



Improvements to the New Zealand Emissions Trading Scheme: Submission to the Ministry for the Environment

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Submitter type

Independent non-profit research organisation

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Key messages

Objectives for NZ ETS reform

The Government's consultation document requests input on how to adapt the design of the New Zealand Emissions Trading Scheme (NZ ETS) so it can more effectively support New Zealand's transition toward a net-zero-emission economy. Our submission focuses on the core design features relating to the management of unit supply, unit prices, international purchasing and industrial free allocation.

In our view, the next phase of reforms to the NZ ETS should seek to achieve:

- **Environmental effectiveness:** by enabling the system to make a genuine and ambitious contribution toward both domestic and global decarbonisation in line with New Zealand's current targets and future aspirations
- **Policy and price predictability:** by creating structural mechanisms and processes that support decision making under uncertainty and enable efficient investment decisions that will unlock transformational change.

It is very encouraging to see that the core proposals contained in this consultation document build on the previous Government's in-principle policy decisions announced in July 2017. The underlying driver for these proposals has not changed across election cycles: New Zealand is facing a challenging low-emission transition and effective emission pricing needs to be part of the solution, alongside other regulations, policies and measures. Maintaining cross-party support for long-term policy continuity on the operation of the NZ ETS will be essential for sustaining confidence and investment by market participants as well as buy-in from the general public.

Purchasing international emission reductions

International purchasing can help New Zealand to make a more ambitious and cost-effective contribution toward global mitigation and support developing countries accelerate their low-emission transition. However, international purchasing should not divert New Zealand from its domestic decarbonisation pathway.

The New Zealand government will need to ensure that all international emission reductions accepted in the NZ ETS and counted toward its targets have environmental integrity, are not double counted under the seller's Nationally Determined Contribution (NDC), and have government approval by the seller and New Zealand.

The Paris Agreement has fundamentally changed how countries will trade international emission reductions over the 2021-2030 period. Direct international purchasing by NZ ETS participants under a new UN market mechanism may not become possible for a considerable period of time.

For the foreseeable future, the only way for New Zealand to purchase international emission reductions will be through government-to-government agreements. However, options can be identified enabling private entities to play a role in those agreements and receive international emission reductions in return.

Motu and international researchers are collaborating to develop a "Climate Team" mechanism for international climate change cooperation which could facilitate purchasing by the New Zealand government. A group of buyer countries would pool resources to enable large-scale mitigation by the seller beyond its NDC. Payment would be guaranteed upon delivery within a pre-agreed price range that offered benefits to both the seller and buyers.

In the case of government-led purchasing, the volume of international emission reductions would be factored into the NZ ETS cap and used to back NZUs sold at auction or issued under price management mechanisms beyond New Zealand's NDC budget.

If it becomes possible in the future for NZ ETS participants to purchase international emission reductions, then a quantity limit should apply as a percentage of the surrender obligation. Furthermore, participants' international purchasing should offset other supply under the cap so that New Zealand retains its ability to make deliberate decisions about its decarbonisation pathway.

If the NZ ETS price is lower than prevailing international prices, the government will bear the extra costs of any international emission reductions the government purchases. If the NZ ETS price is higher, whoever sells or surrenders the international emission reductions into the NZ ETS will gain the price difference. In this context, it would be preferable for taxpayers, rather than ETS participants, to receive the benefits of lower-cost international emission reductions.

Managing unit supply

The market needs to have clear signals about long-term supply to set an efficient price for low-emission investment – and changes in long-term supply can immediately affect current prices.

New Zealand must set its own pathway for emissions and prices with reference to, but not dependence on, “effective emission prices” elsewhere. In our preferred approach, this would be accomplished by setting a volume-limited cap on unit supply which encompasses auctioning, free allocation and a unit reserve for price management. The cap would not bind forestry or industrial removals. Banking would shift supply and smooth prices over time. As noted above, participant purchasing of international emission reductions would not add to supply under the cap.

In our preferred approach, the cap would be fixed in advance for a period of five years, extended by one year each year, and guided by a 10-year indicative trajectory (corridor) for emissions. It could be reviewed and adjusted more quickly in response to clearly defined *force majeure* events.

Setting the cap requires consideration of multiple factors. In addition to the list provided in the consultation document, these could include: a long-term corridor for target-consistent domestic emission prices; the number of units banked by participants or held in reserve by the government; international rules regarding carry-over between commitment periods; international mitigation costs; and the desired relative weight on short- versus long-term climate outcomes, as expressed by the choice of “metric.”

Cap setting involves complex technical considerations but ultimately is a political decision. We believe that cap setting decisions should remain with government and be informed by independent advice by the Climate Change Commission.

Managing unit prices

In the current policy and market context, there is value in managing both supply and prices under the NZ ETS. No one knows the optimal value for either. While managing emission quantities in line with our targets and emission budgets, we can take advantage of mechanisms for guarding against unacceptable price extremes in both directions.

For managing upside price risk, we support the government's proposal to replace the current fixed-price option (FPO) with a volume-limited cost containment reserve (CCR) implemented at

auction. In our preferred approach, the CCR would be bound by the cap. It would operate using a tiered approach as follows:

- a. If the auction price rose to hit a first trigger price, units would be released from the CCR for auctioning. The auction would continue to set the price.
- b. If the auction price continued to rise and hit a second trigger price, the government would initiate a review of the settings for unit supply and price management and their interactions with other non-ETS policies. This review could either be conducted by, or informed by independent advice from, the Climate Change Commission.
- c. If the CCR volume was exhausted before new unit supply settings were in place, then the government would offer an unlimited number of fixed-price units for purchase and immediate surrender by participants. Fixed-price units could not be traded or banked.

For this approach to operate, the government would need to ensure that the formulation of its targets and emission budgets set pursuant to the Zero Carbon Bill do not preclude the international purchasing that may be needed to prevent unacceptably high emission prices in the NZ ETS.

The current NZ\$25 FPO is not appropriate for the short term because it is discouraging efficient mitigation, could generate windfall gains for participants holding NZUs, and poses serious target and fiscal risks to government. We recommend that it be adjusted before 2020. Our preferred option would be to raise the FPO level to mitigate fiscal risk and start auctioning as soon as possible to support liquidity. An alternative would be to raise the FPO level with no auctioning; however, it is possible that constrained liquidity could rapidly drive prices up to the new FPO level. The market should be notified of changes in advance.

For managing downside price risk, we recommend the implementation of a reserve price at auction (or “price floor”). This is simple to implement and can help avoid very low prices. If private actors are not willing to pay at least the reserve price, the government would stop selling units and the supply to the market would automatically contract. An auction reserve price mechanism does not provide an investment guarantee. Units in the secondary market can still be traded below the auction reserve price.

We strongly disagree with the stated position in the consultation document that a limit on participant purchasing will be a sufficient safeguard against low emission prices. As has been demonstrated clearly in New Zealand and overseas, political risk could drive down emission prices while decarbonisation costs remain high, producing an inefficient outcome that derails valuable low-emission investments.

With a reserve price, an ETS auction will respond quickly and predictably to unpredictable events that lower prices. A reserve price signals the direction of travel for minimum emission prices and builds confidence for low-emission investors and innovators. It also provides greater assurance to government about the minimum level of auction revenue to expect.

Under our preferred approach, the volume of the CCR, CCR trigger price, review trigger price, level of the fixed-price option, and level of the auction reserve price should be decided and fixed five years in advance, extended by one year each year, and guided by an indicative 10-year trajectory (corridor). As with setting the cap, these are political decisions that belong with government and could be informed by independent advice from the Climate Change Commission.

The “metric” that governs trade among different greenhouse gases also affects the effective price of emissions. It should also be reviewed regularly to assess whether there has been a

change in society's assessment of the desired relative weight on short- versus long-term climate outcomes. This could potentially be reviewed on a five-yearly basis with a political decision informed by independent advice from the Climate Change Commission.

Phase-down of industrial free allocation

New Zealand's approach to industrial free allocation is not aligned with New Zealand's decarbonisation targets, does not reflect the falling risks of leakage under the Paris Agreement, lowers mitigation incentives for recipients and downstream consumers, poses a high cost to taxpayers, and applies an outdated methodology. During this phase of NZ ETS reform, the government should revisit the objectives and methodology for providing free allocation to emissions-intensive and trade-exposed (EITE) producers.

We recommend that the key NZ ETS policy objectives for EITE producers should be incentivising low-emission transformation and preventing (or otherwise compensating for) leakage of emissions overseas which would undermine New Zealand's contribution to global mitigation.

The phase-down of industrial free allocation for EITE producers should be determined through a decision-making process guided by tests or conditions relating to:

- a. aligning the level of free allocation with New Zealand's targets and emission budgets for domestic decarbonisation
- b. the risk and cost to New Zealand of leakage versus free allocation.

We suggest that decisions on free allocation should be made by government with independent advice from the Climate Change Commission. Given the potential complexity of assessing leakage risk and allocative baselines, we suggest that free allocation determinations be made less frequently (e.g. every five years) than other decisions on unit supply and price management, although all of these decisions should be coordinated.

The methodology for calculating free allocation could be adjusted over time by updating the emissions intensity thresholds for eligibility, updating allocative baselines, and/or changing the rate of phase-down. In addition, we recommend periodic updates to the Electricity Allocation Factor used to calculate the amount of free allocation, and regular monitoring of the actual emission factor for marginal electricity generation.

The government could consider replacing output-based free allocation with the alternative of a lump-sum payment (in cash or units) for some recipients. One option would be for the payment to take the form of a grant conditional on investment to reduce the emissions intensity of production.

Other issues

We have provided commentary on several additional issues which are not addressed in the consultation document but will be important for the future operation of the NZ ETS. These include:

Alignment between the Zero Carbon Bill and the NZ ETS amendments

It will be important to ensure that decisions taken on targets, emission budgets and limits on international purchasing will enable the later operation of unit supply and price management mechanisms under the NZ ETS. The government may wish to consider setting a contingency emission budget for this purpose. As noted above, we suggest that with regard to the NZ ETS, the role of the new Climate Change Commission should focus on provision of independent technical advice so that political decisions remain with government.

Implications of international rules for carry-over across commitment periods

Any mismatch between net banking of domestic and/or international units in the NZ ETS and rules for international carry-over could create a taxpayer and/or target liability across commitment periods.

Managing short- versus long-lived gases

There is considerable debate underway on the choice of metrics and policy instruments for managing agricultural methane relative to long-lived greenhouse gases such as carbon dioxide and nitrous oxide. There is no “correct” metric. The choice depends on both scientific and non-scientific factors.

It would be possible to manage emission reduction pathways for methane and long-lived GHGs under a single ETS cap, under two caps or under a methane “quota” system. There are significant reasons why the rationale for a quota system for fisheries does not automatically apply to a quota system for methane. Whether it is intended or not, because the methane and other GHGs will both have emission unit prices, a “metric” will be implicitly created by both a quota system and an ETS with two caps; it is the ratio between the two prices.

Any differences between these systems should be thought of in terms of political framing and administrative and institutional complexity. The advantage of using the existing ETS mechanism is that it already exists and operates.

This discussion about relative prices (and hence marginal costs of abatement) for gases within emissions pricing mechanisms should be clearly separated from discussion around setting of long-run targets. For targets, there is a logic for a net-zero (or even net-negative) limit on combined long-lived gases and a separate target for short-lived gases which would need to be regularly revisited but would not necessarily go to zero.

Enabling cancellation of units in the ETS and under New Zealand’s target

Currently no mechanism enables firms or individuals to cancel NZUs in a way that would both reduce NZ ETS supply and tighten New Zealand’s target (thereby preventing double counting of emission reductions). This precludes participants from applying cancelled NZUs for non-ETS offsetting purposes, including for meeting international aviation obligations under CORSIA. Enabling such a mechanism would increase the required level of mitigation action within the ETS sectors. That could either increase the ETS price or be accommodated with a higher ETS cap. The latter could pose a fiscal risk to the government which would need to purchase more international emission reductions. The government could consider two options:

- a. Create a mechanism through which the cancellation of an NZU would flow through to New Zealand’s target or GHG inventory reporting. A quantity limit could be used to limit ETS price risk.
- b. Enable firms or individuals to buy international emission reductions directly from the government and cancel them, assuming they do not have the option to purchase them directly from the international market.

The second option would be easier to administer and limit ETS price risk. For the voluntary market, an alternative is to move away from the traditional concept of offsetting and enable other forms of branding or recognition that reward extra action to reduce entities’ long-term emissions or invest in removals under the ETS cap.

Questions

1. What issues should the decision maker consider when making unit supply decisions?

Issue	Yes/No	Comments
CONSULTATION LIST		
proper functioning of the ETS	Yes	This should include proper functioning of the cost containment reserve and auction reserve price mechanisms.
NZ's projected emission trends	Yes	
number of NZUs expected to be allocated	Yes	This should encompass consideration of free allocation, auctioning, and unit reserve.
emissions covered by the ETS	Yes	
arrangements that govern the operation of the ETS	Yes	
any limit on international units	Yes	This should include limits on international purchasing applied by the government to ETS participants – and any self-imposed limits on international purchasing by the government, if relevant.
emissions budgets, such as those proposed in the Zero Carbon Bill	Yes	
recommendations from the independent Climate Change Commission proposed in the Zero Carbon Bill	Yes	
agreements or arrangements regarding international emissions reductions	Yes	
non-ETS climate change mitigation policies	Yes	
modelling of New Zealand's domestic abatement potential and costs	Yes	This should include assessment of both ETS and non-ETS sectors, and encompass forestry removals both inside and outside of the ETS.
forestry reporting periods	Yes	
forecasts of international carbon prices	Yes	More guidance will be needed about whose international emission prices will be considered, over what time period, under what mechanisms, and how this information will be applied. Price convergence is unlikely in the near term. For assessing leakage potential, "effective emission prices" achieved through both price-based mechanisms and other regulations and policies are more relevant than nominal prices in an ETS or carbon tax.

Issue	Yes/No	Comments
inflation rates	Yes	This would be relevant as a technical consideration if inflation was factored into progression of the trigger price in the cost containment reserve and auction reserve price.
ISSUES TO ADD		
[15]-year indicative corridor for target-consistent domestic emission prices	Yes	The government should request independent advice from the Climate Change Commission on a trajectory (corridor) for target-consistent emission prices in New Zealand. Ideally this would extend over a period of 15 years, so it covers the five-year period for which the cap on unit supply is fixed, and provides a further 10-year planning horizon to guide policy makers, market participants and investors.
The number of units banked by ETS participants	Yes	The government needs to account for the implications of net changes in banking over time in order to manage its requirements for purchasing international emission reductions and meeting its targets and budgets, to ensure that the market has adequate liquidity, and to give private actors the ability to manage long term risks and smooth transient shocks to the market.
The number of units held in reserve by the government, including any unsold or unallocated units from previous periods	Yes	To meet its targets and budgets, the government needs to be prepared to cover emissions enabled by NZUs held in reserve. The government will need to decide if unused reserve units will roll forward into future periods and accumulate, and how to manage the implications for international purchasing, targets and budgets.
The number of fixed-price units, if any, sold by the government in the previous period	Yes	Whether fixed-price units have been sold in the previous period is an important indicator of the suitability of the previous cap.
International rules regarding carry-over of emission budgets and international units between commitment periods	Yes	Any mismatch between net banking and international carry-over creates a taxpayer and/or target liability across international commitment periods.
International mitigation costs	Yes	Decisions on domestic unit supply and international purchasing should take into account the costs to New Zealand of purchasing international emission reductions. This is a distinct consideration from effective international carbon prices imposed through other countries' policy decisions that have implications for competitiveness and leakage.
Desired relative weight on short- versus long-term climate outcomes	Yes	This will inform decisions about the metrics that are appropriate to apply to short-lived greenhouse gases, e.g. methane, relative to long

Issue	Yes/No	Comments
		lived gases, and hence the number of NZUs that will be demanded to cover these emissions. Any difference between the metric applied in NZ and that used for international compliance will have fiscal implications. This issue is discussed further below.

2. What, if any, restrictions should be placed on the NZ ETS decision maker when making unit supply decisions? (For example, currently one year’s notice must be given for changes to unit supply volumes).

We recommend that decisions on unit supply (encompassing free allocation, auctioning, cost containment reserve level and price trigger, level of any fixed-price option, auction reserve price, limits on international purchasing and free allocation) should be made five years in advance and fixed for the full period of five years, with an exception only in the case of clearly defined *force majeure* events.

With the exception of free allocation, these coordinated decisions on unit supply should be extended by one year, each year (i.e. a rolling Year 6 update). In the case of decisions on free allocation requiring updated assessment of leakage potential, we suggest a less frequent decision-making process, such as every five years, to be conducted in conjunction with the other annual decisions on unit supply, prices and international purchasing in that year.

In addition, we recommend that decision makers should be guided by an indicative (non-binding) trajectory (corridor) for target-consistent unit supply and emission prices extending for a further 10 years. This trajectory should be supported by transparent modelling so that the assumptions used to create it are easily understood. This would provide a 15-year planning horizon for decisions by government, market participants and investors.

Under the approach currently in legislation, the “overall limit” (the cap) would be set for five years in advance but adjustments could still be made to supply in Years 3-5. ETS prices are based on expectations of long-term supply. We suggest that routinely enabling intermediate changes to unit supply in Years 3-5 (as is currently provided in the legislation) increases near-term supply uncertainty for participants with no gain. Decisions on unit supply in Year 6 will immediately affect current prices, so can be used to adjust market behaviour during Years 2-5 if desired.

The fixed five-year cap would operate in conjunction with a cost containment reserve, reserve price at auction, and participant banking. As discussed further below, the system could also have a further price safety valve in the form of a fixed-price option that would operate if the cost containment reserve was exhausted. Under most circumstances, this combination of measures with a rolling Year 6 update should enable the system to accommodate normal fluctuations in the market. However, it is conceivable that a *force majeure* event could override the capacity of these measures to maintain market liquidity and prices within acceptable parameters. In this case, it is possible that the government might need to respond more quickly and with less notice to the market than is enabled under current legislation. If an exception is enabled for *force majeure* events, then the criteria for identifying such events should be clearly defined and the government could be required to seek independent advice from the Climate Change Commission on the need for an urgent response and the type of response that may be necessary.

3. Do you agree with the proposal to implement a single-round, sealed bid auction format with uniform pricing? If not, why not?

This approach has been widely used in other systems with success. One of the government's assumptions in the consultation document is that New Zealand's secondary market will be sufficient to enable price discovery. Given the volume of trades that occur outside of exchanges in New Zealand and are not reported, this assumption needs to be tested further with market participants. Market participants will vary in their level of sophistication with assessing emission prices in the secondary market. The current legislation enables a pilot auction to be conducted. The government could test its preferred option before committing to a long-term auction structure.

In the consultation document, the government has not specified when units released from the cost containment reserve would become available for auctioning. The government identifies the two options of a special auction or the subsequent scheduled auction. This is an important consideration for managing liquidity and prices, especially as the bank reduces over time. These two options raise the possibility that the clearing price at a given auction could exceed the trigger price for releasing additional volume, since the additional volume would not become available until a later date and some participants might need units immediately for compliance. This situation could be remedied by enabling immediate release of additional volume within the same auction as soon as the market clearing price hit the trigger level.

- 4. Do you think that auctioning frequency should be:**
- **weekly (not preferred)**
 - **monthly**
 - **quarterly**
 - **annually (not preferred).**

Auctioning frequency should be monthly or quarterly. We have no strong preference between these two options.

5. Do you agree with the proposal that all NZ ETR account holders should be able to participate at auction? If not, why not?

Participants beyond those with surrender obligations have a legitimate interest in purchasing units at auction, and should be enabled to do so provided they are NZ ETR account holders in good standing. Enabling more participants at auction can help to guard against collusion. The government should have adequate processes for verifying the identities of those participating in auctions, including those who have been appointed as representatives of NZ ETR account holders. Requiring bid guarantees would be useful for ensuring the legitimacy of auction participants.

6. Do you think that the Government should use the proceeds gained from the auctioning of NZUs for specific purposes? If so, please explain what those purposes would be.

NZ ETS auction revenue could be used for many purposes. Examples include transitional assistance to disproportionately impacted businesses and households, support for climate change mitigation and adaptation activities, and reductions in other distortionary taxes.

Because of uncertainty over the magnitude and timing of auction revenue, it is preferable not to make specific programme budgets directly dependent on auction revenue. It would be more effective for the government to take auction revenue into account in overall budget planning and decide on budget allocations for individual programmes based on their merits.

7. Do you agree with the proposal to replace the \$25 fixed priced option with a cost containment reserve price ceiling implemented through the auctioning mechanism? If not, why not?

The current fixed-price option (FPO) exposes the government to both target and fiscal risk and will not be effective for managing these risks in the ETS in the future. A volume-limited cost containment reserve (CCR) implemented through the auctioning mechanism would be a better approach for balancing costs and risks to the government and participants if it is implemented well. As detailed below, if the CCR was exhausted before new unit supply settings were in place, we propose that the government should be able to sell units at fixed price as a last resort.

8. How do you think the price level and number of units in the cost containment reserve should be managed over time? (Note: specific settings will be consulted on later). Select all that apply.

- **decision-maker has discretion to determine the settings while having regard to certain factors (please explain)**
- **settings are determined by mandated formulae (please explain)**
- **other (please explain).**

We recommend that the volume of the CCR, CCR trigger price, review trigger price, and level of the fixed price should be decided and fixed five years in advance, extended by one year each year, and guided by an indicative 10-year trajectory (corridor). These decisions are ultimately political and should be made by government, taking into account independent advice from the Climate Change Commission on the range of considerations that apply to all decisions on unit supply (addressed in Question 1 above).

9. What actions should occur if the price ceiling is struck?

- **increase the price ceiling trigger level, if it was set on a too low or erroneous basis**
- **increase the limit on international units, if high domestic abatement costs are the cause of the excessively high prices**
- **undertake a fuller system review, if the high prices are seen as a sign of wider market dysfunction**
- **government buying international units to compensate for additional units added to the market through the price ceiling**
- **adjust the overall cap**
- **other (please explain).**

Researchers at Motu have been collaborating with participants in Motu's ETS Dialogue to discuss options for the design of an effective cost containment reserve. The following proposal has emerged from that work. Please note this does not represent a consensus view among all participants.

Under our preferred approach, a cost containment reserve would be set as part of the overall cap, taking into account the government's emission budget and emission price pathway for ETS sectors in relation to its international target as well as actual and intended purchasing of international mitigation. A tiered approach would apply as follows:

- a. If the auction price rose to hit a first trigger price, units would be released from the CCR for auctioning. The auction would continue to set the price.
- b. If the auction price continued to rise and hit a second trigger price, the government would initiate a review of the settings for unit supply and price management and their interactions with other non-ETS policies. Market dysfunction may not be the

only driver of high prices; companion policies could also play a role. This review could either be conducted by, or informed by independent advice from, the Climate Change Commission.

- c. If the CCR volume was exhausted before new unit supply settings were in place, then the government would offer an unlimited number of fixed-price units for purchase and immediate surrender by participants. Fixed-price units could not be traded or banked. To maintain environmental integrity, the government would need to compensate for emissions enabled by the fixed-price option at the level of its international targets (e.g. through additional international purchasing).

CCR units that were not auctioned would roll forward to the next period. In this way, the CCR would offer a form of unit banking for government. The government would need to monitor the accumulated volume in the CCR to ensure that it remained in line with the government's intentions for its targets and international purchasing.

Enabling the FPO after the CCR is exhausted would expose the government to target and fiscal risk. However, this option would be the final port of call, not the first port of call (as it is today). The FPO should be set at a high enough level to mitigate fiscal risk if additional international purchasing is required, and it would be triggered only if the government failed to adjust unit supply settings quickly enough following a review. To maintain the political viability of the system, we think it is preferable for the government to provide the FPO as a final safety valve rather than enable the system prices to spike at a level beyond government control – and public acceptability – if the CCR is exhausted.

For this approach to operate, the government needs to ensure that the formulation of its targets and emission budgets set pursuant to the Zero Carbon Bill will not preclude the international purchasing that may be needed to prevent unpredictably and unacceptably high emission prices in the NZ ETS. The government may wish to make a distinction between its intended level of international purchasing in line with its preferred pathway for domestic decarbonisation, and the potential for additional international purchasing as a contingency measure to prevent unacceptably high prices in the NZ ETS.

10. Do you agree with the proposal to review the price ceiling if another significant event occurs (such as a decision to link the NZ ETS with another carbon market)?

The consultation document identifies two types of special events: striking the price ceiling or linking to another ETS. Our response to Question 9 addresses what should happen if the price ceiling is struck.

If the NZ ETS were to establish an unconstrained linkage with another carbon market, then all of the settings for managing unit supply, prices and international purchasing would need to be harmonised across the two markets. Such a linkage would likely be negotiated well in advance, enabling any necessary changes to be implemented under the standard five-year time frame. This scenario appears unlikely at present and it is not possible to “future proof” the design of the CCR at this point in time to accommodate future linking. The CCR should be designed to reflect our current circumstances and needs as a stand-alone market, and reviewed if circumstances change significantly.

As noted in our response to Question 2, it may be advisable to enable review of all unit supply settings in response to a *force majeure* event, provided this is clearly defined and both the confirmation of the event's significance and the appropriate response are informed by independent advice from the Climate Change Commission.

11. Do you agree that the \$25 FPO may not be appropriate for the short term, and may need to be adjusted before 2020? Please explain.

The current NZ\$25 FPO is not appropriate for the short term and we recommend that it be adjusted before 2020. At the time of writing, the market's spot price has reached the level of the FPO. The low level of the FPO is suppressing mitigation investment needed to deliver on New Zealand's ambitious emission reduction targets. It incentivises participants holding NZUs to bank them for future use at higher value and use the FPO instead, thereby benefitting from arbitrage at taxpayer expense. In a second arbitrage scenario, post-1989 forestry participants could deregister from the ETS, clear their unit liabilities using the FPO while banking the NZUs received to date, and re-register to receive further NZUs with a higher value. The availability of capital for clearing forestry liabilities at the level of the FPO could be a deterrent.

Both of the arbitrage scenarios would impact negatively on the government's balance sheet. They could also expose the government to longer-term target and fiscal risk. The government will need to purchase international emission reductions to cover the emissions associated with NZUs that have been banked because participants used the FPO. The availability and price of international emission reductions are both uncertain; it is possible the government will need to pay more than NZ\$25 per tonne.

At this stage, three options for addressing this situation are:

- **Option 1: Raise the FPO level to mitigate fiscal risk and start auctioning as soon as possible to support liquidity.** We do not have to know the perfect long-term cap to start auctioning before 2021. The Climate Change Response Act 2002 enables the government to conduct a pilot auction.
- **Option 2: Raise the FPO level to mitigate fiscal risk.** This would likely reduce use of the FPO compared to the status quo. Depending on the level of the FPO, some participants could still benefit from arbitrage at taxpayer expense. With no other sources of unit supply pre-2021 beyond industrial free allocation, ETS removals and the bank, if participants chose to hold banked NZUs either for speculative gain or to manage future forestry liabilities, emission prices could rise quickly up to the level of the new FPO. If it gets too low, the NZU bank may not function as a safeguard for liquidity and price smoothing.
- **Option 3: Keep the FPO at \$25 and then tighten the post-2020 cap by the number of fixed-price units sold to participants to compensate.** This would likely increase the use of the FPO and inflate the bank of NZUs and the scale of the arbitrage opportunity. Any NZUs issued by the government for free allocation or forestry removals while the low FPO was in place, and banked for future use, would generate a windfall gain to the recipients at taxpayer expense.

We think that Option 1 offers the greatest benefits. Under either Option 1 or Option 2, the level of the new FPO should be high enough to incentivise emission reductions in line with New Zealand's targets and mitigate the fiscal risk to the government from purchasing additional international emission reductions. The FPO should act as a price safeguard, not a price setter.

Any of the changes to the FPO – and potentially the initiation of auctioning on a pilot or permanent basis – could be decided in 2018 in conjunction with the legislative process for the Zero Carbon Bill. Changes to the operation of the FPO should be notified to the market in advance to maintain confidence in the stability of government rulemaking.

12. Which mode of purchase for international units (direct or indirect) would be the best approach for the NZ ETS, acknowledging that there are other significant factors that will influence this decision? Please explain.

In the consultation document, “direct” purchasing refers to purchasing of international emission reductions by NZ ETS participants, and “indirect” purchasing to that by government.

Under any regime for purchasing international emission reductions, the New Zealand government needs to ensure that (a) those reductions have environmental integrity, (b) they are additional to (i.e. not double-counted under) the seller country’s Nationally Determined Contribution, and (c) they are being traded with government approval by the seller country as well as New Zealand.

The New Zealand government also needs to ensure that the total amount of international emission reductions accepted in the NZ ETS – regardless of who buys them – is consistent with New Zealand’s preferred pathway for domestic decarbonisation and emission prices, as reflected in the targets and emission budgets established under the Zero Carbon Bill.

Government-led purchasing (indirect)

At this stage in the rulemaking process under the Paris Agreement, trading of international emission reductions (referred to as internationally traded mitigation outcomes, ITMOs) is possible only through government-to-government agreements under Article 6.2. This could take many possible forms, such as “Climate Team” agreements (see the text box below), ETS linking or other options.

Under the “indirect” model, the government would take its actual and intended purchases of international emission reductions into account when setting the parameters for the ETS cap on unit supply (and associated cost containment reserve and fixed-price option). By purchasing additional international emission reductions, the government would be able to auction more NZUs into the market and still achieve its Paris targets.

Under the “indirect” model, in addition to managing its own purchasing, the government could potentially choose to:

- a. Enable private entities to purchase international emission reductions on the government’s behalf using tender or reverse auction mechanisms, or
- b. Include private entities as partners in government-to-government agreements, enabling them to receive units in return for providing some of the necessary upfront guarantee of funds, investing private capital, and/or supporting technology transfer.

The “Climate Team” mechanism for international climate change cooperation

Researchers at Motu, Seoul National University, Universidad de los Andes, Colombia, Environmental Defense Fund, and the University of California, Santa Barbara are proposing a new mechanism to extend international climate cooperation. The Climate Team mechanism is designed to allow countries to work together to transfer resources for credible emission reductions.

Under the Climate Team mechanism, a host country with the potential to generate large-scale (e.g. sectoral- or national-level) abatement beyond its NDC would contract to transfer that abatement to a group of buyers (partners) in return for a guarantee of payment upon delivery.

The host and partners would negotiate a ‘crediting baseline’ which ensured that any transferred abatement went beyond the host’s NDC. The host’s actual performance against the crediting baseline would be measured using official national inventory data. If the host reduced emissions below this baseline, partners would guarantee to purchase the emissions reductions beyond the baseline within a pre-agreed price range up to the contracted ceiling for total partner funds.

The partners would need to select hosts with sufficiently ambitious and clearly defined NDCs. Countries would likely choose to work with others with whom they have existing relationships. The negotiated crediting baseline would prevent double counting of emission reductions against the host’s NDC. The large scale of the crediting baseline would reduce concerns about lack of additionality and guard against leakage, both of which have been problems with project-based activities. All countries would have an incentive to work together to set the host country on a trajectory to low emissions. Technical assistance and private capital flows would complement the agreement.

There is an opportunity for NZ companies to have a role in a Climate Team agreement (e.g. by providing some of the necessary upfront guarantee of funds and/or supporting technology transfer and investing private capital, and receiving a share of units when they are delivered in return).

More information is available on the [Motu website](#).

Participant-led purchasing (direct)

The Paris Agreement enables the implementation of a new UN mechanism for trading ITMOs under Article 6.4, but the associated rulemaking process is proceeding slowly and a pipeline of tradable emission reductions could be many years away. As a result, there currently is no international mechanism to enable direct purchasing of international emission reductions by NZ ETS participants.

If it did become possible for NZ ETS participants to directly purchase international emission reductions from the international market, then a quantity limit should apply as a percentage of the surrender obligation for each participant. Furthermore, international purchasing by participants should offset other supply in the market. This could be done by adjusting the planned auction volume *ex post* to account for the actual volume of international emission reductions surrendered. If the government allowed participants unconstrained access to international emission reductions in the NZ ETS, it would lose its ability to manage domestic emission prices and the rate of domestic decarbonisation.

Who should gain from international purchasing?

Even if it becomes possible in the future for NZ ETS participants to directly purchase international emission reductions, there is a strong case for limiting international purchasing to the (indirect) government-led model. If the NZ ETS price is lower than the international price, the government will bear the extra costs of any international emission reductions the government purchases. If the NZ ETS price is higher than the international price, whoever sells or surrenders the international units into the NZ ETS will gain the price difference. With the same total cap on units in the ETS (including any international units), the marginal cost of compliance (the effective ETS price) will not be affected. In this situation, it would be preferable for taxpayers to receive the benefit of lower-cost international emission reductions, instead of distributing those gains only to points of obligation in the ETS and those who purchase international units on their behalf.

- When the government “buys low” internationally and “sells high” at auction, the gains from trade get returned to the whole economy and all participants face the full domestic emission price at the margin (with the exception of those receiving output-based free allocation).
- When ETS participants “buy low” internationally and “sell high” domestically (by surrendering international units), the gains from trade are captured by only those participants.

Enabling ETS participants to capture gains from purchasing international emission reductions is essentially like handing out cash or free allocation to them at taxpayer expense. Those benefitting from those gains are not necessarily those who bear emission costs or face leakage concerns (for example, fossil fuel suppliers buying large volumes of units simply pass compliance costs downstream). Furthermore, ETS participants may vary in their ability to capture such gains because of the different scale or sophistication of the purchasing arrangements they are able to achieve.

13. If NZ ETS participants are able to purchase and surrender international units directly, do you think that there is justification for varying the percentage of allowable international units by participant type? If not, why not?

We cannot see any justification for varying the percentage of allowable international units by participant type. This would raise significant equity and operational considerations. If there are concerns that some ETS participants are already receiving windfall gains from output-based free allocation or forestry activities, then those windfall gains should be remedied directly, not compensated for by limiting international purchasing.

14. How do you think decisions on a phase-down of industrial allocation should be made? Select all that apply.

- **make an up-front decision to phase-down industrial allocation from 2021**
- **set a test or condition that would trigger a phase-down**
- **establish a decision-making process to determine industrial allocation rates over time**
- **other process (please explain).**

Recommendations for the phase-down of industrial free allocation

The phase-down of industrial free allocation for EITE producers should be determined through a decision-making process guided by tests or conditions relating to:

- a. aligning the level of free allocation with New Zealand's targets and emission budgets for domestic decarbonisation
- b. the risk and cost to New Zealand of leakage versus free allocation.

To the extent possible, the tests and conditions should be objective, evidence-based, practical to implement, and clearly understood.

We suggest that the Climate Change Commission be tasked with providing independent advice to the government on leakage risk and costs, the relative benefits and costs to New Zealand of free allocation, and recommended changes to the level of free allocation for EITE producers. Political decisions on free allocation should remain with government.

Government decisions on free allocation should be made in concert with other decisions on ETS unit supply, price management and international purchasing. However, given the potential complexity of assessing leakage risk and allocative baselines, we suggest that the determination of changes to free allocation could be made less frequently (e.g. every five years), instead of extended annually on a rolling basis (as applies to the other ETS decisions listed above).

The methodology for calculating free allocation could be adjusted over time by:

- a. Updating the emissions intensity thresholds for eligibility
- b. Updating allocative baselines
- c. Changing the rate of phase-down.

In addition, we recommend periodic updates to the Electricity Allocation Factor used to calculate the amount of free allocation, and regular monitoring of the actual emission factor for marginal electricity generation. Such updates are distinct from decisions on the rate of phase-down of free allocation.

The government could consider replacing output-based free allocation with the alternative of a lump-sum payment (in cash or units) for some recipients, particularly those who are only moderately emissions intensive. A lump-sum payment could enable recipients to invest in reducing their emissions intensity and ongoing exposure to the emission price. One option would be for the payment to take the form of a grant conditional on investment to reduce the emissions intensity of production. There are benefits to both the government and participants of eliminating the cost of administering free allocation, particularly for those receiving small volumes of units. Enabling some recipients to exit from the free allocation mechanism would reduce the number of activities for which regular leakage risk assessment would be required.

[Basis for these recommendations](#)

To address this question, it is important to first clarify and test the underlying policy objectives for providing free allocation to emissions-intensive and trade-exposed (EITE) producers in the NZ ETS. In theory, these could include: preventing leakage of emissions overseas, maintaining competitiveness (including sustaining employment and avoiding economic regrets), compensating for stranded assets, smoothing the economic transition to emission pricing, and protecting vulnerable communities.

The current approach to output-based free allocation was chosen by the government in 2009 on the basis of avoiding leakage and economic regrets. At the time, emission reduction targets under the Kyoto Protocol applied only to industrialised countries and few jurisdictions were operating with emissions pricing mechanisms or ambitious mitigation policies.

Nearly ten years later, the world is on a pathway toward global decarbonisation under the Paris Agreement. To date, 51 emission pricing initiatives have been implemented around the world.¹ New Zealand is ten years into the operation of the ETS with an extended period of price moderation for a gradual transition. It is now facing ambitious targets for accelerating its transition to net-zero domestic emissions. The key competitiveness question is becoming how prepared the New Zealand economy is to thrive under global carbon constraints.

In this context, our key ETS policy objectives for EITE producers should be two-fold:

- a. Incentivising low-emission transformation
- b. Preventing (or otherwise compensating for) leakage of emissions overseas which would undermine New Zealand's contribution to global mitigation.

Output-based free allocation can contravene the first of these objectives. It constitutes an implicit output subsidy and leads to higher emissions because it reduces the incentive for domestic users of the products to mitigate.² While we could face regrets from losing emissions-intensive but highly efficient producers during the transition to global emission pricing (at which point they would be globally competitive again), we could also face regrets from transitioning too slowly to a low-emission economy and foregoing efficient investment in new low-emission enterprises. Output-based allocation has fiscal costs: the government foregoes auction revenue which it has to raise instead using distortionary taxes, and the government has to purchase more international emission reductions to meet its targets. Once the ETS operates with a cap, output-based free allocation will also raise domestic emission prices because it incentivises higher output by EITE producers.

We need to evaluate carefully whether the high costs of output-based free allocation are in line with the actual risks of leakage and benefits to New Zealand of preventing leakage. Under current policy settings, the government is projecting total free allocation demand of 143 million units over 2021-2030. This could be worth NZ\$4.3-7.2 billion under auction at \$30-50 per unit. It could be more cost-effective for New Zealand to compensate for any actual leakage – by taking on a more stringent target or offsetting leakage through additional international purchasing – than to provide long-term free allocation to prevent any risk of leakage.

How likely does leakage need to be to make it worth paying so much? Leakage risk varies by industry and competitor, is hard to assess and should decline under the Paris Agreement. Furthermore, it is hard to predict or confirm how emission pricing influences decisions by firms to reduce domestic production, leave New Zealand, or not arrive, and shift emissions offshore. Because of sunk assets, EITE producers facing a rising emission price may choose to continue operating at lower levels of profitability rather than close down. Some EITE producers in New Zealand have closed during the past eight years despite facing low emission prices and receiving high levels of free allocation. Other significant change drivers may include exchange rates; changes in consumer preferences and global commodity prices; costs imposed by environmental, labour, health and safety regulations; and other contributors to differential profitability.

Other options beyond output-based free allocation can be used to help firms, and their workers, more generally with the low-emission transition. Examples include:

¹ See [World Bank and Ecofys \(2018\). State and Trends of Carbon Pricing 2018. Washington, DC: World Bank.](#)

² In the case of products that are not (or are rarely) imported into New Zealand, using an export-based subsidy would be preferable to using an output-based subsidy, as the former would not lower the emission price signal passed to domestic consumers.

- a. Lump-sum payments to help with managing stranded assets (if they are still considered a significant social concern after ten years of ETS) or providing up-front capital for low-emission investment if capital constraints are a problem
- b. Subsidies for retraining, relocation, R&D and new business development
- c. Better financing mechanisms for low-emission investments.

The methodology for calculating free allocation is also becoming increasingly outdated. In 2009, New Zealand essentially adopted the methodology proposed for Australia's ETS, which is now defunct. The three key components are the emissions intensity thresholds for eligibility, allocative baselines, and trade exposure test.

- a. New Zealand used Australia's emissions intensity thresholds for determining firms' eligibility (1,600 or 800 tonnes of CO₂e per million dollars of revenue). The determination assumes an Australian electricity emission factor of 1 tonne CO₂e/MWh – nearly twice the New Zealand Electricity Allocation Factor (EAF) currently used to calculate free allocation in the NZ ETS (0.537 t CO₂e/MWh).
- b. The allocative baselines³ are calculated based on industry mixes and data on emissions intensities which are already 10+ years old and will continue to change over time. They apply an EAF which was last calculated in 2012. To our knowledge, no monitoring is currently conducted on the actual marginal emissions from electricity generation to confirm how well aligned the free allocation is to the electricity price impact of the ETS.
- c. The trade exposure test is very simplistic: it deems eligible all outputs that are traded internationally to or from New Zealand with no further assessment of the actual risk of leakage on the basis of relative effective emission prices.

Depending on how it is calculated, free allocation may also not be a practical tool for preventing leakage in the longer term. In a future of ultra-low-emission energy, leakage potential may be driven by high energy costs rather than high emission costs and emissions-based free allocation may not target the appropriate issue.

The key point here is that the value proposition for ongoing output-based free allocation using the current methodology is not at all clear, and more research and better modelling are needed to assess its fiscal costs and social benefits to New Zealand. At the same time, free allocation recipients in the NZ ETS have made investment decisions in good faith based on current policy, and policy continuity has value. It could be politically disruptive to renew past debates on free allocation. Updating allocative baselines could require substantial effort with variable impacts across recipients.

In this context, the following principles could be useful to guide future policy on free allocation to EITE producers in the NZ ETS:

- a. The key policy objective should be to prevent leakage of emissions offshore.
- b. The amount of free allocation should be in line with New Zealand's targets and emission budgets supporting domestic decarbonisation.
- c. The fiscal cost of free allocation should be commensurate with the changing risk of leakage, and benefits of preventing leakage, to New Zealand.
- d. Given the level of uncertainty about future leakage risk, we should avoid locking ourselves into long-term commitments to free allocation.

³ Allocative baselines are the average emissions per unit of saleable product across all people conducting the activity in a particular historical period (2006 – 2008 for most firms).

- e. We should provide sufficient policy certainty to businesses so they can make efficient investment decisions.

15. If a decision-making process for industrial allocation is implemented, which of the following factors should the decision-maker taken into account? (Select all that apply).

- **New Zealand's emission budgets**
- **the risk of emission leakage, with the aim of avoiding leakage driven by differential emission pricing policies, and based on economic analysis of the markets for EITE activities and their products**
- **other sources of supply into the NZ ETS**
- **the availability of low-emissions technologies**
- **New Zealand's international obligations**
- **other (please explain).**

In making decisions on industrial allocation, decision-makers should focus on assessing the risk and cost of emission leakage from New Zealand as a result of the ETS. In making this assessment, decision makers should consider the effective emission prices imposed on New Zealand's export and import competitors as a result of their mitigation policies, not just the nominal emission prices under a carbon tax or ETS. In addition, decision-makers should consider the relative level of exposure to emission pricing, which could be a factor of the scope of emissions coverage, the relative emissions intensity of production and opportunity to mitigate, and/or the level of free allocation or other transitional assistance. Jurisdictions with ambitious, high-cost regulations (e.g., a renewable electricity standard) may have a relatively low emissions price, but producers in those jurisdictions may face relatively high climate policy costs. Jurisdictions with a higher-level emission price could provide very high levels of output-based free allocation. The scope of the leakage assessment could be narrowed to a subset of leading competitors/price setters (e.g., countries that account for a significant share of global production and/or exports) for each trade-exposed activity.

16. If a phase-down is initiated in future, which of the following rates for phasing-down industrial allocation should be considered?

- **0.01 per year**
- **0.02 per year**
- **0.03 per year**
- **Other (please explain).**

Given the uncertain and changing profile of leakage risk and the mitigation challenges and costs facing New Zealand through 2050 and beyond, we would advise against locking the government into any predetermined long-term pathway for phasing down free allocation to EITE producers. Providing clear tests and conditions for the rate of phase-down which align with the government's policy objectives would provide greater investment certainty to firms than a rigid pathway that would have to be abandoned when it became too costly and socially and politically untenable.

17. What impact would changes to the levels of industrial allocation from 2021 have on your investment or business decisions?

No response.

- 18. For each of the seven areas that we have identified as being sources of potential risk, what is your assessment of the level of risk that they create, both now and in the future? Please provide examples or evidence if possible.**

Risk area	Current risk	Future risk
inadequate, false or misleading advice	Yes	Yes
a lack of transparency, monitoring and oversight for trades	Yes	Yes
risks of manipulation of the NZU price	Don't know	Yes
insider trading	Don't know	Yes
money laundering risks	Don't know	Yes
credit and counterparty risks	Don't know	Yes
potential conflicts of interest	Don't know	Yes
other (please explain)		

These issues have arisen in other ETS operating to date. It would be appropriate for the government to establish market oversight mechanisms to prevent or mitigate these risks in the future.

[We are not providing a response to Questions 19-29.]

- 30. Do you agree with the proposal that all coal sold or used from a stockpile be reported, regardless of whether the participant meets the threshold for coal importing or mining in the year the coal was sold or used? If not, why not?**

We agree with the proposal to close the loophole enabling some participants who import or mine coal above the eligibility threshold to avoid paying an ETS obligation on stockpiled coal.

- 31. Do you agree with the proposal that the Government should be able to amend UEFs from previous years? If not, why not?**

We agree with the proposal that the government should be able to amend Unique Emission Factors from previous years if an error is found.

- 32. Do you agree with the proposal that participants should repay the same type of units, rather than the exact same unit? If not, why not?**

We agree with the proposal that participants should have the flexibility to repay units to the Crown using units of the same type, and not require repayment of the exact same units.

[We are not providing a response to Questions 33-37.]

Additional issues

Reserve price at auction

Implementing a reserve price at auction – or a “price floor” – is a powerful tool for managing the risk that emission prices could fall for the wrong reasons and undermine much needed low-emission investments. An auction reserve price is simple to implement and can help avoid very low prices. If private actors are not willing to pay at least the reserve price, the government would stop selling units and the supply to the market would automatically contract.

An auction reserve price mechanism does not provide an investment guarantee. Units in the secondary market can still be traded below the auction reserve price. When emission prices are below the auction reserve price in the secondary market, the auction reserve price simply stops the flow of further auctioned units from the government into the market until demand recovers again and prices rise.

The ETS consultation document suggests that no auction reserve price will be needed in the future because a limit on international purchasing will be sufficient to prevent the kind of price collapse we experienced in the past. However, that assessment neglects other drivers of this risk.

Ideally, ETS prices would respond to signals of the long-term cost of meeting New Zealand’s decarbonisation goals and achieving global climate stabilisation. With today’s information, we generally expect ETS prices to rise over time. For example, modelling prepared for the New Zealand Productivity Commission suggests emission prices could rise to at least NZ\$75 per tonne, possibly over NZ\$200 per tonne, over the next three decades.

However, ETS prices could also fall because of sudden technology breakthroughs or economic downturn. Even though some low-emission investors would lose the returns they had hoped for, this could be an efficient outcome because low ETS prices would reflect true decarbonisation costs. Technological and economic uncertainty imposes a genuine risk on low-emission investments that society cannot avoid.

But there is another scenario in which ETS prices fall while decarbonisation costs remained high. This could arise because of political risk. For example, if a major emissions-intensive industrial producer was to exit the market unexpectedly and it was unclear how the government would respond, or if a political crisis was perceived to threaten the future of the ETS, then emission prices could collapse and efficient low-emission investments could be derailed.

Even when remedies are on the way, it can take time to correct perceptions of weak climate policy intentions. The New Zealand government’s slow response to the impact of low-quality international units in the ETS from 2011 to mid-2015 is a vivid example of this.

With a reserve price, an ETS auction will respond quickly and predictably to unpredictable events that lower prices. A reserve price signals the direction of travel for minimum emission prices and builds confidence for low-emission investors and innovators. It also provides greater assurance to government about the minimum level of auction revenue to expect.

We have three good case studies overseas for the value of a price floor mechanism.

- a. The European Union ETS did not have a price floor for correcting unexpected oversupply and prices dropped because of the global financial crisis, other energy policies and overly generous free allocation. It now has a complex market stability

reserve for this purpose, although that operates with less ease and transparency than a reserve price at auction.

- b. To counteract low EU ETS prices, the UK created its own price floor as a “top up” to the EU ETS. Although this did not add to global mitigation beyond the EU ETS cap, it did drive down coal-fired generation in the UK.
- c. California’s ETS was designed in conjunction with a large suite of emission reduction measures with complex interactions. Its reserve price at auction has ensured that a minimum and rising emission price has been maintained, despite uncertainties about the impact of other measures.

The auction reserve price could be set at the minimum level that any credible global or local modelling suggests is consistent with New Zealand and global goals. The Climate Change Commission could provide independent advice on preferred modelling and an appropriate level. The merits of a price floor warrant cross-party support.

If the market operates in line with expectations, then the price floor has no impact on emission prices. But the price floor usefully guards against price collapse when the market does not go to plan.

[Alignment between the Zero Carbon Bill and the NZ ETS amendments](#)

It will be important to ensure that government decisions taken under the Zero Carbon Bill in 2018 are supportive of changes to the NZ ETS which will occur later through 2019 amendments to the Climate Change Response Act 2002. Two areas of particular concern relate to (a) setting parameters for targets, emission budgets and international purchasing, and (b) institutional arrangements.

When the government sets its long-term emission reduction targets, emission budgets and any restrictions on international purchasing under the Zero Carbon Bill, it may need to build in a contingency emission budget (potentially backed by additional international purchasing) for operation of the NZ ETS cost containment reserve and any fixed price option. If the government wishes to maintain a level of price containment in the NZ ETS, it will need to be prepared to manage the consequences for its targets and preferred level of international purchasing.

Under the Zero Carbon Bill, the government will decide the role of the new Climate Change Commission with regard to the NZ ETS. In our view, the work of the Climate Change Commission with respect to the ETS should focus on the provision of independent technical advice regarding NZ ETS settings for unit supply, price management, international purchasing and free allocation. The Climate Change Commission should also provide advice on target-consistent emission price trajectories to help inform decisions on these settings. Although decisions on NZ ETS settings contain technical elements, they also involve political judgments regarding the relative weighting of a range of considerations, implications, distributional effects and interactions with non-ETS policies. For this reason, the ultimate decision making on these issues should rest with government and be subject to political accountability.

On a related note, we are concerned about recommendation 5.5 from the Productivity Commission in its final *Low Emissions Economy* report that the government establish a new independent market agency to set the quantity caps for NZUs. Even if the government sets the overarching targets, emission budgets, limits on international purchasing and the price trigger for the cost containment reserve, decisions on the NZU quantity caps will still contain political value judgments about relative mitigation effort and cost in ETS versus non-ETS sectors, the implications of the bank of NZUs for meeting long-term targets, and interactions between the ETS and other government policies.

Implications of international rules for carry-over across commitment periods

At this time, the international rules have not been developed for managing the carry-over of surplus domestic emission budgets and internationally traded emission reductions (ITMOs) across commitment periods under the Paris Agreement. Any mismatch between net banking of domestic and/or international units in the NZ ETS and international carry-over could create a taxpayer and/or target liability across commitment periods. Banking should be maintained in the NZ ETS for managing liquidity and price volatility, even as New Zealand approaches target periods involving net zero domestic emissions.

Managing short- versus long-lived gases

Consideration of metrics within an all-sectors ETS

Different greenhouse gases (GHGs) have effects on temperature of different intensities and over different time horizons. These are dealt with within the current ETS by using “metrics” to allow gases to be traded. There is no “correct” metric. The choice depends not only on the fundamental science (which is well understood) but also on society’s expectations about the extent and timing of future impacts from climate change, our ability to adapt to those impacts over time, our level of concern about current relative to future generations, and our ability to compensate future generations for the climate legacy we leave them by making non-climate-related investments (e.g. innovations or long-lived infrastructure). Combined, these non-scientific factors affect our judgement of the importance of near versus long-term climate impacts and hence of the short versus long lived gases. The metric used should reflect all these factors; it will always involve a political judgement.

This choice of metric should be regularly evaluated and reconsidered. It is not hard to change the metric within the ETS – this is not the concern of the international community as long as we report appropriately against our target. For example, if adaptation turns out to be very difficult in the short term (because, for example, local infrastructure is replaced slowly or new institutions need to develop) but is anticipated to be easier in the long term, we might choose to weight short-lived gases more heavily. Changes in societal preferences and expectations could also lead to a shift in the metric chosen. If in contrast methane emissions fall fast because of the introduction of synthetic proteins and/or an effective methane vaccine and this makes achievement of our ETS cap easier than we anticipated (leading to a low ETS price and “too low” an effort to reduce carbon dioxide emissions), then we don’t need to adjust the metric. Our assessment of the relative importance of short- and long-lived climate outcomes has not changed. Instead, we might choose to adjust the overall ambition (i.e. make our target more stringent and tighten the ETS cap) because we set our target on the basis of mitigation cost estimates that were too high. Similarly, if short-run climate impacts are worse than expected we would not necessarily adjust the metric but might increase overall ambition; long-run climate impacts might also be worse.

Consideration of alternative market mechanisms for agricultural methane

In its final *Low Emissions Economy* report, the Productivity Commission suggested either the use of two caps within the ETS or the addition of a methane “quota” system, to address the same issue that metrics address within the current ETS. In theory several approaches could achieve the same balance between efforts to reduce short- and long-lived gases. The economic differences between approaches are analogous to the differences between an emissions tax and an emissions trading system. In an ETS you need to choose one target and one metric (with one

price band⁴) and keep updating them. In a two-basket system (or with one ETS and one quota system), you need to choose and update two quantity caps (and two price bands). With banking and regular revisiting of caps, the different approaches could be closely aligned even under uncertainty.

It may appear that a quota system, akin to that used for fisheries management, which treats methane as a flow pollutant,⁵ would have an advantage. However this is a dangerously misleading analogy.

First, the effect of fishing on the sustainability of a fish stock is very different from the effect of a methane emission on radiative forcing (and hence climate change). Although harvesting fish is not the only human effect on fish stocks (water pollution is another), it has been the major one to date. In contrast methane is only one of many gases affecting radiative forcing at each point in time, and not the most important. Thus managing fish harvest separately from water pollution (but loosely coordinated) can work, but managing methane without close coordination with carbon dioxide management is likely to be highly inefficient. The reduction in radiative forcing in a specific time period (and temperature in later periods) from a methane reduction is a direct substitute for that from a carbon dioxide reduction.

Second there is a natural level for a sustainable fish stock (above the level that yields the largest sustainable flow of fish). Above a certain level of stock even ecological benefits decline sharply. In contrast there is no “natural” level of methane emissions to aim for. Given that radiative forcing is already higher than we would like and set to risk reaching dangerous levels, any reductions in any greenhouse gas emissions are good. The trade-offs are with economic costs of further reductions.

Third, even if a quota system is based on the right to emit a flow of pollution (e.g. a tonne of methane each year), in reality, with uncertainty about the total level of methane that is appropriate, these quota will need to be regularly adjusted (possibly like the shares system in fisheries). Each year what will actually be traded is an annual entitlement to emit (annual catch entitlements in the case of the fishing quota system). This raises important questions about banking, an option that is provided for NZUs. Limiting banking of short-lived pollutants seems unnecessary. The “short-lived” effect still has a very long time frame – more than 50 years of impact at a level significantly greater than carbon dioxide. Banking always provides an environmental benefit because emission reductions have to happen earlier than otherwise. It seems extremely unlikely that so many units would be banked for so long that the flow of emissions in the long term would be higher than desired (especially when the “desired level” is extremely hard to set and will be changing).

Fourth, the use of the methane quota system (MQS) model as proposed by Productivity Commission assumes that all rights to emit non-fossil methane should be allocated to farmers. This was the final decision for fisheries, though a resource rental was seriously considered in order to transfer some benefits from the fisheries to society. This is one possible outcome for methane emissions but should be a deliberate decision based on criteria for assessing free allocation that are applied to all emitters, not hidden in instrument choice.

Whether it is intended or not, because the methane and other GHGs will both have emission unit prices, a “metric” will be implicitly created by both a quota system and an ETS with two caps; it

⁴ The term “price band” refers to a cost containment reserve (price ceiling) and auction reserve price (price floor).

⁵ While it is correct that methane is a flow pollutant, each tonne emitted has significant effects on temperature for over 50 years. In any other environmental context, this effect is more akin to that of a stock.

is the ratio between the two prices. Two caps are no easier to determine than one cap and one “price” or metric. Neither set of instruments can be determined on the basis of science. Any differences between these systems should be thought of in terms of political framing and administrative and institutional complexity. The advantage of using the existing ETS mechanism is that it already exists and operates.

Reflections on setting long-run economy-wide targets

This discussion about relative prices (and hence marginal costs of abatement) for gases within emissions pricing mechanisms should be clearly separated from discussion around setting of long-run targets. For targets, there is a logic for a net-zero (or even net-negative) limit on combined long-lived gases and a separate target for short-lived gases which would need to be regularly revisited but would not necessarily go to zero.

The nature of the target can provide a clear signal that there are different end goals for short-versus long-lived gases. It is not immediately clear what the level of the short-lived gas target should be. A level of zero is still best for the climate in the short and long term. If profitable horticultural options develop for New Zealand and if synthetic meat and milk become good global substitutes for ruminant protein, this will also be optimal. We cannot signal a clear fixed level of long-term methane flow now. The Productivity Commission suggests some considerations for setting this level, but these are both unknown and changing. In particular, the relative costs of reducing carbon dioxide and methane are unknown and will change. Social and economic consequences of reductions in methane will also change over time. In contrast, with a fish stock there is a more logical way to set a sustainable catch that is optimal – it depends primarily on biological factors and to a lesser extent on the economics of the cost of harvesting and how that depends on the fish stock.

The Productivity Commission first argues that it is not practical to use the social cost of carbon/methane as a way to price short versus long-lived emissions but then recognises that “New Zealand’s quantity targets for long and short-lived gases should reflect the relative marginal social costs.” Relative emission prices are relative marginal social costs. Moving to quantities does not simplify the problem. GWP* does not solve this problem because it includes only the time profile of radiative forcing, not the time profile of damage or social discount rates.

Enabling cancellation of units in the ETS and under New Zealand’s target

When the NZ ETS operated under the Kyoto Protocol, if an ETS market participant bought and cancelled an Assigned Amount Unit (AAU), it automatically reduced New Zealand’s assigned amount (target budget). This meant the associated emission reduction could not be double counted by both the participant and the government. This option was used by firms or individuals who wanted to offset their emissions (e.g. under carbon neutrality or travel emission offsetting programmes).

Currently there is no mechanism that enables firms or individuals to cancel NZUs in a way that would both reduce NZ ETS supply and tighten New Zealand’s target (thereby preventing double counting of emission reductions). If an NZU is cancelled, the associated emission reduction under the NZ ETS will be offset by emissions enabled elsewhere under New Zealand’s target. This means that firms cannot cancel NZUs (with commensurate adjustment of New Zealand’s target) for export into other emissions trading systems where they carry international obligations, such as CORSIA for international aviation. It also means cancelling NZUs cannot support firms or individuals with achievement of carbon neutrality or other external offsetting, as they have been traditionally defined.

Enabling such a mechanism would increase the required level of mitigation action within the ETS sectors. That could either increase the ETS price or be accommodated with a higher ETS cap. The latter could pose a fiscal risk to the government which would need to purchase more international units. The government could consider two options:

- Create a mechanism through which the cancellation of an NZU would flow through to New Zealand's target or GHG inventory reporting. A quantity limit could be used to limit ETS price risk.
- Enable firms or individuals to buy international units directly from the government and cancel them, assuming they do not have the option to purchase them directly from the international market.

The second option would be easier to administer and limit ETS price risk. For the voluntary market, an alternative is to move away from the traditional concept of offsetting and enable other forms of branding or recognition that reward extra action to reduce entities' long-term emissions or invest in removals under the ETS cap. Although such actions may not produce a net emissions gain to the atmosphere under the current ETS cap and target, they could enable the government to set more ambitious caps and targets in the future and progress more quickly toward net zero domestic emissions. This may be something that evolves from the market.