Regulatory Impact Statement: Updates to NZ ETS unit limit and price control settings regulations

Contents

Coversheet

Purpose of Document	
Decision sought:	Approval for regulations prescribing unit supply limits and price control settings for auctioning in the New Zealand Emissions Trading Scheme (NZ ETS) for 2022-2026.
Advising agencies:	Ministry for the Environment
Proposing Minister:	Hon James Shaw, Minister of Climate Change
Date finalised:	28 July 2021

Problem Definition

The Climate Change Response Act 2002 (CCRA) requires annual regulation updates by 30 September to prescribe unit limit and price control settings for the NZ ETS. NZ ETS settings are updated on a five-year rolling basis.

Current unit limit and price control settings were set in regulations in 2020 for 2021-2025[1]. These settings need to be updated this year for the period 2022-2026.

The current unit limit and price control settings are based on emissions and abatement costs data that is now out of date. There is also now an increased likelihood that the cost containment reserve price will be triggered in 2022 unless the trigger price is adjusted this year.

Executive Summary

A set of regulations governs the emissions unit limit and price control settings of the NZ ETS. These regulations provide unit limit and price control settings for the upcoming five years and need to be reviewed and amended on an annual basis. The regulations were first prescribed in 2020, setting unit limits and price controls for 2021-2025. These settings can be found in regulations and in the 2020 RIS[2].

The NZ ETS unit limit and price control regulations need to be updated for 2022-2026 by 30 September this year. The unit supply limits are:

a. The number of New Zealand Units (NZUs) available by auction
b. The number of approved overseas emissions units that can be used in the NZ ETS
c. An overall limit on the emissions units in the NZ ETS

[1] Climate Change (Auctions, Limits, and Price Controls for Units) Regulations 2020

[2] NZ ETS unit supply and price control setting regulations

Unit limits are the maximum volume of NZUs the Government can provide to the market (not including NZUs provided for emission removals).

The price control settings are:

d. The auction price floor

e. The cost containment reserve (CCR) trigger price

f. The number of reserve NZUs in the CCR

The auction price floor and CCR trigger price set the lower and upper bounds of the price corridor for NZUs sold at auction, managing the risk that these prices are not consistent with what is required to meet New Zealand's targets and emissions budgets. They form a price corridor of expected and acceptable prices in NZ ETS auctions and provide an important price signal for the NZ ETS market. They do not directly affect the day-to-day price movement of NZUs on the NZ ETS secondary market; the market price is determined by NZU supply and demand at a point in time.

Unit limits and price control settings must be set in accordance with emissions budgets and nationally determined contributions

Under the CCRA, unit limit and price control settings must be set in accordance with emissions budgets and the nationally determined contribution (NDC) under the Paris Agreement. The government is not required to set emissions budgets until the end of 2021. Therefore, the unit limits and price control settings for 2021-2025 were based on a provisional emissions budget (PEB), which was agreed by Cabinet in 2020 [ENV-20-MIN-0016 refers]. Until the Government sets emission budgets, the PEB acts as the budget to inform unit limit and price control settings. Once in place, the first emissions budget under the CCRA will supersede the PEB as the basis for updating unit limits and price control settings.

The role of the Climate Change Commission

The Climate Change Commission (the Commission) is required to provide recommendations on emissions budgets, unit limit and price control settings. In June 2021, the Commission released its final advice for the first three emissions budgets, as well as recommendations on the NZ ETS unit limit and price control settings. The Government is required to consider this advice and set the first emissions budget (2022-2026) by the end of 2021.

Considerations for updating unit limits and price controls this year

There are two key legal considerations for updating unit limits and price controls this year:

1) The starting emissions volumes used to calculate unit limits; and

2) The years to update.

The Government is yet to respond to the Commission's advice on emissions budgets. Therefore, the PEB is the applicable budget to provide starting emissions volumes to

calculate unit limits until the first emission budget is set. However, we propose some necessary differences from the PEB to include a starting emissions volume for 2026. The relevant volumes from the Commission's demonstration pathway are preferred as they are based on the most recent and high-quality analysis to achieve the 2050 target.

The unit limits for 2022 and 2023 can only be updated under special circumstances, but there is more flexibility for 2024 and 2025. We consider that the special circumstances allowing for updates to unit limits and price controls for 2022 and 2023 have been met. While there is justification to update the price controls for those years, there is none for changes to the unit limits. We therefore recommend updating the price controls settings from 2022, but only updating the unit limits for 2024 and 2025 and introducing new values for both price controls and unit settings for 2026.

We propose updating the auction price floor and the CCR trigger price based on the Commission's recommendations for those settings. We consider this approach best supports alignment with New Zealand's emissions budgets and Nationally Determined Contributions (NDCs), the proper functioning of the NZ ETS, and the consistency of NZU prices with the level and trajectory of international emissions prices. It also reduces the likelihood of triggering the CCR. The CCR volume will be calculated and updated based on the current methodology.

Limitations and Constraints on Analysis

We are confident in the evidence base and analysis in this RIA.

The analysis has mainly been drawn from two key sources:

1) The 2020 RIA for the unit limits and price control settings regulations; and

2) The Commission's final advice report and evidence.

The 2020 RIA was based on a large body of evidence, as well as the extant economic impact analyses of different emissions prices in New Zealand. Its impact analysis is recent and can still be used to assess the current proposals.

The Commission's report also provides robust and comprehensive economic analysis of the impacts of higher emissions prices.

We have undertaken additional impact analysis based on the Commission's advice and publicly consulted on the proposals for unit limits and price controls.

We acknowledge there are constraints to the analysis in this document. The CCRA sets the process for prescribing NZ ETS settings, limiting the scope of options considered in the RIA, and how these options must be assessed.

The current circumstances surrounding the NZ ETS and other climate change policies also constrain the options that can be assessed. For example, we do not consider options for using overseas emissions unit limits, as there is no means currently available to procure offshore mitigation within the first emissions budget period.

We are also limited in our ability to assess the economic impacts of changing emissions prices. It is difficult to predict with accuracy how the emissions price could change in

response to updating NZ ETS settings. However, it is possible the emissions price will increase, particularly if the price control settings are adjusted. We have mainly relied on modelling by the Commission and Treasury to assess the economic impacts of changing emissions prices due to the limited availability of similar high-quality modelling.
Responsible Manager
Scott Gulliver Acting Manager NZ ETS Operations and Policy Ministry for the Environment 29 July 2021

Quality Assurance	
Reviewing Agency:	Ministry for the Environment
Panel Assessment & Comment:	The Ministry for the Environment's Regulatory Impact Analysis Panel has reviewed this Regulatory Impact Statement. The Panel confirms that the level of information provided meets the quality assessment criteria.

Section 1: Diagnosing the policy problem

Context behind the policy problem

1. The Climate Change Response Act 2002 (CCRA) requires annual regulation updates to prescribe the New Zealand Emissions Trading Scheme (NZ ETS) emissions unit limits for the following five calendar years for:
    a. New Zealand Units (NZUs) available by auction (annual auction volume + volume available within the cost containment reserve)
    b. approved overseas units
    c. overall number of units (annual auction volume + cost containment reserve volume + a projected free allocation volume + approved overseas units).
2. These limits affect the number of NZUs supplied into New Zealand's carbon market by the Government.
3. Annual updates are also required to the NZ ETS price controls:
    a. minimum price that NZUs can be sold at auction (auction price floor)
    b. cost containment reserve (CCR) trigger price
    c. the number of reserve NZUs in the CCR
4. Price controls are mechanisms to prevent NZUs from selling at unacceptably low or high prices at Government auctions. They also form a price corridor for the market and

provide an important price signal for the NZ ETS market. They do not directly affect the day-to-day price movement of NZUs on the NZ ETS secondary market.

5. Unit limits and price controls are set in accordance with New Zealand's emissions budgets[3] and Nationally Determined Contributions (NDCs) under the Paris Agreement. The current NZ ETS settings were based on a provisional emissions budget (PEB) agreed to by Cabinet (ENV-20-MIN-0016) for 2021–2025. A PEB was used because the first emissions budget under the CCRA had not been set.
6. The Government will set the first emissions budget, superseding the PEB, by the end of 2021. The Government must first consider the advice of the Climate Change Commission on emissions budgets. The Commission provided advice for the first (2022-2025), second (2026-2030), and third (2031-2035) emissions budgets in June 2021[4].
7. In 2022, after the first emissions budget has been set, the Commission must provide annual recommendations on unit limit and price control settings. Although the Commission was not required to fulfil this requirement this year, they have provided specific recommendations on NZ ETS unit limit and price control settings in their final advice. This advice specified that the Government should update these settings as soon as possible.
8. In early 2021, the Government publicly consulted on proposals to update unit limits and price controls regulations for 2022-2026[5]. The consultation also included proposed updates to other NZ ETS settings and the synthetic greenhouse gas levy.

Methodology to calculate unit limits

9. The methodology for calculating unit limits was established last year and used for the settings currently in place. There are six steps to reach the final proposed annual auction volumes for each year:
    a. **Calculate the NZ ETS coverage**. Using the relevant starting emissions volumes, remove the forecast emissions that are not covered by the NZ ETS (including agriculture, some waste emissions, synthetic greenhouse gases (SGG) covered by the SGG levy, and post-1989 forestry not registered within the scheme).
    b. **Make technical volume and forestry adjustments**. Account for technical and forestry factors that could affect the volume of emissions covered by the cap.
    c. **Account for free NZU allocation volumes**. The Government allocates free NZUs to industry through industrial allocation. As these units cannot be auctioned, they are removed to calculate the auction volume.
    d. **Set reduction volume to address unit oversupply**. To address the oversupply (the 'stockpile') of NZUs in the NZ ETS market, the Government withholds a

[3] An emissions budget is the total volume of emissions New Zealand is allowed to emit over a period of time.

[4] Ināia tonu nei: a low emissions future for Aotearoa

[5] Proposed changes to NZ ETS and SGG levy regulations 2021

volume of units available for auctioning. This encourages market participants to use units from the stockpile.

e. **Set approved overseas unit units**. Setting the unit supply volumes requires setting a limit on approved international emissions units that can be supplied into the market.

f. **Calculate annual auction volumes**. This step combines all the previous considerations into a final calculation to determine the resultant annual NZU auction volumes available under the NZ ETS cap, as well as the unit limits required to be set in regulations.

What is the policy problem or opportunity?

10. The CCRA requires unit limits and price control regulations for the period 2022-2025 to be updated by 30 September 2021, to have them in place by 1 January 2022. The settings for 2026 must also be announced and in place at this time.

11. The NZ ETS is one of the most important tools available to reduce emissions in New Zealand. Ensuring the unit limits and price controls are reviewed and updated annually, with appropriate analysis and transparency, is crucial to maintain the integrity of the NZ ETS.

12. The process for setting unit limits this year is complicated by the timing of the Commission's advice, as well as the Government's requirement to set the first emissions budget by 31 December 2021. Decisions on unit limits and price controls have to be made before the Government sets the first emissions budgets.

13. This timing challenge will not occur from 2022, as the Government will have adopted an emissions budget by the end of this year.

14. There are also significant fiscal risks associated with the status quo price control settings. Secondary market NZU prices are approaching the current CCR trigger price of $50 (NZUs traded at $48.50 on 28 July 2021). This strongly indicates that the CCR will be triggered this year or in 2022. The sale of reserve NZUs at auction in 2022 would likely require the Government to back at least some of these units by purchasing international units, resulting in a potentially significant fiscal cost.

Objectives for updating unit limits and price control settings regulations

15. The overall objective of the unit supply and price control regulations is to ensure the efficient and accurate operation of the NZ ETS and align the settings, as best as possible, to assist New Zealand to meet its emissions budgets and targets.

16. An important secondary objective is to address oversupply in the NZ ETS market. The ability of NZ ETS participants to hold or 'bank' NZUs has led to considerably more units being held in private accounts than is needed to meet surrender obligations (referred to as the stockpile). Oversupply reduces demand for units and dampens the emissions price – impacting the ability of the NZ ETS to reduce emissions and incentivise emissions removals.

17. The objectives for the price controls include mitigating the risk of unacceptably low or higher NZU prices and signalling to the market expectations of future emissions prices. Price controls should allow the Government to reduce the risk of unacceptably low or

high emissions prices, contributing to a stable and predictable domestic emissions price that allows market participants to form long-term expectations of their NZ ETS costs.

Section 2: Options to address the policy problem

Criteria used to compare options to the status quo

18. The options are assessed against criteria based on the matters the Minister of Climate Change (the Minister) must consider when making regulations for unit limits and price controls in sections 30GC(5) and (6) of the CCRA.

19. The primary criteria are the main matters the Minister must consider in section 30GC(5) and apply to both unit limits and price controls. The secondary criteria are the additional matters the Minister must consider in section 30GC(6) and only apply to price controls.[6]

Table 1: Criteria for unit limits and price control settings options analysis

Primary criteria	Description
Alignment with New Zealand's emissions budgets and the NDC	The NZ ETS should help deliver the abatement required to meet New Zealand's emissions budgets and transition to a low-emissions economy.
Account for trends in domestic emissions over the 5-year rolling period	NZ ETS unit limits and price controls should account for projected trends for New Zealand's greenhouse gas emissions in the 5-year rolling period. This includes the anticipated volumes of emissions covered by the NZ ETS, as well as those emissions outside the scheme.
Support the proper functioning of the NZ ETS	Unit limit and price control settings should support the objectives of the NZ ETS, such as reducing emissions in line with climate targets. The NZ ETS should operate in a transparent and durable manner that allows participants to form expectations about future market conditions to encourage investment in domestic emissions abatement. This should include minimising administrative costs and complexity and avoiding perverse incentives and unintended consequences.
Improve compatibility with overseas carbon markets [redacted]	Unit limit and price control settings should consider international climate change obligations, and instruments or contracts that New Zealand has with other jurisdictions to access emissions reductions in their carbon markets. This includes an effective cap on unit supply within the market, maintaining the integrity

[6] Although inflation is an additional matter the Minister must consider, it would not be appropriate as a criterion.

	of NZUs, and the relative levels of domestic and international emissions prices.
Consistency with the forecast costs of reducing emissions to meet emissions reduction targets	Changes in the forecast availability and costs of reducing emissions that are needed to meet emissions reduction targets should be reflected in unit limit and price control settings, where applicable.
Accords with the recommendations of the Climate Change Commission[7]	Under section 5ZOA of the CCRA, the Climate Change Commission will make recommendations on unit limit and price control settings when updated annually. Unit limits and price controls should be updated in accordance with these recommendations.
Addresses any other matters that the Minister considers relevant	Unit limit and price control settings should reflect, and be consistent with, any matter the Minister considers to be relevant.
Secondary criteria (only applies to price controls)	**Description**
Allocates costs and benefits appropriately among those affected by an emissions price	Price controls should allocate the costs and benefits appropriately among NZ ETS participants, the Crown, 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.
Supports consistency of NZU prices with the level and trajectory of international emissions prices	Price controls should allow NZU prices to change over time to maintain a consistency with the level and trajectory of international emissions prices. They should also reflect price controls settings in international carbon markets New Zealand is linked to.

20. Assessment of each option against the criteria is given a rating outlined in the key below.

Key	
++	much better than doing nothing/the status quo
+	better than doing nothing/the status quo
o	about the same as doing nothing/the status quo
-	worse than doing nothing/the status quo
- -	much worse than doing nothing/the status quo

[7] This criterion is based on section 30GC(5)(e). The provision itself does not legally come into effect until the first emissions budget has been set. Therefore, we have not applied it to assess options in this round of regulation updates.

Legal considerations for updating unit limits and price controls

21. The CCRA prescribes the process and requirements for updating unit limits and price control regulations. These considerations establish the scope of options that can be considered by the Government.

22. There are two key considerations for updating unit limits and price controls:

    1) The starting emissions volumes for calculating unit limits; and

    2) The years that regulations can be updated within the five-year rolling period.

The starting emissions volumes for calculating unit limits

23. An emissions budget is used to derive starting emissions volumes to calculate unit limits (see methodology to calculate unit limits in 9 above). These values represent the quantity of emissions that can be produced in a particular year under an emissions budget. Under section 30GC(2), the Minister must be satisfied that unit limit and price control settings are in accordance with emissions budgets and the 2050 target.

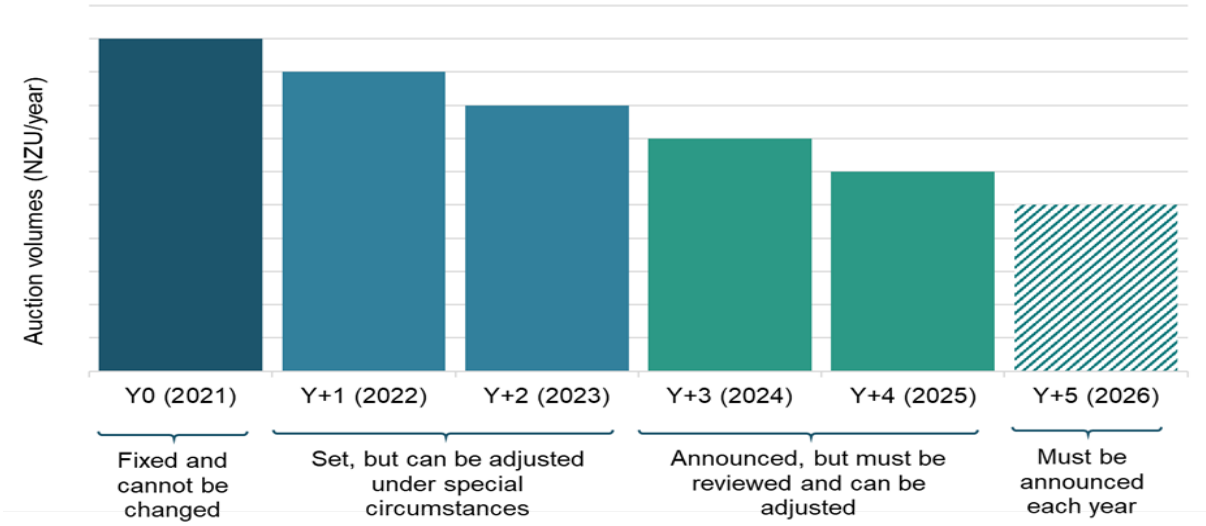
24. Prior to emissions budgets being set, if there is a PEB, the unit limits and price control settings must be set in relation to it. As the first emissions budget has not been set yet, the 2021-2025 PEB remains the applicable budget for calculating unit limits for this year. However, to calculate unit limits for the 2022-2026 period an input value for 2026 is required.

25. Section 30GC(3) stipulates the limits and price control settings do not need to strictly accord with the budgets as long as the Minister is satisfied the discrepancy is justified. A discrepancy from the PEB is necessary to include a 2026 input value so that unit limits can be calculated for that year. It is also justified as the Commission's analysis and emissions projections are more up to date than those that informed development of the PEB.

The years that unit limit and price controls can be updated within the five-year rolling period

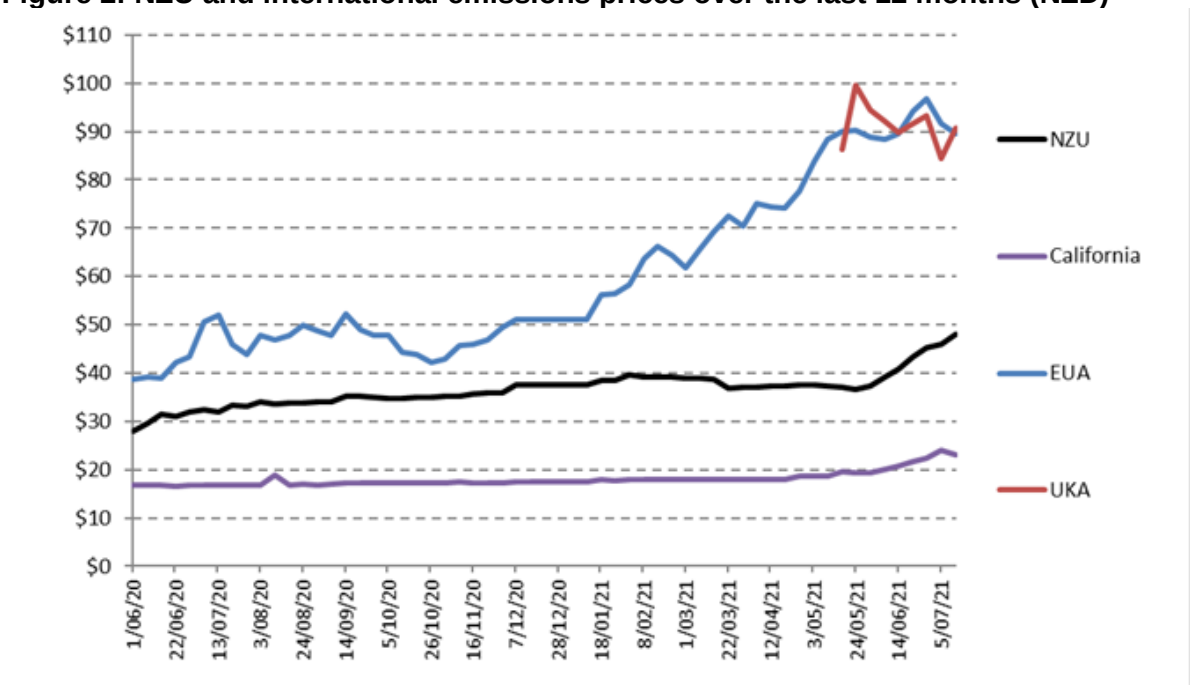
26. Under section 30GB, updates to unit limits and price control regulations take place on a five-year rolling basis (figure 1).

Figure 1: five year rolling process for updating NZ ETS settings



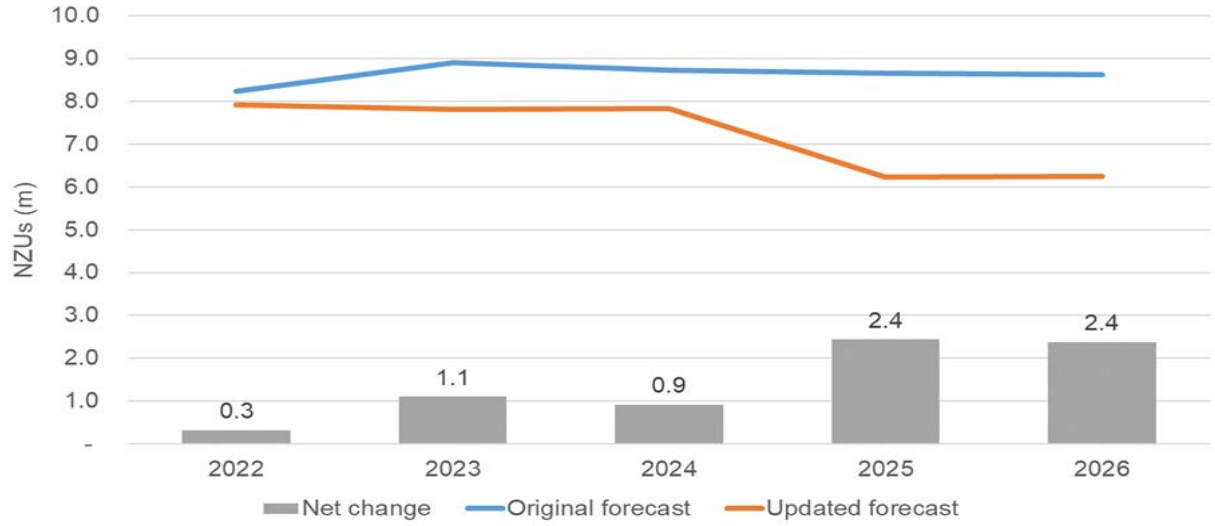
27. The current settings for 2021 are fixed and cannot be changed. The settings for 2022 and 2023 are also set – however, they can be adjusted under special circumstances. There is more flexibility for updating 2024 and 2025. In those years the settings are announced but must be reviewed and can be adjusted. The settings for 2026 must be announced by 30 September.
28. Sections 30GB(5), 30GC(5) and 30GC(6) clarify the special circumstances where settings for 2022 and 2023 can be updated.
29. We assess that the circumstances in sections 30GB(5)(a), 30GB(5)(b)(ii) and (iii) have not occurred. However, some of the circumstances described in sections 30GB(5)(b)(i) and 30GC(5) have been met; specifically:
    - 30GC(5)(d) 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 Commission has provided new forecasts for costs of reducing emissions.
    - 30GC(5)(f) any other matters that the Minister considers relevant. The Commission's advice on emissions budgets and price controls are matters the Minister considers relevant as it reflects the most recent and high-quality analysis to meet the 2050 target that is available to the Government.
30. Furthermore, 30GC(6) allows for price controls to be changed if special circumstances have been met:
    - 30GC(6)(b) the level and trajectory of international emissions prices (including price controls in linked markets)**.** Since price controls were set in 2020, there have been significant changes in the level and trajectory of some international emissions prices (figure 2). European Union Allowance (EUA) prices have more than doubled in less than a year, and United Kingdom Allowances (UKAs) were introduced in mid-2021. Prices in the California cap and trade programme have remained steady.

Figure 2: NZU and international emissions prices over the last 12 months (NZD)



31. While the special circumstances for updating unit limits in 2022 and 2023 have been met, we assess a change is not justified for those years. The use of starting emissions volumes for the point years 2022 and 2023 from any of the relevant emissions budgets available to the Government would result in the same auction volumes (see table 3). Furthermore, the new forecasts for the costs of reducing emissions in the Commission's advice are not particularly relevant for setting unit limits. This suggests there are not strong grounds to update the unit limits for the next two years.
32. Unit limits for 2024 and 2025 should be updated given there have been changes to unit supply projections *from 2024*, which will materially affect unit limits from that year. The forecasts have changed since 2020 to account for the announced closure of New Zealand Aluminium Smelter at the end of 2024, resulting in a reduction of nearly 1.5 million free NZUs provided through industrial allocation (figure 3).

Figure 3: Industrial allocation forecasts



33. There is justification to update the price control settings from 2022. The Commission's forecasts for the costs of reducing emissions are relevant for these settings as price controls can influence NZU prices by providing a price corridor for units sold at auction. Updates to price controls are justified so NZU prices can change to reflect the Commission's forecasts and reduce emissions in line with meeting the 2050 target.

[redacted]

35. Our overall assessment of the considerations in sections 30GB and 30GC for updating unit limits and price control regulations is that:
    - The PEB is the applicable base emissions budget for starting emissions volumes to calculate units limits this year, but needs to include an input value for 2026
    - The special circumstances for updating the unit limits and price controls for 2022 and 2023 have been met

- There is no justification for updating unit limits in 2022 and 2023; however, there is justification to update the settings for 2024, 2025 and 2026
- There is justification to update the price control settings from 2022

What scope will options be considered within?

36. The following matters are out-of-scope:

    a. **Setting emissions budgets**. The PEB or the Commission's emissions budget analysis and modelling are not assessed. The Commission's analysis is being assessed through a separate work programme to develop the Emissions Reduction Plan. Proposing or assessing different budgets with alternative volumes is also not within scope of the RIA.

       Although the Commission's advice is still being assessed by the Government, it nonetheless represents the most recent, high-quality analysis to meet the 2050 target available to the Government. It also reflects the most up-to-date emissions data and projections. We generally consider the analysis to be robust. The Commission's process for developing its advice was rigorous and transparent, and the budget recommendations were extensively consulted on.

       While the RIA uses emissions values from the Commission's advice to assess options to calculate unit limits, this is not an indication of the Government accepting or adopting its recommended emissions budget. Rather, the underlying modelling, analysis and emissions data for the Commission's demonstration path budget are used to inform NZ ETS regulation updates.

    b. **The methodology for calculating unit limits**. The methodology for calculating unit limits was developed last year for the NZ ETS unit limits. There is no reason to change the sequential set of calculations, as the process remains the only appropriate way to determine unit limits. This was largely supported through response to consultation and Cabinet has agreed to this process.

    c. **The methodology for calculating the volume of the CCR**. The methodology for calculating the volume of the CCR was developed last year for the price control settings. There is no reason to change, as the process remains the only appropriate way to determine the CCR volume.

    d. **Options to update unit limits and price controls that are inconsistent with regulation-making requirements in sections 30GB and 30GC of the CCRA**. As discussed in the *Legal considerations for updating unit limits and price controls* section of the RIA, sections 30GB and 30GC delimit the scope of updates that can be made. Updates that are inconsistent with the regulation-making requirements in these sections are out of scope.

Section 3: Options for updating unit limits

Starting emissions volumes for calculating unit limits

37. The first emissions budget set under the CCRA will not be in place before 30 September 2021. This means the PEB remains the applicable base emissions budget for the starting

emissions volumes for unit limits. However, the PEB does not include an emissions input for 2026 and therefore cannot be used for that year.

38. We have recommended that unit limit settings for 2022 and 2023 are not adjusted as any change in the starting emissions volumes for those years would result in unchanged auction volumes. However, a decision is needed on how to calculate unit limits from 2024.

39. The options are to base the calculations on the PEB, or to adjust the calculations based on modelling and data from the Commission. Changes to emissions projections are among some of the reasons when a discrepancy from a budget may be justified.

40. The PEB and the Commission's analysis result in different volumes of emissions, requiring different levels of domestic emissions abatement. These volume differences are reflected in the final NZ ETS unit limits.

Option 1 (status quo) – use the emissions volumes from the PEB extended to 2026

41. Under this option, annual emissions volumes from the PEB would be used as the starting emissions volumes to calculate unit limits, without adjusting to incorporate updated values during subsequent calculations. Its current straight-line trajectory would be extended to include an input value for 2026 (figure 4).

Option 2 – use the emissions volumes for 2024, 2025 and 2026 from the Commission's analysis and updated projections

42. The starting emissions volumes for calculating unit limits would be adjusted using the Commission's modelling and updated projections (figure 4) – specifically the emissions volumes for 2024 and 2025. As 2026 is not included in the PEB it would be set based on the Commission's modelling. This includes updating the emissions budgets using the IPCC's Fifth Assessment Report (AR5) GWP_{100} values. The change from AR4 to AR5 GWP_{100} values makes the volume adjustment appear to be larger than it is.

43. For the purpose of setting unit limits from 2024, we propose to adjust the PEB to consider the Commission's demonstration path modelling and analysis for 2024 to 2026. The demonstration path was used to calculate the Commission's recommendation for emissions budgets. The alternative pathways are indicative and meant to demonstrate the feasibility of the recommended emissions budgets. It would therefore be inappropriate to use either of them to inform unit limit and price control settings.

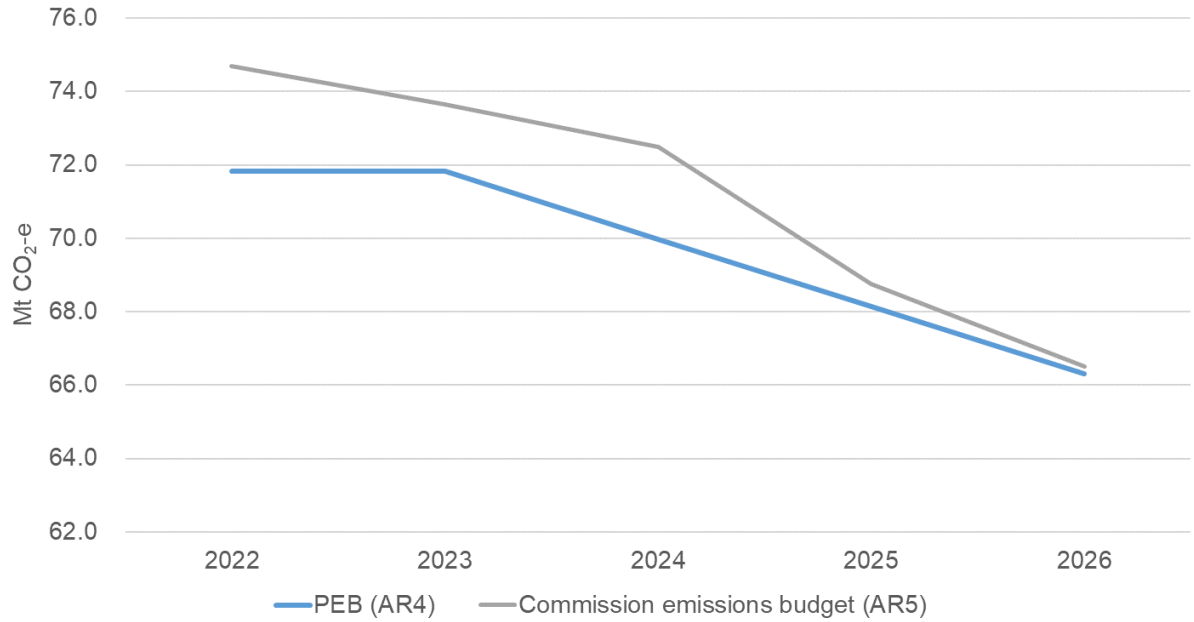
44. Table 2 shows the starting emissions volume options. 2022 and 2023 are shown below as comparison, but only 2024, 2025 and 2026 are being considered to update unit limits.

Table 2: Starting emissions volumes to calculate unit limits (Mt CO_2-e)

	2022	2023	2024	2025	2026
Option 1 (status quo) – use the emissions volumes from the PEB extended to 2026	71.8	71.8	70.0	68.1	66.3
Option 2 – use the emissions volumes for	74.7	73.7	72.5	68.8	66.5

2024, 2025 and 2026 from the Commission's analysis and updated projections					

Figure 4: Comparison of PEB and Commission's demonstration path



Calculating auction volume and final unit limits

45. Taking the two starting emissions volume options for each year, we have calculated the NZU auction volumes. The methodology for calculating unit limits is described in Section 1 of the RIA. The calculations for each step to reach the final figures are described in Appendix 1.

    a. **Calculate the NZ ETS coverage**. Emissions outside the NZ ETS are removed from both starting emissions volumes options. The volumes of emissions outside the NZ ETS have been updated and based on most recent estimates available to the Government.

    b. **Technical and forestry adjustments.** There are no volume adjustments for forestry or other technical matters, as none are necessary or able to be implemented at this time.

    c. **Account for free NZU allocation volumes.** Free allocation volumes are removed from the base emissions budget options. We have used updated industrial allocation projections as described earlier in the RIA.

    d. **Set reduction volume to address unit oversupply**: The consultation document proposed keeping the stockpile reduction volume at 5.4 million units per year. We considered whether to increase this volume to more aggressively draw down on

the stockpile. It is assumed that by reducing auction supply, market participants will have to purchase NZUs on the secondary market to meet surrender obligations, which will reduce the stockpile.

There is insufficient justification for updates to the stockpile reduction volume this year. No new relevant information has been gathered that would improve our analysis of the stockpile. It may be appropriate to consider the stockpile adjustment in next year's regulation updates, after a full year of Government auctions and NZ ETS surrender obligation without the fixed price option[8] have occurred.

A number of submitters to the NZ ETS regulations update consultation commented on the stockpile reduction. Some industrial firms and business organisations expressed concerns with the current level of the reduction, arguing it was too high and would drive up emissions prices. Others submitted the reduction was too low and would not address oversupply.

e. **Set approved overseas units**: There is a limit of zero on approved overseas emissions units as New Zealand does not currently have access to international carbon markets.

f. **Calculate annual auction volumes:** The auction volumes derived from Options 1 and 2 are shown in table 3. The auction volumes are the same for both options in 2022 and 2023. Auction volume, however, would decrease by 4.9 million NZUs from the status quo between 2024 and 2026 if Option 2 was used.

Table 3: Final auction volumes (NZUs millions)

	2022	2023	2024	2025	2026
Current auction volumes	19.3	18.6	17.2	15.5	-
Option 1 (status quo) – use the emissions volumes from the PEB extended to 2026	19.3	18.6	18.3	18.7	17.5
Option 2 – use the emissions	19.3	18.6	18.1	16.5	15.0

[8] The fixed price option was a price control in the NZ ETS. It was removed from the scheme in 2021.

volumes for 2024, 2025 and 2026 from the Commission's analysis and updated projections					

How do the options compare?

Table 4: Impact analysis of base emissions budget options

	Option 1 (status quo) – use the emissions volumes from the PEB extended to 2026	Option 2 – use the emissions volumes for 2024, 2025 and 2026 from the Commission's analysis and updated projections
Alignment with New Zealand's emissions budgets and the NDC	o	++ Aligns unit limits from 2024 with the most recent, high-quality modelling and analysis to achieve the 2050 target and the possible volume of the first emissions budget
Account for trends in domestic emissions over the 5-year rolling period	o	+ Based on more up-to-date projections and modelling
Support the proper functioning of the NZ ETS	o	+ Reduces unit supply into the NZ ETS through auctioning, which could help address oversupply. + More likely to support the NZ ETS to meet its objectives of supporting NZ to meet its climate change targets
Improve compatibility with overseas carbon markets	o	o
Consistency with the forecast costs of reducing emissions to meet emissions reduction targets	o	o This criteria/matter is not relevant for setting unit limits
Addresses any other matters that the Minister considers relevant	o	+ Takes into account the relevant matter of the Commission's recommendation for NZ ETS settings from 2024

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

46. Option 2 is preferred as the starting emissions volumes to calculate unit limits for 2024, 2025 and 2026. It strongly supports the proper functioning of the NZ ETS as auction

volumes would be consistent with the most recent, high-quality modelling and analysis of the emissions reductions and removals for New Zealand to meet the 2050 target that is available to the Government.

47. We have greater confidence that the Commission's analysis is consistent with achieving the 2050 target than the PEB. This is a reflection of it being based on the most recent emissions data, modelling and analysis. The PEB was developed in early 2020 and attempted to account for the impact of COVID-19 on emissions. The 2020 RIS acknowledged there was substantial uncertainty at that time about both the duration and severity of the pandemic on domestic economic activity and emissions. The Commission's analysis, on the other hand, was developed in late-2020 and early 2021 and benefits from being drawn from the latest emissions data, which includes the actual impacts of COVID-19 on 2020 emissions.

48. There is also no significant difference between the options with respect to improving linking. Both options would provide an effective cap on unit supply, maintaining the integrity of the NZ ETS.

What are the marginal costs and benefits of the preferred option?

49. Option 2 would reduce auction volume by 4.9 million NZUs compared to the status quo, over the 2022-2026 period. The Government would likely receive less auction revenue over the 2022-2026 period, although any price increases due to increased scarcity might reduce this impact. This potential fiscal cost is quantified in the analysis section for the CCR trigger price options.

50. Reducing unit supply into NZ ETS market through auctioning could help address oversupply in the NZ ETS by encouraging market participants to draw down on the stockpile. This would support the Government's efforts to realign unit supply in the NZ ETS with targets.

Feedback from submissions

51. Some submitters supported the PEB remaining the base emissions budget for 2022 and 2023 updates, with the Commission's budget used from 2024.

Recommendation

52. We recommend using the starting emissions volumes for 2024, 2025 and 2026 from the Commission's analysis and updated projections to calculate unit limits for those years (table 5).

Table 5: unit limit settings

	New Zealand units available by auction (millions)		Approved overseas units used (millions)		Overall limit on units (millions)	
Calendar Year	Current	Recommended	Current	Recommended	Current	Recommended
2022	26.3	26.3	0	0	34.5	34.5
2023	25.6	25.6	0	0	34.5	34.5
2024	24.2	25.0	0	0	32.9	32.9
2025	22.4	23.3	0	0	31.1	29.6
2026	-	21.7	-	0	-	27.9

Section 4: Options for updating the auction price floor

53. Price controls are used to prevent NZUs from being auctioned at unacceptably low or high prices.

54. The CCRA requires annual regulation updates to set price controls for:

    a. minimum price that units can be sold at auction (auction price floor)

    b. cost containment reserve (CCR) trigger price

    c. CCR unit volume

55. The Commission has recommended increasing both the auction price floor level and the CCR trigger price (Recommendation 11: Strengthen market incentives to drive low-emissions choices). The Government will decide on whether to adopt these recommendations through the current NZ ETS regulations updates process.

Auction price floor initial level

56. To avoid NZUs being auctioned at unacceptably low prices, regulations must set a minimum auction clearing price for the next five years. The auction price floor[9] prevents auction participants from placing bids below the level set in regulations.

57. There are two components to the auction price floor, the initial level and the rate of increase each year.

58. The 2020 RIA considered options for the price floor from $0 to $20. A $20 price floor was recommended and is in place. Options above $20 were not considered as this was too close to the market price at the time. We note that the current price is significantly higher ($48.50 on 28 July 2021).

59. The 2020 RIS considered options to increase the price floor by the rate of inflation each year, 5 per cent plus inflation and 15 per cent plus inflation. The Government agreed to increase the floor by the rate of inflation each year, although a 5 per cent increase was recommended in the 2020 RIS as it best supported alignment with emission budgets.

Option 1 (status quo) – keep the current auction price floor initial level

60. The auction price floor pathway is retained from a starting point of $20 for 2021.

Option 2 – use the Commission's auction price floor initial level

61. The Commission has recommended increasing the auction reserve price floor to $30 as soon as practical.

62. We have not considered options below the current level of the auction price floor or above the Commission's recommendation. A price floor below $20 would be inconsistent with NZU prices sustainably increasing over time to drive emissions reductions. It would

[9] In addition to the auction price floor, a confidential reserve price was implemented in early 2021 to ensure units are not auctioned significantly below the NZ ETS secondary market price. The regulations updates considered in this RIA do not include the confidential reserve price.

also signal to the market that NZUs are currently over-valued, which risks dampening prices on the secondary market.

63. An auction price floor above the Commission's recommendation would risk driving up NZU prices in the short-term, well beyond market expectations. The auction price floor is meant to prevent an unacceptably low NZU price and support price discovery. A $40 price floor in 2022, for example, would be too close to the current market price of NZUs, as well as the most recent auction clearing price of $41.70.

How do the options compare?

Table 6: auction price floor initial level options

	Option 1 - keep the current auction price floor initial level	Option 2 - use the Commission's auction price floor initial level
Alignment with New Zealand's emissions budgets and the NDC	o	++ Aligns auction price floor with the Commission's emissions price pathway
Account for trends in domestic emissions over the 5-year rolling period	o	o This criteria/matter is not relevant for setting the auction price floor
Support the proper functioning of the NZ ETS	o	++ Supports higher NZU prices over time, providing greater incentives to make emissions reduction and carbon removal investments - An immediate change to previous years auction price floor could reduce the predictability of NZU prices
Improve compatibility with overseas carbon markets	o	+ Ensures units are not auctioned at prices well below international emissions prices, maintaining the integrity of NZUs
Consistency with the forecast costs of reducing emissions to meet emissions reduction targets	o	+ Aligns auction price floor settings with the Commission's forecast costs of reducing emissions
Addresses any other matters that the Minister considers relevant	o	+ Aligns with the Commission's recommended auction price floor
Allocates costs and benefits appropriately among those affected by an emissions price	o	+ Could increase minimum auction revenue over the 2022-2026 period + Signals to the market that NZUs will not drop below $30, benefiting foresters and other unit holders - Potentially higher costs for auction participants to buy NZUs, which could increase NZ ETS compliance costs
Supports consistency of NZU	o	+

prices with the level and trajectory of international emissions prices		Helps to ensure NZUs prices don't fall below international emissions prices

Auction price floor rate of increase

Option 1 (status quo) – keep the current auction price floor rate of increase

64. The auction price floor is currently set to increase at a rate of inflation using a modelled rate of 2 per cent per year. A value would be added for 2026.

Option 2 – use the Commission's auction price floor rate of increase

65. The Commission recommended increasing the auction price floor by 7 per cent (5 per cent plus the modelled rate of inflation of 2 per cent annually).

How do the options compare?

Table 7: auction price floor rate of increase options

	Option 1 - keep the current auction price floor rate of increase	Option 2 - use the Commission's auction price floor rate of increase
Alignment with New Zealand's emissions budgets and the NDC	o	++ Greater rate of increase helps align auction price floor with the Commission's emissions price pathway
Account for trends in domestic emissions over the 5-year rolling period	o	o This criteria/matter is not relevant for setting the auction price floor
Support the proper functioning of the NZ ETS	o	++ Greater rate of increase supports higher NZU prices over time, providing greater incentives to make emissions reduction and carbon removal investments - An immediate change to previous years auction price floor could reduce the predictability of NZU prices
Improve compatibility with overseas carbon markets [redacted]	o	+ Greater rate of increase will help ensure units are not auctioned at a price well below international emissions prices, maintaining the integrity of NZUs [redacted]
Consistency with the forecast costs of reducing emissions to meet emissions reduction targets	o	+ Greater rate of increase aligns auction price floor settings with the Commission's forecast costs of reducing emissions
Addresses any other matters that the Minister considers relevant	o	+ Aligns with the Commission's recommended auction price floor
Allocates costs and benefits appropriately among those affected by an emissions price	o	+ Could increase minimum auction revenue over the 2022-2026 period +

		Signals to the market that NZUs will not drop below $30, benefiting foresters and other unit holders - Potentially higher costs for auction participants to buy NZUs, which could increase NZ ETS compliance costs
Supports consistency of NZU prices with the level and trajectory of international emissions prices	o	+ Greater rate of increase helps ensure NZUs prices don't fall below international emissions prices

What options are likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

66. We propose raising the auction price floor to $30 in 2022 and increasing at a rate of 7 per cent (5 per cent + 2 per cent inflation) per annum.

67. Table 8 shows the status quo auction price floor (extended to 2026) and the proposed auction price floor.

Table 8: Auction price floor options (NZD)

	2021	2022	2023	2024	2025	2026
Status quo auction price floor (extended to 2026)	20	20.40	20.81	21.22	21.65	22.08
Proposed auction price floor	N/A	30.00	32.10	34.35	36.37	39.32

68. The preferred approach supports alignment of the auction price floor with New Zealand's emission reduction targets. It will align NZUs supplied into the market through auctioning with the lower bound of the Commission's price pathway. A 7 per cent rate of increase supports a consistent and predictably escalating emissions price, allowing market participants and unit holders to form expectations of future minimum NZU prices.

69. The price floor serves as an important NZU price signal to encourage and safeguard emissions reduction and carbon removal investments. The preferred approach would send a stronger signal to the market compared to the status quo. It could also prevent NZUs from falling well below anticipated international emissions prices – maintaining their integrity and supporting linking with overseas carbon markets.

What are the marginal costs and benefits of the option?

70. Updating the price floor would increase the minimum auction revenue the Government could earn (table 9), assuming all the volume is sold. However, the confidential reserve price reduces the chance of auctions clearing at the price floor. Auction revenue is therefore likely to be greater than the estimates below.

Table 9: Minimum potential NZ ETS auction revenue (NZD millions)

	2022	2023	2024	2025	2026	**Total**
Auction revenue	579	597	629	680	688	**3,173**

Note: minimum potential auction revenue is derived from the preferred option of the starting emissions volumes from the Commission's analysis and updated projections to calculate unit limits, without considering any impacts from a confidential reserve price.

71. Our preferred approach would increase the minimum cost of purchasing NZUs at auction. This could increase NZ ETS compliance costs for participants planning to use units obtained from auctioning to meet surrender obligations. However, considering that auctions are likely to clear well-above the price floor (because of the confidential reserve price), updating these settings is unlikely to significantly affect NZ ETS compliance costs.

72. Updating the price floor would help align NZU prices with the required abatement costs the Commission has forecast to meet the 2050 target. It would also shift price floor settings closer to recent market prices, ensuring price continuity and safeguarding existing investments.

Feedback from submissions

73. Most industrial firms opposed updating the auction price floor based on the Commission's recommendation. These submitters were critical of the magnitude of the change from current settings, and the associated risk of higher NZU prices. Concerns were also raised about the Government adopting the Commission's recommendations before publicly responding to the advice.

74. Foresters and electricity companies were more supportive of updating the auction price floor. Forestry submitters noted that updating the price floor would provide greater certainty with respect to the value of NZUs earned from carbon sequestration, which would encourage afforestation. Some electricity companies submitted that a higher price floor could increase NZU prices to reduce emissions.

75. Some submitters noted that the auction price floor level setting was less relevant now following implementation of the confidential reserve price this year.

Recommendation

76. We recommend updating the initial auction price floor level and rate of increase from 2022 using the Commission's recommendations on the price floor.

Section 5: Options for updating the cost containment reserve trigger price

77. The cost containment reserve (CCR) is a supply of NZUs that can be auctioned if the clearing price reaches a specific trigger price level. These additional units increase supply into the market, reducing scarcity and dampening prices. While the CCR does not directly affect NZU prices, its ability to increase unit supply provides an effective, albeit indirect, tool to manage price movement.

78. The CCR trigger price signals the upper bound of acceptable prices in the NZ ETS. It is the Government's view the CCR should be rarely triggered, if at all. Its purpose is to protect households and businesses from significant financial impacts arising from unacceptably high and aberrant NZU prices.
79. It is difficult to assess the impact of updating price controls on NZU prices. This is because the auction price floor and CCR are not considered major drivers of price movement on the NZ ETS secondary market. The CCR would have a dampening impact on price if it was activated. Existing unit supply and demand are more influential factors affecting the day-to-day movement of emissions prices.
80. However, the CCR trigger price level may affect NZU prices by influencing the hedging decisions and planning of market participants. There is limited information available to the Government on the hedging behaviour of participants. This makes it difficult to assess the degree to which the movement of emissions prices is affected by CCR price trigger signals.
81. The recommendation of a higher CCR trigger price is therefore not the Government's price forecast. Although we propose increases to the CCR price trigger and the rate of increase, this does not imply that NZU prices would suddenly jump. However, there is potential that the higher price corridor set by price controls could see NZU prices above $50.

CCR initial trigger price level

82. The CCR is currently set at $50, increasing by 2 per cent every year. In the 2020 RIS we considered a range of options for the CCR trigger price, from $40 to $100. The acceptability of an emissions price around $70 has changed since the CCR trigger price was set last year – particularly in light the Commission's recent advice.

84. NZU price movement since 2020 has been significant and somewhat unexpected. The risk of the CCR being activated at a $50 price trigger in 2021 was considered low at the time it was set. There is now a material likelihood of the CCR being triggered in 2021 and 2022, given recent NZU price trajectory (see figure 2). Increasing the CCR trigger to $70 in 2022 would reduce the risk of the CCR being triggered in that year. The likelihood of the CCR being triggered this year cannot be reduced, as the CCRA does not allow for the trigger price to be changed in 2021.
85. Three options are considered for the initial CCR trigger price level: 1) the current CCR price trigger level, 2) a new price trigger set at $60 in 2022 and 3) the Commission's recommended CCR price of $70.
86. Options below the current CCR trigger are not assessed as they would be inconsistent with a sustainably escalating domestic emissions price and would likely result in the CCR being activated in the near-term (the most recent auction cleared at $41.70).

87. Options above the Commission's recommendation are also not considered. A $100 trigger price option was assessed in 2020 and not recommended. They would risk very high auction clearing prices, which are well-above the abatement costs the Commission has forecast to meet their recommendations for the first emissions budget. [redacted] it could impose significant and unnecessary costs on businesses and households at this time. Options above the Commission's recommendation would not effectively achieve cost containment in the NZ ETS.

Option 1 (status quo) – keep the current CCR initial price trigger

88. The CCR trigger price is currently set at $50 for 2021 and $51 for 2022.

Option 2 – use an intermediate CCR initial price trigger

89. The CCR trigger would be updated to $60 for 2022. This would be an intermediate option between the current trigger price and the Commission's recommendation.

Option 3 – use the Commission's recommended initial CCR trigger price

90. The Commission recommended increasing the CCR trigger price to $70 as soon as practical. The trigger price would be updated to $70 for 2022.

How do the options compare to the status quo?

Table 10: CCR trigger price options

	Option 1 – keep the current CCR initial price trigger	Option 2 – use an intermediate CCR initial price trigger	Option 3 – use the Commission's recommended CCR initial trigger price
Alignment with New Zealand's emissions budgets and the NDC	**o**	+ Sets the initial level of the trigger price partially in line with marginal abatement costs required to reach emissions budgets and targets	++ Aligns the initial price trigger level with the Commission's emissions price pathway for meeting the 2050 target
Account for trends in domestic emissions over the 5-year rolling period	o	o This criteria/matter is not relevant for setting the CCR trigger price	o This criteria/matter is not relevant for setting the CCR trigger price
Support the proper functioning of the NZ ETS	o	+ Allows for price discovery up to $60, somewhat in line with marginal abatement costs required to reach emissions budgets and targets + Sets the initial trigger price high enough to somewhat reduce risk of triggering the CCR in 2022	++ Allows for price discovery up to $70, in line with marginal abatement costs required to reach emissions budgets and targets, based on most up-to-date modelling and analysis ++ Sets the trigger price high enough to minimise the risk of triggering the CCR and the associated risk of breaching emissions budgets in 2022
Improve compatibility with	o	+	++

overseas carbon markets [redacted]		Allows units to be auctioned at levels that are closer to international emissions prices, maintaining the integrity of NZUs [redacted]	Allows units to be auctioned at levels consistent with international emissions prices, maintaining the integrity of NZUs, [redacted]
Consistency with the forecast costs of reducing emissions to meet emissions reduction targets	o	+ Partially aligns the initial trigger price with the Commission's forecast costs of reducing emissions to meet emissions reduction targets	++ Fully aligns the initial trigger price with the Commission's forecast costs of reducing emissions to meet emissions reduction targets
Addresses any other matters that the Minister considers relevant	o	o	+ Aligns with the Commission's recommended trigger price
Allocates costs and benefits appropriately among those affected by an emissions price	o	+ Increase auction revenue + Somewhat reduces the fiscal risk of triggering the CCR and Government having to purchase international units to back volume + Increases the secondary market price signal, which would benefit foresters and other unit holders + A higher emissions price could drive more afforestation, increasing the emissions removals that can be counted towards NZ's climate targets - Risks higher NZU prices, which would increase compliance costs for NZ ETS participants; increase pass through costs to consumer and households - A significantly higher carbon price could drive unacceptable land use change if NZ ETS forestry settings are not changed	++ Increase auction revenue ++ Reduces the fiscal risk of triggering CCR and Government having to purchase international units to back volume ++ Significantly increases the secondary market price signal, which would benefit foresters and other unit holders ++ A higher emissions price could drive more afforestation, increasing the emissions removals that can be counted towards NZ's climate targets - - Risks higher NZU prices, which would increase compliance costs for NZ ETS participants; increase pass through costs to consumers and households - - A significantly higher carbon price could drive unacceptable land use change if NZ ETS forestry settings are not changed
Supports consistency of NZU prices with the level and trajectory of international emissions prices	o	+ Sets trigger price high enough for NZU prices to increase in line with international prices [redacted]	++ Would allow for NZU prices to increase in line with international prices [redacted]

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

91. We propose that the CCR trigger price is raised to $70 in 2022 (Option 3).

92. Raising the CCR trigger price supports alignment with New Zealand's emission reduction targets. The status quo risks cost containment occurring at an emissions price that is below the expected abatement costs to meet the 2050 target.

93. As per the Commission's modelling, New Zealand's emissions price will need to increase above $50 to drive emissions reductions to achieve its recommended emissions budgets. Retaining the status quo risks NZU prices being too low to achieve sufficient levels of mitigation in the first emissions budget period. This would require New Zealand to make steeper and likely costlier reductions in later budget periods.

94. The Commission's modelling indicated that meeting the 2050 target will involve emissions reductions with marginal abatement costs from energy use that are higher than the current trigger price settings. The emissions price may need to increase to around $140 by 2030 to deliver this abatement depending on the effectiveness of other measures. Their evidence suggested that in process heat, significant abatement opportunities exist at an emissions costs well-above $50. Option 3, and to some extent Option 2, would allow NZU prices to increase to realise more expensive abatement opportunities across the economy.

95. The Commission's forecast abatement costs are consistent with marginal abatement cost curve analysis done by the Ministry for the Environment in 2019[10]. The analysis found the abatement costs for the energy, industrial processes and product use, and waste sectors are well-above current NZU prices. This gives us confidence in both the Commission's forecast abatement costs and recommendation to increase the CCR trigger price to $70.

96. Option 2 and 3 would reduce the risk of the CCR being activated in the first emissions budget period and dampening NZU prices. Triggering the CCR would make it harder for the NZ ETS to incentivise near-term emissions reductions and removals. Both options would also reduce the associated fiscal risk of the CCR being activated and the Government having to 'back' reserve units with offshore mitigation[11].

97. The Commission advised that an increase in the CCR trigger price was necessary to mitigate the risk of it being activated and adding NZUs to the stockpile. Avoiding the CCR being triggered is a key objective for the Government when updating the price control regulations.

98. Option 3 would improve the compatibility of the NZ ETS with overseas carbon markets by allowing NZU prices to increase in line with international emissions prices. [redacted]

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[10] Marginal abatement cost curves analysis for New Zealand: potential greenhouse gas mitigation options and their costs

[11] Section 30IA of the CCRA requires the Government to obtain additional emissions reductions if NZUs from the CCR are supplied through auctioning, and doing so exceeds the NZ ETS cap. This would likely involve New Zealand procuring international emissions units for the amount of reserve units that are sold. The backing of CCR units is necessary to maintain the integrity of the cap.

Cost containment reserve rate of increase

99. The CCR trigger price is currently set to increase by 2 per cent every year. In the 2020 RIS, we considered a range of options from increase by inflation, to increasing by 15 per cent plus inflation. The RIS recommended increasing the CCR by 5 per cent plus inflation.

100. Three options are considered for updates this year: 1) the current CCR increase, 2) increasing the CCR by 5 per cent per year plus inflation and 3) the Commission's recommendation to increase the CCR by 10 per cent plus inflation.

Option 1 (status quo) – keep the current CCR rate of increase

101. The CCR trigger price is currently set to increase by 2 per cent each year to reflect inflation.

Option 2 – increase the CCR rate of increase by 7 per cent

102. The CCR trigger would increase by 5 per cent plus a 2 per cent rate of inflation each year. This would be an intermediate option between the current increase and the Commission's recommendation. This option was recommended in the 2020 RIS.

Option 3 – the Commission's recommendation to increase the CCR by 12 per cent

103. The Commission's recommended increasing the CCR by 10 per cent plus a 2 per cent rate of inflation each year.

How do the options compare to the status quo?

Table 11: CCR rate of increase

	Option 1 – keep the current CCR rate of increase	Option 2 – increase the CCR rate of increase by 5 per cent plus inflation	Option 3 – the Commission's recommendation to increase the CCR by 10 per cent plus inflation
Alignment with New Zealand's emissions budgets and the NDC	**o**	+ Higher rate of increase allows NZU prices to increase in line with abatement costs required to reach the 2050 target	++ Much higher rate of increase aligns CCR price trigger with the Commission's emissions price pathway for meeting the 2050 target
Account for trends in domestic emissions over the 5-year rolling period	o	o This criteria/matter is not relevant for setting the CCR trigger price	o This criteria/matter is not relevant for setting the CCR trigger price
Support the proper functioning of the NZ ETS	o	+ Somewhat reduces risk of triggering the CCR and the associated risk of breaching	++ Allows the NZU prices to increase over time in line with marginal abatement costs required to reach the 2050

		emissions budgets over the 2022-2026 period	target, based on most up-to-date modelling and analysis ++ Minimises risk of triggering the CCR and the associated risk of breaching emissions budgets over the 2022-2026 period
Improve compatibility with overseas carbon markets [redacted]	0	+ Allows units to be auctioned at levels consistent with international emissions prices, maintaining the integrity of NZUs, [redacted]	++ Allows units to be auctioned at levels consistent with international emissions prices, maintaining the integrity of NZUs, [redacted]
Consistency with the forecast costs of reducing emissions to meet emissions reduction targets	0	+ Partially aligns trigger prices over time with the Commission's forecast costs of reducing emissions to meet emissions reduction targets	++ Fully aligns trigger prices over time with the Commission's forecast costs of reducing emissions to meet emissions reduction targets
Addresses any other matters that the Minister considers relevant	0	0	+ The Commission's recommended CCR trigger price is a matter the Minister considers relevant
Allocates costs and benefits appropriately among those affected by an emissions price	0	+ Allows increase in Government auction revenue + Somewhat reduces the risk of triggering the CCR and Government having to purchase international units to back volume + Increases the secondary market price signals, which would benefit foresters and other unit holders + A higher emissions price could drive more afforestation, increasing the emissions removals that can be counted towards NZ's climate targets - Risks higher NZU prices, which would increase compliance costs for NZ ETS participants; increase pass through costs to consumers; and impact economic activity - A significantly higher carbon price could drive unacceptable land use change	++ Allows much greater increase in Government auction revenue ++ Reduces the risk of triggering CCR and Government having to purchase international units to back volume ++ Significantly increases the secondary market price signals, which would benefit foresters and other unit holders ++ A higher emissions price could drive more afforestation, increasing the emissions removals that can be counted towards NZ's climate targets - - Risks significantly higher NZU prices, which would increase compliance costs for NZ ETS participants; increase pass through costs to consumers; and impact economic activity - - A significantly higher carbon price could drive unacceptable land use change

Supports consistency of NZU prices with the level and trajectory of international emissions prices	o	+ Would partially allow NZU price increases in line with international [redacted]	++ Would allow NZU price increases in line with international prices

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

104. Table 12 shows the levels of the CCR trigger price options assuming different rates of increases.

Table 12: CCR price trigger option (NZD)

	2021	2022	2023	2024	2025	2026
Status quo CCR trigger price levels ($51 in 2022 and increasing by 2 per cent per year)	50.00	51.00	52.02	53.06	54.12	55.20
Intermediate CCR trigger price levels ($60 in 2022 and increasing by 7 per cent per year)	N/A	60.00	64.20	68.69	73.50	78.65
The Commission's recommendation trigger price level ($70 in 2022 and increasing by 12 per cent per year)	N/A	70.00	78.40	87.81	98.34	110.15

105. We propose that the CCR trigger price increases by 10 per cent plus inflation (Option 3). A higher rate of increase is justified to allow NZU prices to increase over the 2022-2026 period to drive emissions reductions and removals.

106. The Commission's modelling indicated that meeting the 2050 target will involve emissions reductions with marginal abatement costs from energy use that are higher than the current rate of increase. The emissions price may need to increase to around $140 by 2030 to deliver this abatement depending on the effectiveness of other measures. Option 3, and to some extent Option 2, would allow NZU prices to increase, enabling more expensive abatement opportunities across the economy.

107. This is supported by marginal abatement cost curve analysis. The analysis found the abatement costs for the energy, industrial processes and product use, and waste sectors are well-above current NZU prices. The Commission's price corridor would enable higher emissions prices required for these abatement opportunities to become economical.

108. Retaining the status quo risks cost containment being effectuated at $50. NZU prices would be contained too low to achieve sufficient mitigation in the first emissions budget period. This will require New Zealand to make steeper and likely costlier reductions in later budgets. A 7 per cent increase (Option 2) would allow for an increase in NZU prices over time; however, it would still be below levels needed to drive emissions reductions in line with the forecast abatement costs recently provided by the Commission.

109. A 10 per cent plus inflation rate of increase supports a consistent and predictably escalating emissions price, allowing market participants and unit holders to form expectations of future NZU prices at auction.

What are the marginal costs and benefits of the option?

110. The marginal costs and benefits of the preferred CCR trigger level and the rate of increase are assessed together as their impacts are closely related.

Impact of gross and net emissions

111. The RIA applies current NZ ETS settings and does not attempt to separate the emissions price and incentive for forestry removals when presenting estimates of gross emissions reductions and net removals. We note the Commission's modelling decoupled the price emitters face and the NZ ETS incentive for landowners to remove emissions through forests[12]. This allowed it to model independent levels of gross emissions reductions and net forestry removals in its demonstration pathway.

112. Under current NZ ETS settings, the emissions price and incentive for forestry removals are the same. The Commission has identified this risks higher emissions prices driving afforestation and net forestry removals, rather than gross emissions reductions. To address this, the Commission recommends adjusting NZ ETS forestry settings to constrain the rewards for carbon sequestration. While we accept the Commission's analysis, consideration of new NZ ETS forestry settings and the potential implications for forestry incentives is outside the scope of the RIA.

113. Table 13 provides estimates of gross emissions reductions from a higher emissions price. The estimates are based on an emissions price that increases annually in line with the preferred CCR trigger option.

114. Higher emissions prices would likely reduce emissions in other sectors, but we are unable to provide estimates at this time. The uncertainty of these estimates is considered high and will likely change as the modelling is updated and refined.

[12] The Commission applied 'emissions values' of $40.80 per tonne CO2-e in 2021 increasing to $95.10 by 2026, $140 by 2030, and $250 by 2050 to model gross emissions reductions. Its forestry projections for the three budget periods were based on the Government's modelling, which uses a $35 emissions price.

Table 13: estimates of potential emissions reductions due to higher emissions price (kt CO_2e)

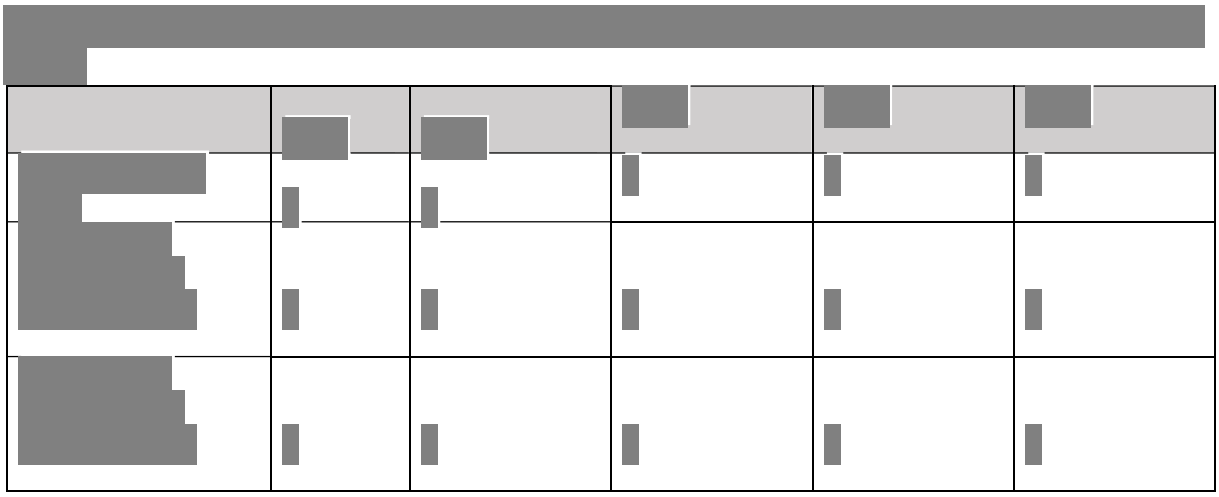
	First emissions budget	Second emissions budget	Third emissions budget
Heating and process heat			
Road transport			

115. Higher emissions prices would drive more afforestation in New Zealand. Table 14 provides the Government's current afforestation projections based on a flat $35 emissions price and new projections based on a higher emissions price of $50 in 2022, increasing to $100 in 2026.

Table 14: afforestation projections (hectares)

	2022	2023	2024	2025	2026

116. Table 15 provides estimates of the emissions removals from different emissions price scenarios. Short-term changes in the emissions price have little impact on removals as it takes time for new forests to grow and sequester meaningful levels of carbon. Emissions removals will begin to increase towards the end of the second emissions budget period.



Impact on auctioning revenue

117. Higher trigger price levels could increase auction revenue, which can be reinvested in climate change mitigation and adaptation activities. Table 16 shows the potential auction revenue based on the preferred CCR trigger level and the rate of increase, and assuming all the auction volume is sold (but no CCR units released).

Table 16: potential NZ ETS auction revenue (NZD millions)

	2022	2023	2024	2025	2026	**Total**
Auction revenue	1,351	1,458	1,589	1,623	1,652	**7,673**

Note: maximum potential auction revenue is derived from the preferred option of the starting emissions volumes from the Commission's analysis and updated projections to calculate unit limits.

Impacts on businesses and households

118. The preferred option could lead to higher emissions prices, increasing NZ ETS compliance costs. Some of these costs would be passed to consumers, households and businesses.

119. Table 17 provides estimates of the cost impact of emissions prices on some common commodities. The estimates are rough and assume 100 per cent of the emissions cost is passed to consumers. They are meant to demonstrate the magnitude of price changes in response to potentially higher NZU prices – and are not exact forecasts of the impacts of updating the CCR trigger price.

Table 17: Cost impact of emissions prices on common commodities

Commodity	**Cost impact of emissions prices (NZD/unit)**		
	$50 emissions price	**$70 emissions price**	**$100 emissions price**

Electricity (kWh)	0.03	0.04	0.05
Petrol (litre)	0.12	0.17	0.25
Diesel (litre)	0.13	0.19	0.27

120. The Treasury previously conducted an analysis that assessed the impact of higher emissions prices on short-term household spending. It showed that a rise from $50 to $75 would increase low-income household spending by $2 per week, and $4.10 per week for high-income households. This was based on 100 per cent pass-through of emissions prices, and an assumption that households did not adjust their consumption to rising emissions prices.

121. The impact of higher emissions prices on emissions intensive and trade exposed (EITE) industries would be small given they receive free NZUs through industrial allocation. Although the level of assistance is set to reduce over time, industry will continue to receive a high level of support well-after the 2022-2026 period. There is also evidence that some eligible activities are receiving over-allocations that fully compensates EITE firms for their NZ ETS costs.[13]

122. Over the long-term, the cost impact of higher emissions prices should decrease. 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 and heating are likely to decrease in the middle to long-term, allowing households to switch to lower-carbon alternatives.

Costs and benefits of reducing emissions

123. In the short-term, it may appear beneficial for price controls to deliver lower emissions prices – particularly to avoid near-term financial impacts on business and households. However, this could be costlier for New Zealand when measured over the longer term. Reducing emissions too slowly early in the transition means New Zealand may need to make more expensive investments later to meet our climate change targets. The Commission argued that delaying emissions reductions would result in greater economic and social costs. It found that delaying action could result in GDP in 2050 being up to 2.3 percent lower.

124. [redacted]

[13] Reforming industrial allocation in the New Zealand Emissions Trading Scheme. Consultation document

[redacted]

Fiscal risk of backing the CCR

126. The preferred option would reduce the fiscal risk of the Crown having to back reserve units if the CCR was triggered. NZU prices are approaching the current CCR trigger level of $50. It is increasingly likely the CCR will be activated in 2022 unless the trigger level is increased to $70.

127. If the CCR was triggered next year, the Government would have to back reserve units sold at auction that exceed the emissions budget that has been set and purchase equivalent emissions reductions [redacted] activation of the CCR could incur a significant fiscal cost. Avoiding the CCR being triggered reduces this risk.

128. This fiscal cost is difficult to estimate at this time [redacted]

Climate Change Commission impact analysis

129. The Commission's impact analysis indicated that increasing the CCR trigger price was critical in meeting its recommended emission budgets.

130. The Commission applied an 'emissions value' in its modelling of $40.80 per tonne CO_2-e in 2021 increasing to $95.10 by 2026, $140 by 2030, and $250 by 2050. The main areas where the emissions value influenced emissions reduction decisions in the model were in electricity generation, fuel switching in industrial process heat and space and water heating, and the choice of vehicle technology for vehicles entering the fleet. The emissions values were not used agriculture, forestry and waste.

131. The Commission assessed the impacts of meeting its recommended emissions budget. The key findings are:

a. **Impact on GDP**. The overall reduction to GDP, compared to a future without further policy action, will be around 0.5 per cent by 2035 and less than 1 per cent in 2050 (compared to 2.3 per cent if action is delayed).

b. **Energy**. Reductions in the demand for coal and gas generation demand in the first emissions budget; and an increase in the demand for wind generated electricity. Electricity prices are unlikely to increase, but electricity prices from fossil fuels will increase. Petrol and diesel costs are likely to increase.

c. **Process heat**. At higher emissions prices there are opportunities for fuel switching and improving energy efficiency.

d. **Small businesses**. Potentially higher electricity and fuel costs, but these should be manageable.

e. **Industry**. Minimal impact to industry as emissions intensive and trade exposed firms will continue to receive industrial allocation, which reduces the cost impact of changing NZU prices.

f. **Households**. The Commission found that, in general, the cost of living would not increase. There could be higher electricity and fuel costs. Improvements in energy efficiency may be able to offset this, but lower-income households may require Government support through policy to assist making these transitions.

g. **Forestry**. The Commission modelled afforestation using an emissions price well below $70 in 2022. Given the sensitivity of land use change to high emissions prices, rates of afforestation would likely increase beyond the Commission's modelling if NZU prices increased above $50 in the near-term without changes to forestry in the NZ ETS.

   In forestry, the Commission identified opportunities in bioenergy and greater use of timber in construction from higher emissions prices.

Feedback from submissions

132. Industry submitters strongly opposed updating the CCR trigger price based on the Commission's recommendation. The Commission's proposal represented a significant adjustment to the upper bound of the auction price corridor. This would risk rapidly driving up NZU prices and introducing greater volatility to the secondary market. They also expressed concerns that the analysis carried out by the Government and the Commission on the impacts of higher emissions price was incomplete and lacked transparency.

133. Industry disagreed with the need to update the trigger in the short-term, arguing the near-term risk of the CCR being triggered was low. There was some support for the Government to reconsider the trigger price level once the first emissions budget was confirmed.

134. Foresters, electricity companies and environmental NGOs tended to support updating the trigger price. They suggested that doing so would align the price control settings with the Commission's proposed emissions budget and signal to businesses that emissions would soon be priced at higher levels.

Recommendation

135. We recommend updating the initial CCR trigger price level and rate of increase from 2022 in line with the Commission's recommendations.

Section 6: Options for updating the cost containment reserve volume

136. The volume of the CCR affects its ability to manage emissions prices. The more NZUs held in the reserve, the greater the volume of units that can be supplied into the market when prices are unacceptably high.

137. The CCRA requires that all reserve units sold at auction that exceed the emissions budget in place at the time must be backed. This means the Government must be able to obtain equivalent emissions reductions up to the amount of reserve units. This could be in the form of purchasing offshore mitigation or by other activities or investments that reduce emissions domestically. There would be cost to the Government from having to source the additional emissions reductions to back reserve units.

138. The current regulations calculate the CCR volume based on:

a. the stockpile adjustment volume, plus

b. 5 per cent of the NZ ETS cap

139. As discussed in section 2, reviewing the method for calculating the CCR volume is out of scope.

140. The proposed CCR volume is shown in table 18, with the calculation shown in Appendix 1.

Table 18: Proposed CCR volumes

	2022	2023	2024	2025	2026
Total CCR volume	7.0	7.0	7.0	6.8	6.7

Feedback from submissions

141. A small number of submitters commented on the CCR volume. There was some support to increase the CCR volume to ensure sufficient reserve NZUs to effect cost containment. One environmental NGO argued for the volume to be reduced to avoid the risk of the CCR oversupplying the NZ ETS market in the event it is triggered.

Recommendation

142. We recommend updating the CCR volume based on the figures in table 18.

Section 7: Delivering an option

How will the new arrangements be implemented?

143. NZ ETS settings will be given effect through regulations. These regulations will be gazetted by 30 September 2021, allowing them to be in place by 1 January 2022.

How will the new arrangements be monitored, evaluated, and reviewed?

144. Agencies will closely monitor the impacts of the proposed NZ ETS settings. The Ministry for the Environment routinely tracks the price of NZUs and informs the Minster of this, 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.

145. Agencies will continue to update and refine emissions projections that will be used for future emissions budgets and informing unit limit and price control settings. 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.

146. The legislated coordinated decision-making process in the CCRA 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 such as if the CCR is triggered.

147. The Commission will also have a role monitoring and reviewing unit limits and price controls settings. Under section 5ZOA, the Commission must recommend to the Minister limits and price control settings, including any desirable emissions price path, each time regulation updates are required. This requirement only applies after the first emissions budget has been set.

Appendix 1

Unit limits calculations for the PEB and the Commission's analysis and updated projections

Starting emissions volumes to calculate unit limits options

	2024	2025	2026
Status quo – the emissions volumes from the PEB extended to 2026 and prior projections	70.0	68.1	66.3
The emissions volumes for 2024, 2025 and 2026 from the Commission's analysis and updated projections	72.5	68.8	66.5

1) **Set the NZ ETS cap**. The cap is calculated by using the relevant starting emissions volumes and removing the forecast emissions that are not covered by the NZ ETS.

Outside of the NZ ETS	2024	2025	2026
Agriculture[14]	39.7	39.2	38.9
Waste[15]	2.1	2.1	2.0
Synthetic greenhouse gases[16]	0.67	0.67	0.67
Forestry[17]	- 1.25	- 1.35	- 1.66
Total emissions outside of the NZ ETS cap	41.2	40.6	39.9

Remaining NZ ETS Cap	2024	2025	2026
Status quo – use the emissions volumes from the PEB extended to 2026 and prior projections	31.6	30.3	29.1
The emissions volumes for 2024, 2025 and 2026 from the Commission's analysis and updated projections	31.3	28.2	26.6

[14] On-farm emission (biogenic methane from ruminants and nitrous oxide) are excluded from the NZ ETS.

[15] 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.

[16] Synthetic greenhouse gases covered by the SGG levy

[17] Post-1989 forests not registered in the NZ ETS.

2) Make technical volume and forestry adjustments

	2024	2025	2026
Technical and forestry adjustments	0	0	0

3) Account for free NZU allocation volumes

	2024	2025	2026
Free allocation volumes	7.8	6.2	6.3

4) Set reduction volume to address unit oversupply

	2024	2025	2026
Stockpile reduction volume	5.4	5.4	5.4

5) Set approved overseas unit units

	2024	2025	2026
Approved overseas limits	0	0	0

6) Calculate annual auction volumes.

Remaining auction volume	**2024**	**2025**	**2026**
Status quo – use the emissions volumes from the PEB extended to 2026	**18.3**	**18.7**	**17.5**
The emissions volumes for 2024, 2025 and 2026 from the Commission's analysis and updated projections	**18.1**	**16.5**	**15.0**

CCR volume calculations

	2024	2025	2026
Stockpile adjustment volume	5.4	5.4	5.4
5% Commission analysis and updated projections cap	1.6	1.4	1.3
Total CCR volume	**7.0**	**6.8**	**6.7**