emissions price pathway	+ Allows price trigger to increase – although this increase may not align with emissions price path in later years of the PEB as it is too great
Appropriately allocates risks, costs and benefits	+ Holds NZU prices at or near \$50, minimising costs on households and the economy + Holds ETS compliance costs at or near \$50 for the PEB	+ Holds NZU prices near \$50, minimising costs on households and the economy + Ensures NZ ETS compliance costs only increase by inflation	- Would allow for higher NZU prices over the PEB, potentially increasing costs on households and the economy - Potentially higher costs to buy NZUs at auction + Allows for greater auction proceeds over the PEB	-- Would allow for very high NZU prices over the PEB, likely imposing unacceptable costs on households and the economy -- Potentially higher costs to buy NZUs at auction ++ Allows for greater auction proceeds over the PEB
Improves regulatory certainty and predictability	+ High degree of certainty in the level of the price trigger as it stays the same throughout the PEB	0 Less certainty in the level of price trigger as it changes with inflation	0 Less certainty in the level of price trigger as it changes with inflation	0 Less certainty in the level of price trigger as it changes with inflation
Consistent with broader New Zealand climate change policy	- Limits price discovery at auction by preventing the sale of NZUs above \$50 for the entire period of the PEB	0	+ Supports market integrity by allowing price discovery at auction above \$50	+ Supports market integrity by allowing price discovery at auction above \$50
Supports linking	- Capping domestic emission price at or near \$50 for PEB may make the NZ ETS a less attractive linking partner	0	+ Setting the CCR price trigger to allow for higher emissions prices could make the NZ ETS a more attractive linking partner	+ Setting the CCR price trigger to allow for higher emissions prices could make the NZ ETS a more attractive linking partner
Overall assessment	Option 3 is preferred. It allows for some increase in the level of the price trigger over the PEB			

Like the auction price floor, the Government has to consider inflation when setting the level of the CCR price trigger. Options 2, 3 and 4 satisfy this legislative requirement, adjusting the level of the price trigger for inflation.

To achieve New Zealand's ambitious emissions reduction targets it is important the NZU prices be allowed to rise over time. This is because allowing a higher emissions price will drive greater levels of abatement over the PEB.

Option 1 would constrain New Zealand's emissions prices around \$50. We assess this would not support alignment with emissions reduction targets – particularly in the later years of the PEB when prices may need to be above \$50 to effect the right amount of abatement to align with our targets. Similarly, Option 2 only increases the price trigger by the annual rate of inflation. As this would lead to small year-to-year increases in the price trigger level from \$50 in 2021, it would also be unlikely to drive a sufficient level of abatement over the PEB. There is also some risk that the level of the price trigger could actually decrease in a deflationary environment.

Options 2 and 3 support alignment with our emissions reduction target, as they allow NZU prices to increase to a certain level over the 2021-2025 period, by steadily escalating the clearing price where the CCR activates. Option 3 best supports the first criteria as the price increase aligns with New Zealand's emissions price pathway. This is not the case with Option 4. Under this option NZU prices could rise to over \$90 (in 2025) before the CCR is triggered. This price would be outside the price pathway, driving unnecessarily high levels of abatement i.e. more emissions reductions than are needed to meet the 2050 target.

There are higher costs associated with Options 3 and 4 compared to Options 1 and 2. Under Options 3 and 4, NZU prices could increase to higher levels over PEB period. This risks imposing higher costs on households and the economy. It could also lead to higher NZ ETS compliance costs for participants intending to use units acquired at auction to meet surrender obligations. The benefit of higher auction prices is that it would increase the revenue the Crown receives from auctioning.

Options 1 and 2 hold the price trigger close to \$50, helping to ensure NZUs remain at this level. This removes the risk of imposing higher costs on the economy. Both options would hold the costs of buying units at auction around \$50, constraining any increases in NZ ETS compliance costs.

All the options give certainty to participants in respect of the price triggers levels and the point where the CCR activates. There would be slightly less certainty under Options 2, 3 and 4 as the price trigger adjusts with inflation, which can be variable.

Lastly, an escalating price trigger could support the Government's efforts to link with overseas carbon markets. New Zealand's potential linking partners are likely to want certainty that NZU prices will be allowed to increase over time, ensuring the NZ ETS meets a level of environmental integrity. It will also be important to our prospective linking partners that New Zealand's emissions price are allowed to increase at a comparable rate to their own.

We propose setting the price trigger at \$50 in 2021 and adjusting the rate by 5 per cent plus inflation for each subsequent year of the PEB. This option allows NZU prices to increase before cost containment occurs, ensuring the upper bound of New Zealand's emissions price path rises over the PEB. However, it still prevents prices from increasing to a very high level that could pose unacceptable economic and fiscal costs. Option 3 supports alignment with our emissions reduction targets, while appropriately allocating the costs and benefits from a potentially higher domestic emissions price.

In addition, a large number of submissions on the CCR argued in support of the price trigger rising incrementally.

Recommendation

We recommend the CCR price trigger should be set at \$50 in 2021 and increase by 5 per cent plus inflation thereafter, amended from the proposal in the consultation document to keep the price trigger level. Option 3 is preferred because:

- It fulfils section 30GC(6)(c) of the Emissions Trading Reform Act that requires the Government to consider inflation when setting the level of the price floor
- It supports alignment with New Zealand's emissions reduction targets by increasing the upper bound of New Zealand's emissions price pathway
- It ensures higher auction provides for the Crown and increases the value of units earned through sequestration, while avoiding the unacceptably high cost impacts of a very high auction price that rises by a large amount every year
- It supports the ability to link with overseas carbon markets
- A escalating price trigger was supported by a number of submitters during consultation
- It would match the proposal to also increase the price floor by 5 per cent plus inflation

The CCR NZU volume

The effectiveness of the CCR in dampening emission prices is dependent on the volume of units available to be released, and the impact this additional supply has on the required demand. The larger the reserve is, the more units that can be added to the market in response to high NZU prices. A small CCR risks there being insufficient unit supply to meet demand and contain costs. However, the actual impact that reserve volumes will have on prices once released is challenging to forecast.

The Emissions Trading Reform Bill will enable all NZ ETS settings – including the volume of the CCR – to be reviewed if the trigger price is reached, potentially allowing for changes in years 1+2 or the five-year rolling cycle. This could allow different price trigger levels and CCR volumes to be considered.

All units released from the CCR that are outside of the NZ ETS cap must be backed by equivalent emissions reductions, i.e. 1 tonne for each NZU released. This could be in the form of purchasing international units, or by other activities or investments that reduce emissions domestically, such as additional afforestation. There would be cost to the Government from having to source the additional emissions reductions to back the CCR. It follows that the larger the reserve, the greater the financial risk this creates for the Crown.

The Ministry for the Environment commissioned an independent study in order to assess the benefits and risks associated with the CCR. The study analysed the market risks of the CCR, such as market manipulation and supply shortages, and the role the currently large stockpile plays in combination with the reserve to affect NZU prices. The report concluded that the stockpile serves as a potential CCR in its own right, as when prices rise, a significant volume of additional units will be available to be released on to the market, helping to avoid any sudden price spikes. Therefore, the size of the stockpile, and the volume being withheld from auctioning with the aim of reducing the stockpile is a

key factor in assessing an appropriate reserve size and cannot be considered independently from the CCR setting choices.

The volume within the reserve also needs to consider the level of the price trigger. For example, a low price trigger, with a large reserve volume, creates significant fiscal risk to the Crown. This is because there is a higher chance of releasing the reserve and then being required to back a large volume of units. A high price trigger and a small reserve volume reduces this risk to the Government, but increase the risk of higher prices to participants.

For the purpose of this assessment, we base our options analysis on the NZU auction volumes and stockpile reduction volumes proposed in the unit supply settings section and the proposed CCR price trigger settings.

Option 1: Set the volume of the CCR at 90 per cent of the difference between forecast net emissions and the volume of NZUs supplied through free allocation and auctioning

During consultation, the Government proposed that the annual volume of the CCR be equal to 90 per cent of the difference between forecast net emissions covered by the NZ ETS and the volume of NZUs supplied to the market through free allocation and auctioning. This was based on the rationale that if the required overall supply to the market had been underestimated, the additional volume would be sufficient to meet required demand. Only putting 90 per cent of the potential additional demand into the reserve reduces the risk of potentially oversupplying the market.

Figure 15 and Table 20 demonstrate this option based on emissions projections from the Fourth Biennial Report and the unit supply settings proposed within this RIA.

Figure 15: Setting the CCR volume based on 90 per cent of the difference between forecast net emissions and NZUs supplied through free allocation and auctioning methodology

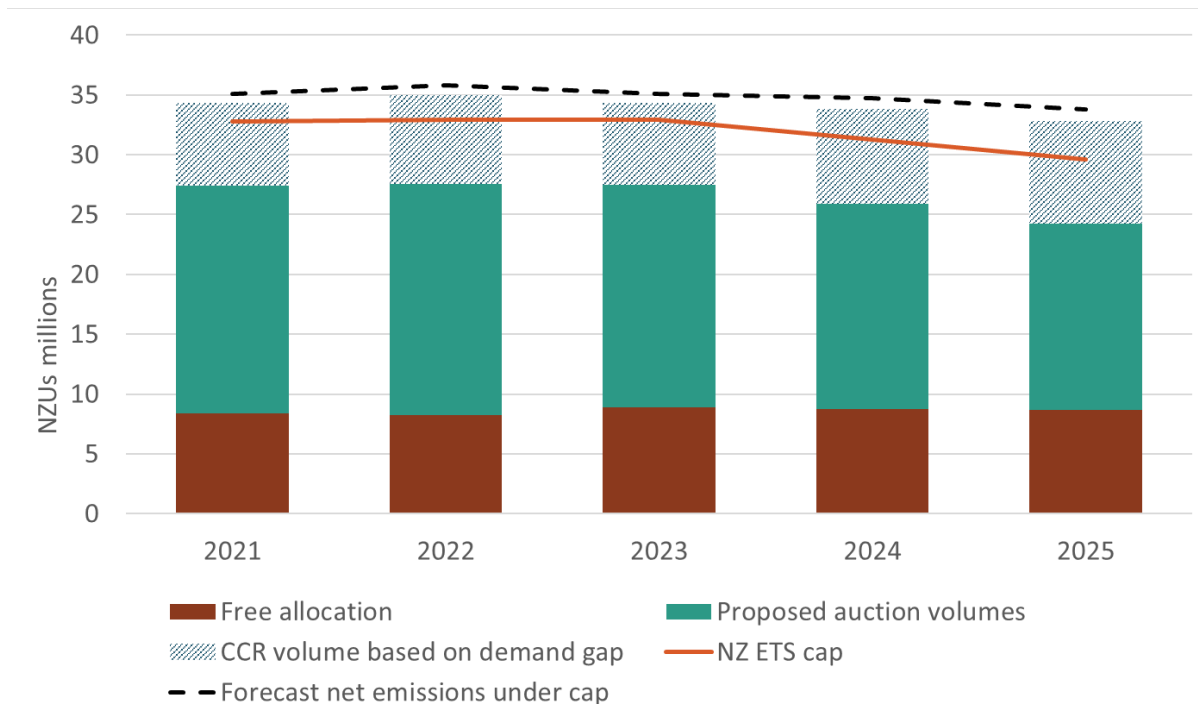


Table 20: Volume of the CCR based on 90 per cent of the difference between forecast net emissions and NZUs supplied through free allocation and auctioning methodology

	2021	2022	2023	2024	2025	Total
Forecast net emissions	35.1	35.8	35.1	34.7	33.8	174.5
<i>Free allocation supply</i>	8.4	8.2	8.9	8.7	8.7	42.9
<i>Auction supply</i>	19.0	19.3	18.6	17.2	15.5	89.6
Total unit supply	27.4	27.5	27.5	25.9	24.2	132.5
<i>Difference between forecast emissions and supply</i>	7.7	8.2	7.6	8.8	9.6	41.9
Option one volumes: 90 per cent of demand gap	6.9	7.4	6.8	7.9	8.6	37.7

Option 2: Set the volume of the CCR as the sum of the stockpile reduction volume and five per cent of the NZ ETS cap

Option two uses a different methodology to calculate the volume based on the quantity of units withheld from auction for the purpose of reducing the stockpile, plus an additional volume of five per cent of the total NZ ETS cap volume. This methodology is designed to more closely consider the interrelation between the stockpile and the CCR volume and the more stable volume of the proposed cap, compared to the uncertainties associated with forecast emissions. Figure 16 and Table 21 show this methodology and volumes.

Figure 16: Setting the CCR volume based on the stockpile reduction volume plus five per cent of the total NZ ETS cap methodology

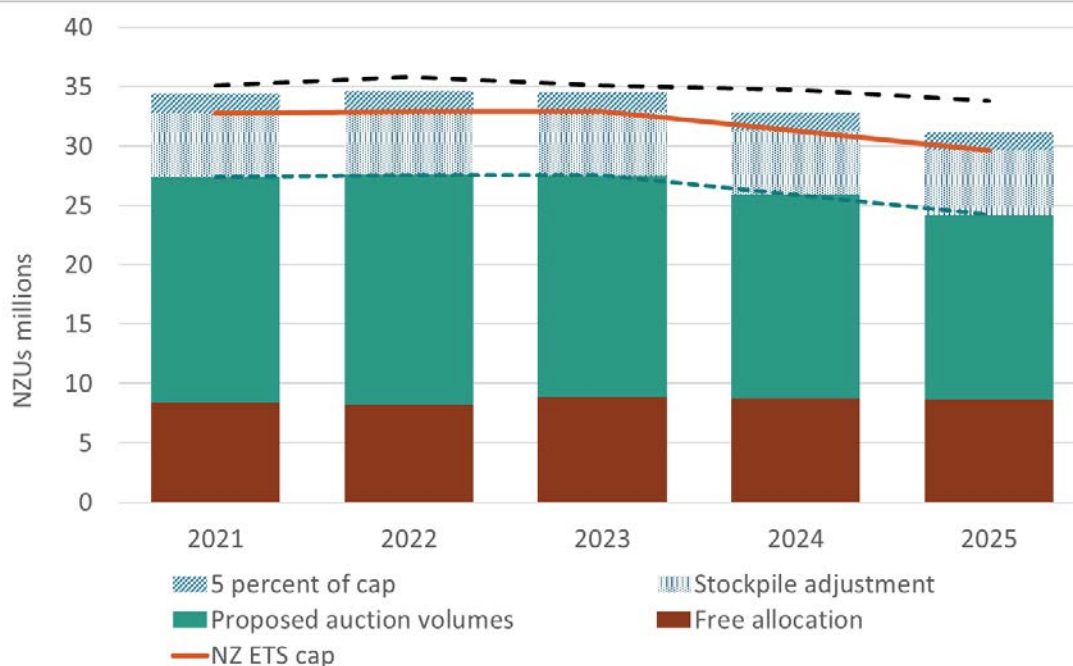


Table 21: Volume of the CCR based on the stockpile reduction volume plus five per cent of the total NZ ETS cap methodology

	2021	2022	2023	2024	2025	Total
Stockpile reduction volume	5.4	5.4	5.4	5.4	5.4	27.0
5 percent of total NZ ETS cap	1.6	1.6	1.6	1.6	1.5	8.0
Option two volumes	7.0	7.0	7.0	7.0	6.9	35.0

Other options

The above options represent two logical methodologies for determining a reserve volume; basing it wither on the relationship between supply and demand, or on a relationship to the NZ ETS cap.

However, the settings within them, (i.e. choosing 90 per cent of difference in supply and demand, and 5 per cent of total cap), could be changed, which would result in significantly different total reserve volumes. For this analysis, we focussed on assessing the impacts of the methodologies themselves, as the total volumes are relatively similar.

Table 22: Impact analysis of options to set the volume of the CCR

	Option 1: Demand gap	Option 2: Stockpile reduction + cap percent
Supports alignment with New Zealand’s emission reduction targets	-- The volume of the CCR increases over the PEB, which is not consistent with reducing supply over time in line with emissions targets	+ Volume reduces in relation to the NZ ETS cap
Appropriately allocates risks, costs and benefits	-- More fiscal risk for the Government as the reserve increases over time as the gap between forecast demand and supply increases + Increasing volume of the reserve in line with projected demand helps to ensure the reserve will effectively dampen prices	+ Less fiscal risk as the CCR volume reduces over the PEB, requiring fewer units to be backed if the reserve is triggered - Small and reducing reserve volume increases risk of not effectively containing prices
Improves regulatory certainty and predictability	- Basing volumes on forecasting which can have high levels of uncertainty is greater risks of changes	+ Determining the reserve volume is simpler for participants and is less affected by variations in forecasting
Consistent with broader New Zealand climate change policy	0	0
Supports linking	0	+ Methodology is similar to ETSs in other countries , enhancing credibility

Overall assessment

Option two is the preferred because it is more in line with the principle of a reducing cap, and minimises the risk of having to back units above the cap

A key principle for the reforms to the NZ ETS is that of a reducing cap on emissions to help New Zealand achieve its emissions reduction targets. Option 2 is consistent with this principle as the methodology gradually reduces the volume of the CCR. We therefore assess that Option 2 better supports alignment with emissions reduction targets. As Option 1 results in the CCR volume actually increasing over time it does not support the first criteria.

Under Option 1, the volume of the CCR increases. This creates greater fiscal risk for the Crown as there is more volume the Government may have to back if reserve units are sold at auction. Option 2 progressively reduces this fiscal risk by decreasing the reserve volume over time.

Option 2 may also better support linking as the methodology is similar to that used in emissions trading schemes in other countries. Implementing a comparable CCR design to reserves operated by our prospective linking partners could increase their confidence in the NZ ETS.

We are confident that the volumes from both methodologies are large enough to dampen NZU prices if they become unacceptably high. Both options add an additional reserve volume of over 25 percent of the unit supply volume available through auctioning and free allocation. However, because of the significant proportion being withheld from auction to reduce the stockpile, the volume of units above the cap requiring to be backed is still relatively low.

Option 2 is preferred because it limits the risks associated with basing a reserve volume on current emissions forecasts. Option 2 is also more closely aligned with targets as the volume reduces over time. The risks associated with Option 2 are that if the cap is more ambitiously reduced, without sufficient reductions to support this, the volume in the reserve will not be enough to reduce the stress on demand and prices. However, we assess this risk to be low as the total CCR volume of 35 million units should be more than enough to contain prices over the PEB. This is a different methodology, but very similar volume to what was proposed in consultation. Feedback from consultation regarding the CCR volume was mixed, but many submitters supported the proposed volume. Concerns with the proposal were generally related to the proposal to use a CCR as a price control mechanism, rather than specifically the methodology used to calculate the CCR volume.

Recommendation

It is proposed that the volume of the CCR is set at the stockpile reduction volume plus five per cent of the overall NZ ETS cap volume. This results in a CCR volume of 35 million NZUs for the 2021-2025 period, with the annual volumes shown in Table 21.

Uncertainties

It is difficult to assess how much impact the proposed price control settings will have on NZU prices. This is because the auction price floor and CCR are not expected to be the major drivers of price movement on the NZ ETS secondary market. Unit supply and demand are far more influential factors affecting the emissions price. The impact of the prices on NZU prices are indirect, as they affect supply and demand dynamics in the secondary market, or establish a price signal for NZUs. It could be that a CCR price trigger of \$70 or \$100 could have the same impact on NZU prices.

It can also be challenging to predict how the NZ ETS market would respond to the release of NZUs from the CCR. The key assumption for the CCR is that adding reserve supply to the market will reduce demand when prices are high. While this is solid assumption, based on the experience of similar price controls operating in overseas carbon markets, there is some uncertainty as to the amount of units that would actually be needed to efficiently contain prices. The proposals for the CCR volume both err of the side of caution and set large CCRs. This ensures that if the reserve was activated there would be enough supply to reduce demand. However, this outcome could potentially be achieved with smaller reserves. This would potentially be a more efficient outcome.

Outstanding auctioning decisions

There are two outstanding auctioning operational decisions that need to be considered: the auction start date and auction frequency. These decisions were not addressed in the *Rules for Auctioning in the NZ ETS* RIA, but were put forward in the auctioning discussion document. This was because when the RIA was being produced it was uncertain when it would be practicable for auctioning to commence in 2021. Now that auctioning decisions have been progressed, and there is clarity in respect of when auctioning can possibly begin, it is now appropriate to assess the outstanding decisions.

While the auctioning operational rules are related to the NZ ETS settings, they should still be considered as a separate set of decisions. Accordingly, we have not assessed these decisions using the NZ ETS settings criteria developed for this RIA.

It is proposed that auctioning will commence on 17 March 2021. This has been assessed as the earliest date the Government could begin auctioning for next year. Development of the auctioning system is currently underway. There is some chance the system might not be operationalised by February 2021. The earliest that auctioning could begin is in March 2021. Commencing auctioning in the middle of March 2021 provides sufficient lead time for the auction operator to be ready. It also allows for auctioning to begin in the first quarter of 2021, while adhering to the auctioning regulation that auctions cannot be held close to the 31 May unit surrender obligation date in the NZ ETS.

Delaying auctioning until after March would make it difficult to implement a quarterly auctioning schedule for 2021. It would also delay implementation of the price controls, which are a part of the auctioning system. This would prevent the Government from being able to manage unacceptable emissions prices in the early part of 2021.

It is important that auctioning commence on time in 2021. A 17 March start date will ensure units are supplied into the NZ ETS at the beginning of the PEB period. This will allow the Crown to immediately begin collecting revenue from the auctioning system. It will also allow the price controls at auction to be operationalised right away.

The auctioning frequency will set how many auctions are held in a calendar year. In 2018, the Government decided that auctioning in the NZ ETS would follow either a monthly or quarterly schedule.

A monthly schedule would increase the number of auctions held in a year. More frequent auctions would allow for a more regular distribution of the auction volume across a calendar year. This would increase the regularity to which units were supplied into the NZ ETS market. A more consistent supply of NZUs entering the NZ ETS could help regulate demand and price movement in the market. However, as New Zealand's carbon market is relatively small (in terms of the units traded and number

of participants) it is likely that even a less frequent auction schedule could still provide a similar regulating function.

There are different costs associated with implementing a monthly versus quarterly schedule. A monthly schedule would have significantly higher administrative and transaction costs. Operating 12 auctions in a year would be costly for the auction operator, and by extension the Government. Similarly, it would increase the costs for potential auction participants from having to secure collateral, develop bidding strategies and employ staff for these auctioning events. These costs would be reduced with a quarterly schedule.

A quarterly auction schedule is preferred. The proposed auction schedule for 2021 is to begin auctioning on 17 March and hold further auctions on 23 June 2021, 1 September 2021, and 1 December 2021.

Fewer auctions in a year would significantly reduce costs to participants and the Crown. There would also only be marginal unit supply benefits from operating a monthly schedule.

Recommendation

It is proposed that an auction start date of 17 March be set. A quarterly auction schedule is proposed as it is less costly than monthly auctions.

Financial Impacts of the PEB and NZ ETS settings

This section sets out the potential financial impacts of the proposals on households, businesses, and farmers/land owners. Most of the analysis in this section was carried out before the emergence of COVID-19, and therefore does not take into account the expected economic impacts of the outbreak.

The proposed NZ ETS settings establish an emissions price pathway for the PEB. The auction reserve price floor sets the lower bound of this pathway, while the CCR price trigger sets the level at which a cost containment reserve mechanism is triggered, and additional units are released to the market. It is expected NZU prices will range from \$20 to \$50; however, prices could go outside this on the secondary market, as the auction price floor and CCR only relate to units sold by the Government at auction. It is likely secondary market prices will reflect the signals established by the price controls if they are operating correctly.

As the emissions price changes over the 2021-2025 period there will be short-term economic impacts. Higher NZU prices will increase compliance costs for businesses that participate in the NZ ETS. Some participants will pass these costs onto consumers by increasing the prices for the products they sell. This could see changes to common household costs, such as electricity, petrol and food.

In the short-term, it may appear beneficial for the PEB and price controls to be set to deliver lower emissions prices. However, the consequences of this may be more costly for New Zealand when measured over the longer term. This is because reducing emissions too slowly early on in this transition means New Zealand may need to make more expensive investments later on to meet our climate change targets at a higher cost than could be achieved with early domestic abatement.

Short and long-term impacts on households

A preliminary analysis led by the Treasury in August 2019 investigated the direct impact of emissions pricing on household costs such as energy, transport and food. It showed the direct impacts of higher emissions prices on household expenditure was likely to be moderate, on average. This is because a

small proportion of household expenditure is typically allocated towards emissions intensive goods such as petrol, and the low coupling between emissions and food costs. Table 23 shows the range of impacts on households at different emissions prices.

Table 23: Weekly change in household spending based on increases in emissions price

Emissions price (NZD per tonne CO ₂ -e)	Quintile 1 (Low income households)	Quintile 2	Quintile 3 (Middle income)	Quintile 4	Quintile 5 (High income households)
\$25	0	0	0	0	0
\$30	0.1% (\$0.40)	0.1% (\$0.50)	0.1% (\$0.70)	0.1% (\$0.70)	0.1% (\$0.80)
\$35	0.2% (\$0.80)	0.1% (\$1.10)	0.1% (\$1.40)	0.1% (\$1.50)	0.1% (\$1.60)
\$40	0.3% (\$1.20)	0.2% (\$1.60)	0.2% (\$2.00)	0.1% (\$2.20)	0.1% (\$2.40)
\$45	0.4% (\$1.60)	0.3% (\$2.10)	0.2% (\$2.70)	0.2% (\$2.90)	0.1% (\$3.20)
\$50	0.4% (\$2.00)	0.3% (\$2.70)	0.3% (\$3.40)	0.2% (\$3.60)	0.2% (\$4.00)

The impact of emissions pricing is felt slightly more strongly by the lowest-income households because they spend a greater proportion of their income on emissions intensive goods, even though the absolute level of such consumption tends to be lower. As such, the proportional effect of higher emissions price (in terms of impact on disposable income) will be greater for low-income households in the short-term, even though the absolute dollar effect will be less. With fewer resources, lower income households will have less ability to change behaviour or invest to reduce their exposure to emissions prices (such as buying an electric vehicle).

The modelling may overstate the actual cost to all households. It does not account for household behaviour changes to reduce emissions, or planned Government actions to reduce potential costs, such as making fuel-efficient cars cheaper, supporting home energy efficiency, and reducing the use of fossil fuels for electricity. Moreover, additional costs on households could be partially offset by the indexation of benefits and tax credits to inflation (the consumer price index (CPI)) and wage growth.

Over the long-term, it is expected that the cost impact of higher emissions prices on households will be lower. This is because households and businesses will increasingly be able to take advantage of low-emissions alternatives to the current predominantly fossil-based technologies. The costs of transport (electric vehicles) and heating (heat pumps) are likely to decrease in the middle to long-term, allowing households to switch to lower-carbon alternatives.

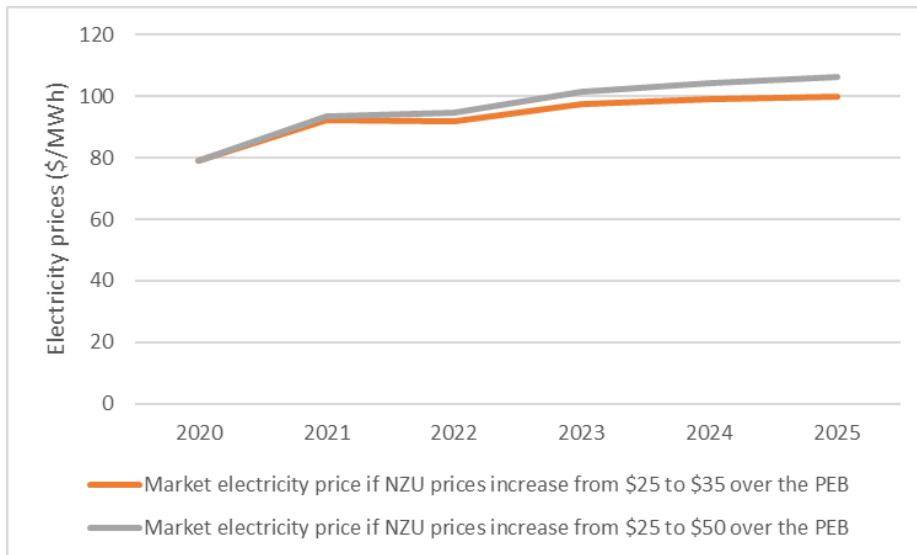
Impact of the proposed settings on electricity prices

Electricity is an important household cost affected by changing emissions prices. The impact of emissions price rises on electricity in the longer-term is likely to be muted by the ability of the system to build more renewable generation capacity. In addition, even a rapid rise in the price of emissions prices (and consequently power prices) may not immediately flow through to residential consumers.

The Ministry for the Environment recently procured modelling for the electricity allocation factor (EAF) that showed the potential impact of a higher emissions price on electricity. A key finding of this work was that electricity prices are more sensitive to changes in demand than they are to carbon costs.

We have applied some of the modelling outcomes to approximate changes in electricity prices. Figure 17 shows electricity prices under two emissions price scenarios. The first scenario sees a linear increase in NZU prices from \$25 in 2020 to \$35 in 2025, while the second scenario sees prices rise from \$25 in 2020 to \$50 in 2025.

Figure 17: projected electricity prices under different NZU price scenarios



We project that higher NZU prices over the PEB would have a relatively small impact on electricity prices. The price difference between the first and second carbon price scenario is only \$6.48/MWh in 2025. This would translate to a small increase in the retail electricity prices households and most businesses pay as the wholesale cost of power contributes only about a third of the total cost of residential power prices.

Impacts on business

In considering the impacts on businesses, it is important to distinguish between those businesses that participate in the NZ ETS and have direct costs associated with surrendering NZUs, and those that do not participate but may face indirect costs from higher energy prices or other input commodities affected by an emissions price.

It is difficult to estimate the compliance costs of participating in the NZ ETS. Emissions data is reported at an aggregated sectoral level, as such the Ministry does not have access to emissions data for individual participants making it difficult to determine the cost of their surrender obligations. This information is currently considered commercially sensitive under the CCRA, and kept confidential by the EPA. The Emissions Trading Reform Bill will change this and require participants to publicly report their emissions.

Industrial allocation will ameliorate some of the direct costs of rising NZU prices. Emissions intensive and trade-exposed (EITE) participants currently receive 90 per cent or 60 per cent of their emissions obligations for free from the Crown. This leaves an implied remaining NZ ETS cost of 10 per cent for highly emissions intensive firms and 40 per cent for moderately emissions intensive firms receiving free allocation. It should be noted that the implied costs are likely to differ from the actual NZ ETS compliance costs for firms receiving free allocation. This is because industrial allocation volumes are proportional to their production output rather than the obligated emissions specific to each company.

The Government has decided to gradually phase-out the level of industrial allocation, starting with the level of assistance declining by 1 per cent a year from 2021–2030. The phase-out will have a cost impact on firms receiving allocations. The cost impacts of the phase-out are proportional to changes in the emissions price. .

Table 24 shows the projected implied NZ ETS costs for several of the most highly emission-intensive activities, which have the highest NZ ETS costs and receive free allocation, at different carbon prices. It assumes that highly emissions intensive firms continue to receive free allocation over the PEB (which is phased-out at a rate of 1 per cent per annum from 2021) and have an implied NZ ETS cost that is not covered by free allocation.

Table 24: Projected implied NZ ETS costs for eligible activities at different emissions prices

Eligible activity	Implied cost impact at \$25/NZU (\$ millions)		Implied cost impact at \$35/NZU (\$ millions)		Implied cost impact at \$50/NZU (\$ millions)	
	2021	2025	2021	2025	2021	2025
Iron and steel	6.5	8.8	9.1	12.4	13.0	17.7
Aluminium	5.0	6.8	7.0	9.5	10.0	13.6
Methanol ⁶	3.5	4.8	4.9	6.7	7.0	9.6
Cement	3.3	4.6	4.2	6.2	6.5	8.9
Urea	1.0	1.3	1.4	1.9	2.0	2.7
Burnt lime	0.9	1.2	1.2	1.7	1.8	2.4

The analysis suggests that if NZU prices increased to \$50 by the end of the PEB, there would be material cost impacts for firms carrying out eligible activities.

However, there is also increasing evidence that some recipients of free allocation are currently being over-allocated. This means they could be receiving a level of allocation greater than what is needed to achieve the objectives of industrial allocation policy. Officials do not know the prevalence of over-allocation; however a review of industrial allocation planned for 2020 and 2021 should be able to demonstrate the risk.

Non-emissions intensive and trade-exposed participants are expected to face far fewer cost impacts than EITE firms from a rising emissions price. In general, such businesses will be able to pass-on a significant proportion of emission costs to consumers – thereby giving rise to the impact on New Zealand households outlined in the Treasury analysis above.

⁶ While the production of methanol is an eligible activity to receive free allocation, the CCRA does not require firms carrying out this activity to surrender units in the NZ ETS. Rather, the firm producing methanol faces indirect NZ ETS costs through higher natural gas and electricity prices.

However, despite the detailed information that we have about some firms, there are gaps in our analysis that cannot currently be addressed. The Climate Change Commission and Motu are currently working on distributional economic impact analysis of the NZ ETS. This work is expected to be completed by the end of 2020.

During consultation, some submitters noted that because their businesses are trade-exposed, they are unable to pass on their NZ ETS costs. Some firms would be particularly exposed to higher emissions prices over the PEB if they are ineligible for industrial allocation (as they are not emissions intensive), but still compete with overseas business. Increasing NZ ETS costs could significantly impact these industries.

Some of these issues apply to businesses that do not participate in the NZ ETS but may face indirect costs from a rising emissions price. Similar to households, this would occur where higher emissions prices drive up the pass through costs of commodities with a high carbon component.

Impacts on land-use change and forestry

While land-use change is sensitive to a range of factors, a changing emissions price has the potential to drive rapid and wide-spread changes, particularly the conversion of highly productive farm land to forestry. This has led to concerns from some sectors that large areas of productive land across New Zealand are being (or have the potential to be) converted into plantation forestry. Farm to forestry conversions have the potential to impact on the social and economic wellbeing of rural communities.

Increases in new forestry planting are likely being driven by a range of government priorities including the One Billion Trees programme, the NZ ETS and broader climate change targets. Other factors, such as strong log prices, water quality and soil conservation aims, and individual landowner choices and decisions are also supporting the establishment of more trees. This makes it challenging for officials to assess the actual scale of conversions, and the role New Zealand's emissions prices play in this phenomenon.

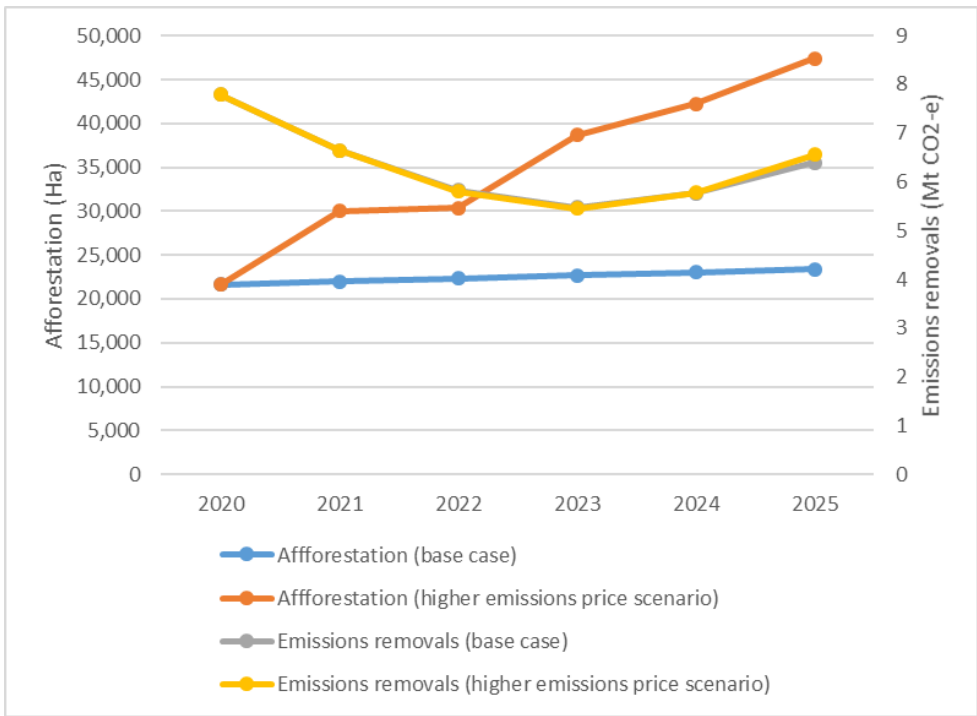
Nonetheless, modelling from the Ministry for Primary Industries suggests that afforestation rates will increase over the PEB period. Farmland currently categorised as having low productive capacity will likely be converted if the emissions price makes forestry a more economically attractive land-use. Table 25 and Figure 18 show projected afforestation rates and emissions removals for the 2020-2025 period under two emissions pricing scenarios: a base scenario where NZUs increase to \$26.88 by 2025, and a much faster increase of prices from current levels to \$50 in 2025.

Table 25: Projected afforestation and emissions removals under different emissions pricing scenarios

	2020	2021	2022	2023	2024	2025	Total
Base case where emissions price increases to \$26.88 by 2025							
Afforestation (Ha)	21,634	21,988	22,341	22,695	23,048	23,402	135,108
Emissions removals (Mt CO ₂ -e)	7.8	6.7	5.8	5.5	5.8	6.4	37.9
Scenario where the emissions price increases to \$50 by 2025							
Afforestation (Ha)	21,634	29,988	30,341	38,695	42,248	47,402	210,308

Emissions removals (Mt CO ₂ -e)	7.8	6.6	5.9	5.5	5.8	6.6	38.0
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Figure 18: Projected afforestation and emissions removals under different emissions pricing scenarios



The forecast suggests that if NZU prices increase to \$50 by 2025, the cumulative afforestation could be nearly double that which would be achieved if prices remained on a slowly upward trajectory. This could certainly increase the prevalence of farm to forest conversions over the course of the PEB.

However, the increased rate of afforestation would not result in an attendant rise of carbon emissions abatement. This is because, in the short-term, a higher rate of afforestation would result in a loss of soil carbon. Beyond the first emissions budget, the increased levels of afforestation contribute significant emissions reductions. This will help New Zealand meet future emissions budgets and track towards the 2050 target.

The afforestation projections are based on economic modelling completed by the University of Canterbury in 2019, and exclude any new planting driven by the Government Grants or Joint Ventures programmes. They assume 90 per cent exotic and 10 per cent native planting.

The carbon price is merely one of many reasons why a land owner may, or may not, choose to afforest. In particular future afforestation rates are subject to a range of factors such as: the land owners' interest in forestry, current and future wood product returns, differing rates of return between forestry and other land uses, nursery capacity, forest/land owners future intentions, future international and domestic carbon accounting rules, land availability, health and safety issues related to topography, government planting schemes, current private sector interest in participating in forestry schemes administered by the government, and forest and land owner's carbon and wood price predictions.

Other barriers include: seed from seed suppliers, seedlings from nurseries, labour (planting crews), and suitable land at the right price.

These afforestation rates and removal estimates exclude the impact of COVID-19. COVID-19 may reduce the intended level of afforestation in 2020, due to impacts on activities such as land preparation, supply of seedlings to site, and labour force operation. Planting over the near term is also likely to be reduced to some degree, as a result of wider market impacts.

Section 5: Conclusions

5.1 What option, or combination of options is likely to best address the problem, meet the policy objectives and deliver the highest net benefits?

The Climate Change Response (Emissions Trading Reform) Amendment Bill establishes a unit supply framework in the NZ ETS to limit the overall emissions covered by the scheme. This framework will enable the Government to gradually reduce domestic greenhouse gas emissions in line with the 2050 targets set under the Zero Carbon Act, as well as New Zealand's Nationally Determined Contribution under the Paris Climate Change Agreement.

The Impact Statement assesses the unit supply and price control settings that will give effect to the policy changes introduced by the Emissions Trading Reform Bill. These settings will be set in regulation.

Four sets of decisions have been considered:

1. Determining the volume of the provisional emissions budget (PEB)
2. The NZ ETS unit supply settings
3. The NZ ETS price control settings; and
4. Some outstanding auctioning decisions

It is proposed that the volume of the PEB will be set at 354 Mt CO₂-e. This is the same overall volume as originally proposed in consultation, however, the annual emissions have been adjusted to account for the potential impacts of COVID-19 and prevent oversupplying the NZ ETS market in the early part of the PEB. This approach ensures steady progress towards our 2050 target, while assisting the economy to recover from COVID-19 by not forcing greater emission reductions than previously signalled in consultation.

The overall cap on emissions covered by the NZ ETS will be 160 Mt CO₂-e. This equates to a limit of 160 million NZUs. This was calculated by removing emissions outside the NZ ETS from the PEB. From this, a final auction volume of 90 million NZUs for the PEB period is proposed. This volume allows for a stockpile reduction of 27 million units.

These settings are the outcome of the sequential decision-making process the Government consulted on, and that received broad support from stakeholders. We found no compelling reason to change this process. Some minor updates were made to the forecast free allocation volumes and the spread of the units across the five year period, largely based on the slight adjustments to the PEB. Also forestry emissions outside the NZ ETS were removed from the volume of the cap.

There are some changes to the price control proposals from consultation. The Government initially proposed setting the auction price floor and CCR price trigger at \$20 and \$50 respectively for the entire PEB. These rates remain for 2021, but it is now proposed that these will increase by five per cent plus the annual rate of inflation for each subsequent year of the PEB. This will allow for some increase in New Zealand's emissions price path, supporting greater levels of abatement needed to align with the 2050 target. Options for

higher price control settings were dismissed as they could risk higher NZU prices over the 2021-2025 period, increasing costs on households and the economy.

A substantial change has been made to the preferred methodology for calculating the volume of the CCR. During consultation, it was proposed that the volume would be 90 per cent of the difference between forecast net emissions covered by the NZ ETS and the quantity of NZUs supplied into the scheme through free allocation and auction. It is now proposed that reserve volume is based on the quantity of units from the stockpile reduction, plus an additional volume based on five per cent of the NZ ETS cap. This results in an overall CCR volume of 35 million NZUs over the PEB. We consider this volume to be large enough to ensure the effectiveness of the CCR to dampen unacceptably high costs. It also means that only the portion of the reserve outside the cap needs to be backed by equivalent emissions reductions, reducing the fiscal risk to the Crown.

Lastly, auctioning will begin on 17 March 2021. It is proposed that a quarterly auction schedule is adopted.

We are confident in the assumptions and analysis used to develop the PEB, NZ ETS unit supply settings, and price control settings. The evidence base for the Impact Analysis is also robust. The analysis has drawn from marginal abatement cost research and independent analysis undertaken by Treasury last year.

We recognise that there are some uncertainties in the available data, particularly the emissions forecasts used to determine the PEB. Emissions projections may not reflect actual emissions, and events like the COVID-19 pandemic substantially increase the uncertainties present in these data. The duration of the current COVID-19 lockdown measures and their ongoing restrictiveness are unknown. Although the Ministry for the Environment has developed preliminary modelling of the impacts of COVID-19 on emissions over the PEB, and the Treasury has similarly modelled the economic impacts, there remains considerable uncertainties about the severity and duration of the pandemic.

The analysis in the Impact Statement is based on the most current forecasts available to officials. The uncertainties in the data cannot easily be mitigated within the current decision-making process. However, the first emissions budget that replaces the PEB in 2022 will be based on up- dated projections. There is also provision in the coordinated decision-making process to review the unit supply and price control settings, in the circumstance where setting needs to be adjusted.

The proposals assessed here have been comprehensively tested with the public. Consultation took place in late 2019 and early 2020. Māori/iwi were invited to participate in consultation alongside other stakeholders and notice of the consultation was included in a regular Ministry iwi newsletter. Māori/iwi groups were also specifically consulted through a series of regional hui held in February 2020. Māori have significant interest in the NZ ETS, primarily through the substantial investments in forestry and renewable energy assets, which could benefit financially from higher emissions prices. We have carefully considered these interests and taken into account the Treaty of Waitangi when developing this analysis.

Submitters generally supported the overall goal of reducing New Zealand's greenhouse gas emissions, and tended to support the unit supply and auction price control measures proposed to help achieve this. However, opinions on the level of ambition of the PEB and

the specific prices proposed for the CCR and auction price floor varied significantly between submitters. We consider the proposals accommodate the desire from most submitters for a more ambitious scheme that drives higher level of domestic emissions abatement, with those from participants and business groups concerned with high emission prices imposing severe costs on them and the economy.

5.2 Summary table of costs and benefits of the preferred approach

Affected parties (<i>identify</i>)	Comment: <i>nature of cost or benefit (eg, ongoing, one-off), evidence and assumption (eg, compliance rates), risks</i>	Impact <i>\$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts</i>	Evidence certainty <i>(High, medium or low)</i>

Additional costs of proposed approach compared to taking no action			
Regulated parties	<p>NZ ETS participants may face higher compliance costs as the proposals will likely increase New Zealand's emissions price over the PEB. These potential costs will differ among participants based on their emissions intensity and ability to pass on the costs.</p> <p>Auctioning participants will incur costs from buying NZUs. We can estimate the minimum auction cost based on the minimum bid size (500 NZUs) and the auction price floor level (\$20) and the CCR price trigger (\$50).</p> <p>Bidders will have to provide collateral equal to 25 per cent of their bid.</p>	<p>Implied NZ ETS costs for emissions intensive and trade exposed activities:</p> <p>Largest increase for iron and steel: \$8.8 million in 2025 at an emissions price of \$25; and \$17.7 million in 2025 at an emissions price of \$50. This assumes emissions intensive firms receive free allocation and have an implied NZ ETS cost.</p> <p>Minimum total cost to buy units at NZ ETS auction: \$10,000 at a NZU price of \$20, and \$25,000 at a NZU price of \$50.</p> <p>Minimum collateral cost of participating in auctioning: \$2,500 at a NZU price of \$20, and \$6,250 at a NZU price of \$50.</p>	Medium to high
Regulators	The proposals do not impose any additional costs that are material on the NZ ETS regulators.		High

Wider government	<p>The Government are required to back units from auctioned from the CCR with equivalent emissions reductions. This will likely mean buying international units. Note: the entire CCR does not have to be backed – only reserve units that exceed the NZ ETS cap.</p> <p>There is an implied cost to the Crown of meeting New Zealand's NDC under the Paris Agreement. As the NZ ETS settings do not achieve sufficient domestic abatement to meet the NDC, the Government will likely have to procure offshore mitigation. Buying international units will come at a fiscal cost to the Crown.</p>		Low
Other parties	<p>Small change in household spending with an increase in the emissions price from \$25 to \$50.</p> <p>Likely increase in costs for some businesses indirectly affected by an emissions price (higher fuel and electricity prices).</p>	Increase in weekly costs for middle income households by \$3.40 (0.3%).	Medium
Total Monetised Cost		N/A	
Non-monetised costs		<i>(High, medium or low)</i>	

Expected benefits of proposed approach compared to taking no action

Regulated parties	<p>There are a number of expected benefits for NZ ETS participants:</p> <ul style="list-style-type: none"> • Improves the operational of NZ ETS and the integrity of the domestic carbon market • Provides a new source of unit supply to participants through auctioning • Stable NZU prices will help participants understand the 		Medium
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	<p>costs associated with being in the NZ ETS</p> <ul style="list-style-type: none"> Predictable prices will also help investors to make efficient decisions for investing in low-emissions technologies or afforestation 		
Regulators	Improved NZ ETS will be easier and less costly to administer.		Medium
Wider government	<p>The proposed settings are projected to have positive fiscal impact, and increase Crown non-tax revenue.</p> <p>The Crown will receive revenue from the proceeds of auctioning NZUs. The auction price floor and CCR price trigger establish the range of prices units could be auctioned for.</p> <p>The Crown will receive revenue for CCR units sold at auction. However, CCR units that exceed the NZ ETS cap will have to be backed by the Government procuring equivalent emissions reduction. This requirement would offset the revenue the Government could earn from auctioning reserve units.</p> <p>Helps the Government meet the 2050 emissions reduction target set under the Zero Carbon Act.</p>	<p>Projected fiscal impacts of proposed NZ ETS settings compared to current settings: \$618 million in 2024/25.</p> <p>Projected impact of proposed NZ ETS settings on non-tax revenue: \$285 million in 2024/25.</p> <p>Potential total auctioning proceeds over the PEB: \$1.8 billion at a NZU price of \$20.</p> <p>Potential total CCR proceeds for reserve units that do not need to be backed (i.e. the stockpile reduction portion of the CCR): \$1.35 billion at \$50 CCR price trigger level.</p> <p>Potential total CCR proceeds for reserve units that do need to be backed: \$400 million at \$50 CCR price trigger level.</p>	Medium

Other parties		N/A	
Total Monetised Benefit		N/A	
Non-monetised benefits		<i>(High, medium or low)</i>	

5.3 What other impacts is this approach likely to have?

The main benefit of the proposed PEB and NZ ETS settings is that they establish an overall limit on domestic greenhouse gas emissions. This is needed to drive emissions abatement over the first emissions budget period.

There are large, and immediate, economic co-benefits from reducing emissions. This includes improving the health of New Zealanders (through reduced levels of air pollution) and realising non-climate related environmental outcomes, such as improvements in water quality and biodiversity.

Section 6: Implementation and operation

6.1 How will the new arrangements work in practice?

The PEB and NZ ETS settings will be given effect through regulations. These regulations will be progressed throughout 2020 and implemented by the end of 2020. This timeframe will allow auctioning to commence in 2021.

Sections 30GA to 30GG of the Emissions Trading Reform Bill set out the types of decisions that the Minister for Climate Change will need to make when recommending that auctioning regulations be made.

The proposed regulatory settings for the NZ ETS are provisional. The first emissions budget and related NZ ETS settings recommended by the Climate Change Commission and adopted by the Government will replace the provisional settings considered in this Impact Statement. The Government will publicly consult on the first emissions budget in 2021. This will provide another opportunity for NZ ETS participants, stakeholders and the public to submit on the short-term NZ ETS settings.

The Ministry for the Environment is running a competitive tender process to appoint an auction operator and establish the auctioning platform. The auction operator will be appointed during 2020 with a view to starting auctions in early 2021. The auction operator will apply some of the proposed NZ ETS settings, including the annual auction volumes, the auction price floor, and the CCR.

The auctioning platform is required to interface with the NZ ETS Registry that is operated by the Environmental Protection Authority (EPA). Details of this interface will be worked through with by the Ministry for the Environment, the EPA and the auction operator once appointed.

6.2 What are the implementation risks?

We have identified several risks associated with implementing the NZ ETS settings regulations.

The regulations for the NZ ETS settings are being progressed alongside other sets of regulations that are required to enable other policy changes in the Emissions Trading Reform Bill. Cabinet has already agreed to the operational rules for auctioning in the NZ ETS. These are expected to be in place by early 2021. Together the two sets of regulations form a package. Delays or disruptions in one set of regulations could affect the other. The Government has prioritised the passage of both sets of regulations to ensure they are implemented on time.

A package of forestry regulations is currently being developed to implement the forestry changes in the Emissions Trading Reform Bill. These regulations have been delayed and the major forestry proposals (including averaging accounting, the new permanent forestry activity in the NZ ETS, temporary adverse events exemptions, and offsetting for post-1989 forestry) will not be implemented until 2023. While this should not affect implementation of the interim NZ ETS settings, future budgets and settings will be impacted. This is because forestry has a strong impact on New Zealand's emissions, which flows through to the supply

of units into the NZ ETS. Delaying these proposals could disrupt unit supply and influence price movement in the domestic carbon market.

COVID-19 has increased pressure on Cabinet, Parliament and government agencies to deliver and implement policy. In the current environment, the Government is focussed on the COVID-19 response and recovery, and there is uncertainty regarding its ability to consider regulatory proposals for the rest of 2020. While the Emissions Trading Reform Bill and associated regulations are considered priorities, there is still some risk of delays to accommodate further COVID-19 policy development. Even a short-term delay could risk the settings being pushed to 2021.

There is also some implementation risk if the COVID-19 outbreak worsens and economic conditions deteriorate. Under a worst-case scenario, Cabinet could seek to delay some of the NZ ETS settings if it considered the economic impacts of the proposals unacceptable at this time. This would have material impacts on other parts of the climate change response. It would not be possible to begin auctioning in 2021 if the NZ settings were not enacted this year. It would also delay the emissions reductions New Zealand needs to achieve over the early part of the PEB to make progress towards the 2050 target. Delaying the NZ ETS settings will make meeting the target more difficult and expensive.

These implementation risks are difficult to mitigate. Agencies will continue to work towards the implementation of the NZ ETS settings regulations, and support Cabinet and Parliamentary Council Office through the legislative process to develop the regulations.

It is likely the implementation of these settings will have a significant impact on New Zealand's carbon market. Information on the level of the price floor and CCR, as well as the auction volumes, will provide an immediate signal to the market that could affect the market value of NZUs. It is difficult to predict how NZU prices could respond during this process. To avoid sudden and disruptive market and price impacts, the implementation process will need to be carefully managed. This will include how and when market sensitive information on the settings is communicated to the public. This will also ensure information is released to the market at the same time, guaranteeing the equitable treatment of all market participants.

Section 7: Monitoring, evaluation and review

7.1 How will the impact of the new arrangements be monitored?

Agencies will closely monitor the impacts of the proposed NZ ETS settings. The Ministry for the Environment routinely tracks the price of NZUs, as well as the flow of units within the NZ ETS and the secondary market. It also measures and reports annually domestic emissions. This will be used to assess the impact of the NZ ETS under the proposed settings.

Agencies will also continue to update and refine emissions projections that will be used for future emissions budgets.

The broader economic impacts of the proposed NZ ETS settings will be monitored and assessed by an array of Government agencies, and public and private institutions. The Treasury will lead in reviewing the distributional economic impacts arising from the NZ ETS over the PEB period. This work will be supported by the Ministry for the Environment, Ministry for Primary Industries and Ministry for Business, Innovation and Employment.

The legislated coordinated decision-making process in the Emissions Trading Reform Bill includes provision to review the NZ ETS settings under certain circumstances. The Government is obliged to review the settings if the price controls are used (and may adjust the units supply and price control settings if need be). This provides an opportunity to monitor the interim settings in the event where prices reach unacceptable levels in 2021.

The auction operator will collect and report some data on auctioning. The Government will be able to use this to monitor auction results, the number of units sold, the price units are sold for, and other data points that indicate the operation of the auctioning system. The independent auction monitor may also periodically assess the auction system, to make recommendations for improvement or monitor the conduct of participants and the auction operator, if required. This independent oversight would mitigate the risk to the integrity of auctions.

Although the Climate Change Commission does not have direct oversight responsibility for the provisional settings, it will nonetheless closely follow the new arrangements and monitor the related impacts. This will be necessary as the PEB and interim NZ ETS settings will help inform the first emissions budget recommended by the Commission.

7.2 When and how will the new arrangements be reviewed?

It is unlikely the PEB and interim NZ ETS settings will need to be reviewed. This is because they will be superseded by the first emissions budget. The settings may only apply for the calendar year 2021. Nonetheless, the settings can be reviewed if the price controls are used in this year.

The Ministry for the Environment will review the provisional settings and provide briefings to the Government on any unexpected impacts.

Appendix 1: Summary of submissions for NZ ETS settings

Summary of proposals	Submitter views
Setting the PEB	<p>Submitters were divided on the Government’s proposal for setting the PEB. 36 submitters generally supported the proposed provisional emissions budget straight-line emissions reduction pathway, however, views regarding the provisional emissions budget volume and methodology varied significantly. ‘In principle’ support came from the majority of the electricity sector, and some business and industry groups, though a number of these submitters expressed concerns about the underlying abatement cost analysis.</p> <p>30 submitters believed the proposed provisional emissions budget was not sufficiently ambitious, often noting that the proposal did not match up with our nationally determined contribution, as well as the environmental and potential fiscal costs of this. These submissions came from a range of individuals, NGOs, and other organisations. In contrast, 16 submissions, nearly all from business/industry groups, believed that the proposed PEB would be too ambitious and expressed concerns about the economic impacts on households and businesses.</p>
Technical volume and forestry adjustments	<p>The majority of submitters tended to agree in principle with the technical volume adjustments. However, a range of additional considerations were also suggested.</p> <p>3 submitters noted that the voluntary offsetting consideration needs to be further considered.</p>
Addressing oversupply in the NZ ETS	<p>The majority of submitters who commented on the proposal to address the NZ ETS unit stockpile (45 submitters) agreed in principle with the general approach to reduce the annual volume of NZUs available to auction. This support came from a range of submitters including some electricity companies, forestry groups, NGOs, agricultural groups, and individuals.</p> <p>29 submitters did not agree with the proposed approach, predominantly business/industry groups, stationary energy and liquid fossil fuel companies. These submitters held concerns that reducing auction volumes would cause NZU prices to increase and incentivise participants to hold onto stockpiled units. Others who opposed the proposal came from more of an environmental perspective, and believed that stockpiled units without surrender obligations should be bought back by the government or have expiry dates.</p>
Setting the final auction volume	<p>25 submitters agreed in principle with the steps taken to set the final auction volume, generally saying they were logical and the overall methodology is sound. Submitters that disagreed were often concerned with specific steps in the decision-making process to determine the auction volume, rather than the approach as a whole. This included the methodology for reducing the stockpile, the level of industrial allocation, and whether or not agriculture is in the NZ ETS.</p>

Summary of proposals	Submitter views
Level of the auction price floor	<p>Of the submitters who commented on the auction reserve price floor, 36 were in favour of the proposed floor of \$20, 34 supported a floor but considered that it should be set at a higher price, and 17 opposed a floor.</p> <p>Support for a price floor of \$20 came from a range of submitters, including business groups and foresters who discussed the business certainty a minimum price on emissions provides. Those who advocated for a higher price floor held concerns that cost to businesses of reducing emissions was considered, but no account was being taken of the cost of actual removals and the social cost of carbon. 15 submitters argued the price floor should increase over time, with suggested annual increments ranging from \$2-\$25 a year.</p>
Single or multiple price triggers	<p>Submitters to the <i>Rules for Auctioning in the NZ ETS</i> consultation overwhelmingly preferred a single price trigger to activate the CCR (29 out of 34). A single trigger was considered the simplest way to trigger the CCR, and would send a clearer signal to the market of the maximum emissions price. Multiple triggers were seen as being too complex and would lead to greater uncertainty.</p>
Level of the CCR price trigger	<p>The greatest proportion of submitters who commented on the price ceiling trigger held strong opinions that it should be higher than the proposed price of \$50. This response came from 31 submitters including electricity companies, foresters, consultancies, community groups and individuals. Concerns were raised that the \$50 ceiling price trigger would dampen NZU prices relative to international trends, and could risk muting domestic emission reduction projects.</p> <p>15 submitters specified that the price trigger should rise incrementally, rather than be a flat price for the period 2021-2025. The Climate Change Commission expressed concern that the proposed flat price of \$50 does not reflect the matters the Minister must consider in the Emissions Trading Reform Bill when recommending price controls, highlighting the lack of adjustment for inflation at the least.</p> <p>Many submitters considered that if the price ceiling trigger is set too low, the cost containment reserve has the potential to inflate the NZU stockpile further, contributing to an oversupply of units that could suppress future emission prices below the level required to achieve emissions reduction targets.</p> <p>Four submitters representing agricultural and industry groups explicitly stated the price ceiling trigger should be lower, and 12 submitters held other concerns about uncertainties in reaching \$50 as a proposed price and the effectiveness of the mechanism at adequately moderating prices.</p>

Summary of proposals	Submitter views
Volume of the CCR	<p>22 submitters supported the proposed annual CCR volumes to be released if the price trigger is hit. Submitters that commented held that releasing the reserve volume is an appropriate way to manage unexpectedly high NZU prices, and that 90% of the difference between forecast net emissions and the proposed unit supply is a suitable method of determining the volume.</p> <p>30 submitters did not support the proposed annual cost containment reserve volumes to be released if the price ceiling trigger is hit. Some submitters argued that the proposed reserve volume was too high, risking the environmental integrity of the NZ ETS. In contrast, many business/industry groups were concerned about there being a restriction on units within the cost containment reserve.</p> <p>Concerns were also raised about backing reserve units with equivalent emissions reductions, specifically the environmental and fiscal risks associated with the proposal.</p>

Acronyms

Acronym	Definition
CCC	Climate Change Commission
CCR	Cost containment reserve
CCRA	Climate Change Response Act
CO ₂ -e	Carbon dioxide equivalent
EAF	Electricity allocation factor
ETR Bill	Emissions Trading Reform Bill
FPO	Fixed price option
LULUCF	Land use, land use change and forestry
MAC	Marginal abatement cost curve
NDC	Nationally Determined Contribution under the Paris agreement
NZ ETS	New Zealand emissions trading scheme
NZU	New Zealand ETS emissions unit
PEB	Provisional emissions budget
ZCA	Climate Change Response (Zero Carbon Act) Amendment Act