

Regulatory Impact Statement: 2023 update to New Zealand Emissions Trading Scheme limits and price control settings for units

Coversheet

Purpose of Document

Decision sought:	Cabinet approval for the 2023 annual update to New Zealand Emissions Trading Scheme limit and price control settings for units
Advising agencies:	Ministry for the Environment
Proposing Ministers:	Hon James Shaw, Minister of Climate Change
Date finalised:	20 July 2023

Problem Definition

The NZ ETS settings need to be reconsidered annually to ensure they meet the legislative requirement that they prescribe limits and price controls for each of the next five years.

Current settings are considered to generate a material risk that we will not meet our emissions targets. In particular there is a stockpile of NZ Units held by NZ ETS participants that appears surplus to what is required to meet emissions targets. Changing unit settings to reduce this surplus stockpile is the rationale for the proposed updates.

Executive Summary

The Government makes annual decisions on units supplied into the scheme for the upcoming five years. This limits or 'caps' the quantity of net emissions that can occur, in line with New Zealand's emissions targets.

The supply settings are prescribed in regulations, which are updated annually.

The supply settings are required to accord with New Zealand's emissions targets, unless the Minister of Climate Change (the Minister) is satisfied that the discrepancy is justified.

The Climate Change Commission (the Commission) is required to give annual advice on updates to these settings. The Commission's advice has been considered in determining preferred options.

Unit limits

The limits for units prescribed in regulations are:

- a limit on the NZUs available by auction;
- a limit on approved overseas units (currently zero); and
- an overall limit on units (often referred to as the NZ ETS cap, which consists of units available by auction and by other means, and approved overseas units).

This RIS recommends the limits to be prescribed. Most of the calculation steps take data from other sources, or previously agreed projections, and these are described in the RIS.

However, three steps used to calculate the annual auction volume are explored in more detail. In each case there are two options considered, the status quo or the recommendation of the Commission.

- calculation and treatment of forestry emissions outside the NZ ETS;
- technical adjustment; and
- additional stockpile adjustment.

In summary, we generally recommend agreeing with the recommendation of the Commission in each of these steps to calculate the annual auction volumes as these are most likely to support the achievement of emissions budgets and reduce the stockpile.

Price control settings for units

The price control settings for units are:

- auction reserve price (ARP) - the price below which the Government will not sell units at auction;
- cost containment reserve (CCR) trigger price(s) - below; and
- CCR volume(s).

Alternatives to the status quo for the ARP considered in this RIS involve an increased price. The Commission's recommendation was preferred as it provides a greater certainty of return for gross emission reductions and afforestation. It could also provide some protection from adding additional supply if a large volume of surplus units come to market at once, which could reduce prices and allow emissions above emission budgets.

Cost containment reserve

The CCR releases additional NZUs for sale at auction if the auction's interim clearing price is above a set 'trigger' price.

The Commission has recommended updating the structure, volume calculation, and trigger price of the CCR. The recommendation on structure was to set two trigger prices along with volumes released under each price.

Decisions on CCR settings require careful consideration of emissions reductions and impacts that could occur or be incentivised at different price points.

The Commission's recommendation was preferred as it increases the likelihood that emissions budgets will be achieved, as it ensures that the CCR trigger price is significantly above the range of NZU prices that would support emissions reductions. A high trigger price reduces the risk of the release of the reserve volume (which would prevent the reduction of the stockpile) and is also more likely to reduce the risk of secondary market prices tracking the CCR trigger price (termed the 'magnet effect') and associated speculative trading.

Updating unit settings from 2023 [Legally privileged]

The Act requires updates to regulations every year to ensure that unit settings are prescribed for each of the following five calendar years. These updates can only include changes to unit settings for the first two years (ie, 2024 and 2025 this year) in specified situations.

The Commission considered that there was no justification for updating settings for 2024 and 2025. ^{s 9(2)(h)}

However, there has been a legal challenge to the 2022 decisions (for the 2023-2027 settings). The Applicants and the Crown agreed to resolve the matter by consent, with the Crown admitting that the Minister did not have reasonable grounds to believe that Cabinet's preferred unit settings (which were ultimately adopted) met statutory requirements. The Court confirmed this agreement in a judgment issued 13 July 2023, meaning that the 2022 decisions have been quashed and I am required to reconsider unit settings for 2023-2027.

This means that this RIS is considering settings for 2023 to 2028.

Consultation feedback

Feedback from consultation on these settings fell broadly into two categories, those supportive of the Commission's recommendations, and those supportive of retaining status quo settings. Some submitters supported some elements, but not others, of the Commission's advice, or recommended alternative options that hadn't been considered in the discussion document.

Those supportive of status quo settings have highlighted the potential impacts on emissions intensive and trade exposed businesses as well as households and the economy allowed for by these settings. A few raised concerns about the modelling approach taken by the Commission.

Those supportive of the Commission's advice have tended to acknowledge potential impacts but consider that these should be addressed via complementary measures rather than via NZ ETS unit settings. They have also highlighted that settings should focus primarily on driving the emissions reductions required to achieve domestic emissions budgets and accord with the NDC. Some submitters also noted that the Commission's role as an independent advisory body means that its recommendations should be followed.

Limitations and Constraints on Analysis

There has only been a short timeframe available for analysis of settings and the Commission's advice, which has limited this analysis. The timing of public consultation and subsequent time available for review of submissions have exacerbated this constraint.

The Commission's model from which its scenarios and price modelling was derived, has not been made available to the Government or the public. This has limited our ability to carry out sensitivity testing.

We have been unable to fully assess possible impacts of changes from updating price control settings. This includes the potential impacts on land use change, households, and the economy.

Responsible Manager



Kate Whitwell

Manager
ETS Policy, Markets Directorate, Climate Business Group
Ministry for the Environment
20 July 2023

Quality Assurance

Reviewing Agency:	Ministry for the Environment
Panel Assessment & Comment:	The Ministry for the Environment Regulatory Impact Analysis panel (the RIA panel) has met and reviewed the Regulatory Impact Statement: 2023 update to New Zealand Emissions Trading Scheme limits and price control settings for units. The RIA panel considers the information and analysis summarised in the RIS meets the Quality Assurance criteria.

Section 1: Diagnosing the policy problem.

What is the context behind the policy problem and how is the status quo expected to develop?

Current state

1. The NZ ETS is one of the Government's key tools to price greenhouse gas emissions and address climate change.
2. The NZ ETS aims to provide a strong and stable signal of the cost of emissions to the economy. The costs of meeting NZ ETS obligations flow through New Zealand's economy by impacting the costs of goods and services that use fossil fuels or produce significant levels of emissions.
3. Aligning the NZ ETS with New Zealand's emissions budgets, along with expectations of a rising future emissions price, allows it to shape future economic development by flexibly encouraging businesses and households to align investment decisions and choices with low-emissions alternatives.

Annual process for unit limits and price control settings

4. Under the Act regulations are required to set unit limits and price control settings - 'unit settings'.
5. Unit limits include:
 - a limit on the NZUs available by auction;
 - a limit on approved overseas units (currently zero); and
 - an overall limit on units (often referred to as the NZ ETS cap, which consists of units available by auction and by other means, and approved overseas units).
6. The price control settings for units are:
 - auction reserve price (ARP) - the price below which the Government will not sell units at auction;
 - cost containment reserve (CCR) trigger price(s) – the price or prices at which additional NZUs will be released if an auction's interim clearing price reaches or exceeds this level; and
 - CCR volume(s) – the number of NZUs that will be released if the trigger price is reached.
7. As these price controls set a minimum and maximum price for auctions, and can be adjusted annually, they provide a 'price corridor' over the five year time horizon. Managing the supply and (indirectly) the stock of units limits or 'caps' the quantity of net emissions that can occur, in line with New Zealand's emissions reduction targets.
8. The Act requires updates to regulations every year to ensure that unit settings are prescribed for each of the following five calendar years. These updates generally exclude changes to unit settings for the first two years (ie, 2024 and 2025 this year) except in specified situations.
9. Under the Climate Change Response Act 2002 (the Act) NZ ETS unit limits and price control settings are required to accord with New Zealand's emissions budgets and targets, or, if they are not in accordance, the discrepancy must be justified in line with the criteria prescribed in the Act.¹

¹ See section 30GC of the Climate Change Response Act.

10. The annual updates to unit limits and price control settings are prescribed in the Climate Change (Auctions, Limits, and Price Controls for Units) Regulations 2020. This update will be the fourth time that these settings have been updated since regulations were made in 2020.²

The Climate Change Commission has provided advice on NZ ETS unit settings

11. The Commission is required to give annual advice on NZ ETS unit settings.³ The Commission's 2023 advice was provided to the Minister of Climate Change (the Minister) on 31 March 2023. The Minister must consider the Commission's advice when recommending updates to settings, and must table a report in Parliament if there are any differences.
12. The Commission is required to consider the same matters as the Minister in developing its recommendations – namely that the unit limits and price control settings must be in accordance with emissions budgets and climate change targets; or if they are not in accordance, justify the discrepancy.
13. When the Commission has provided its advice, the Ministry for the Environment ('the Ministry') publicly consults on that advice to secure feedback from stakeholders about the feasibility and impacts of the Commission's recommendations. After assessing the information in the submissions, and its own assessment of the of the Commission's recommendations, the Ministry provides recommendations as to whether the Government should accept the Commission's recommendations or adopt alternative courses of actions.,

Impact of decisions in 2022

14. The first iteration of the Commission's NZ ETS settings advice was provided in July 2022.⁴ The Government did not agree with all of the Commission's 2022 recommendations, and a report on reasons for differences was made available in December 2022.⁵ The Government broadly agreed with the Commission's recommendations for unit limits, but continued status quo settings for the price controls.
15. Since this decision was announced, NZU prices have dropped from over \$80 in November 2022 to around \$50 currently.⁶ Market commentary on the divergence from the Commission's recommendation attributed the recent fall in NZU prices to this decision, as well as the recent commencement of consultation on the NZ ETS review. The majority of submitters thought that the Government's decision on settings in 2022 had an impact on NZ ETS market behaviour. Most attributed this impact to undermined confidence in the secondary market. Some also noted the impact on regulatory certainty resulting from not taking the Commission's advice. A smaller number of business and industry participants considered that the drop in the price of NZUs indicated that the secondary market was returning to normal operating levels as speculative activity reduced.

Meeting emissions budgets

² The previous impact assessments can be found at the links below:

- 2020 [Regulatory Impact Assessment - Full Impact Statement Template \(environment.govt.nz\)](https://environment.govt.nz/regulatory-impact-assessment-full-impact-statement-template)
- 2021 [Regulatory Impact Statement: Updates to NZ ETS unit limit and price control settings regulations - 29 July 2021 - Regulatory Impact Assessment - Ministry for the Environment \(treasury.govt.nz\)](https://treasury.govt.nz/regulatory-impact-statement-updates-to-nz-ets-unit-limit-and-price-control-settings-regulations-29-july-2021)
- 2022 [Regulatory Impact Statement: Annual update to the New Zealand Emissions Trading Scheme limits and price control settings for units 2022 \(treasury.govt.nz\)](https://treasury.govt.nz/regulatory-impact-statement-annual-update-to-the-new-zealand-emissions-trading-scheme-limits-and-price-control-settings-for-units-2022)

³ This requirement is described in section 5ZOA of the Climate Change Response Act 2002. The Commission's 2023 advice: [NZ ETS unit limits and price control settings for 2024-2028 » Climate Change Commission \(climatecommission.govt.nz\)](https://climatecommission.govt.nz/nz-ets-unit-limits-and-price-control-settings-for-2024-2028)

⁴ The Commission's 2022 advice: [NZ ETS settings for 2023-2027 \(climatecommission.govt.nz\)](https://climatecommission.govt.nz/nz-ets-settings-for-2023-2027)

⁵ [He Pou a Rangi Climate Change Commission, Report on reasons for differences between prescribed NZ ETS limits and price control settings for units and the Climate Change Commission's advice on these settings, 14 December 2022 \(bills.parliament.nz\)](https://bills.parliament.nz/bills/2022/14/he-pou-a-rangi-climate-change-commission-report-on-reasons-for-differences-between-prescribed-nz-ets-limits-and-price-control-settings-for-units-and-the-climate-change-commission-s-advice-on-these-settings-14-december-2022)

⁶ [CommTrade](https://commtrade.govt.nz/)

16. The first emissions reduction plan contains the policies and strategies needed to meet the first emissions budget and put New Zealand on a path to achieving the 2050 target.⁷ This includes the role of the NZ ETS in how it supports New Zealand to meet emissions budgets and the 2050 target.
17. The Minister is required to set emissions budgets and ensure that they are met. This specifically means ensuring that 'net accounting emissions' do not exceed the limit imposed by the emissions budget. If faced with information and evidence indicating that an emissions budget is unlikely to be met, the Minister is required to take steps to achieve the budget.

What is the policy problem or opportunity?

18. NZ ETS unit limits and price control settings need to be updated annually to ensure they are fit-for-purpose to assist New Zealand in meeting its emissions budgets and climate change targets. They also need to be extended to cover an additional year to meet the requirement that there must always be 5 years of settings in place.
19. In its 2023 advice the Commission warned that the status quo settings are at risk of being out of step with emissions targets. It considers that the status quo settings increase the likelihood that extra NZU volumes would come to market, adding to the existing surplus of units and reducing the likelihood that emissions targets are met. It also noted that status quo settings are more likely to require the government to adjust the emissions reduction plan to include further regulations and other policies to drive emissions reductions and ensure that emissions budgets are met.
20. In particular, there is a stockpile of NZ Units held by NZ ETS participants that appears surplus to what is required to meet emissions targets. Changing unit settings to reduce this surplus stockpile is the rationale for the proposed updates. The stockpile is around 160 million NZUs as of 30 June 2023.⁸ In 2022 the Commission estimated that the surplus stockpile was between 33-66 million units.
21. Status quo settings were set last year based on the policies and plans in the emissions reduction plan, and the prices likely thought needed for the ETS to support these. The Climate Change Interdepartmental Executive Board (IEB)⁹ have since assessed how New Zealand's emissions are tracking towards the first three emissions budgets. It found that there are currently some risks to the achievement of the first emissions budget. While projections indicate emissions may fall within the first emissions budget limit, this is mainly due to methodological changes. Stronger NZ ETS settings could help support achievement of the first emissions budget.

What objectives are sought in relation to the policy problem?

22. The objective of the unit settings is to satisfy the Minister of his legal obligations that one of two tests are met under the Act. Namely, before recommending unit settings to be prescribed in regulations, the Minister must be satisfied, either:
 - a) that the unit settings [strictly] accord with all extant emissions budgets, New Zealand's NDC, and the 2050 target (collectively 'emissions targets') (section 30GC(2)); or
 - b) if the unit settings do not strictly accord with the emissions budgets and the NDC, that the discrepancy is justified with reference to prescribed statutory matters (section 30GC(3)). Note – even if applying this test, settings must always strictly accord with the 2050 target.

⁷ New Zealand's first emissions reduction plan was published in May 2022. [Emissions reduction plan | Ministry for the Environment](#)

⁸ [Privately held units | EPA](#)

⁹ The IEB was established to oversee the emissions reduction plan and monitor and report on progress.

23. In determining whether either test is met, prescribed statutory matters must be considered, including emissions trends, the Commission's advice, the operation of the NZ ETS, international markets, and New Zealand's international obligations, and the economic effects of emissions prices.

s 9(2)(h)

- [REDACTED]
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s 9(2)(h)

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Section 2: Deciding upon an option to address the policy problem

What criteria will be used to compare options to the status quo?

33. The criteria used to assess the options are described in table 1 below. They broadly align with the factors in section 30GC of the Act (see Appendix One).

Table 1: Criteria for options analysis of limit and price control settings for units

Criteria	Description
Likelihood of incentivising emissions reductions	<p>The NZ ETS supports gross emissions reductions by incentivising the uptake of low-emissions technology, energy efficiency measures, and other abatement opportunities as quickly as real-world supply constraints allow. It does this by providing a strong and stable price signal to incentivise gross emissions reductions.</p> <p>The NZ ETS drives levels of removals sufficient to help meet our climate change goals in the short-to-medium term and to provide a sink for hard-to-abate emissions in the longer term. It does this by providing a strong and stable price signal that rewards removal activities.</p> <p>Due to the risk the stockpile creates to the achievement of emissions budgets, options that are more likely to reduce the stockpile will rate more highly on this criterion.</p>
Support the proper functioning of the NZ ETS	<p>Settings should allow the NZ ETS to function as an efficient and effective market. The NZ ETS should operate in a transparent and durable manner that allows participants to form expectations about supply and demand to support investment in cost-effective opportunities for domestic emissions abatement.</p> <p>The restrictions on how settings are updated allow changes to be made in response to new information, while maintaining regulatory predictability. Options that undermine this standard approach rate negatively in this criterion.</p> <p>It also includes NZ ETS participants being able to attain and surrender NZUs to meet NZ ETS obligations.</p>
Support consistency of NZU prices with the level and trajectory of international emissions prices **	<p>NZ ETS settings should support efforts to allow access to offshore mitigation, including keeping NZU prices in line with international prices.</p>
Manages overall costs to the economy and households **	<p>The costs imposed by the NZ ETS on the economy, household, different sectors, regions, and the government are broadly acceptable.</p> <p>Additional costs imposed by the NZ ETS on vulnerable groups and communities are mitigated as much as possible through NZ ETS settings and companion policies.</p> <p>Changes to revenue earned by the government from NZ ETS auctions enable continued support for these companion policies.</p>

**** these criteria are considered for price control settings only.**

34. We have weighted the criterion of likelihood of incentivising emissions reductions more highly than the other criteria because of the ongoing uncertainty on the achievement of emissions budgets.

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

Key for assessing options against the status quo	
++	much better than the status quo
+	better than the status quo
0	about the same as the status quo
-	worse than the status quo
--	much worse than the status quo

What scope will options be considered within?

36. Options for controlling unit supply and mitigating unacceptable prices are being considered in the context of adjusting the existing auctioning regulations.
37. The following matters are out-of-scope:
- The methodology for calculating unit limits.** The methodology for calculating unit limits was developed in 2020 for the NZ ETS limits for units. The Commission followed this methodology in their 2022 advice on NZ ETS unit limit settings. We consider there is no reason to change the sequential set of calculations, as the process remains the appropriate way to determine these limits.
 - Policy on gross and net emissions.** New Zealand's emissions targets are premised on net emissions - the combination of emissions and removals of CO₂e to and from the atmosphere. The Commission has recommended amending the NZ ETS to prioritise gross emission reductions. The Commission's draft advice¹⁰ on the second emissions reduction plan also included a recommendation for a specific level of gross emission reductions, their final advice is expected by 31 December 2023.

Consideration of the incentives for gross emission reductions and emissions removals towards meeting New Zealand's net emissions targets is out of scope for this analysis. The Government is considering this issue through the NZ ETS review¹¹ and the second emissions reduction plan.
 - Strategy for meeting the NDC.** The Government is currently developing a strategy to meet NDC1 and set the foundation to meeting subsequent NDCs. The strategy provides an adaptive management approach for the balance of domestic and offshore mitigation towards meeting the NDC over time. If the Government decides further domestic action is needed, auction volumes may need to change to enable this. These decisions would be considered in future NZ ETS settings decisions.

Updating unit settings from 2023 [Legally privileged]

38. The Act requires updates to regulations every year to ensure that unit settings are prescribed for each of the following five calendar years. In normal circumstances, these updates can only include changes to unit settings for the first two years (ie, 2024 and 2025) in specified situations.
39. There was legal action against the Minister challenging the 2022 decisions on unit settings, on the basis that they were not made in accordance with the requirements of the Act.

¹⁰ [2023 Draft advice to inform the strategic direction of the Government's second emissions reduction plan » Climate Change Commission \(climatecommission.govt.nz\)](#)

¹¹ [Review of the New Zealand Emissions Trading Scheme: Discussion document | Ministry for the Environment](#)

40. The Applicants and the Crown agreed to resolve the matter by consent, with the Crown admitting that the Minister did not have reasonable grounds to believe that Cabinet's preferred unit settings (which were ultimately adopted) met statutory requirements. The Court confirmed this agreement in a judgment issued 13 July 2023, meaning that the 2022 decisions have been quashed and I am required to reconsider unit settings for 2023-2027.
41. This means that this RIS is unusual and will be recommending settings for 2023-2028.

What options are being considered?

42. Changes are being considered to the limits for units and the price control settings for units prescribed in schedule 3 of the Climate Change (Auctions, Limits, and Price Controls for Units) Regulations 2020.
43. The options have been divided into the limits for units (section 3), the price control settings (section 4).

Section 3: Limits for units

44. The limits for units that are prescribed in regulations are:
- a **limit on the NZUs available by auction** (annual auction volume + volume available within the CCR);
 - a **limit on approved overseas units**; and
 - an overall limit on units** (often referred to as the NZ ETS cap, which consists of units available by auction and by other means¹², and approved overseas units).
45. A methodology for calculating the annual auction volumes was first developed in 2020, and the same broad approach has been used both by the Government and by the Commission in its 2022 and 2023 advice to the Minister. The methodology moves through a series of steps, which is then used as an input, alongside other data, to calculate the limits prescribed in regulations.
46. The methodology for calculating the auction volumes uses the following calculation steps:
1. Align with climate change targets
 2. Allocate the emissions budgets to NZ ETS and non-NZ ETS sectors;
 3. Make technical adjustments;
 4. Account for free NZU allocation volumes;
 5. Set the reduction volume to address the unit surplus;
 6. Set the approved overseas unit limit; and
 7. Calculate the base auction volumes.
47. There are options considered for step 2, step 3, and step 5. The remaining steps have been agreed previously and further changes are not considered, as they are primarily derived from other sources.
48. The recommended option for each step is then incorporated into the calculation of auction volumes (table 7). This is used to inform the limits for units to be prescribed in regulations, which are provided in Section 6: *Delivering an option*.

Step 2: Allocate the emissions budgets to NZ ETS and non-NZ ETS sectors

49. This step allocates emissions budgets between sectors that the NZ ETS covers and those that it does not. It recognises that emissions outside the ETS will already account for a portion of the emissions budget.

¹² This does not include units supplied from forestry.

50. Last year the Government followed the Commission’s recommendation to allocate the emissions budget between NZ ETS sectors and non-ETS sectors on the basis of the sectoral gross emissions reductions implied by the sector targets in the emissions reduction plan, as well as unregistered post-1989 forest carbon removals.¹³ This approach means that if projections for gross emissions outside the NZ ETS (mainly agricultural emissions) change, there would not be a change to the emissions reductions required by sectors covered by the NZ ETS.
51. In its 2023 advice, the Commission updated its estimates of forestry emissions outside the NZ ETS to account for recent changes in levels of forest land registered in the NZ ETS. The Commission’s analysis suggests that an increase in the level of forest land registered means the portion of the emissions budget allocated to the NZ ETS should now be smaller. Their recommendation would reduce auction volumes.
52. There are two options for this step. Maintain the status quo or update the forestry estimates.

Option One – Status Quo

53. This would not update the 2022 estimates of forestry outside the NZ ETS used to calculate auction volumes.

Option Two – update estimates of forestry outside the NZ ETS

54. This option would update the estimates of forestry outside the NZ ETS to calculate auction volumes, based on the Commission’s recommendation. The Commission has updated its estimated breakdown of forestry emissions inside and outside the NZ ETS to reflect the most recent data from the Ministry for Primary Industries and the high rates of registration from eligible post-1989 forest land that was already established before 2019. This update was based on the following inputs:
 - a) The volume of total native post-1989 forest land registered in the NZ ETS has increased from approximately 35,000 hectares to 90,000 hectares, 92 per cent of which was planted before 2019
 - b) The volume of post-1989 exotic forest land has increased from approximately 297,000 hectares to 471,000 hectares, 81 per cent planted before 2019.
55. Drawing on this, updated proportions of total post-1989 forest land area registered in the NZ ETS have been used to update estimates of forestry emissions remaining outside the NZ ETS.
56. The updated estimates including forestry are compared with previous estimates (status quo) of emissions outside the NZ ETS in table 2.

Table 2: Impact of change to forestry estimates of emissions outside the NZ ETS

Option	Year					
	2023	2024	2025	2026	2027	2028
Option 1: Status quo emissions outside the NZ ETS	41.3	41.0	41.0	40.4	40.2	39.8
Option 2: Commission’s advice emissions outside the NZ ETS	42.9	42.7	42.6	42.0	41.6	41.3
Difference (mil NZUs)	-1.5	-1.7	-1.6	-1.7	-1.5	-1.5

¹³ See pages 34 – 36 of [Full report: Advice on NZ ETS unit limits and price control settings for 2023-2027 \(July 2022\)](#) » [Climate Change Commission \(climatecommission.govt.nz\)](#)

How do the options compare to the status quo/counterfactual?

57. An assessment of each option against the status quo is presented in table 3 below.

Table 3: Assessment of changing forestry estimates against the status quo

	Option Two
Likelihood of emissions reductions	++ More likely to see emission reductions as it reduces the risk of additional units being added to the stockpile
Supports proper functioning of the NZ ETS	- Unexpected change as method for calculation was determined last year, to minimise the need for further changes. Material reduction in auction volumes, expected to be buffered by the stockpile.
Overall assessment	+ Although this option will have a negative impact on proper functioning of the ETS as it undermines regulatory certainty, it would increase the likelihood that emissions budgets are met.

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

Accordance with emissions budgets

58. Option 2 supports the objective of according with emissions budgets, as it reduces the risk of adding additional units to the NZ ETS that have already been accounted for by non-NZ ETS sectors.
59. Retaining the status quo approach would risk auctioning more units than are available to NZ ETS sectors and could mean the emissions budget is exceeded. It does not accord with emissions budgets.

Consultation feedback

60. Of the submitters that responded, most were satisfied that the Commission's forestry estimates were accurate. Two business submitters questioned the reliability of the MPI data used in these estimates.
61. Most submitters agreed that a reduction in auction volumes to reflect the updated estimates was the best course of action. The reasons given for making this adjustment were that it maintains the integrity of the NZ ETS with accurate and up to date data while providing the best chance of meeting New Zealand's emissions reduction targets.
62. Some submitters were opposed to making the adjustment to auction volumes and stated that this could pose a risk to necessary market liquidity and could drive NZU prices higher. A few submitters took a broad approach to the consultation by opposing all auction and surplus stockpile volume reductions due to economic concerns regarding the impacts on businesses and the cost of living.

Recommendation

63. We recommend updating the allocation of the emissions budget to NZ ETS and non-NZ ETS sectors by making the forestry adjustment as this better accords with emissions budgets. This will reduce the total auction volume. A discrepancy is not justified. The estimates are presented in the final auction calculations in table 7.

Step 3: Make technical adjustments

64. Emissions reported into the NZ ETS for covered sectors are intended to align with emissions reported in New Zealand’s Greenhouse Gas Inventory (the Inventory) as New Zealand uses inventory data to report progress towards targets. Any accounting misalignment could mean too many, or too few, emission units are supplied into the market. This could risk over- or under- achieving those targets.
65. The Commission has identified two discrepancies between emissions reported in the Inventory and those reported in the NZ ETS. These discrepancies were identified last year, and the decision was to not make the adjustment because the source of the discrepancy was unknown, so it could have had a negative impact on regulatory certainty and because the reduced auction volume could result in a fiscal cost.¹⁴
66. The two discrepancies are:

Liquid fossil fuels	The variance has been consistent since 2010. Emissions reported in the NZ ETS have been around 0.8 Mt CO ₂ e per annum lower than emissions reported in the Inventory. The source of the discrepancy has been identified.
Coal and steel	There is no discrepancy for the 2021 Inventory. In 2018, NZ ETS reported emissions were 0.5 Mt CO ₂ e lower than emissions reported in the inventory, and 0.9-1.0 Mt CO ₂ e (or around 16%) lower than the emissions reported in the Inventory from 2019-2020. The source of the discrepancy has been identified.

67. Officials have investigated the methodologies and emissions factors used in the NZ ETS and the inventory and it is likely that they are both a result of over-reporting emissions in the Inventory. The coal discrepancy has already been updated in the latest Inventory and it is possible the Inventory will need adjustment for the liquid fossil fuel discrepancy.

Option One – status quo – no technical adjustment

68. No technical adjustments are made during the calculation of auction volumes

Option Two – reduce calculated auction volumes by the full amount of the observed discrepancy – Commission’s advice

69. The Commission recommends making the technical adjustment through reducing unit limits in the NZ ETS. This is because emissions budgets may be adjusted in future to reflect changes to emissions reported in the Inventory. If the budgets are reduced to reflect this discrepancy and the technical adjustment is not made now more effort will be required to achieve emissions budgets in future, as too many NZU’s will have been sold.

Other options were discarded

70. Consultation considered an in between option of reducing auction volumes to reflect half of the observed discrepancies. This has not been progressed as it was not supported through consultation and because the source of the discrepancies has been identified.

71. An assessment of each option against the status quo is presented in table 4 below.

Table 4: Impact of technical adjustment to auction volumes

Option	Year (Million NZUs)					
	2023	2024	2025	2026	2027	2028

¹⁴ This was based on an emissions price that did not increase significantly in response to the reduction in supply. This is discussed further in the impacts assessment of the unit limits [see para x].

Option 1: Status quo, no technical adjustment	0	0	0	0	0	0
Option 2: Commission’s advice, make a technical adjustment	-1.6	-1.4	-1.3	-1.3	-1.3	-1.3

How do the options compare to the status quo/counterfactual?

72. An assessment of each option against the status quo is presented in table 5 below.

Table 5: Assessment of making a technical adjustment against the status quo

	Option Two
Likelihood of emissions reductions	<p style="text-align: center;">+</p> Reduces the risk of additional units being added to the stockpile Improves alignment of unit supply in ETS market with inventory
Supports proper functioning of the NZ ETS	<p style="text-align: center;">-</p> Negatively impacts regulatory certainty as this option was discarded last year. Reduction in auction volumes, expected to be buffered by the stockpile.
Overall assessment	<p style="text-align: center;">+</p> Including the additional weighting given to the first criterion, this option is an improvement of the status quo

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

Accordance with emissions budgets

73. Option 2 supports the objective of according with emissions budgets, as it reduces the risk of adding additional units to the NZ ETS in excess of emissions budgets. The unit limits start from the demonstration pathway towards meeting emissions budgets, which is based on the current Inventory.
74. As the source of the discrepancy is likely to be the Inventory, and ‘actual’ emissions are lower than currently reported, then fixing this would make it easier to meet emissions budgets than expected when the emissions budget was set.
75. Retaining the status quo approach would risk auctioning more units than available for future emissions budgets, increasing the effort to meet future emissions budgets. There is a greater risk that this option does not accord with emissions budgets.

Consultation feedback

76. Feedback from a range of submitters including individuals, NGOs, businesses, and industry participants showed strong support for a reduction in auction volumes to address the technical discrepancy. Some submitters supported the adjustment under the condition that the nature of the discrepancy was well understood. Submitters were widely of the opinion that the inventory and the NZ ETS should be aligned.
77. A smaller group of submitters primarily from business and industry do not support any adjustment until there is a greater understanding of the discrepancy. Some supported no change to volumes at all due to economic concerns.

Recommendation

78. Option 2 is recommended.

Step 7: Calculate the base auction volumes

79. Table 6 displays the calculation of annual auction volumes using the recommended options at each of the steps above for 2023 - 2028. The resulting auction volumes

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would vary if different options are chosen at steps 2 (allocating emissions budget), 3 (technical adjustments), and step 5b (discrepancy adjustment)¹⁵.

¹⁵ In its 2023 advice the Commission recommended an additional stockpile adjustment to account for changes that were not made in 2022. These related to; the allocation of the emissions budget (step 2); technical adjustment (step 3); and, new free allocation projections. As the preferred option is to update the unit settings for 2023 based on the Commission's advice, this sub-step does not need to be made, as there are no discrepancies to adjust for.

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Table 6: Calculation of preferred auction volumes

Step	Data source	2023	2024	2025	2026	2027	2028
Step 1: align with emissions budget	The emissions budgets are for a desired level of emissions over a five year period ¹⁶ , rather than an annual reduction. A straight- line trajectory is used to determine a point-year emissions budget. ¹⁷	73.6	72.1	69.7	66.5	63.9	60.7
Step 2: allocate to NZ ETS sectors (emissions outside the NZ ETS) allocated to NZ ETS sectors	See [Step 2. Allocate the emissions budgets to NZ ETS and non-NZ ETS sectors]	(-42.9)	(-42.7)	(-42.6)	(-42.0)	(-41.6)	(-41.3)
Step 3: technical adjustment	See [Step 3. Make technical adjustments]	-1.6	-1.4	-1.3	-1.3	-1.3	-1.3
Step 4: free allocation	The Government provides free allocation to businesses undertaking activities that are emissions-intensive and trade-exposed. These units take up part of the emissions budget allocated to NZ ETS sectors, reducing the number of NZUs that the Government can sell at auction. Free allocation NZUs are re-forecast each year for the upcoming five years. ¹⁸	-6.2	-6.1	-6.1	-6.0	-5.9	-5.8
Step 5: stockpile adjustment	In its 2022 advice, the Commission recommended reducing the 49 million surplus to zero by 2030 by reducing auction volumes each year. ¹⁹ The Government agreed with the recommendation of the Commission. ²⁰	-8.0	-7.7	-7.1	-6.5	-5.9	-5.3
Step 6: international unit limit	International mitigation will be required for New Zealand to achieve its 2021–30 NDC. Although the Act allows for limits on the use of approved overseas units to be prescribed, agreements for the import of those units have not occurred. Therefore, consistent with current regulations, the proposed approved overseas unit limit will remain at zero units per year.	0	0	0	0	0	0
Step 7: Preferred NZU auction volumes		15.0	14.1	12.6	10.7	9.1	6.9

¹⁶ The first emissions budget is an exception to this and is from 2022-2025.

¹⁷ See the Commission's [Workbook-for-NZ-ETS-Settings-2023.xlsx \(live.com\)](#), "Allocate emissions budget" worksheet.

¹⁸ See the Commission's [Workbook-for-NZ-ETS-Settings-2023.xlsx \(live.com\)](#), "Industrial free allocation" worksheet.

¹⁹ See 2022 [Regulatory Impact Statement: Annual update to the New Zealand Emissions Trading Scheme limits and price control settings for units 2022 \(treasury.govt.nz\)](#).

²⁰ Due to timing issues, there has not been an update to this figure in the Commission's 2023 advice and they therefore recommend the same reduction figures. The Government has not reconsidered these options or reassessed the size of the surplus as the Commission will reconsider this in 2024.

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Status quo methodology ²¹		18.1	17.2	15.5	13.7	11.9	9.7
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²¹ This assumes that the status quo methodology is continued for each step. This is an increase in auction volumes currently prescribed in regulations, as the status quo methodology is to update free allocation projects with new data.

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What are the marginal costs and benefits of the option?

80. The impacts of the options are assessed together based on the preferred choices for each step in the methodology. If the NZU price stays the same, reducing auction volume would reduce revenue generated. However, reducing the volume of auctioned units should lead to higher prices over time, all else equal. Therefore, the impact on auction revenue is difficult to determine.²²
81. Further information can be found in the price controls section, as the total impacts are assessed together.

Section 4: Price control settings

82. Auction price control settings provide the Government with a mechanism to moderating supply of units via auctions.
83. The auction reserve price (ARP) is the price below which the Government will not sell units at auction.²³ The ARP is not a hard price floor as units can be traded at any price on the secondary market. Instead, it prevents the government from adding further NZUs into the market if the prices are below this level, which would be expected to put upward pressure on prices.
84. The cost containment reserve (CCR) is the price control that provides the government with a mechanism to help manage unacceptably high prices in the NZ ETS. It achieves this by releasing additional units for sale at auction if the auction's interim clearing price is above a set 'trigger' price for the CCR.
85. There are three aspects of the CCR that are being considered, these are:
 - a) The trigger price or prices
 - b) The volume
 - c) The structure i.e., the number of tiers of auction volume and trigger prices
86. If set appropriately, price controls are intended to play a role rarely and are not intended to set emissions prices. However, to date a relationship has been observed. The market appears to have been highly responsive to signals sent by the Government on the trajectory of future carbon prices.
87. Decisions to increase the CCR trigger price appeared to act as a 'magnet' for prices, though views from submitters were mixed on whether this is actually the case. Steep and rapid increases in market prices have occurred when the price ceiling value has been increased, or announcements made that indicate this value is likely to be increased.²⁴ This includes releasing the full CCR in 2021 (7 million NZUs) and 2022 (7 million NZUs). The recent drop in prices around December 2022 also appears related to the Government's decision, announced in December 2022, not to take the Commission's advice.
88. This suggests that the prevailing secondary market price has been heavily influenced by regulatory uncertainty rather than the intended fundamentals of the cost of achieving emissions reductions. Part of the reason for this correlation between price control settings and market prices is likely to be that changes in price do not influence

²² The NZ ETS is not designed to generate revenue.

²³ The NZ ETS also includes a confidential reserve price, based on the secondary market price, below which units cannot be sold at auction. This means the ARP only influences auction outcomes when the secondary market price is already close to or below it.

²⁴ Since the NZ ETS closed to international markets in 2015, the market price of NZUs has closely tracked the upper price controls, the \$25 and then \$35 fixed price option, and the more recent \$50 and then \$70 CCR trigger prices.

participant's demand for units in the short term.²⁵ Speculative demand is, however, likely to be price-sensitive.

Commission's price control settings were informed by modelling

89. The Commission has modelled the costs to achieve gross emissions reductions from all NZ ETS covered sectors of the economy, excluding forestry. The Commission used sector sub-targets from the emissions reduction plan to set expectations for the gross reductions from emitting sectors and the amount of carbon removed through forestry. This allowed the Commission to account for carbon removal from forests for the first three emissions budgets.
90. The Commission used its ENZ model to estimate the costs to achieve the calculated gross emissions target in a range of scenarios in the context of three sources of uncertainty: baseline emissions from which reductions need to occur, mitigation costs, and other policies affecting NZ ETS sectors. The Commission notes these costs are expressed as emission prices but might be associated with other policies. Due to limitations of their model at higher prices, the results are likely to understate the mitigation response to significantly higher emissions prices. These prices were used by the Commission to recommend lower and upper bounds for the price controls.
91. The Commission's modelling of the prices needed to achieve its gross emissions reduction target decoupled the incentives for reductions and removals. Under current NZ ETS design the NZ ETS is likely to drive more afforestation than gross emissions. However, the Commission noted the afforestation response to higher NZU prices would not assist New Zealand to meet the first emissions budget as forests have initially slow rates of carbon sequestration. However, by the third budget period, the removals from afforestation from 2023 would be material.

Option assessment

92. The Commission has recommended that the ARP and the CCR are considered together as a package as the trigger prices materially shift the 'price corridor' and impact the appropriate unit volumes. We agree with this assessment and consider the impacts of the trigger prices together.
93. All the ARP and CCR trigger price options have been adjusted for inflation using the most recent inflation figures from Treasury's Budget Economic and Fiscal Update 2023.²⁶ The inflation adjustment avoids the effectiveness of settings being eroded over time in real terms. This is consistent with the considerations in section 30GC(6)(c) of the Act and is supported by the advice of the Commission.²⁷

Section 4.1 Auction reserve price

Options

Option 1 - status quo – increasing at 5 per cent and adjusted annually for inflation

94. The status quo has an ARP starting from \$30 in 2022 and increasing at 5 per cent and adjusted for inflation.

Option 2 – mid option - immediate increase to \$45, increasing at 5 per cent and adjusted annually for inflation

95. This would involve an immediate increase to a 2023 value of \$45, increasing annually by 5 per cent and adjusted for inflation. The rate of increase of 5 per cent was selected, to manage risks of creating unintended speculative opportunities and is the default discount rate recommended by the Treasury.

²⁵ This is technically called demand inelasticity, meaning demand is largely independent of price.

²⁶ [Budget Economic and Fiscal Update 2023 \(treasury.govt.nz\)](#) see *Table 1.1 Economic Forecasts*

²⁷ [2023-advice-on-NZ-ETS-unit-limit-and-price-control-settings.pdf \(climatecommission.govt.nz\)](#) page 48

Option 3 – Commission’s 2023 advice - immediate increase to \$64, and adjusted annually for inflation

96. The Commission estimated the current value using a forward-looking approach, with a lower benchmark 2030 price of \$70 in real 2023 dollars. This was discounted back to 2023 by 3 per cent, using as a conservative assumption of the likely rate of return available for other investments.

Table 7 Options for the auction reserve price

Option	Auction reserve price for each year, in dollars					
	2023	2024	2025	2026	2027	2028
Option 1 – Status quo methodology	\$33	\$36	\$39	\$42	\$45	\$48
Option 2 – mid option	\$45	\$48	\$52	\$56	\$60	\$64
Option 3 – Commission’s advice	\$60	\$64	\$68	\$72	\$75	\$79

Other options

97. No option more stringent than the Commission’s recommended ARP is considered in this RIS. A higher ARP would require greater effort than expected in the emissions reduction plan by sectors covered by the NZ ETS to achieve emissions budgets.
98. The discussion document considered other mid-range options between the status quo and the Commission’s recommendation. Although they could be implemented differently, these options are considered together in this RIS as they are broadly similar. Feedback from submitters showed little support for the mid-range options with the majority of feedback supporting either the status quo or the Commission’s recommendations.

How do the options compare to the status quo/counterfactual?

99. An assessment of each option against the status quo is presented in table 8 below.

Table 8: Assessment of options against the status quo

	Option Two	Option Three
Likelihood of emissions reductions	<p style="text-align: center;">+</p> <p>Supports investment in net emissions reductions from afforestation (beneficial for the third emissions budget)</p>	<p style="text-align: center;">++</p> <p>Supports investment in net emissions reductions from afforestation and gross reductions as there is a greater certainty of return, so higher likelihood of emissions reductions (beneficial for all future budgets)</p>
Supports proper functioning of the NZ ETS	<p style="text-align: center;">-</p> <p>Abrupt and significant increase in ARP level could undermine regulatory certainty</p>	<p style="text-align: center;">--</p> <p>Abrupt and significant increase in ARP level could undermine regulatory certainty Above prevailing market prices, risk of speculative trading. Slower annual increase could mitigate this somewhat.</p>
Support consistency of NZU prices with the level and trajectory of international emissions prices	<p style="text-align: center;">+</p> <p>Closer to current and expected international prices</p>	<p style="text-align: center;">++</p> <p>More in line with floor prices and low end of expected price ranges</p>
Manages overall costs to the	<p style="text-align: center;">-</p>	<p style="text-align: center;">--</p>

economy and households	High signal for land-use change to forestry. Increased costs on households and businesses, although prices have traded higher than this previously	High signal for land-use change to forestry. Greater cost impacts on household and business from higher NZU prices, although prices have traded higher than this previously
Overall assessment	+	++
	This option is an improvement on the status quo with the higher weighting given to the first criterion.	This option ranks the best and is an improvement on the status quo with the higher weighting given to the first criterion.

Section 4.2 Cost containment reserve trigger price

100. Triggering the CCR releases an additional supply of units. While the trigger price is considered here, the impact assessment needs to consider the price and volume together. This is because lower trigger prices are more likely to result in the release of this volume, which would increase the stockpile and allow more emissions.

Climate Change Commission advice

101. The Commission recommends a two tier CCR (in effect two trigger prices and two volumes (see the section Cost containment reserve structure). Each of the Commission's recommended trigger prices is considered below as an option for the trigger price of a single CCR volume.

Options

Option 1 - status quo – increasing at 10 per cent and adjusted annually for inflation

102. The status quo has a trigger price of \$70 in 2022 and increasing at 10 per cent and adjusted for inflation.

Option 2 – immediate increase to \$160, increasing at 5 per cent and adjusted annually for inflation

103. This would involve an immediate increase to a 2023 value of \$160, increasing annually by 5 per cent and adjusted for inflation. \$160 was selected as the mid-point between the status quo and the Commission's proposed second tier. The rate of increase of 5 per cent was selected, to manage risks of creating unintended speculative opportunities and is the default discount rate recommended by the Treasury.

Option 3 – Commission's low trigger – immediate increase to \$184 and adjusted annually for inflation

104. The Commission used a forward-looking approach, with a benchmark 2030 price of \$200 in 2030 selected as it is halfway between the status quo 2030 value (\$150) and their upper 2030 benchmark of \$250. This was discounted back to 2023 by 3 per cent per annum, as a conservative assumption of the likely rate of return available for other investments.

105. The Commission recommended that if the Government maintained a single tier for the CCR, that the lower trigger price and volume should be used.

Option 4 - Commission's high trigger – immediate increase to \$230 adjusted annually for inflation

106. This is the trigger price that would be used if a two-tier structure for the CCR is agreed (see the section Error: Reference source not found).

107. Again, the Commission used a forward-looking approach, with a benchmark 2030 price discounted back to 2024 at 3% per annum. Their modelling provided an upper 2030 benchmark of around \$270; however, they adjusted this down to \$250 due to the limitations in the model's ability to capture the full likely effect of high emissions prices on emissions.

Table 9 Options for the cost containment reserve trigger price

Option	CCR trigger price for each year					
	2023	2024	2025	2026	2027	2028
Option 1 – Status quo methodology	\$82	\$93	\$105	\$118	\$133	\$149
Option 2 – mid option	\$160	\$172	\$185	\$198	\$213	\$228
Option 3 – Commission's low trigger	\$173	\$184	\$194	\$205	\$215	\$226
Option 4 – Commission's high trigger	\$216	\$230	\$243	\$256	\$269	\$283

Other options

108. No option more stringent than the Commission's recommended CCR is being considered. The Commission's model found a higher price path could be necessary to meet the third emissions budget under a scenario with much weaker mitigation from other policies compared with the impact range estimated in the emissions reduction plan. They considered this would represent an excessive reliance on the NZ ETS. A higher price would also exceed prices expected in almost all international pricing systems and risks impacts becoming unmanageable.
109. In its 2022 advice, the Commission considered whether the CCR should be disabled. The government's 2023 consultation document asked feedback on this issue. At this stage the government agrees with the Commission's assessment that the CCR should be maintained. This is because there continues to be significant uncertainty in the market, and the NZ ETS market appears to be thin with significant price variability. However, the need for the CCR should decrease over time. We will reconsider this option in future.
110. Submitter views were mostly aligned on this point and supported the CCR remaining in place. The general rationale described by submitters was that the CCR plays an important role at present in mitigating extreme market conditions, however, there were differences in opinion regarding the appropriate trigger price level. Some submitters expressed support for the CCR being disabled in future but were comfortable deferring to the Commission's advice for now. A smaller portion of submitters argued for the removal of the CCR stating that supply and demand should set the price and the CCR is a risk to achieving New Zealand's required emissions reductions.
111. The discussion document considered other mid-range options between the status quo and the Commission's recommendation. Although they could be implemented differently, these options are considered together in this RIS as they are broadly similar. Similar to last year, feedback from submitters showed little support for the mid-range options with the majority of feedback supporting either the status quo or the Commission's recommendations.

How do the options compare to the status quo/counterfactual?

112. An assessment of each option against the status quo is presented in table 10 below.

Table 10: Assessment of cost containment reserve trigger price options against the status quo

	Option Two	Option Three	Option Four
Likelihood of emissions reductions	<p>0/+</p> <p>Allows higher prices to generate net emissions reductions, but unlikely to be sufficient for the first and second emissions budgets.</p> <p>May not be high enough to reduce the risk of being triggered, which would prevent the stockpile reduction.</p>	<p>+</p> <p>Allows higher prices to generate emissions reductions.</p>	<p>++</p> <p>Allows higher prices to generate gross emissions reductions.</p> <p>In line with Commission's modelling of upper prices needed to meet emissions budget in a range of scenarios</p>
Supports proper functioning of the NZ ETS	<p>0/+</p> <p>May not be high enough to prevent a magnet effect. Significant increase likely to undermine regulatory certainty</p>	<p>+</p> <p>The slower increase per annum is less likely to have a magnet effect, reducing speculative trading. Widens the price corridor, allowing the market to find the price. Significant increase likely to undermine regulatory certainty.</p>	<p>+</p> <p>The slower increase per annum is less likely to have a magnet effect, reducing speculative trading. Widens the price corridor, allowing the market to find the price. Significant increase likely to undermine regulatory certainty.</p>
Support consistency of NZU prices with the level and trajectory of international emissions prices	<p>+</p> <p>Closer to current and expected international prices</p>	<p>++</p> <p>In mid-to-high range of current and expected international prices.</p>	<p>++</p> <p>High trigger is around high range of current and expected emissions prices.</p>
Manages overall costs to the economy and households	<p>-</p> <p>Increased risk of greater impacts on households and the economy, including inflationary impacts, could occur before price controls take effect.</p> <p>Risks driving faster land use change, impacting rural communities</p>	<p>--</p> <p>Increases the risk of significantly greater impacts on households and the economy, including inflationary impacts, could occur before price controls take effect.</p> <p>Risks driving rapid and extensive land use change, impacting rural communities.</p>	<p>--</p> <p>Increases the risk of significantly greater impacts on households and the economy, including inflationary impacts, could occur before price controls take effect.</p> <p>Risks driving rapid and extensive land use change, impacting rural communities.</p>
Overall assessment	<p>0/+</p> <p>More likely to allow higher prices sufficient for net emissions reductions. May not support gross emission reductions for the first 2 emissions budgets.</p>	<p>+</p> <p>More likely to allow higher prices to support some gross emissions reductions. Below the upper bound modelled by the Commission. However, it is likely to have impacts that need to be managed.</p>	<p>+</p> <p>More likely to allow higher prices to support gross emissions reductions. In line with the upper bound modelled by the Commission. However, it is likely to have impacts that need to be managed.</p>

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

Accordance with emissions budgets

113. All options provide a price pathway that could potentially allow New Zealand to meet its emissions budgets. The status quo price control settings were informed by the Commission's estimate from *Ināia tonu nei*, and in its 2023 advice the Commission

reiterated that these remain its best estimate of the abatement costs associated with meeting emissions budgets.²⁸

114. However, meeting emissions budgets is dependent on a range of policies and actions, not just emissions pricing. There is a significant risk that status quo settings will not support emissions budgets to be met and may not be in accordance. Status quo settings were based on policy actions in the first emissions reduction plan being progressed. There is now a material risk of a shortfall in emissions reductions needed to achieve the first emissions budget.
115. Status quo settings also pose a risk that the CCR is triggered as it is closer to current prices and similar to prices seen previously. This would risk the release of units that add to the stockpile or prevent it from being reduced.
116. Price control settings materially above the status quo increase the likelihood of emissions reductions and the achievement of emissions budgets.
117. The middle ground options to increase the price control settings would encourage investments by providing a greater certainty of return and providing a wider corridor for prices. This is likely to encourage net emission reductions, through increased forestry, although there is likely to be a smaller impact on gross emissions.
118. New forest planting in response to higher emission prices will not result in material removals over the first or second emissions budget period and so cannot assist the Government with achieving these emission budgets the same way incentivising gross emission reductions can. This will start to have an impact over the third emissions budget period, providing greater levels of removals.
119. The mid-option CCR also continues the risk of providing a magnet effect and increased speculative trading. A continued magnet effect would mean there is a continued risk of the CCR being triggered, preventing the stockpile from being reduced.
120. The Commission's price corridor is likely to better incentivise emissions reductions, and act to safeguard investments already being made to reduce emissions. It is consistent with the prices modelled by the Commission to be needed for gross emissions reductions in a range of scenarios. This has the least risk that emissions budgets will not be met, as it supports net and gross emissions reductions. The Commission's recommended ARP is more likely to provide investment certainty for gross emission reductions.²⁹
121. The Commission's price corridor is also more likely to support the NDC. The Government has stated its intention to use offshore mitigation to support meeting the NDC, and that there are some risks with this approach. Price controls that allow higher prices in the NZ ETS are more likely to allow for increased emissions reductions to support meeting the NDC, if the Government decides these are required.

Consultation feedback

122. Submitters whose key focus was on driving behaviour change and meeting targets, generally agreed that a focus on gross reductions is necessary, potentially through reflecting this in setting price controls, or otherwise avoiding overreliance on afforestation. Some submitters noted that setting price controls with reference to gross reductions could unintentionally drive afforestation instead, where difficult-to-abate emissions existed.
123. Submitters generally supported following the Commission's recommendations if all years are updated. These submitters tended to highlight either the positive impact of a general increase in prices for achieving gross and/or net emissions reductions. They also saw lower price options as more likely to result in the possible 'magnet' effect.

²⁸ S5.3.1, p 69, [NZ ETS settings for 2023-2027 \(amazonaws.com\)](https://www.amazonaws.com)

²⁹ [NZ ETS settings for 2023-2027 \(climatecommission.govt.nz\)](https://climatecommission.govt.nz) table 18 – breakeven for boiler conversion to process heat \$50

124. Submitters that did not support the Commission's recommendation generally supported the status quo settings. The rationale was due to the concern that the Commission's option could create rapidly rising prices, noting this could have unacceptable market, economic, or other impacts.

Recommendation

125. The Commission's options for the ARP and the CCR trigger prices are recommended as they are most likely to drive emissions reductions. This differs from the recommendation last year.

What are the marginal costs and benefits of the option?

126. The impacts of the preferred option unit and price control settings are considered together and assessed in table 12 below. NZ ETS unit and price control settings do not directly set a price path for the NZ ETS. Price controls set the boundaries within which price discovery by the market is largely expected to occur. However, the secondary market could (and has) trade outside these boundaries. This analysis assumes that the preferred option leads to NZ ETS prices that are relatively higher than the status quo option in the near term, all else equal. Further analysis on the impacts on emission reductions and on households are provided in appendix one.

Table 12: Cost and benefits of the preferred price control settings

Affected groups	Additional benefits of the preferred option compared to taking no action	Additional costs of the preferred option compared to taking no action	Net impact of preferred option
Landowners (e.g. foresters and farmers)	<p>Returns to foresters are closely linked to NZ ETS prices, with relatively higher prices likely to lead to higher returns.</p> <p>Higher returns on forestry land also increases the option value of farming and other land that is suitable for forestry use (regardless of whether this option is exercised).</p>	<p>Large-scale change in land use for exotic carbon forestry, if left unchecked and without any management oversight or requirements, has the potential for unintended impacts on the environment, rural communities, and regional economies.</p> <p>Increased cost to landowners of deforestation due to increased price.</p>	<p>In the short term, the preferred option is likely to marginally increase the rate of afforestation and farm conversions, subject to existing capacity constraints (labour, seedling supplies etc).</p> <p>Likely to lower net emissions from increased removals, although these will not be realised for several years.</p> <p>Increased afforestation now may lead to greater downward pressure on prices in the 2030s when these forestry units enter the market in material volumes.</p>
Emitting firms subject to NZ ETS obligations	Increased certainty on the direction of future emissions prices for investment decisions	Higher costs for firms to meet surrender obligations. This may be mitigated by the extent to which firms have hedged their forward obligations, and by the extent to which these additional costs can be passed through to households (see household row below).	<p>The short-term response to relatively higher NZU prices is likely to be fairly inelastic and result in limited additional emission reductions relative to the status quo.</p> <p>Over longer timeframes, relatively higher NZ ETS prices would increase the incentive for firms to invest in emissions reduction actions.</p> <p>See appendix one for estimates of emission reductions under plausible price paths.</p>
Emissions-intensive trade-exposed (EITE) firms that receive free allocation of NZUs (additional to firm impacts above)			At emissions prices over \$100 there is increased risk that industrial allocation is no longer effective in preventing emissions leakage for some activities. The preferred option increases the likelihood of this occurring.
Other NZ ETS participants	Relatively higher prices would increase the financial value of stockpiled units, both those held for hedging purposes and the liquid		

Affected groups	Additional benefits of the preferred option compared to taking no action	Additional costs of the preferred option compared to taking no action	Net impact of preferred option
	stockpile		
Households		The impacts of emission prices on households are regressive, and relatively higher NZ ETS prices will likely increase these impacts somewhat. The mitigating factors will be the extent to which businesses pass through additional costs, and the extent to which households are able to change their consumption patterns in response.	A \$10 increase in NZU prices is estimated to increase annual household expenditure on emissions costs by about \$87 for the average household (\$1.67 per week). ³⁰ For lower income households, the increase is estimated at \$46-49 per annum, while for higher income households it is estimated at \$125-145.
Wider economy	Relatively higher prices are likely to induce greater emissions reductions and removals, although in both cases these are likely to take time to materialise.	Relatively higher NZ ETS prices are likely to marginally increase inflationary pressures, in an already overheated economy, although we judge this highly unlikely to influence the trajectory of monetary policy.	The net increase in emissions reductions from relatively higher prices within the first emissions budget period is likely to be small, on the order of 0.1-0.2 million units. ³¹ A sustained relatively higher price could lead to much larger emission reductions in the second budget period. A \$10 increase in NZU prices is estimated to contribute to a 0.1% increase in inflation as measured by the Consumer Price Index (CPI), largely due to higher fuel and electricity prices. ³²

Cost containment reserve structure

127. The Act allows for the CCR design to include one or more trigger prices. For example, there could be two or three trigger prices, each with a reserve of units to be released at that price point.
128. Multiple price triggers were considered when introducing price control settings. A single trigger price and reserve volume were seen as the most appropriate choice because this approach is simple and provides a clearer market signal, although multiple price triggers were not ruled out as an option to consider later. At that time, the majority of submitters who commented on the use of single or multiple trigger prices supported a single price trigger.

³⁰ This assumes 100 per cent and instantaneous pass through of ETS costs to households and does not account for behaviour change. Therefore, this is an upper bound estimate of the impact.

³¹ For context, under status quo settings auctioned units will decline by 4.0 million units in the budget period.

³² This assumes 100 per cent instantaneous pass through of ETS costs to households, and no resulting change in household consumption. Therefore, this is an upper bound estimate of the impact on inflation.

Options

Option 1 - status quo - a single tier cost containment reserve

129. The status quo prescribes a single trigger price at which additional units are released for sale at auction.

Option 2 – Commission’s recommendation - a two tier cost containment reserve

130. This option would prescribe two trigger prices at which additional units are released for sale at auction.

Other options have been discarded

131. A third option of a three tier CCR was considered last year and then discarded [see xx]. It has not been considered again this year. would require consideration and decisions on multiple trigger prices.

How do the alternative options compare to the status quo?

132. The alternative option of a two-tier CCR with volumes as proposed by the Commission is compared to the status quo in table 13 below.

Table 13 Assessment of options against the status quo

	Option Two
Likelihood of emissions reductions	<p style="text-align: center;">+</p> Tiered volumes reduce the risk of slowing stockpile drawdown as not all the reserve units would become available at once.
Supports proper functioning of the NZ ETS	<p style="text-align: center;">0</p> Having tiered volumes makes auctions marginally more complex. This is balanced by two tiers reducing the risk of potential magnet effects
Manages overall costs to the economy and households	<p style="text-align: center;">-</p> A two-tiered CCR is marginally less effective at dampening prices (depending on the volume available it may be more likely to smooth price increases)
Overall assessment	A tiered CCR is a slight improvement on the status quo given the weighting of the criteria.

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

133. The status quo of a single tier CCR equal to the stockpile reduction volume performs better against the criteria listed above. However, it does not perform as well as a two-tiered option in relation to the likelihood of emissions reduction. This is because a single tier increases the likelihood that the full CCR volume will be sold when compared with a two-tier system with a small initial volume and a larger volume only released at a much higher price.

134. Overall, both options rank similarly. Given two tiers is a strong recommendation of the Commission, the Ministry recommends creating a two tier CCR.

According with emissions budgets

135. How the options accord with emissions budgets depends on how the volume available in the reserve is determined and the trigger price.

Cost containment reserve volume

Total reserve volume

136. The volume of the CCR needs to be sufficient to enable it to perform its function of increasing supply enough to mitigate against unacceptably high prices.
137. The Commission has retained their advice from last year, which was accepted by the Government. This was that the CCR volume should be equal to the surplus stockpile reduction volume. They have not increased this volume with the additional volume they recommend reducing the stockpile in Step 5b. They consider this is unrelated to the estimate of the underlying surplus volume.
138. The Ministry considered options for calculating the reserve volume in 2022. It determined that the Commission's recommendation to set the reserve volume equal to the stockpile reduction volume would be within the emissions budget and reduce the fiscal risk of the Government needed to purchase offshore mitigation if the release of the reserve caused emissions budgets to be exceeded.
139. At this stage we do not consider that this decision needs to be revisited. It can be reassessed for future years if the CCR is triggered.

Volume available at each tier

140. The Commission has recommended that the first tier contains a portion of the total CCR based on an estimate of the average demand gap between the NZ ETS cap and forecast emissions under current policies for sectors covered by the NZ ETS. The lower tier volume should meet demand if NZ ETS participants find it more difficult than expected to reduce their emissions, while avoiding enabling emissions above current forecasts. Under this approach, tier 1 comprises around a third of the total CCR volume.
141. The second tier should contain the balance of the CCR.

Section 6: Delivering an option

How will the new arrangements be implemented?

141. Implementation of any updates to NZ ETS unit settings will be relative straightforward, as they are technical changes to an existing regulatory framework. Schedule 3 of the Climate Change (Auctions, Limits, and Price Controls for Units) Regulations 2020 will be updated to reflect the new settings.
142. The amendment regulations will be published in the New Zealand Gazette in September 2023, to take effect from 1 January 2024.
143. The 2024 auction calendar will be published on the Ministry for the Environment's website to reflect the agreed auction volumes for 2024, once decisions have been made.

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

144. Agencies will closely monitor the impacts of NZ ETS unit settings. The Ministry for the Environment routinely tracks the price of NZUs and informs the Minister of this, as well as the flow of units within the NZ ETS and the secondary market. It also measures and reports domestic emissions annually. 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 Act 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.

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147. The Commission will continue to have a role monitoring and reviewing unit limits and price controls settings. Under section 5ZOA of the Act, the Commission must recommend to the Minister limits and price control settings, including any desirable emissions price path, each time regulation updates are required.

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Appendix One: Considerations for determining unit limits and price control settings

148. As described above, the Act requires that the limits and price control settings are in accordance with the NDC, the emission budgets, and the 2050 targets.
149. Section 30GC of the Act also provides relevant factors for determining settings. These relevant factors can also justify settings that do not strictly accord with these emissions targets.
150. The relevant factors are provided in table 1 below. The table also explains how the factors have been considered our analysis. Some of the relevant factors have been used to derive criteria to evaluate how these options compare with the status quo. These criteria are provided in table 2.

Table 1: Considerations for determining unit limits and price control settings

Relevant matters in s30GC of the Act	Criteria that reflect this matter
The Minister must be satisfied that the limits and price control settings are in accordance with (a) the emissions budget and the nationally determined contribution and (b) the 2050 target	The criterion <i>Likelihood of meeting emissions budgets</i> described in table 2 is used to assess whether the option increases or decreases the likelihood that emissions budgets will be met. This recognises that there may be a range of options that might accord with emissions budgets, but have different risk levels.
Matters the Minister must consider	
Projected trends in greenhouse gas emissions, including both emissions covered by the NZ ETS and those that are not covered	This is considered when determining the unit limits as an input to emissions inside and outside the ETS.
The proper functioning of the NZ ETS	This is considered as a criterion, described in table 2
International climate change obligations and contracts New Zealand may have for accessing offshore mitigation from other carbon markets	New Zealand has no current instruments or contracts with other jurisdictions to access emissions reductions in their carbon markets.
The forecast availability and costs of ways to reduce greenhouse gas emissions that may be needed for New Zealand to meet its emissions reduction targets	This is derived from the policies and measures in the emissions reduction plan and is considered when the unit limits are calculated in step 1 and step 2.
The recommendations made by the Climate Change Commission under section 5ZOA	The Commission's recommendations are included among the options considered for all NZ ETS unit settings decisions in this RIS.
Additional matters the Minister must consider in analysing price control settings	
The impact of emissions prices on households and the economy	This is considered as the criterion <i>Manages overall costs to households and the economy</i> as provided in table 2
The level and trajectory of international emissions prices (including price controls in linked markets)	This is considered in the criterion <i>Support consistency of NZU prices with the level and trajectory of international emissions prices</i> as provided in table 2
(6)(c) Inflation	All price control options have been adjusted for forecast inflation.

	Inflationary impacts of the NZU price are considered in the criterion <i>Manages overall costs to households and the economy</i> as provided in table 2
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Table 2: Criteria for options analysis of limit and price control settings for units

Criteria	Description
Likelihood of incentivising emissions reductions	<p>The NZ ETS supports gross emissions reductions by incentivising the uptake of low-emissions technology, energy efficiency measures, and other abatement opportunities as quickly as real-world supply constraints allow. It does this by providing a strong and stable price signal to incentivise gross emissions reductions.</p> <p>The NZ ETS drives levels of removals sufficient to help meet our climate change goals in the short-to-medium term and to provide a sink for hard-to-abate emissions in the longer term. It does this by providing a strong and stable price signal that rewards removal activities.</p> <p>Due to the risk the stockpile creates to the achievement of emissions budgets, options that are more likely to reduce the stockpile will rate more highly on this criterion.</p>
Support the proper functioning of the NZ ETS	<p>Settings should allow the NZ ETS to function as an efficient and effective market. The NZ ETS should operate in a transparent and durable manner that allows participants to form expectations about supply and demand to support investment in cost-effective opportunities for domestic emissions abatement.</p> <p>The restrictions on how settings are updated allow changes to be made in response to new information, while maintaining regulatory predictability. Options that undermine this standard approach rate negatively in this criterion.</p> <p>It also includes NZ ETS participants being able to attain and surrender NZUs to meet NZ ETS obligations.</p>
Support consistency of NZU prices with the level and trajectory of international emissions prices **	<p>NZ ETS settings should support efforts to allow access to offshore mitigation, including keeping NZU prices in line with international prices.</p>
Manages overall costs to the economy and households **	<p>The costs imposed by the NZ ETS on the economy, household, different sectors, regions, and the government are broadly acceptable.</p> <p>Additional costs imposed by the NZ ETS on vulnerable groups and communities are mitigated as much as possible through NZ ETS settings and companion policies.</p> <p>Changes to revenue earned by the government from NZ ETS auctions enable continued support for these companion policies.</p>

**** these criteria are considered for price control settings only.**

Appendix Two: Emissions and Household Impacts of NZ ETS Unit Settings

Context

NZ ETS unit and price control settings do not directly set a price path for the NZ ETS. Auctioned units make up a significant portion of the supply side of the market. However, forestry removals units and stockpiled units also have a significant influence on supply.

The demand side of the market, to meet surrender obligations, is likely to be fairly inelastic in the short term and is largely linked to economic activity levels and hedging positions. Over longer timeframes, demand will be more elastic as firms can invest in emissions reducing actions, which in turn will be influenced by emissions prices. Speculative demand is likely to be elastic in either direction, though to date this appears to be mostly on the long side, based on an expectation of rising NZ ETS prices over the long term.

Price controls set the boundaries within which price discovery by the market is largely expected to occur. However, the secondary market could (and has) trade outside these boundaries.

As such, it is difficult to predict a likely price path based on unit and price control settings alone. This appendix uses some plausible price paths that fit within these general parameters to explore potential emissions reductions and related impacts on households.

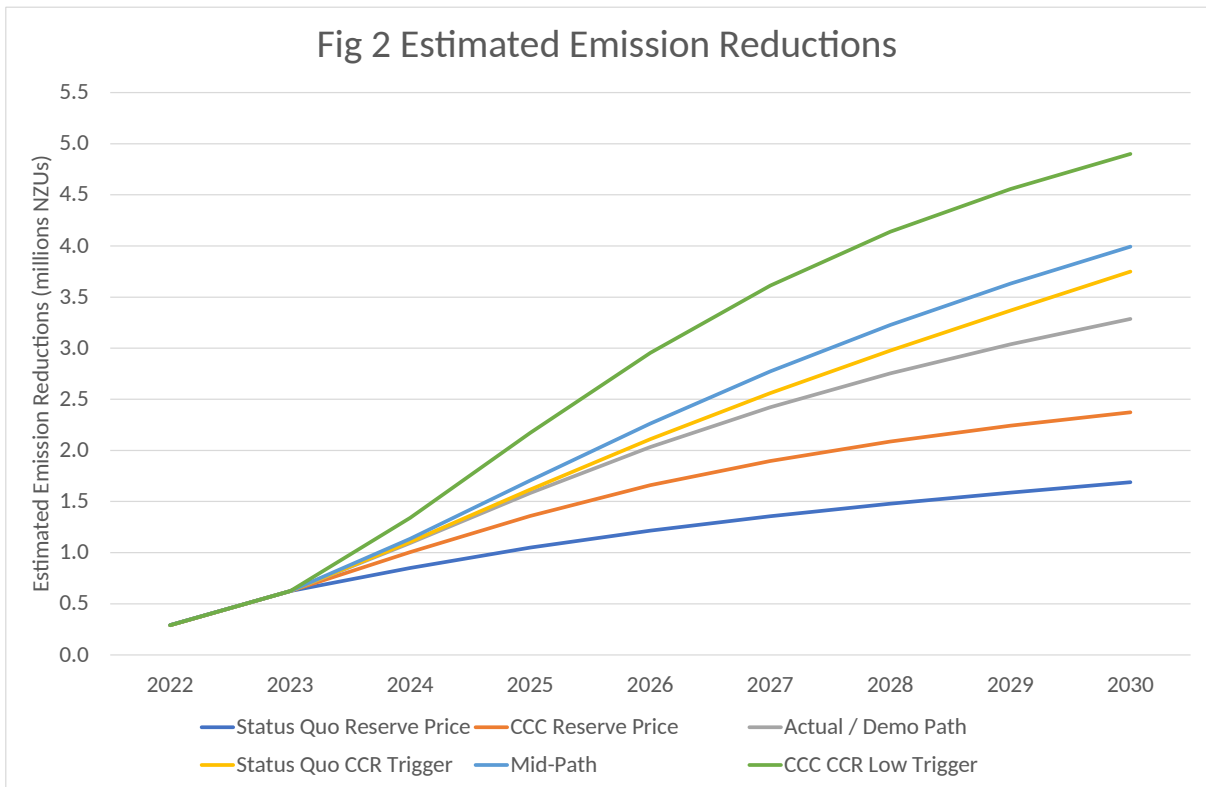
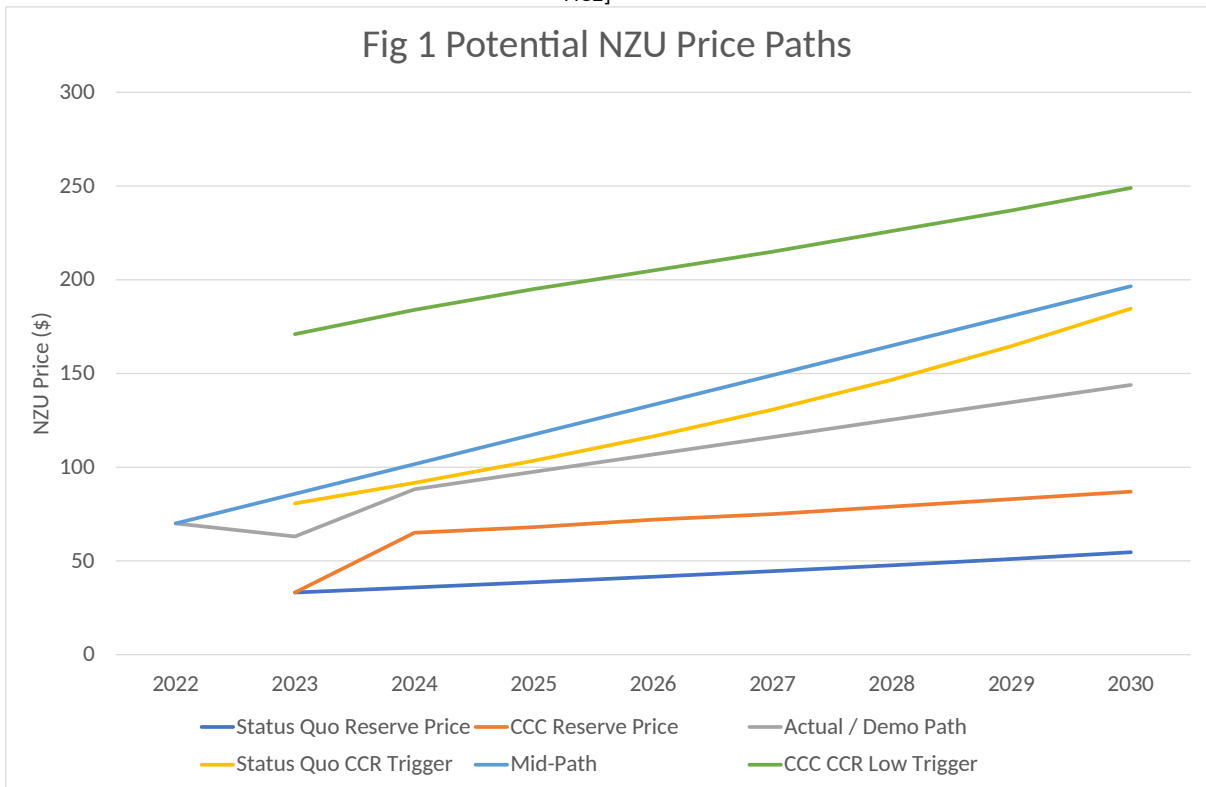
Emissions Reductions

Emissions reduction methodology

The Commission's ERP, emission budget, and unit settings advice relies in part on the bottom-up, multi-sector ENZ model. The ENZ model has multiple abatement opportunities that are linked to emissions prices. MfE's NZU Supply and Demand has converted the ENZ abatement options into a single abatement cost curve. This analysis uses that econometrically derived abatement cost curve to estimate the potential emissions reductions from different plausible price paths.

Figure 1 below shows the different price paths used for this analysis. Four paths relate to the reserve price and CCR trigger price of the status quo and the Commission's proposed settings. The demonstration path is taken from the Commission's ERP1 advice, with 2022 and 2023 set at the actual average price (YTD in the case of 2023). The mid-path starts from the 2022 average price and rises linearly to a mid-point between the demonstration path and the Commission's CCR trigger price in 2030. The purpose of the mid-path is to show a relatively high price that is still well below the Commission's CCR trigger.

Figure 2 shows the estimated emissions reductions based on these different price paths. Emissions reductions for 2022 and 2023 are taken from the NZU model. Emissions reductions from 2024 onwards are based on the relevant price path and the ENZ-derived equation. The ENZ equation is essentially an autoregressive function that relates emissions reductions in the current period to emissions reductions in the prior period and the emissions price. The NZU model uses a forward looking price while this analysis uses the contemporary price (for simplicity).



Emissions Reductions Insights

Under the demonstration path, emissions reductions induced by price are estimated to amount to 3.6 million NZUs in the first emission budget (EB1) period and 13.5 million units in the second budget (EB2). The EB1 reduction is roughly consistent with the decrease in the NZ ETS cap over that period of 4.0 million NZUs (allowing for some stockpile reduction). The overall emissions reduction target for EB1 is 11.5 million tonnes, noting this also covers sectors outside the NZ ETS.

The CCC reserve price path which sits in the high 60s for 2024 and 2025 is a useful proxy for a continuation of market conditions from the first half of 2023 (NZU secondary price is \$60 as of 16/6/23). Estimated emissions reductions for EB1 are approximately 0.3 million NZUs lower than the demonstration path. This illustrates the risk that a relatively flat NZ ETS price increases the risk of not meeting EB1.

The mid-path is a useful proxy for a situation in which unit settings and market behaviour lead to higher prices (in the low \$100s) over 2024 and 2025 (and beyond). On these higher prices, estimated emissions reductions are around 0.2 million units higher than the demonstration path for EB1. However, over EB2 there are about 2.4 million units more emission reductions in the mid-path than in the demonstration path. This helps illustrate the importance of long run price signals in generating emissions reductions.

The most extreme situation is an immediate shift up to the Commission's CCR low trigger price of \$171 in 2024 and then rising beyond. This is fairly implausible as it involves a tripling of price from 2023 levels, and a large part of the rationale of a much higher CCR trigger price is to break the "magnet effect". Nonetheless, estimated emissions reductions are 0.8 million units higher than the demonstration path for EB1 and 6.6 million units higher in EB2.

Impacts on Households

This section of the analysis uses the same price paths as above and applies them to the household costs model. The household cost model estimates the exposure of different households by income decile to emissions prices. A full model description can be found [here](#).

Impact on consumer price inflation

The household model estimates that a \$10 increase in NZU prices contributes to a 0.13% increase in inflation as measured by the Consumers Price Index (CPI), largely due to higher fuel and electricity prices. The key caveats are that this assumes 100% instantaneous pass through of NZ ETS costs to households, and no behavioural change by households in response to higher prices. As such, this is best viewed as an upper bound estimate of the impact on inflation, particularly for larger changes in NZU prices.

The starting context is that NZU prices have been steadily falling over the first half of 2023. To the extent this is being passed through, this implied the NZ ETS is currently have a deflationary impact. It is more probable that businesses are using these lower costs to offset cost pressures elsewhere, so the decline in NZU prices is more likely to be having a small disinflationary impact, slowing the rate of inflation.

An increase from mid-2023 secondary market price levels (\$60 as of 16/6/23) to the status quo CCR trigger implies a 0.28% increase in CPI inflation. A doubling in prices from here would see a 0.81% increase in inflation. In the current context of inflation running a little under 7%³³ these would be relatively small contributions, albeit still unwelcome to households facing pressure elsewhere. These contributions to inflation would be more material in an environment when inflation is within the RBNZ's target range of 1 – 3%, although by the same token households would be less pressured from other directions in this situation.

Impact on household budgets

The household model can estimate the dollar expenditure by households on costs resulting from the NZ ETS for a given NZU price. As with the inflation analysis, these are likely upper

³³ 6.7% in the year to March 2023.

bounds. Some behavioural change is proxied using the decrease in emissions expected under the Commissions demonstration path. This assumes household emissions are about 16% lower by 2030.

Figure 3 plots the estimated expenditure by the average household for each of the different price paths, including the behavioural change proxy noted above. As with the price paths, there is a wide range of estimates. Under the most probable paths, the cost for the average household is expected to increase from around \$700-900 per annum in 2024 to around \$1,000-1,400 per annum in 2030.

Looking at the average household masks the considerable variation between households. Figure 4 estimates household expenditure for different households by income decile, using just the demonstration price path. Lower income households are expected to face an emissions price cost of around \$400 per annum in 2024, rising to around \$600 per annum in 2030. Expenditure by higher income households, who consumer considerably more in absolute terms, increase from around \$1,100-1,200 per annum in 2024, to around \$1,500-1,700 in 2030. While the absolute figures rise with income, the impacts are regressive, as emissions costs make up a larger share of income for lower income households than they do for higher income households.

