

International emissions trading schemes and forestry

Commissioned by B+LNZ and completed by Macaulay Jones

Beef + Lamb New Zealand commissioned research to gain a detailed understanding of how other countries allow offsetting through forestry within their emissions trading schemes (ETS) and wider emissions policies compared to New Zealand.

Key findings

- New Zealand's emissions trading schemes (ETS) settings are unconventional when compared internationally.
- The NZ ETS is the only scheme internationally that includes the entire forestry sector, with all other ETS systems globally only including forestry offsets on a project by project basis.
- New Zealand is the only country, aside from Kazakhstan, to allow 100 percent offsetting by forestry within its ETS. Most other countries have recognised this as a risk and have set policies to restrict it.
- About half of ETS systems globally allow some amount of offsetting (either from forestry or carbon capture) but most only allow 10 percent or less of emissions to be offset. Only Japanese schemes allow more than 10 percent (in addition to New Zealand and Kazakhstan).
- Many of these programmes also have additional qualitative requirements and restrictions, with the goal of ensuring that offsets either do not cause harm to other socio economic and environmental outcomes or go further and deliver co-benefits.
- By allowing for 100 percent offsetting and full participation of forests in the NZ ETS, the carbon market and forestry sectors are intricately linked with one having the ability to vastly impact the other.
- While Kazakhstan theoretically allows 100 percent offsetting, forestry is not in its ETS and individual companies have to apply to offset on a project basis. Up to date information is scarce and no instances of forestry offsetting happening in practice could be found.
- All other countries with ETS have not relied on forestry offsets to the same extent as New Zealand for a variety of reasons including concerns about how 'permanent' the removals are, the detrimental impacts of land use change on local communities, costs of monitoring and implementation, and a strong preference for fossil-fuel based emissions reductions.
- The removal of the price cap on the carbon price in New Zealand in 2019 along with the combination of increasingly high NZU prices and the unique inclusion of the forestry sector in the NZ ETS has resulted in a significant increase in farmland being purchased for the purposes of carbon offsetting.
- Sheep and beef farm purchases have risen from 7,000ha in 2017 to 52,000ha in 2021 (for a total of 175,000ha over the five-year period).
- B+LNZ estimate that this equates to one million less stock units, 1,600 fewer jobs a year, \$170m less spent in communities annually and \$245m less in export revenue annually.
- Environmental groups, the Parliamentary Commissioner for the Environment and the Climate Change Commission are all calling for limits on forestry as they all agree that too much land conversion is happening, with long term potential implications for New Zealand.
- This report's findings show the treatment of forestry in the NZ ETS is an international outlier, which reinforces and supports the need for urgent change.

Background

New Zealand's sheep and beef sector, and the communities it supports, have been particularly affected by land-use change caused by the sale of whole farms to commercial and carbon forestry interests.

B+LNZ has, since the passage of the Zero Carbon Bill in 2019, argued that this change is primarily driven by the settings in New Zealand's ETS.

To highlight the issues with New Zealand's current rules, we commissioned an examination of other countries' ETS policies relating to forests.¹

A second, separate but related, piece of research has also been commissioned to look at potential policy changes to the NZ ETS, which will be released soon.



How emissions trading schemes and wider emissions policies work

Under international climate change agreements, greenhouse gas (GHG) emissions must be reduced to meet emissions reduction targets.

A key method for achieving reductions is **emissions pricing**. There are two dominant forms of emissions pricing: taxing emissions and the creation of a market for emitters to buy and sell the right to emit carbon. By putting a price on emissions, emitters must theoretically value and reduce emissions accordingly for their business. The goal is to incentivise emissions reductions by putting a price on GHG emissions impacting on the atmosphere.

Carbon markets are trading systems in which carbon credits are sold and bought. One tradeable carbon credit equals one tonne of carbon dioxide or an equivalent amount of different GHG reduced, sequestered or avoided. This is based on a national, regional or international policy or regulation.²

There are usually two broad categories of carbon markets: regulatory and voluntary carbon markets.

An **emissions trading scheme** (ETS) is a **regulatory policy framework** that prices GHG emissions and requires certain companies/individuals to pay for their emissions included within the scheme.

An ETS is also known as a 'cap and trade' scheme because participants can trade their allocated amount of carbon once a cap has been put on the total of permitted GHG within the scheme. The primary objective of an ETS is to reduce emissions.

Under an ETS it doesn't matter where the GHG reductions come from, only that a reduction occurs. In theory, the emissions reductions within an ETS will occur where it is cheapest to do so. Emitters tend to buy units from the government but can also buy units from a 'secondary market'³ where the government allows this. The price is theoretically driven by what emitters are willing to pay for the right to emit (which is also determined by how many units are available in the market).

Depending on the country and the configuration of their ETS, GHG emitters can either:

- reduce their GHGs in line with their allocation;
- purchase more units from a participant that has excess units as they have reduced their emissions by more than requested;
- purchase units from the government.

In New Zealand and some other countries, companies can also:

- offset some of their GHG emissions using forestry (carbon sequestration)
- some other countries theoretically allow for carbon capture offsetting and while there are other carbon capture and storage (CCS) technologies under development, none of these are included within the NZ ETS nor able to be implemented currently at scale anywhere.

A **voluntary market** is similar to the above but the issuance, buying or selling of carbon credits is done on a voluntary basis. This means there is scope for companies globally to offset their emissions through voluntary carbon sequestration systems. The price paid for this sequestration is not directly linked to the carbon price in that country (if there is a carbon price).

¹The research was based on a desktop analysis of available information of other country's ETS and forestry policies at a high-level

²<https://icapcarbonaction.com/en/publications/emissions-trading-practice-handbook-design-and-implementation-2nd-edition>

³www.c2es.org/wp-content/uploads/2016/04/secondary-carbon-markets.pdf



What the research found

Offsetting within carbon markets

The research found that offsetting varies significantly in carbon pricing schemes globally.

Offset or credit limit	ETS name or jurisdiction (alphabetical)
0%	European Union ETS ⁴ ; Germany; Massachusetts (USA); Switzerland; United Kingdom ETS
5% or less	Beijing (CN); California (USA); China ETS; North Carolina (USA); Republic of Korea; RGGI (USA); Shanghai (CN); Washington (USA)
10% or less	Chongqing (CN); Fujian (CN); Guangdong (CN); Hubei (CN); Oregon (USA); Mexico; Taiwan (CN); Tianjin (CN); Quebec (CAN)
33% or less	Saitama (JPN); Tokyo (JPN)
100%	Kazakhstan; New Zealand ETS
Amendments under consideration	Nova Scotia (CAN) – currently no offsets included in ETS
ETS still under development – position unclear	Brazil; Chile; Colombia (USA); Finland; Indonesia; Japan ETS; Malaysia; Montenegro; New Mexico (USA); Pakistan; Philippines; New York (USA); Pennsylvania (USA); Sakhalin (RUS); TCI-P; Thailand; Ukraine; Vietnam; Turkey

About half of ETS systems globally allow some amount of offsetting (mostly from forest-based projects) but most only allow 10 percent or less of total emissions to be offset with tree establishment or management. Additionally, many of these programmes have additional qualitative requirements with the goal of ensuring that forest offsets deliver co-benefits.

Most other systems currently prohibit offsetting, though some countries may allow it with quantitative limitations.

Other countries have concerns about the use of offsets, especially forestry offsets. There are several reasons why they have sought to limit their use.

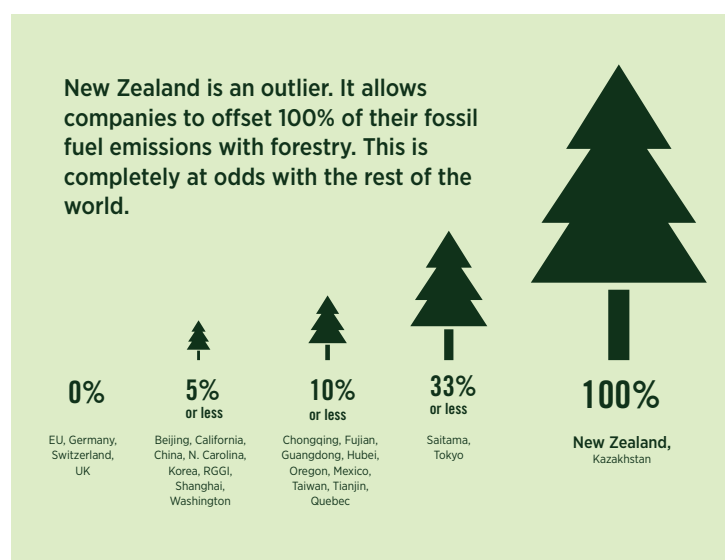
Firstly, offsets may allow emitting sectors an easier way out of their obligations as compared to taking direct action to decarbonise. This is because it tends to be less expensive to plant trees than it is to change fossil fuel reliant practices, products, or processes.

Secondly, countries are particularly concerned about forestry offsets since they can be hard to measure, verify, and confirm environmental integrity. This is because forest projects may not always be additional. That is, a project might have gone ahead anyway even without the provision of a carbon credit. There are also concerns about forest-based carbon removals being permanent since trees can burn or be cut down, releasing the sequestered carbon. In either case of non-additionality or impermanence, the offset provision will increase emissions overall.⁵

Other countries' concerns have been managed by either not allowing offsets at all or by setting limits on which and how many offsets may be used by polluting entities. They have managed the risks posed by limiting their use in carbon markets, requiring additional social benefits to be demonstrated along with emissions removals, and seeking Ministerial approval for exotic forest projects among other actions.

The NZ ETS is an isolated example of a regulatory (and functioning) emissions trading scheme that does not place any conditions or limits on the use of eligible carbon offset units, especially from forests. This inclusion has resulted in offsetting representing a core component of the NZ ETS.

By allowing for 100 percent offsetting and full participation of forests in the NZ ETS, the carbon market and forestry sectors are intricately linked with each having the ability to vastly impact the other.



⁴Note that the EU ETS previously allowed limited amounts of offsetting but have ramped this down to 0 over time. https://www.ieta.org/resources/Reports/The%20Evolving%20Voluntary%20Carbon%20Market_web.pdf

Offsetting outside of carbon markets

Outside of regulatory carbon pricing systems there is scope for companies globally to offset their emissions through voluntary carbon sequestration systems. The price paid for this sequestration is not directly linked to the carbon price in that country (if there is a carbon price) and is generally a lot lower than prevailing carbon prices.

Voluntary carbon markets are a contentious area globally because of the pressure they can take off emissions reduction, but also because of concerns about their integrity. There is growing scrutiny of how these schemes operate and countries are looking to put limits around them.

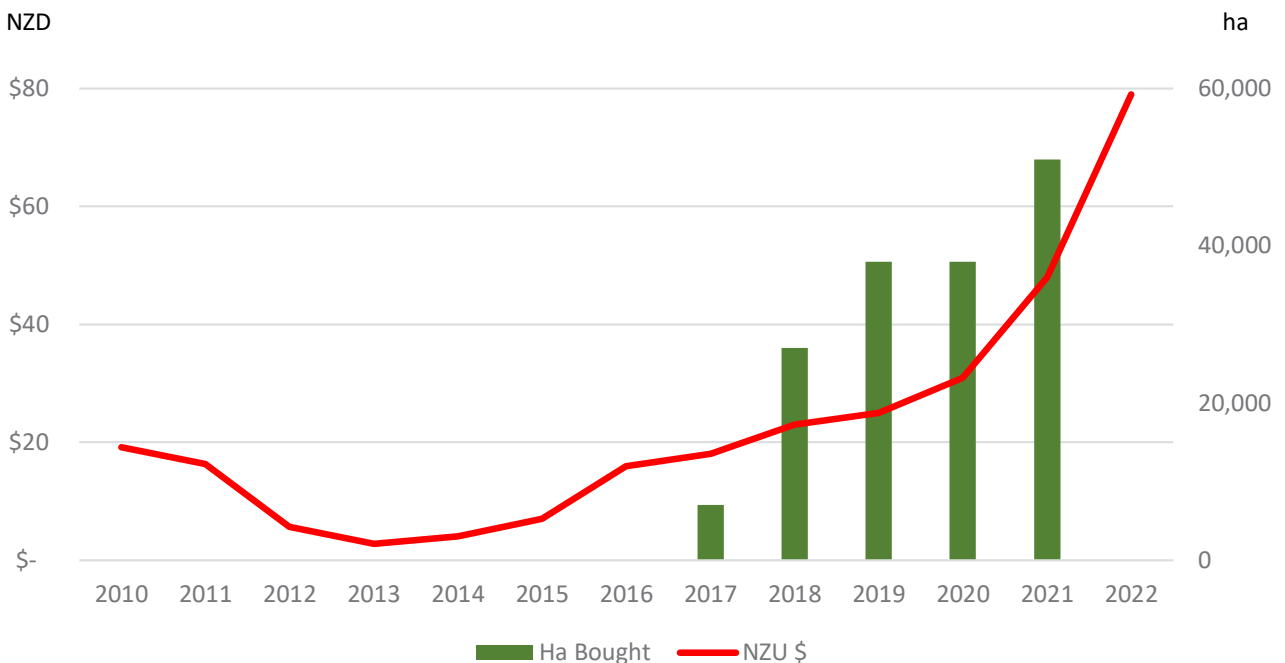
Current New Zealand policy settings are leading to significant land use change

Following the removal of the price cap on the carbon price in New Zealand in 2019, the combination of increasingly high NZU prices and the unique inclusion of the forestry sector in the NZ ETS has resulted in a significant increase in land being purchased for the primary purposes of carbon offsetting (see figure 1). This is mainly because of the significant difference between the return on investment from carbon forestry as compared to other land uses (see figure 2).

Recent planting rates have been the highest seen since the early 1990s (around 55,000ha/yr) and government modelling indicates that reforms made to the NZ ETS (as recommended by the Climate Change Commission) encouraging the carbon unit price to increase further could produce 645,000 hectares of new exotic forest in the next decade if changes to the current settings are not made⁶.



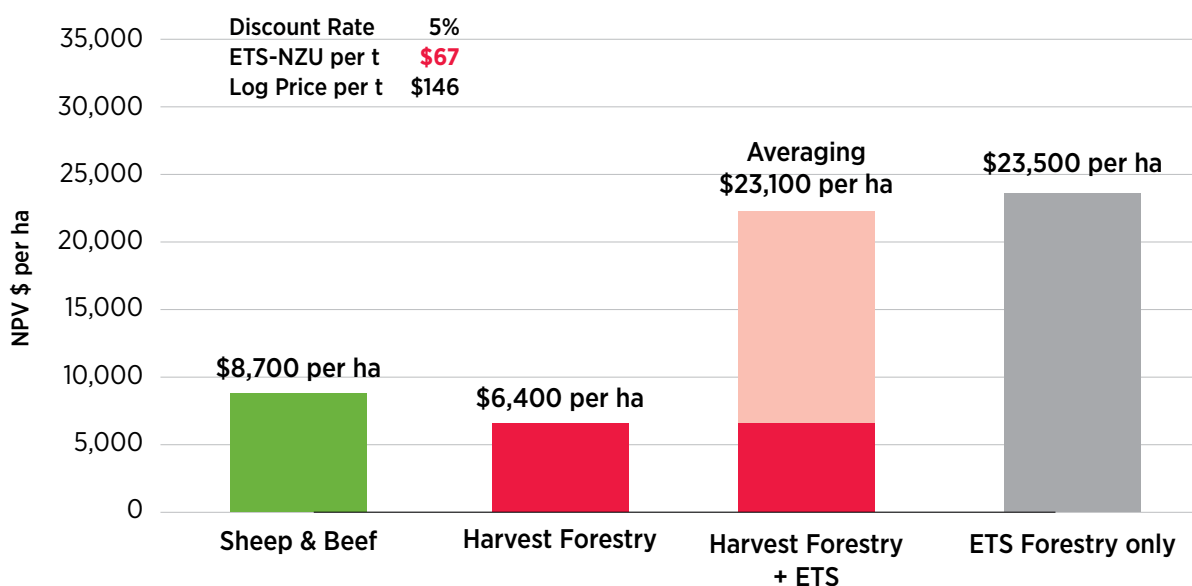
Figure 1: NZU vs ha of sheep and beef farms bought for conversion into forestry or carbon forestry



Source: B+LNZ Economic Service & Insights

⁶Perry et. al (2022)

Figure 2: Farm Class 4 NI Hill Country
EBITRm Net Present Value (NPV) 30 years - \$ per ha



Source: B+LNZ Economic Service & Insights

This rate of planting is deeply concerning to B+LNZ and our farmers. Carbon farming provides fewer and less stable rural jobs as well as less ongoing spend within rural communities than sheep and beef farming or commercial forestry.⁷

Other parties have also raised concerns, such as the Climate Change Commission and Parliamentary Commissioner for the Environment, who have noted that the ability to offset 100 percent of emissions means there is less pressure to actually reduce emissions. The Climate Change Commission in its latest report strongly stated the need for urgent limits otherwise New Zealand may not meet its 2050 net zero targets and the ETS may collapse in the 2030s from the scheme being flooded by too many forestry offsets.

Environmental groups like Forest and Bird NZ and Fish & Game have highlighted the risks these types of increased pine plantings can pose such as increased risk of fire, pest incursion and on water quality and usage.⁸

Putting it right

Relative to international ETS policies that have qualitative and quantitative limits on the use of offsets in place, New Zealand regulators currently have little to no ability to control whether increasing NZU prices result in reductions in gross greenhouse gases or simply increased use of forest offsets. This will not allow the NZ ETS to function as intended as a key means of ensuring emissions reductions occur. This contrasts with the advice from International Carbon Action Partnership:

“To protect the integrity of the ETS, any removal methodology will need to ensure that carbon will be permanently stored and negative impacts on biodiversity and land use have to be avoided. And finally, [emissions removals] must not jeopardise the decarbonization of the global economy, especially through ETSs.”⁹

To align the NZ ETS with other schemes internationally, there needs to be significant changes to how forests are used in the scheme. Because New Zealand’s ETS is so different from other countries, there are no existing guides to work from to amend our ETS.

It was not within the scope of the report to identify specific options for how the NZ ETS could be changed. However, B+LNZ has commissioned additional research on what options could be put on the table. These will be released soon.

The Climate Change Commission has put forward a wide range of options in their recent advice on the 2nd Emissions Budget Period.¹⁰ Overall, changes could include limits to the total amount of forests able to be entered into the scheme or limits to the amount of units emitters can use to meet their obligations.

⁷MPI and MfE (2022). Managing exotic afforestation incentives: Proposals to change forestry settings in the NZ Emissions Trading Scheme. Wellington: MPI.

⁸Baigent-Mercer, D. (2022). Submission on Managing exotic afforestation incentives by changing the forestry settings in the NZ Emissions Trading Scheme from the Royal Forest & Bird Protection Society of New Zealand Inc. <https://www.forestandbird.org.nz/sites/default/files/2022-05/Forest%20and%20Bird%20Submission%20on%20Managing%20exotic%20afforestation%20incentives%20April%2029%202022%20SUBMITTED%20PDF.pdf>

⁹<https://icapcarbonaction.com/en/publications/emissions-trading-worldwide-2022-icap-status-report>

¹⁰See section on Emissions Pricing in <https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/advice-for-preparation-of-emissions-reduction-plans/2023-draft-advice-to-inform-the-strategic-direction-of-the-governments-second-emissions-reduction-plan-april-2023/full-report/>



B+LNZ is not anti-forestry, farmers can be part of the solution

B+LNZ is not against commercial forestry and sees a place for some carbon offsetting. But we are very concerned about the volume of carbon offsetting. Some limits are needed to slow the rapidly increasing amount of sheep and beef farmland being sold purely for carbon offsetting.

We believe there is a balance to be found. Our farmers are playing an important role in combating climate change by sequestering carbon in their trees to reduce the amount of carbon dioxide in the atmosphere. This is achieved by the integration of a variety of forests and trees within farm systems.

There is strong farmer interest in the opportunities for the further integration of trees within their farms through a mixture of exotic pines and natives. This is a win-win and could go a long way towards meeting New Zealand's climate change commitments. Trees have multiple benefits on farms, including erosion control, habitat creation, shade and shelter for livestock as well as carbon removal.

There is also significant Māori agribusiness interest in forestry and carbon farming. It will be important that any potential changes to the NZ ETS are done in partnership with industry groups, Māori landowners, and iwi/hapū. Despite farmers' and Māori landowners important role in addressing climate change, they are not receiving recognition for all their sequestration efforts.

Existing Māori landowners and farmers must be able to access opportunities from exotic and native trees on their farms and receive full recognition for the real sequestration occurring. There must also be more research carried out on sequestration rates.¹⁰

More recognition and support for farmers who are increasing the integration of trees, native and exotic, on their farms, would lead to more resilient farm systems and greater carbon removals.

Reforms to the ETS could help to direct significant capital flows to projects that not only sequester carbon but also achieve co-benefits. Such co-benefits are not necessarily limited to environmental outcomes such as biodiversity and climate adaptation outcomes.

This would allow farmers to continue to support rural communities through job opportunities and local spending.

¹⁰Note that the Government has announced funding for some of this work via its Max Carbon Programme.