

Planting out our rural communities?

What is wrong with forestry offsets in the ETS
and what needs to be done

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Introduction

The face of provincial New Zealand is set to change, perhaps for ever. This change is being driven not by shifts in the balance between rural and urban land use, as might be expected. Rather, it is the result of unbridled growth in exotic forestry.

In response to the current settings of New Zealand's Emissions Trading Scheme (ETS), farmland across the country is increasingly being planted in pine and other exotic species to generate carbon credits that can be traded for value in the ETS. This trend will increase rapidly from this year if policy changes are not made with urgency.

The widespread establishment of exotic forests and in particular, permanent exotic forests, is problematic because it:

- i. **Displaces productive land use.** The increasing financial incentive of exotic forests is displacing the productive land uses that rural economies depend on, and that contribute so much to both the cultural fabric of New Zealand and the national economy.
- ii. **Undermines long-term climate objectives.** High levels of exotic forestry planting each year delays steps to reduce gross global warming-inducing carbon emissions because these forests provide emitters with a relatively cheap way to offset their liabilities without taking action to reduce their emissions for the long-term.
- iii. **Raises questions about the equity and integrity of the ETS.** Rather than confronting the emissions-reduction challenge faced by the global community, New Zealand's ETS settings allow this generation to 'plant, offset and forget', leaving the challenge to the future generations. ETS forestry settings create a weak link between who pays for emissions reductions, and who benefits from them.
- iv. **Puts the ETS out of sync with offshore schemes.** In its zero-restrictions approach to the use of forestry offsets, New Zealand is an outlier, and this will limit our country's ability to participate in the global carbon-trading market.
- v. **Increases environmental risks.** Permanent exotic forests present additional environmental risks, such as debris, fire, disease, pests, and the spread of wilding pines.

Forestry offsets are a key component of a scheme designed to enable our country to meet emissions-reduction targets set in legislation.¹ But they are a tool that must be managed in a way that enables sustainable and equitable social, economic, and environmental outcomes, for generations to come.

This report proposes policy options that will allow strategic management of forestry offsets within the ETS, and that provide a pathway to achieving New Zealand's wider climate goals, while ensuring land is put to best use, for the long-term benefit of all New Zealanders.

The focus of the report is on addressing permanent exotic forestry through changes to the permanent forestry category of the ETS, as the area with the most skewed incentives and therefore the greatest need for reform. Though it is stressed that, in the future, further changes to the ETS that target other categories are likely to be required.

The report has been prepared for Beef + Lamb New Zealand (B+LNZ) by MC and is designed to act as the starting point for a national discussion on the role forestry offsets play in our country's climate strategy.

About MC

With over 100 years' experience working with both the public and private sectors, MC is a large national law firm with preeminent expertise in public interest litigation, public policy, as well as local government and regulatory law. MC knows how to help both the public and private sectors reach and understand one another.

1. To be net zero for non-biogenic emissions by 2050, and 10% less by 2030 and 24-47% less by 2050 for biogenic emissions relative to 2017 emissions.

What is the problem?

The way incentives for forestry offsets in the ETS are structured and managed can only lead to excessive afforestation, particularly in the form of permanent exotic forestry. The level of afforestation likely to occur based on current settings is not a sustainable means for New Zealand to reach its emissions-reduction goals nor to provide for resilient rural communities and physical environments.

Role of forestry in the ETS

Under New Zealand's current climate strategy, the establishment of trees that can remove carbon from the atmosphere as they grow is a key tool for achieving emissions-reductions targets.² These trees can help offset continued carbon emissions in other parts of the economy. The strategy relies on these forestry offsets, as a low-cost emissions-reduction option, to bring down New Zealand's net emissions through to 2050.

Box 1: Gross versus Net emissions

Definitions

Gross emissions

The term "gross emissions" refers to New Zealand's total emissions from the agriculture, energy, industrial processes and product use, and waste sectors.

Net emissions

"Net emissions" means gross emissions (including all activities above), minus any emissions removal activities from forestry, or other carbon sinks.

New Zealand Units (NZUs) are a transferable asset which represents a right to emit one tonne of carbon dioxide equivalent (CO₂-e). NZUs are issued by the Government for removal activities, including the removal of carbon from the atmosphere by foresters. The scheme allows forestry owners to generate revenue by selling their NZUs to emitters throughout the economy.

Establishing and growing exotic forests, such as *Pinus radiata* forest, delivers removals at relatively low cost: estimated to be between \$25-\$50 per tonne of CO₂-e. Whereas opportunities to reduce long-lived gas emissions in other sectors cost \$100 per tonne of CO₂-e or more.³

The market price of NZUs peaked at \$88.50 per NZU⁴ in November 2022; a level which provides financial returns to foresters, but not quite at the level to incentivise gross emission reductions. This means that the ETS is structured to incentivise rapid afforestation and offsetting before incentivising any gross emission reductions.

The strong orientation of the ETS towards one sector means that careful management is required to maintain balance with the rest of the economy. This is where current ETS settings have come unstuck. Recent policy changes – namely, the removal of the 'stock change accounting' and revitalisation of the Permanent Forestry Category within the ETS – have created excessive incentives for afforestation and seem certain to result in negative consequences and perverse outcomes, many of which have been brought to the Government's attention by advisors.

2. CCC (2023).

3. Estimated taken from CCC (2023).

4. See [CommTrade \(2023\)](#). NZU price history, as of 14 November 2022.

An international outlier

The absence of any qualitative or quantitative restrictions on the use of forestry offsets is a defining characteristic of the New Zealand ETS and makes our scheme an outlier in international terms. As shown by **Table 1**, other than Kazakhstan, no other ETS in the world allows such unfettered use of tradable units derived from forestry to offset carbon emissions. Even Kazakhstan, however, has control measures in place, whereby offsetting projects must be approved by the Ministry of Ecology, Geology and Natural Resources before being awarded tradable units.⁵

Table 1: National and regional emissions trading schemes and their offset limits⁶

Offset or Credit limit	ETS Name or Jurisdiction (Alphabetical)
0%	European Union ETS; Germany; Massachusetts (USA); Switzerland; United Kingdom ETS;
5% or less	Beijing (CN); California (USA); China ETS; North Carolina (USA); Republic of Korea; Regional Greenhouse Gas Initiative (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
Limits under consideration or development	Chile; Colombia (USA); Finland; Indonesia; Japan ETS; Malaysia; Montenegro; New Mexico (USA); Pakistan; Philippines; New York (USA); Nova Scotia (CAN); Pennsylvania (USA); Sakhalin (RUS); Transportation & Climate Initiative Program; Thailand; Ukraine; Vietnam.

Further, most national, and regional ETSs include a strong focus on gross emissions reduction. Typically, participants are restricted to offsetting no more than 10% of their gross emissions surrender obligations. In contrast, the primary purpose of the New Zealand ETS is to achieve net emissions reductions, allowing unlimited use of forestry units to meet surrender obligations.

New Zealand's Permanent Forestry category

New Zealand introduced the Permanent Forestry category in 2020, as a replacement for the Permanent Forest Sinks Initiative (PFSI) and came into effect from 1 January 2023. The PFSI was established in 2006, prior to the ETS' inception, and required landowners to sign a covenant agreement with the Crown which included restricted harvest and other forest management conditions on forested land established after 1989. Participants had the right to terminate at any time after 50 years (with surrender of emissions units received while in the scheme). Both natives and exotic plantings were able to be entered.

The Permanent Forestry category in the ETS allows landowners to establish any eligible forest with the expectation that the trees will not be harvested prior to age 50. Additionally, if the forest is initially established with exotic species, the expectation is that native vegetation will grow up within the exotic plantings and, over the long term, give way to a permanent indigenous forest.

This category allows a pine tree owner to enter and for landowners to benefit from the very high carbon credits for pines for 50 years until it transitions to native vegetation (this compares to the 'averaging accounting' category which only pays carbon credits for 16 years).

5. ICAP (2022).

6. ICAP (2022).

Super-charged benefits

The introduction of the Permanent Forestry Category takes the potential benefits for forest owners under the ETS and super-charges them.

For foresters, the appeal of exotic species lies in rapid growth and low establishment costs – they capture carbon (generating NZUs) more quickly than indigenous species, at less cost.

With permanent exotic forestry, NZUs are earned for as long as the forest continues to capture carbon (for upwards of 70-100 years).

In contrast, owners of production exotic forests earn NZUs only until the average carbon storage rates of their trees (at around 16 years for *Pinus radiata*) but do not need to pay for the carbon released at harvest (as long as the forest is replanted).⁷

Further, permanent forests are far more profitable as they require none of the infrastructure and costs required for pruning and harvesting – in particular, roads – that production forestry requires.

Other forms of forestry therefore cannot compete with the economics of permanent exotic forestry: over a 50-year timeframe, an average permanent pine forest in the New Zealand ETS will earn 7.5 times more NZUs than an equivalent area of indigenous forest.⁸

As Figure 1 illustrates, at recent NZU prices of around \$70, MPI estimates an economic return of over \$35,000 per hectare (ha) for permanent exotic forests, compared with \$20,000 per ha for production forestry with integrated carbon forestry.

Figure 1: comparison of economic returns for permanent exotic forestry, production forestry, and sheep and beef farming over 50 years

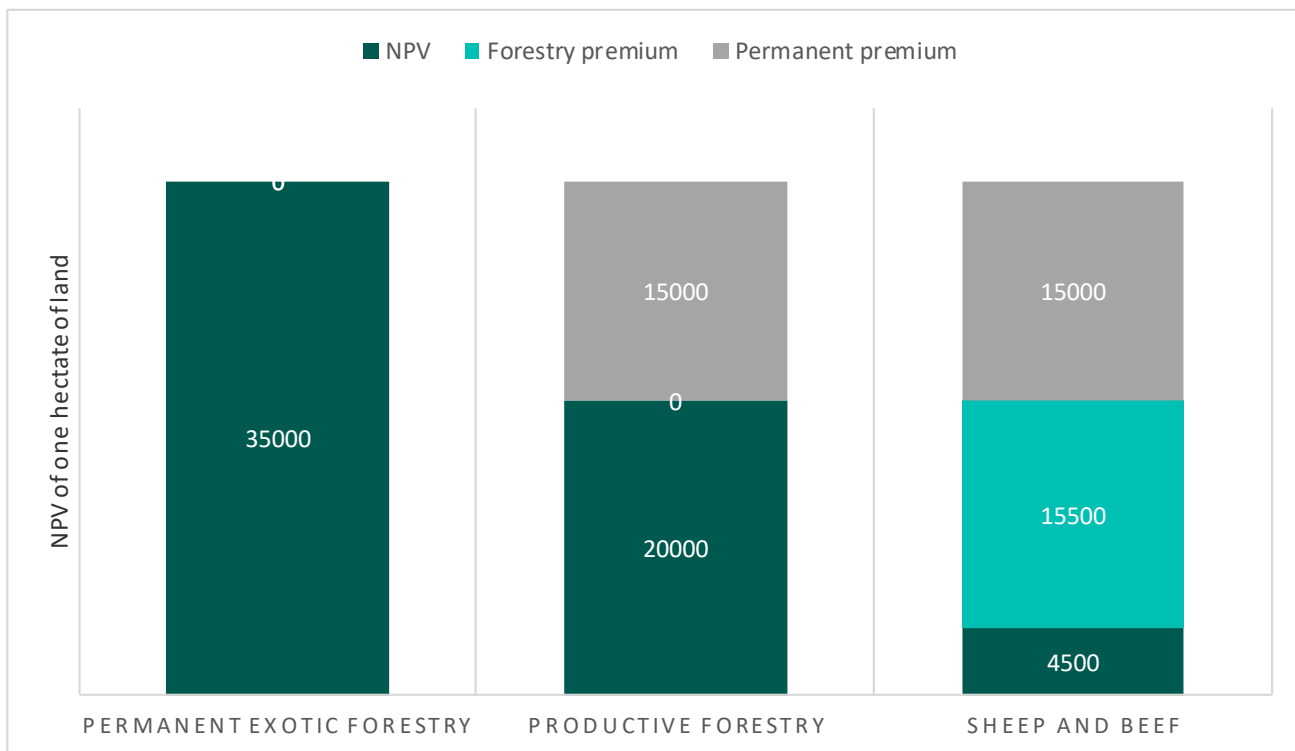


Figure 1 also shows that the gap in economic return is even more marked in the case of sheep and beef farming (forestry's main competing land use), with a 'modelled' extensive sheep and beef farm generating around \$4,500 per ha.⁹

Beef + Lamb New Zealand analysis shows similar differences between the different land uses but not to the same extent as the MPI analysis (see Table 2 below).

7. MPI (2022C).

8. MPI (2022B).

9. MPI (2022B).

Table 2: B+LNZ estimates of returns per hectare over 30 years for different land uses

	Sheep Beef Farm	Production Forestry	Production Forestry + ETS (av)	Permanent Forest + ETS
NPV 30 years per ha	\$8,700	\$4,900	\$21,300	\$23,100

Note that in B+LNZ analysis, Production forestry NPV is valued at \$4,900 per ha and is below the Hill Country Sheep and Beef Farm NPV of \$8,700 per ha.

Surge in afforestation

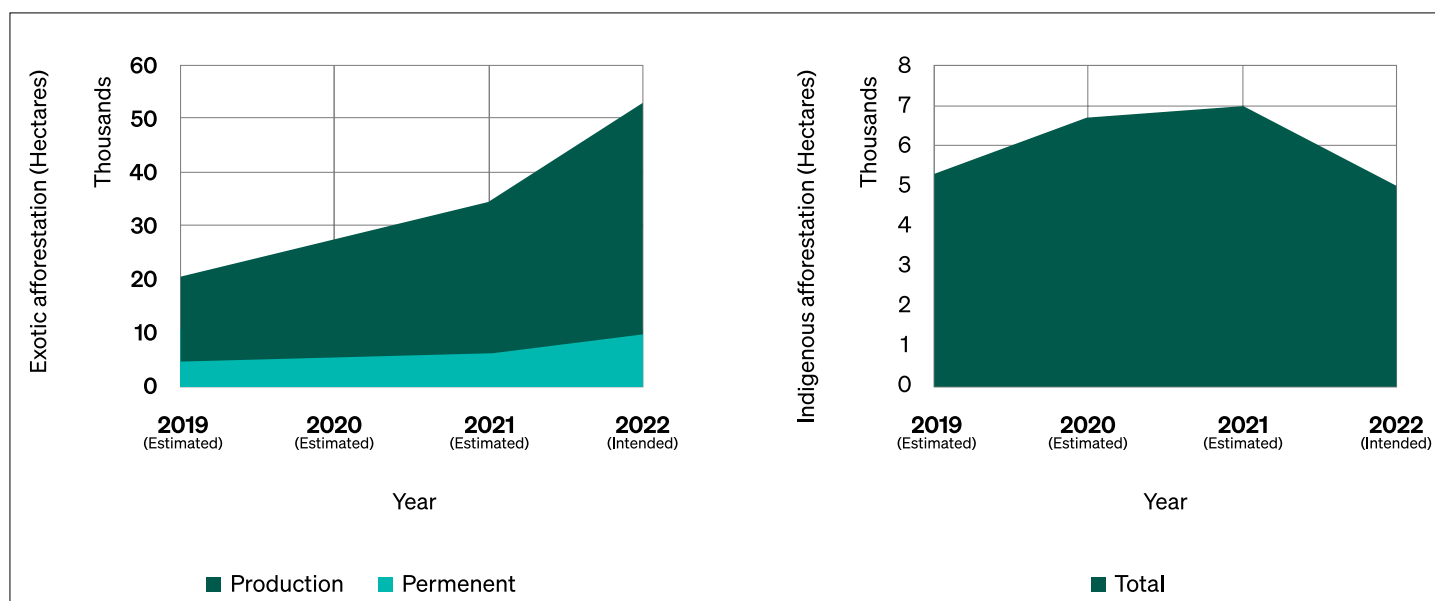
Since 2009, the New Zealand ETS had a fixed price option which acted as a de facto carbon price ceiling. This allowed emitters to pay \$35 to the Government, instead of purchasing NZUs from the secondary market.

In 2019 the fixed-price option was removed to allow the carbon price to increase. The expectation was that this would start to drive a decrease in emissions, but what it has generated instead is a surge in supply to offset emissions.

Most of the initial afforestation activity has been in production exotic forests. In 2022, MPI estimates that over 50,000 ha of production exotic forests was established, up from 20,000 in 2019.

For now, the increase in establishment of permanent exotic forests has been more modest, but it is still significant. In 2021, almost 35% of farm sales occurring were intended to be used for permanent forest purposes.¹⁰ This direction aligns with MPI's 2021 Survey of Afforestation Intentions (see Figure 2), which indicated that in 2022 10,200 ha of new permanent exotic forests were established, an increase from 5,300 ha in 2019.

Figure 2 Afforestation intentions, 2021



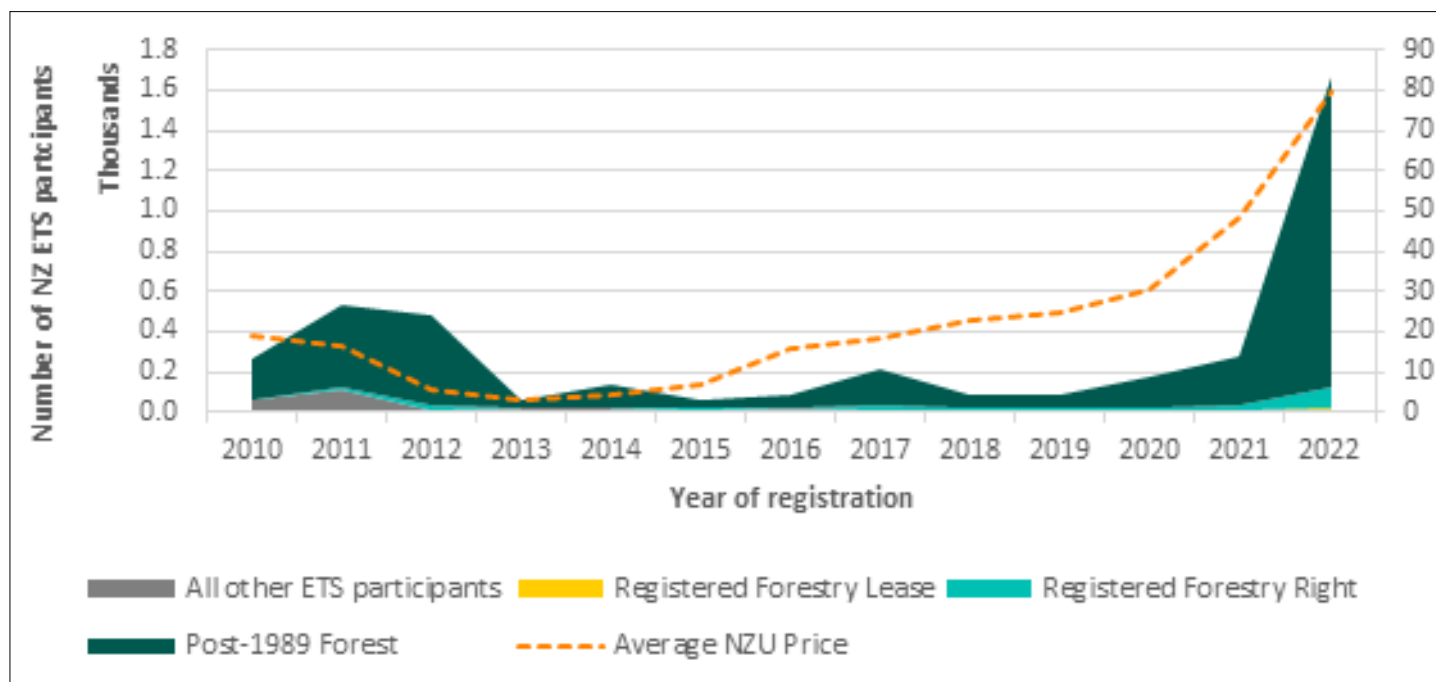
The same survey points to much lower volumes of indigenous afforestation – only around 5,000 ha in 2022, having fallen from around 6,500 ha in 2020, and 7,000 ha in 2021.¹¹

Meanwhile, over the same period, the number of registrations in the ETS has increased dramatically, as landowners responded to the change in policy settings. Figure 3 shows that, from 2021-2022, there was a more than five-fold increase in registrations, doubling the total number since the inception of the ETS. This increase coincides with rapid increases in NZU prices.

10. Beef + Lamb New Zealand (2022).

11. MPI (2022A).

Figure 3: ETS registrations and average NZU prices



Critically, while the number of new plantings in production exotic forestry has exceeded those from permanent exotic forestry in recent years, the trend is expected to reverse in future.

In a 2022 Cabinet paper, MPI estimates that the ETS could drive upwards of 645,000 ha of new exotic afforestation between 2021 and 2030. Permanent exotic forestry is expected to account for over half of this new afforestation.¹² To put this in context, growth in permanent exotic afforestation of 350,000 ha over the decade would represent an average annual afforestation rate of 35,000 ha per year; more than three times higher than the indicative rate in 2022 (which, as noted above, was already a significant jump on previous years).

This potential annual rate of afforestation is also much higher than the 25,000 ha of exotic afforestation that the Climate Change Commission estimates is needed to meet New Zealand’s net zero targets.¹³

12. MPI (2022A).

13. CCC (2021).

An increase in overseas investment in forests

Increasing overseas investment in forests for carbon removal activities can be beneficial in terms of addressing climate change and conserving natural ecosystems. However, there are also several associated problems and concerns with overseas investments in New Zealand forestry. Most notably:

- **Land tenure and rights.** The acquisition of large tracts of land for forestation may conflict with local communities' land rights. Communities could become displaced or lose access to land that they have traditionally used for livelihood.
- **Monoculture plantations:** the skewed incentives for permanent exotic forestry can incentivise projects that focus on monoculture tree plantations rather than re-establishing natural forests.

Beef + Lamb New Zealand has conducted further analysis on the OIO approvals for farmland purchases for afforestation. This is summarised in **Table 3**. Note that OIO approvals for existing forest purchases were excluded from this analysis.

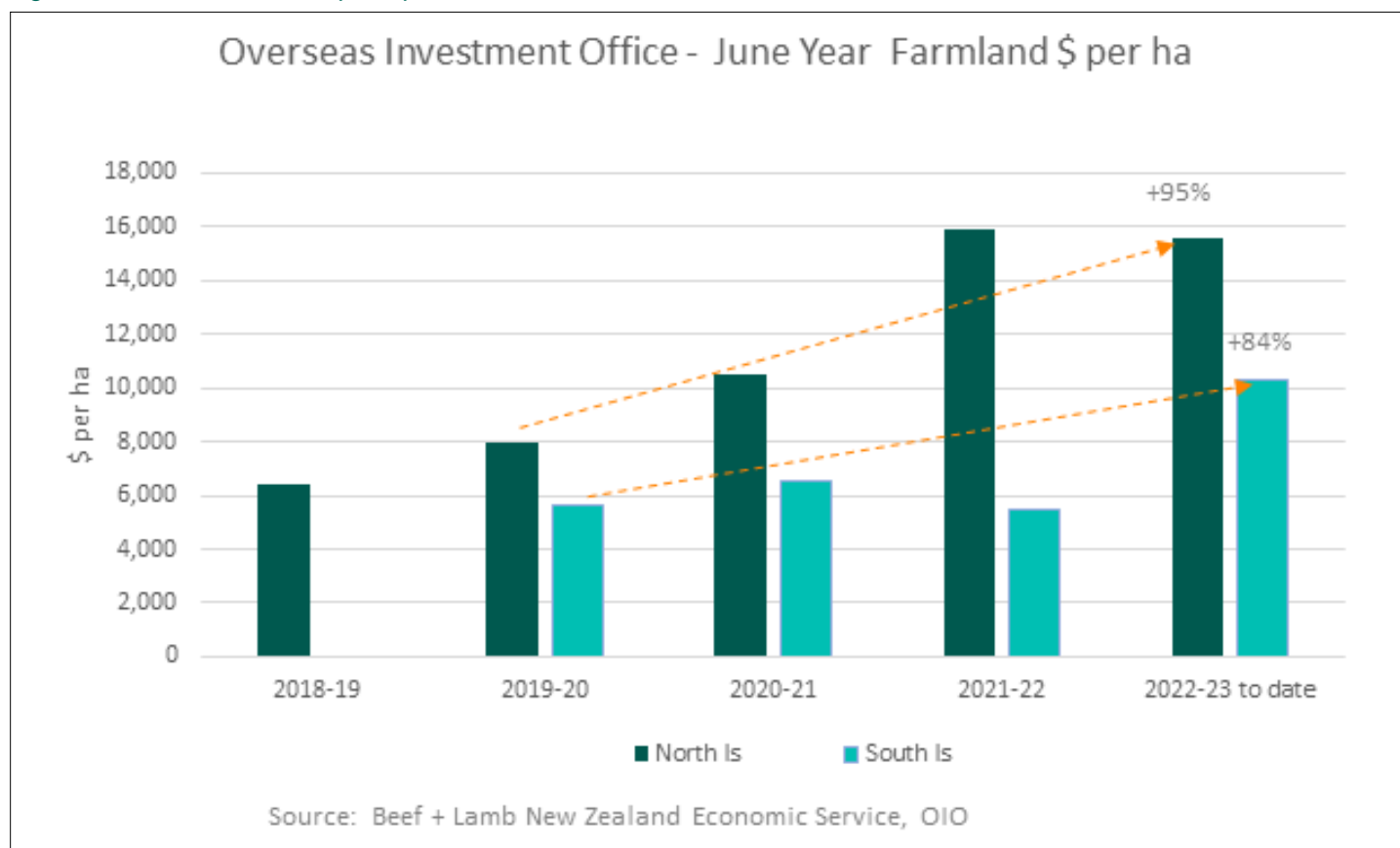
Table 3: Summary of OIO farmland purchases for afforestation.

Summary of Area Approved by Overseas Investment Office for New Forest					
Survey Region	June Year hectares				to date
	2018-19	2019-20	2020-21	2021-22	2022-23
Northland	1,175	235	809	1,017	413
Waikato-BoP	650	500	3,711	963	580
Gisborne	0	680	0	2,539	5,669
Hawkes Bay	1,185	3,753	6,076	1,345	2,023
Wairarapa	1,573	2,076	517	2,288	1,631
Taranaki/Manawatu	1,000	3,500	0	0	0
North Island	5,583	10,744	11,113	8,152	10,316
Nelson-West Coast	0	0	0	0	0
Marlborough	0	1,690	5,300	0	0
Canterbury	0	0	0	1,560	413
Otago	0	1,074	0	3,858	310
Southland	0	0	2,145	1,275	1,988
South Island	0	2,764	7,445	6,696	2,711
Confidential/unassigned				859	
New Zealand	5,583	13,508	18,558	14,848	13,027
Cumulative North Island	5,583	16,327	27,440	35,592	45,908
Cumulative South Island	0	2,764	10,209	16,905	19,616
Cumulative Confidential/unassigned	0	0	0	859	859
Cumulative New Zealand	5,583	19,091	37,649	53,356	66,383

Source Beef + Lamb New Zealand Economic Service & Insights, Overseas Investment Office (OIO)

Some of the OIO approvals state delayed planting times of up to two years until tree seedling stock is available. Further analysis of OIO whole farm sales for afforestation that disclosed the purchase price is summarised in Figure 4 on a purchase price per hectare basis.

Figure 4 Farmland Purchase price per hectare



Note for the North Island from 2019-20 to 2022-23 (April 2023) OIO farmland purchase prices per hectare increased 95% from \$8,000 per hectare to \$15,600 per hectare. Likewise South Island OIO farmland purchase prices have increased 84% from \$5,600 per hectare to \$10,300 per hectare.

Table 3 in conjunction with Figure 4 shows the correlated impact that the increasing NZU price has had on farmland purchase prices for afforestation. While the OIO approved purchases were not the whole market, the OIO approved purchases of farmland to afforest had to compete with the domestic market and vice versa. Hence the OIO data source reflects the farmland purchase price trend for afforestation land.

What is significant is that these increased afforestation land prices also will increase the rateable value of surrounding sheep and beef farms. Rateable land values are revised every three years by District Councils reflecting land price sale trends. Depending on how District Councils set their rural rates charge, afforestation land prices have the potential to increase rates for sheep and beef farms on similar country. For some farm businesses, the increase in rates will make businesses less likely to be profitable. This further increases the incentive and likelihood of sale and conversion of sheep and beef land into permanent carbon forestry.

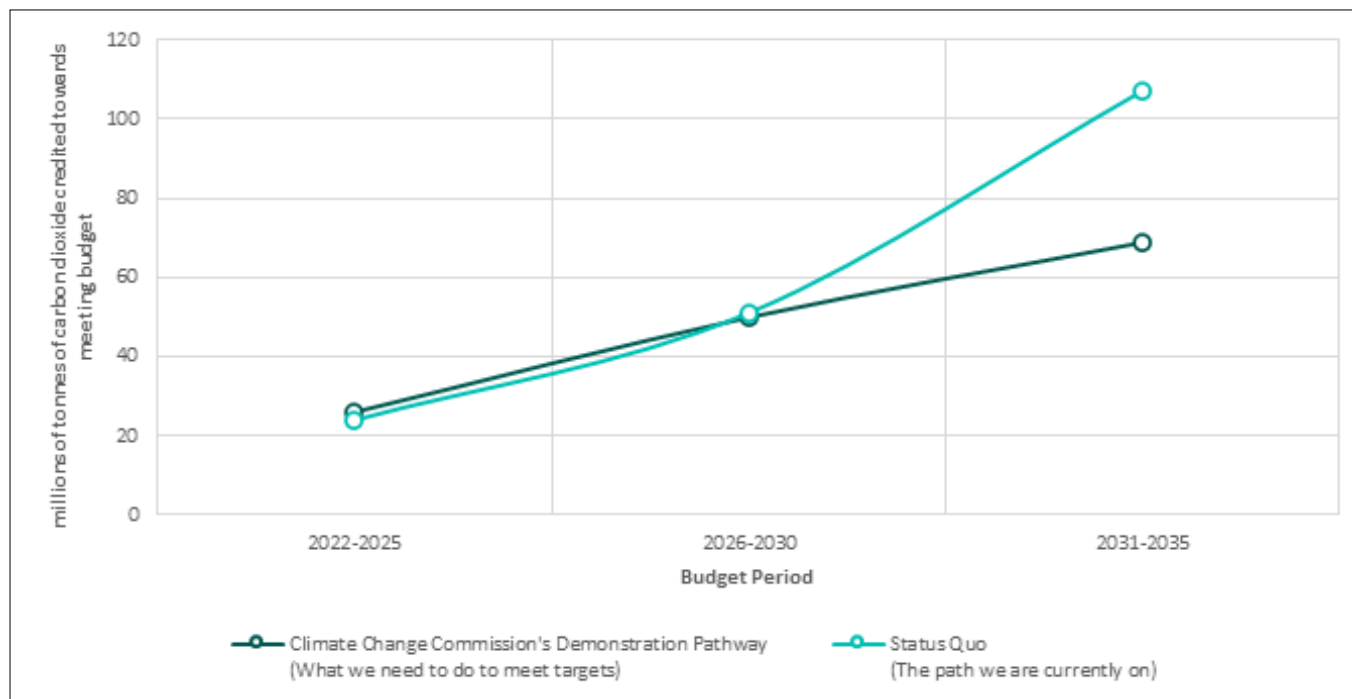
Overshooting on emissions reduction

The evidence suggests that all this afforestation will result in greater emissions reduction than is required, to the point where New Zealand will significantly overshoot short-term targets for gross emissions reduction.

As highlighted in Figure 5, the Climate Change Commission estimates that around 70 million tonnes of carbon dioxide will need to be removed in the third budget period (2031-2035), whereas under the current regime, New Zealand is on course to reduce emissions by well over 100 million tonnes in that period due to exotic planting.

Overshooting targets is likely to create additional negative social, economic, and environmental outcomes, all of which are unnecessary.¹⁴ It also prevents forests from being used to meet future emissions reductions budgets, when it will likely be more challenging to achieve emissions reductions targets in other sectors of the economy.

Figure 5: Comparison of different emissions-reduction pathways



14. CCC (2021).

Why is unrestricted permanent exotic forestry a problem?

Sustained, widespread growth in permanent exotic forestry will generate significant social, economic, and environmental harm, and in many respects goes against the objectives of the ETS.

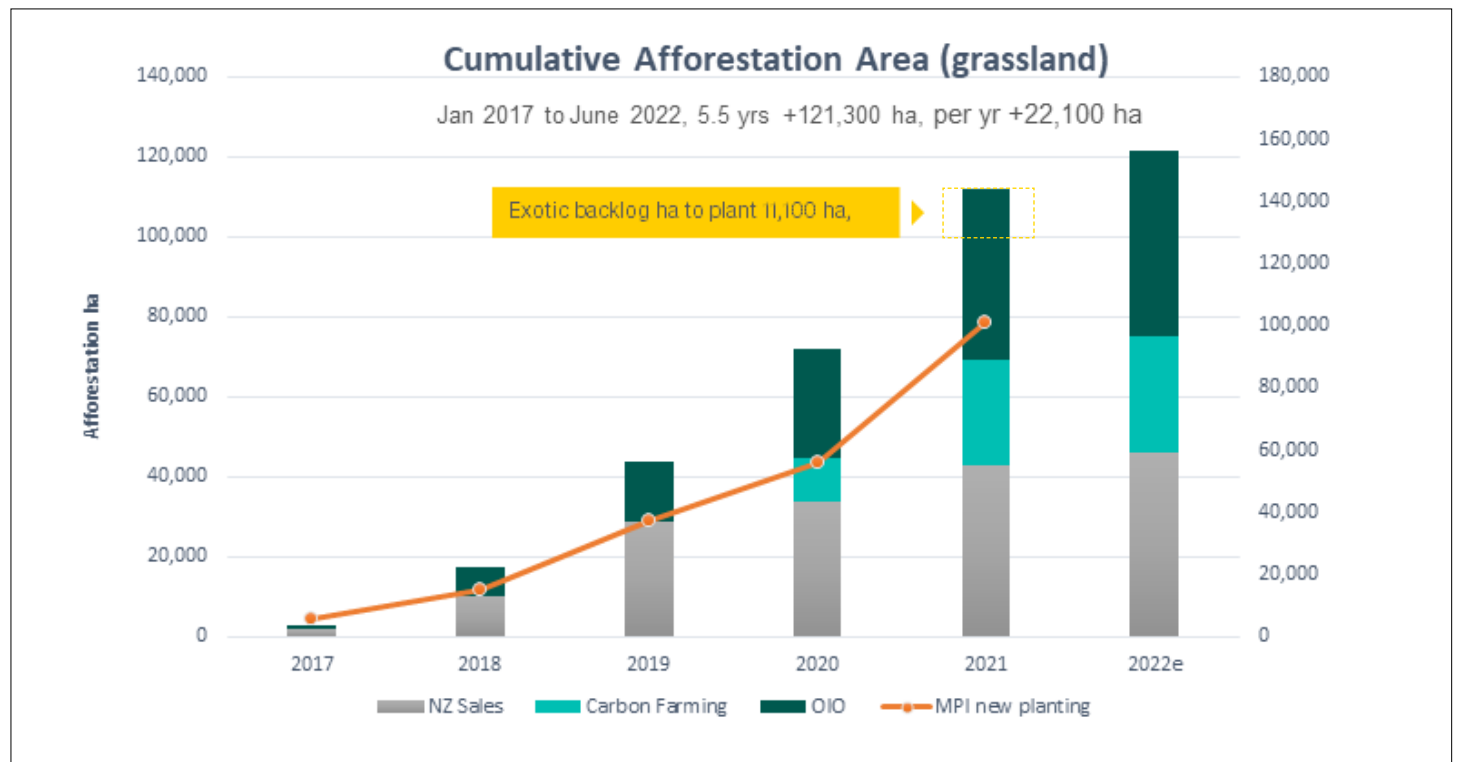
Displacement of productive land uses

As landowners capitalise on current ETS incentives, there is already evidence of a sharp increase in conversions from sheep and beef farms and production forestry to permanent exotic forests.¹⁵

Research from Orme & Associates identifies the purchases of more than 175,000 ha of whole-farm sheep and beef farmland since 2017 for the purposes of conversion into forestry.¹⁶ Of this area 121,300 ha will be new afforestation on farmland. Most of the remainder of this occupied land area is in existing scrub and woody vegetation. In 2021, more than 52,000 ha sheep and beef land were purchased by forestry interests, a 36% increase on the previous two years, and up from 7,000 ha in 2017. Of the farm area sold to forestry in 2020 and 2021, close to 40% involved was intended for carbon-only farming (i.e., permanent exotic forestry). Incidentally, about the same proportion involved purchases through the Overseas Investment Office.¹⁷

The line on the chart indicated the estimated area of plantings from tree seedling sales. The area between the line and the top of the bar is indicative of the land area awaiting to be planted.

Figure 6 Afforestation Trend



Source: Beef + Lamb New Zealand Economic Service & Insights, Orme & Associates Limited, Overseas Investment Office, MPI.

15. MPI (2022C).

16. This is a conservative estimate based on analysis of land sale titles and identification of known forestry interests as a purchaser. More farms could have been sold to forestry interests that were not easily identifiable.

17. See Beef + Lamb New Zealand. (2022). *Afforestation report shows whole farms are being converted into carbon forests at alarming rates.*

Growth in conversions will continue in line with the afforestation trend described above and, where those conversions are concentrated, they will have a profound impact on local communities.¹⁸

Forestry provides sporadic employment from planting to harvest. Permanent carbon farm forestry employs labour for planting with little else from then on. In contrast sheep and beef production provides ongoing farm employment and downstream processing to export or domestic market employment.

Table 4 shows that, for each 100 ha of sheep and beef farmland converted to forestry, an estimated 52 FTE jobs would be removed from the red meat industry over 30 years.

Table 4: Employment FTE: Land use change to forestry¹⁹

Average FTE per 100 hectares (30 years)	With Harvest	Without Harvest
Forestry FTE	17	7
Red meat industry FTE displaced by forestry	-52	-52
New Zealand net FTE change	-35	-45

Scaling the calculation up to match the levels of exotic afforestation anticipated over the next decade shows that 500,000 ha of new afforestation on sheep and beef farmland would remove over the following 30 years 175,000 FTE jobs if the area was used for production forestry, or 225,000 FTE jobs if used for carbon farming.

This analysis is based on input-output tables and takes account of flow-on employment that support the production from forestry or farm to the local market or export.

For the provincial communities where permanent exotic forestry takes hold, this can only mean a future of de-population, economic decline, and identity loss, as economic and social structures built up over 200 years or more are undone. Together with certain tangata whenua groups, farmers and production foresters have made their concerns about local economic and social impacts very clear during consultation on government proposals to change ETS settings.²⁰

Under current settings, once land is converted to permanent exotic forestry, the economics make any future land-use change very difficult. Because of the rate at which permanent exotic forests capture carbon, and the fact that the rules of the Permanent Forestry category require them to remain unharvested for at least 50 years, any landowner looking to convert back to productive land uses faces significant economic consequences as a result of deforestation and foregoing the future allocation of NZUs.²¹ Land converted to permanent exotic forestry is, essentially, locked in that land use.

18. BakerAg (2019).

19. Beef + Lamb New Zealand (2020). The economic impacts of converting red meat industry production to forestry.

20. MPI (2022A)

21. MPI (2022B).

What is bad for local economies is, of course, bad for the national economy.

Wholesale conversion to permanent exotic forestry will come at a cost to national employment. Sheep and beef farming indirectly employs an estimated 92,000 people nationally, while production forestry employs around 35,000 people. It will also reduce New Zealand's export earnings: sheep and beef farming and processing generate in the order of \$11 billion in export revenue each year, and production forestry about half that amount.²² In contrast, permanent exotic forestry generates no export revenue.

Reduced land-use flexibility and reduced availability of productive land limits scope for diversification of the primary sector, and this undermines the resilience of the New Zealand economy. A diversified primary sector is better equipped to respond to global and local economic fluctuations and to changing patterns in consumer demand offshore.

Box 2: Māori and forestry

Māori have a very strong connection to forestry – as rangatira, kaitiaki, landowners, forestry owners, forestry workers and business owners.²³ Approximately 30% of New Zealand's 1.7 million ha of plantation forestry is estimated to be on Māori land, with the total expected to grow to 40% as Treaty settlements are completed.²⁴ Meanwhile, Māori hold a proportionally high level of investment across the primary sector, with the largest concentration of assets in sheep and beef farming.²⁵

The issues identified in this report are therefore of particular relevance to Māori. Acknowledging their position as partners of Te Tiriti, the response to these issues must be developed in partnership with Māori.

Feedback from Māori in consultations on potential ETS changes and engagement with Māori forestry sector experts has highlighted a range of views on the role of forestry offsets in the ETS – some echoing the concerns raised in this document about the expansion of exotic forestry, and others voicing strong support for the role of exotics in the permanent forestry category, now and in the future.²⁶

Undermines long-term climate objectives

Exotic forests planted now and in the next few years will lead to an abundance of supply of NZUs from the 2030s, lasting for several decades.^{27,28} This will flow through into lower carbon prices, which will in turn reduce the incentive for gross emissions reduction.

With less incentive to invest in improvements in energy efficiency, low-carbon technologies, and other initiatives to reduce emissions, the likelihood is that emitters will simply rely on the option of relatively low-price forestry offsets to meet their surrender obligations. This will delay action and increase cumulative emissions.²⁹

Equity and integrity

Moreover, it raises important intergenerational equity questions, because it creates a situation where the current generation passes on to future generations responsibility for the difficult and economically painful adjustments that climate change requires. While the benefits of offsetting are often realised in the short-term (i.e., the first 50 years of the forest), the costs and risks are spread over the long-term.

The equity issues are not just intergenerational – the current model undermines the link between those who pay for emissions reduction and those who benefit from it. Wider society bears the cost of the ETS, and many would find it fundamentally unfair that their contributions support a scheme that avoids directly addressing the underlying problem, and that enables rapid wealth accumulation for a relatively small group.

The absence of any constraints on the use of forestry offsets means the volume of NZUs entering the market is determined by the capacity of landowners and foresters to plant trees (and therefore make profit), rather than the need for abatement. Again, wider society may well question the integrity of the scheme, and the fairness of being asked to pay for it.

22. MPI (2022C).

23. MP (2022A).

24. MPI (2022A).

25. MPI (2022A).

26. See [Te Taumata \(2023\) Technical Forestry Report](#).

27. MPI (2022A); CCC (2023).

28. MfE (2023B).

29. CCC (2021).

Prevents New Zealand from linking with international schemes

As discussed above, the lack of restrictions on forestry offsets in the ETS, and the focus on net emissions, put New Zealand out of alignment with other schemes around the world. This is likely to prevent the ability for New Zealand to link its ETS with others, and to draw on the benefits that come from access to larger carbon-trading markets and liquidity.³⁰ As well as generally higher costs in the national emissions-reduction effort, this could mean New Zealand may struggle to attract foreign investment into low-carbon technologies (because it cannot participate in a global carbon market), and that New Zealand businesses that operate in multiple jurisdictions face regulatory barriers and higher compliance costs.

Potential environmental harm

Exotic forestry has the potential to cause harm to the surrounding ecosystem in a number of ways. The potential impacts apply to both plantation and permanent forestry, though the impacts are likely to be greater from permanent exotic forestry, as that has not been subject to any national policy standards to date.

Most notably, there are concerns that permanent pine forestry may increase the risk of fire, erosion, disease, pests, and the spread of wilding pines.³¹

Cyclones Hale and Gabrielle have highlighted just how vulnerable fast-growing, heavy exotic species can be during extreme weather events, especially when planted on steep, erosion-prone land. A report commissioned by the Hawkes Bay Regional Council found almost half (48%), of the large wood debris volume measured originated from pine plantation forests, and 38% of the volume was from flood-protection willow or poplars. In total, at least 86% of the large wood debris volume measured originated from unstable, erosion-prone landscapes that vegetation was planted to protect.³²

Trees brought down by wind and rain are an extreme risk to people, property and infrastructure.

Permanent exotic forestry is still a relatively recent new land-use option and its implications will only be properly understood with time and greater experience.³³ As noted above, the model is based on an expectation that the exotic pines (which have an average lifespan of 80-90 years) will degrade over time and, in the meantime, native forest will naturally grow up underneath and become a self-sustaining forest.³⁴ Scientists are divided, however, on whether this will in fact happen, with a number of them highlighting that pines typically suppress undergrowth. If regeneration does not take place, permanent exotic forestry would leave New Zealand's countryside scattered with degenerating and decaying exotic pines.

Without careful management, exotic forests can harm biodiversity if they are planted at the expense of indigenous habitats for flora and fauna. During the last decade, for instance, exotic afforestation is understood to have caused a 4,000 ha reduction in indigenous scrub and shrubland.³⁵ Indigenous forests support thousands of native species, many of which are endangered – exotic forests do not come remotely close to matching this scale of biodiversity.

30. Diaz-Rainey and Tulloch (2018)

35. MPI (2022A)

31. MPI (2022B).

32. Interpine Innovation (2023). Cyclone Gabrielle: Post Event Wood Debris Assessment – Hawke's Bay.

33. MPI (2022B).

34. MPI (2022C).

What can be done about it?

If left unchecked, the current structure of the ETS will set New Zealand back economically, socially, and environmentally, and the time for policy change is now.

Today's choices will shape New Zealand's land use patterns long into the future, and action must be taken as soon as practicable, before the economic and environmental costs are too great to remedy. Decisions made today are locked in for the lifespan of the forest because of the nature of the sector, and the life-cycle of trees.^{36,37}

Policy options – longlist

There are a number of policy options at the Government's disposal to drive the change that is required, many of which have been put forward in previous advice from officials and stakeholders.

First, we considered wider changes to the New Zealand ETS and forestry settings. There are many options to limit the supply of forestry units into the scheme as well as the demand for (or use of) these units by emitters. Setting changes will need to ensure that incentives in the New Zealand ETS align with emissions reduction targets. Ideally, settings would also support adoption of planting types and rates as recommended by the Climate Change Commission. Making these setting changes in practice could be challenging to complete given the technical and political nature of many of the options. Broader ETS forestry settings we considered included:

- Limiting the supply of forestry units in the scheme;
- Restricting demand by altering the exchange rate for Forestry NZUs or requiring additional levies for forest units;
- Limiting the proportion of forestry units that emitters can surrender; and
- Moving forestry out of the ETS into a separate project-based mechanism or a separate methane/tree offset market.

In addition to changing the 'supply' and 'demand' forestry related settings in the scheme, there are other levers in the ETS that could be used which could influence forest planting as driven by the New Zealand ETS. These changes aim to align incentives with emission reduction targets, but their implementation might be challenging due to technical and political factors. The options we considered included:

- Limiting the ability to bank forestry NZUs; and
- Opening forestry NZUs to other countries' ETSs. These options could further influence forest planting driven by the New Zealand ETS.

Finally, we considered amendments to the Permanent Forestry Category to limit the entry or participation requirements of those entered in, or entering into, the permanent forest category of the New Zealand ETS. Changes to this category could be made faster than other wider changes to the New Zealand ETS but will not prevent further planting of production forests from displacing gross emissions reductions. The permanent forestry category, proposals we considered included:

- Limiting the entry or participation of certain entities;
- Implementing restrictions on exotic species, possibly with exceptions;
- Imposing bond requirements for those establishing exotic forests transitioning into natives;
- Limiting the amount of land eligible for this category; and
- Introducing a standards regime for all participants.

36. MPI (2022B).

37. MPI (2022C).

Policy design principles

The list of options was narrowed down to a shortlist by applying the following policy design principles:

- i. **There is no silver bullet – target the area of greatest need.** No single policy initiative will address every problematic aspect of forestry offsets in the ETS. The Government must prioritise initiatives that address the areas of greatest urgency, and that can have the greatest impact. Permanent exotic forestry is quickly emerging as the major driver of afforestation, and initial policy interventions must focus on rebalancing ETS incentives so they do not weigh so heavily in favour of permanent exotic forestry. While, as noted by the Climate Change Commission in its most recent draft advice, it is likely that more fundamental changes to the ETS will ultimately be required if we are to focus on gross emissions,³⁸ these changes will be more complex and will take longer to develop and implement. They should be approached as a ‘slow burn’, in the context of a wider conversation about the role of forestry in New Zealand’s climate change response.
- ii. **Avoid extremes.** In remedying the current system, we must not swing from one extreme to the other; that is to say, from a zero-restrictions framework to a complete ban on forestry in the ETS or exotics in the permanent category in the ETS. There is still a critical role for contained and controlled permanent exotic forestry to play if New Zealand is to achieve its emissions reduction targets – the trick is to make sure that role is part of a scheme that works in the best interests of local communities and the country as a whole.
- iii. **Recognise the need for nuance.** Getting the best possible outcomes for New Zealand will require a flexible framework, and practical, balanced solutions (including, among other elements, sensible exemptions).
- iv. **Listen to the experts.** The issues broached in this report have already been considered by government officials, in particular MPI and the Climate Change Commission, and the strong recommendation is that ETS incentives must be moved away from including exotics in the permanent category of the ETS.
- v. **Address both supply and demand.** The current situation involves two separate market failures in the ETS; one on the supply-side and one on the demand-side. No single intervention will suffice, and policy levers must be pulled that both limit the volume of NZUs that can be generated (supply-side interventions), and control how those NZUs can be used once in the system (demand-side interventions).

Policy shortlist

Based on these principles, we propose a shortlist of six policy options which are examined in greater detail, consisting of four supply-side options and two demand-side options. Most of these options focus on changes to the permanent forest category of the NZ ETS, reflecting the fact that the permanent exotic forestry represents the area of greatest need for reforms.

The supply-side options are:

Option 1: Restrict exotic forestry in the New Zealand ETS

This option proposes to remove the ability to register any new exotic forestry in the New Zealand ETS entirely. This would mean that new exotic forestry (such as *Pinus radiata*, other conifers, or exotic hardwoods) would not be eligible to be enrolled in the New Zealand ETS for afforestation of deforestation activities.

For the avoidance of doubt, new indigenous forestry could continue to enrol in the New Zealand ETS, because these species contribute to indigenous, restorative, and regenerative biodiversity for New Zealand.

Option 2: Remove exotics from the Permanent Forestry Category (with exemptions)

Under this option, exotic species would no longer be able to register in the Permanent Forestry Category, except under specific circumstances.

Those circumstances could include situations where controlled exotic planting will deliver environmental or economic benefits that would otherwise not be possible, such as on erosion-prone land or on marginal land where no productive activity is possible, or where it will help the Crown to achieve its Te Tiriti obligations (noting that Māori freehold land has

38. CCC (2023).

different characteristics to general title land which can make it well-suited to permanent forestry).³⁹

Exemptions could also include a 'grandparenting' approach to exotic forestry currently registered in the Permanent Forestry Sink Initiative, which would allow exotic forestry from that category to transition into the new Permanent Forestry Category.

Option 3: Reduce the rate at which exotic forestry earns NZUs

This option would involve reducing the carbon stock rate for permanent exotic forestry – that is to say, the rate at which NZUs are earned for every tonne of carbon captured. The suggestion for further investigation to reduce the carbon stock rate was part of the Climate Change Commission's 2021 report.⁴⁰

Option 4: Limit permanent exotic forestry by land area

This option would see a limit placed on the overall area of permanent exotic forestry that could be registered in the ETS each year. While the Climate Change Commission suggested limiting the overall area of all types of forestry, this approach would maintain an incentive to plant permanent indigenous forests, which avoid many of the potential negative impacts of exotic forests, as discussed above.⁴¹

The demand-side options are:

Option 5: Permanent exotic forestry levy

This option proposes to introduce an additional levy on ETS participants who surrender permanent exotic forestry units. The levy should be based on a nominal figure, rather than a proportion of the value of an NZU, given the likelihood of significant increases in the value of NZUs in the future (which may make the levy unworkable).

The levy on exotic forestry emissions serves three primary roles:

1. It provides a funding mechanism for alternative emission reduction activities, like nature-based or indigenous forestry methods, and research into innovative emission-reducing technologies.
2. It internalizes external costs of potential environmental events associated with exotic forestry, such as clean-ups post natural disasters. This inclusion of external costs gives a more accurate reflection of the true cost of exotic forestry activities.
3. With NZUs being fungible for New Zealand ETS surrender obligations, the levy could decrease demand for units from exotic forestry, thus encouraging the surrender of other types of NZUs, diversifying overall emission reduction efforts.

Option 6: Limit permanent exotic forestry offsets, as a proportion of total NZUs surrendered

This option would see a limit placed on the use of permanent exotic forestry offsets, as a proportion of the total units surrendered by ETS participants each year. As noted above, offset limits are a common feature of carbon-trading schemes around the world and are typically set in the 1-10% range. For reasons of consistency, we recommend that a similar range be considered in the ETS.

39. MPI (2022A).

40. CCC (2021).

41. CCC (2021).

Assessment criteria

In order to compare the options against each other, and to identify preferred options, a high-level assessment of the shortlisted options was conducted, based on an assessment criterion developed by MPI (to assess policy tools to manage exotic afforestation incentives).⁴² The criteria include the following:

- Meets emission budgets and targets;
- Supports gross emissions reductions;
- Supports regional economies and jobs;
- Contributes to gross domestic product (GDP) and purchasing power parity (PPP);
- Enables Land flexibility;
- Preserves the integrity and operation of the ETS;
- Long-term strategic focus;
- Provides environmental benefits;
- Supports indigenous biodiversity;
- Fair and level playing field for all;
- Speed of implementation; and
- Alignment with international schemes

The full assessment for all six policy options is attached in [Appendix 1](#).

Preferred Options

The assessment shows that, among the supply-side options, Option 2 performs most strongly against the criteria, while the same is true of Option 6 on the demand-side. Our two preferred options, therefore, are:

- **Option 2: Remove exotics from the Permanent Forestry Category (with exemptions); and**
- **Option 6: Limit permanent exotic forestry offsets, as a proportion of total NZUs surrendered**

Impact analysis

Based on the high-level analysis, it is our view that the combination of Options 2 and 6 would address many of the problems generated by the current incentives for forestry offsets in the ETS and provide the basis for an approach that can bridge divergent stakeholder views and achieve consensus on the way forward. The most important impacts can be described as follows:

- Reduced displacement.** The current wave of conversions to permanent exotic forestry would be cut short. Relative to the status quo, more land would remain in sheep and beef farming and in production forestry, which would support growth, employment and social cohesion for local communities, and support GDP growth and export receipts at the national level.
- Emissions targets met, without overshooting.** New Zealand could achieve its net emissions reduction targets, over the next 15 years and through to 2050, without significantly overshooting the mark. Pathways with little or no overshoot are more likely to deliver the best overall social, economic, and environmental outcomes.⁴³

42. MPI (2022C).

43. CCC (2021).

- iii. **Flexibility.** Landowners would retain the ability to switch between land uses, whether production forestry, permanent indigenous forestry, farming of some kind, or otherwise. This would support primary sector diversification, and the economic resilience of the wider New Zealand economy. Allowing permanent exotic forests to be planted in situations where no other return was available would maximise the economic opportunity for rural communities, and for New Zealand.
- iv. **Better allocation of the cost of climate change.** By limiting the supply and demand for permanent exotic forestry offsets, the ETS would be geared more towards gross emissions reduction; a stronger link would be established between those who pay for emissions reduction, and those who benefit from it. However, other additional changes would likely be required to achieve the desired 'balance' between emissions reductions and removals.
- v. **Alignment with international schemes.** The structure of the ETS (in terms of the use of offsets) would be brought closer to that of other schemes around the world, noting some significant differences regarding the inclusion of forestry in the scheme generally would still remain. Linking would enable ETS participants to benefit from access to the global market for tradable units, which would have benefits to the economy.
- vi. **Environmental benefits.** New Zealand would avoid many of the negative environmental and resilience impacts associated with permanent exotic forestry (debris, fire, disease, pests, the spread of wilding pines). Meanwhile, the role of indigenous forestry would increase significantly (for carbon farming and, potentially, for harvest), bringing benefits in terms of the diversity of native flora and fauna.

As noted in policy design principle (i) above, these policy options should form the basis of the immediate response and should be rolled out while work is undertaken on more fundamental changes to the ETS.

More detailed research, including economic modelling, will be required to quantify the impacts, and we recommend that this form part of the next phase of analysis.

Implementation

Law changes

The two preferred policy options would require a number of changes to the domestic legal framework around climate change, and should be subject to a thorough cost-benefit analysis. Option 2 would require amendments to the Climate Change Response Act 2002 (Climate Act), to establish exemptions, update the definition of 'permanent forestry', and provide for treatment of future forest compositions (the Climate Act currently defines forests based on the predominant species in a hectare).

Following on from this, the Climate Change (Forestry) Regulations 2022 would need to be amended to reflect the requirement for evidence of forest species, and forests would need to be checked upon registration as well as on an on-going basis to ensure native transition.

Under Option 6, amendments to the Climate Act would be required to provide for the surrender of different types of NZUs, and to restrict the quantity of certain types of NZUs being surrendered (those relating to permanent forestry). The Environmental Protection Agency's existing categorisation of NZUs would provide a useful starting point for the development of this framework.

International obligations

New Zealand's climate change obligations under international law are determined by our Nationally Determined Contribution (NDC), which sets our domestic emissions reduction target. Providing, as anticipated, those targets are met through to 2030, the two preferred policy options would not affect our commitments and obligations under the Paris Agreement 2016, and thus no amendments to the NDC would be required.

Moratorium

We recommend that a moratorium be put in place to restrict the Permanent Forest Category to indigenous forests while the exemptions included in Option 2 are worked through. This would allow for the changes to become effective immediately, while giving the Government time to consider where and what types of exotic forests are desirable in the category.

The moratorium could be structured in a number of different ways. For instance, it could end automatically after a certain period; alternatively, it could require a decision to be made at the end of the period about whether to end or continue.⁴⁴

Timeframe

Following the cost-benefit analysis recommended above, we expect that the law changes could be drafted and enacted within 12 months. The Government has already consulted extensively on proposals like these.⁴⁵ Realistically, the time required to implement these changes is down to the will of the Government of the day.

44. MPI (2022C).

45. See Cabinet Minute *New Zealand Emissions Trading Scheme: Next Steps on the Permanent Forest Category* (19 September 2022) CAB-22-MIN-0390.01.

Next steps

Through the release of this report, B+LNZ seeks to set in motion a national discussion on the role of forestry offsets in the ETS. With that in mind, we recommend the following steps be taken.

Stakeholder engagement

B+LNZ should seek to move as quickly as possible to socialise the report with key stakeholders, including:

- Relevant government agencies – MPI, Te Uru Rakau – New Zealand Forest Service, Climate Change Commission, Environmental Protection Agency;
- Māori (iwi forestry trusts, in particular);
- Production foresters;
- Carbon farming interests; and
- Rural communities where conversions to permanent exotic carbon farming have been concentrated

The purpose of the engagement will be to build awareness and understanding of the concerns raised in this report and obtain feedback on the proposed policy approach. Stakeholder insights will shed light on how the policy options will need to be refined to deliver the best possible outcomes and secure broad-based support for action.

The need for engagement of this kind is all-the-more pressing, given divergent and often strongly held stakeholder views on the matter.

Further analysis

At the same time, we recommend that B+LNZ work closely with the officials (including MPI, MfE, and the Environmental Protection Agency) to further develop key aspects of the report, in particular the detail around the preferred policy options. As noted above, in-depth economic analysis is also required as soon as practicable, to better understand the impacts of the proposed policy options.

Wider discussion

In presenting a solution to one of the most obvious and pressing shortcomings in the design of the ETS, this report points to, but does not seek to address, fundamental questions about our approach to reducing emissions: namely, what is the role of emissions pricing as part of a climate change response, and how should New Zealand strike a balance between net and gross emissions reduction? The Government is currently considering whether ETS changes are needed to provide a stronger incentive for businesses to transition away from fossil fuels, while also supporting greenhouse gas removals.⁴⁶

Second, what role should forests, and forestry offsets, play in emissions reduction? Is it appropriate to continue to rely on forestry in the way we have? What alternative models exist? Looking ahead, what is the optimal mix of forest types – permanent and harvest, indigenous and exotic? How can we ensure that those forests complement, rather than simply co-exist with, sheep and beef farming, and other productive land uses?

B+LNZ should use this report as the catalyst for a discussion on these underlying, strategic issues.

46. See MfE (2023A).

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Appendix 1: Assessment of short-listed policy options

	Supply-side options				Demand-side options	
Criteria	Option 1 Restrict exotic forestry from the New Zealand ETS	Option 2 Remove exotics from the Permanent Forestry Category (with exemptions)	Option 3 Reduce the rate exotics forestry earn units	Option 4 Limit the overall area of forestry registered in the New Zealand ETS	Option 5 Exotic forestry levy	Option 6 Limit permanent exotic forestry offsets, as a proportion of total NZUs surrendered
Meets emission budgets and targets	-	+	+	+	+	+
	May undershoot emissions later budgets without more gross emission reductions	Can manage exemptions to optimally achieve emissions budgets	Can manage exemptions to optimally achieve emissions budgets	Can manage exemptions to optimally achieve emissions budgets	Forestry fee can be managed to optimally incentivise planting to meet emission reduction budgets	Limits can be managed to meet emission reduction budgets
Supports gross emissions reductions	+	+	0	0	+	+
	Limits oversupply of forestry units to incentivise gross emission reductions	Incentivises more gross emission reductions instead of net reductions	Incentivises net emissions, not gross emissions	Incentivises net emissions, not gross emissions	Increases incentives for gross emissions reductions	Increases incentives for gross emissions reductions
Supports regional economies and jobs	+	+	+	+	+	+
	Creates jobs by encouraging production forestry and/or sheep and beef farming	Creates jobs by encouraging production forestry and/or sheep and beef farming. Exemptions can tailor for regional characteristics	Reduces incentive both permanent and production forestry, but incentivises alternative, productive land uses that creates more jobs	Reduces land available for permanent and production forestry, but incentivises alternative, productive land uses that creates more jobs	Reduces incentive both permanent and production forestry, but incentivises alternative, productive land uses that creates more jobs	Indirectly incentivises alternative, productive land uses that creates more jobs
Contributes to GDP and PPP	++	+	+	+	+	+
	Improves GDP via increased production forestry and/or sheep and beef farming exports	Improves GDP via increased production forestry and/or sheep and beef farming exports	increased incentive for alternative land uses	Exotic forestry provides little GDP contribution per hectare on registered land. Increases land availability for other uses.	Reduces incentive both permanent and production forestry, but increases incentives for alternative land use which contribute to GDP	Lower demand for permanent exotic units incentivises alternative, productive land uses that contribute to GDP via exports
Land flexibility	++	+	+	-	+	+
	Encourages land used for most productive purposes, beyond ETS incentives.	Encourages productive use land where viable. Minimises the risk of future sunk costs. Exotics can be exempted where suited	Can increase land flexibility if NPV per hectare comparable with competing land uses	Limits land-use options where forestry may be of some benefits, such as preventing soil erosion. Existing forestry land might artificially increase in value given it's scarcity, reducing land flexibility further.	Encourages land to be used for most productive purposes beyond solely ETS price signals	Encourages land to be used for most productive purposes beyond solely permanent exotic planting
Preserves the integrity and operation of the New Zealand ETS	++	+	+	0	+	+
	Prevents oversupply of units and suppressed NZU prices from uncontrolled exotic forestry	Unit oversupply, stockpile and price suppression from uncontrolled exotic forestry can be managed.	Can limit unit oversupply and NZU price suppression	Does not affect the incentive to plant more exotics, but restricts the number of overall forestry units	Reduces the skewed incentives for permanent exotic forestry, which provides more efficient price signals for emissions	The ETS moves closer to a cap and trade system by reducing financial incentives to plant permanent exotic forestry. Other units for all participants can be procured via primary auctions and allocations

Long-term strategic focus	+	+	-	-	+	+
	Incentivises long-term, intergenerational, and native forestry carbon sinks	Incentivises long-term, intergenerational, and native forestry carbon sinks	Any exotics remains one-off, short-term solution with a shorter forest life than natives	Any exotics remains one-off, short-term solution with a shorter forest life than natives	Slightly reduces the incentives for short-term, exotic forestry plantation	Drives gross emissions reductions, but retains an incentive for productive and/or indigenous forestry
Provides environmental benefits	+	++	+	+	+	+
	Reduces pest, disease, fire, and wilding risks	Reduces pest, disease, fire, and wilding risks. Exotics can be planted in erosion prone regions	Could reduce the extent of exotic plantation and therefore pest, disease, fire, and wilding risk	Slows down the spread of pest, disease, fire, and wilding risk from exotic forests	Reduces exotic forestry incentives therefore associated risks	Reduces risks associated with permanent exotic forestry
Supports indigenous biodiversity	++	++	+	0	++	++
	Reduces incentive for monoculture forests. Native forests can be incentivised via the New Zealand ETS	Reduces incentive for monoculture forest. Native forests can be incentivised via the New Zealand ETS.	Could disincentive exotic forestry planting and therefore create space for indigenous forests	Does not affect the incentive to plant more exotics	Provides some financial incentive for indigenous forests and biodiversity. Exotics levy can be recycled to support indigenous biodiversity programmes	Reduces incentive for monoculture forest. Native forests can be incentivised via the New Zealand ETS.
Fair and level playing field for all	++	++	+	--	+	+
	Limits skewed incentives for permanent exotic forestry	Limits skewed incentives for permanent exotic forestry	Could be amended to make exotic forests comparable to other land uses	Does not address the skewed financial incentives for exotic forestry. Determining eligible land can create inequality among foresters	Can better align the incentives among exotic forestry with alternative land uses	Limits skewed incentives for permanent exotic forestry
Speed of implementation	--	+	--	--	-	-
	Likely challenging to implement due to blunt solution	Exemptions can be tailored to unique circumstances	Likely challenging to implement due to blunt solution	Likely to be challenging to implement due to displacing native forests	Likely to face strong challenges from New Zealand ETS market participants	Likely to face strong challenges from New Zealand ETS market participants
Alignment with international schemes	+	++	-	-	--	++
	Closer alignment to international ETS settings	More comparable with international ETS allow a small amount of forestry offsets.	Carbon stock accounting would not align with international measures	Most ETS limit the use of offsets, rather than issuance of offsets	Does not align with most ETS designs	More comparable with international ETS allow a small amount of forestry offsets.
Overall recommendation	+	(Preferred)++	-	-	+	(Preferred)++
	Improves ESG, but is a blunt solution	Improves ESG outcomes and can be tailored to unique circumstances. Continues to incentivise native afforestation.	Could reduce the incentives to plant exotics but does not support long-term emission reductions	Does not address the skewed incentives to plant exotic forests. Can create inequality among landowners.	Likely to reduce the future oversupply of exotic forestry units. Provides some incentive for productive land use and indigenous biodiversity. Exotics levy can be recycled to support indigenous biodiversity programmes	Likely to reduce the future oversupply of permanent exotic forestry units. Drives gross emission reductions. Reduces risk of sunk cost permanent exotic forestry.