

Submission

On

**He Pou a Rangi draft advice on Aotearoa
New Zealand's fourth emissions budget**

Submission to:
Climate Change Commission

31 May 2024

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Submitter

The New Zealand Forest Owners Association Incorporated (FOA) is the representative membership body for the commercial plantation forest growing industry. FOA members are responsible for the management of approximately 1.2 million hectares of New Zealand's plantation forests and over 70% of the annual harvest.

In 2023, the forest growing sector was worth \$6.6 billion in export value and has a 12% share of rural land use. It contributes 1.6% of New Zealand's GDP and employs between 35,000 and 40,000 people in wood production, processing, and the commercial sector.

Summary

The FOA appreciates the opportunity to provide feedback on the discussion documents and draft advice on the fourth emissions budget. The advice, and subsequent Government decisions taken on the basis of the Climate Change Commission's (the Commission's) advice, significantly and directly, impact the forestry sector and its ability to play a role in mitigating the impacts of climate change. Even draft advice has an immediate impact on investor confidence and commitments as we have seen previously.

Along with the development of the fourth emissions budget, we support revising the first three budgets on the basis of methodological, and significant circumstantial, changes. It is appropriate to maintain the level of commitment that was envisaged when the budgets were set. The inclusion of additional sources of emissions and removals requires an adjustment for good accounting practice. For forestry this includes higher rates of afforestation as well as the recognition of the contribution from pre 1990 forest management changes.

Overall, we agree with many of the conclusions that the Commission has reached including the overall trend in substitution, emissions reduction, and removals.

Nonetheless, we consider that the transition will be slower, and more difficult, than the Commission is assuming. The reasons are:

- The 2050 target will become more ambitious over the next two and a half decades in line with similar commitments made by comparable international partners. As the Commission has noted in all of its consultation documents, this necessarily means that the budgets will have to be adjusted accordingly.
- The carbon price will not be allowed to play the role that it should, to drive investment decisions. The New Zealand Emissions Trading Scheme (the ETS) has not performed as

intended, and the Government has demonstrated that they are prepared to ignore advice from the Commission in favour of shorter-term economic relief. As confirmation of this, the current Minister has recently stated that “*the climate portfolio is an economic one*”.

- If the international transport emissions are included as we believe they will be then, again, the budgets will have to be adjusted as has been conceded by the Commission.
- There appears to be no appetite by Government to review the free industrial allocations for trade exposed industries. Conversely, the Government has signalled that it will review the methane target. Even a modest reduction in the methane target will have significant consequences for the emissions budgets and the Government is unlikely to support the Commission’s recommended reduction in livestock numbers.
- There is an over-reliance on electrification to achieve the very challenging 41% reduction in transport emissions within just the next 10 years.
- For multiple reasons, but especially, the on-going level of forest planting following the 2023 peak will be much lower than the Commission is anticipating. These include:
 - o absolute land class limits on afforestation, significantly increased requirements on any planting that does take place, and a potential ban on overseas forestry investment in the ETS.
 - o the cessation from the beginning of 2023 of the option of using the stock change approach.
 - o The proposal by Ministry for Primary Industries (MPI) to place two-thirds of the cost of maintaining the ETS on forest owners, and to apply this as an annual charge indefinitely. This is already causing some to reconsider their participation in the ETS.
 - o A review of carbon-only forestry and the possibility of additional restrictions relating to this under the National Environmental Standards for Plantation Forestry (the NES-PF).
 - o A permanent readjustment in the Chinese construction market.
 - o Regional policies, such as Otago Regional Council’s Land and Water Regional Plan, which constrain where forests can be planted and replanted. It is plausible that other regional councils across New Zealand will follow Otago’s lead.
- As a consequence of a lower than projected level of afforestation there will also be a lower than projected level of methane reduction and biomass production.
- While the impact largely, but totally occurs after 2050, we continue to view the projections for native forest establishment as unrealistic.

The cumulative impact of the first four budgets covering the period from 2022 to 2040 is expected to achieve reductions of 63% from 2021 levels. As above, we believe there are significant reasons why this will not be achieved but even if it was this still leaves a residual 37% reduction required in the final 10 years to 2050. For this “heavy lifting” in the final 10 years to occur it necessarily means that the rate of emissions reduction and associated removal would have to significantly increase over the “ambitious” rate to that point.

We have strong reservations about the Commission’s conclusion that we will have enough forestry to meet the targets, particularly as this conclusion is relying on projections of planting that may be lower than previous expectations but are nonetheless still abnormally high levels while current policy and market signals influencing investment, point in the opposite direction. As is stated, the emissions budgets must be “*technologically and economically achievable in light of uncertainty*”.

There is a very important acknowledgement that comes towards the end of the draft advice document on page 141 that states “*However, there remain areas where the Government has yet to clarify how its rules will work, including particulars of rules applying to forestry The operation of these rules could materially affect the ambition of future budgets*”.

We have still to see any New Zealand Government provide “indicative levels of gross emissions and carbon dioxide removal from forestry out to 2050 and beyond to guide policy development” as the Commission has called for. Instead, we continue to have a general concern that the level of removals by forestry might be resulting in less gross emissions reductions than would otherwise have occurred. This failure to provide clarity of the role of forestry is one of the core reasons for the current lack of confidence in the system by potential investors.

While the focus is on the 2050 target, it is imperative that what happens after that date (for example, with Emissions Budget Five) is also given careful consideration. As the document notes – “*all the budgets are stepping stones*”.

We remain of the view that removals from forestry (planted 10 to 15 years before that date) will continue to be needed to ensure Aotearoa New Zealand does not start going backwards. We concur that there should be an on-going diminishing reliance of afforestation offsets in favour of gross emissions reductions, but do not consider it realistic to expect the economy will have been completely transformed by 2050. The level of afforestation that takes place in the fourth emissions budget period will be the afforestation that is critical to maintain the gains post 2050. Our concern is that the Commission and, more so, the Government if focussed on the near term as evidenced by the limited amount of forestry that the Government is indicating will be permitted in the ETS for the foreseeable future.

In conclusion, we consider that the fourth emissions budget, which is a net emissions budget, is overly reliant on both emissions reductions and emissions removals through offsets.

Proposed level for the fourth emissions budget

The Commission is proposing to recommend the fourth emissions budget be set at 134 MtCO_{2e} meaning that, along with adjustments to the other three budgets, emissions will be 63% lower across the budget period than in 2021. There are a number of risks which we submit have not been adequately factored in and which therefore make this target an “over stretch”. These are discussed in more detail below:

Influence of other related assessments by the Commission

The draft advice is, itself, influenced by the other two pieces of work that the Commission is currently consulting on as the diagram on page 4 clearly shows. Thus, if international shipping and aviation emissions are included (which would be consistent with international moves) then the climate commission’s advice must necessarily alter. As noted, (page 14) subsequent NDC’s by all signatory countries “*will cover five-year periods, and must get more ambitious each time*”.

It is also reasonable to assume that that Aotearoa New Zealand’s 2050 target will not be downgraded. Indeed, the zero emissions goal and associated targets are described as the minimum

achievements necessary and, if anything, we should expect that the targets will increase in ambition as they have done both here and offshore over time. The consultation document notes that “*in response to the sharpening climate change challenge, the world is intensifying efforts to limit global warming by reducing greenhouse gas emissions*”. In 2021, the Government updated Aotearoa New Zealand’s NDC, which is now to reduce net emissions by 50% below gross 2005 levels by 2030. We consider the Commission should be providing its advice based on an assumption that the 2050 target will be further refined over the next two decades to become more ambitious in concert with comparable trading partners, and Annex 1 countries. Clearly the existing global targets have proven insufficient.

Whether the Commission advises an increased target in its 2024 advice or later it is reasonable to expect this will occur and as stated this “*will set the pace for climate policy over the coming decades*” (page 12). If the 2050 target is made more ambitious, if shipping and aviation emissions are included and if the emissions reductions and offsetting is less than expected then there is no realistic possibility of the budgets being in line with the target.

Offshore mitigation

The Commission propose that “*to meet the fourth emissions budget (2036–2040), the Government:*

- a. *limit offshore mitigation for the fourth emissions budget to 0.0 MtCO₂e*
- b. *only use offshore mitigation as a last resort in exceptional circumstances beyond the Government’s control, such as force majeure events, where domestic measures cannot compensate for emissions impacts (Page 31).*

While we agree with such discipline in order to ensure that adequate domestic transition takes place we are concerned that this will rely on political commitment at a time when the budgets are being tested, and it places even more emphasis on achieving the domestic action that is forecast. We agree that such action to meet Aotearoa New Zealand’s goals would be the least desirable option and somewhat ironic if it involves purchasing offshore offsetting by forestry. Some consolation may be derived from the fact that no agreements have been reached between New Zealand and any other countries and international competition for such units will only further intensify. There is a strong possibility New Zealand will not be able to secure sufficient mitigation at an acceptable price even if there is a political will to do so.

Reliance of methane reductions on land use change

A critical factor in achieving this is the projected fall in methane. “*Of gross emissions of all greenhouse gases in the draft fourth emissions budget, biogenic methane contributes to 55% of these emissions*” (page 44). The Commission acknowledges there will be significant consequences if it does not occur. *Even with land use change to forestry “the level of reductions in (the reference scenario) which estimates the impact of current policy would **not** put Aotearoa New Zealand on track to meeting the biogenic methane component of the 2050 target” (page 62).* Only 13% of 2017 levels compared with the minimum target of 24%.

The impact of increasing or decreasing the stocking rate reduction for sheep/dairy cows/cattle was compared to the level in the Emissions Budget Four (EB4) demonstration path. In this testing the

stocking rate reduction was increased and decreased by 25%. The lower stocking rate reduction would increase emissions by about 5 MtCO₂e. The higher stocking rate reduction would reduce emissions by a similar level (page 79). Under the Commission's own definition these figures qualify as significant. In summarising the section on sensitivity analysis of risks to the EB4 pathway the Commission singles out stock numbers noting that "*Changes to stocking rates could have a large impact on meeting the fourth emissions budget*" (page 81).

It is projected (page 45) that carbon dioxide removals by forests will increase from 7 MtCO₂e to 26 MtCO₂e and biogenic methane will contribute (26%) to overall reductions in gross emissions in 2040. The core point here, that is not being recognised is that these two trends are not independent.

As the draft advice document notes "*Reductions in biogenic methane in the reference scenario are the result of improvements in agricultural productivity, reductions in stock and land use change away from ruminant livestock*" (page 62). And the Commission assumes "*17% of land used for sheep and beef is converted to native and exotic forestry by 2050, relative to 2021 (similar to current trends)*, (page 99).

We contend that of the factors affecting the rate of reduction in biogenic methane the relationship between afforestation and methane reductions is far and away the most important. Afforestation is currently the most significant contributing factor to the rate of reduction in methane emissions and this is not being recognised in the consultation documents. The FOA has made this point on several previous occasions, but the Commission continues not to acknowledge it. For example, under the *Forests Section* on page 68, the role in removing carbon dioxide is acknowledged; why not also the role in reducing methane emissions?

It is clear that the reference level scenario for methane falls well short of the 2050 target (11% below the minimum 24% reduction from 2017). Accordingly, there is a significant reliance on systems change, notably "*leaning heavily on available existing technology and land use change and reductions in stocking rates*" (page 70). With such a system change, we are then just able to manage the lower end of the methane reduction target range.

There was a 1.5% drop in agricultural emissions between 2020 and 2021 largely attributable to a drop in livestock numbers¹.

With methane accounting for 43.5% of the 78.8Mt CO₂e of gross emissions in 2020 this is around 34Mt CO₂e, and the drop equates to approximately half a mega-tonne of CO₂e. New forest planting in this period was 34,000 hectares². Most of this planting would have taken place on class 6 land. The stock unit carrying capacity for such land varies from 6 to 10 SU for hard hill country in the North Island to 2-7 SU for hill country in the South Island (Beef and Lamb figures). Assuming an average of around 6 stock units (or breeding ewes) per hectare, then a total of around 200,000 sheep have been displaced. Taking in to account the annual methane production per sheep and the potency factor in converting from methane to CO₂e it becomes apparent that afforestation displacement of sheep accounts for the bulk of the fall in methane. Notwithstanding that, there is some conversion to horticulture, and some undefined potential from technologies such as methane vaccines, inhibitors

¹ <https://environment.govt.nz/news/new-zealands-gross-greenhouse-gas-emissions-decreased-in-2021/>

² <https://www.nzfoa.org.nz/resources/publications/facts-and-figures>

and adoption of breeding for low-methane animals (with timing, cost and effectiveness all still unknown), the bulk of gross methane emissions reductions will still be reliant on displacement of livestock by forestry on a relatively low percentage of farmland.

Indeed, the high systems change described in the draft advice document requires (page 66):

- For agriculture - *greater reductions in stocking rates, further land-use change to horticulture and forests, further reductions in nitrous oxide use, all urea coated with urease inhibitor.*
- For forestry - *Afforestation of sheep and beef land on land use change (LUC) classes 7 and 8, all land classed as LUC 8 and erosion prone LUC 7 retired to natives.*

Both are highly unlikely to be fulfilled.

Despite the impact of any variation in methane levels we note (page 52) the Commission has “avoided alternative pathways that would increase levels of biogenic methane as doing so could impact the country’s contribution to warming and ability to meet the 2050 target”. While we agree that this would be the impact, we do not see that this justifies ignoring the possibility. An increase in stocking units and/or stocking rates is a realistic possibility given historical trends and particularly so if displacement of sheep by forestry falls appreciably. This is also relevant to alternative pathway A which relies on further reductions in livestock numbers.

Our core message here is that without sufficient land use change to forestry, the rate of methane reduction will abruptly fall. This should be factored in the emissions budgeting process, in addition to the loss of sequestration from any fall in planting when the Commission takes in to account the changes in land use and forestry policy before reporting at the end of 2024. This is especially the case when the document also warns that “without new technologies, reducing agricultural production and more land-use change would be required to reach the fourth emissions budget”.

As the advice document states – “It is important to note that achieving the 2050 target will require Aotearoa New Zealand to meet both the net zero component and the biogenic methane component of the target (page 63).

Without an adequate level of land use change the ability to meet the 2030 goal of a 10% reduction in gross emissions of methane is unlikely, let alone achieving the 2050 minimum target.

Developing the proposed path to the fourth emissions budget

The reference scenario used in the draft analysis “was developed based on the Government agency projections with policies as of 1 July 2023. These will change as the new Government enacts its preferred policies, and Government agencies update their “with existing measures” analysis. While the reference scenario in this consultation draft is unable to reflect these new and future policies, we intend to include an updated reference scenario in the final draft of this advice that will be delivered to the Government by the end of 2024. (page 63).

This is clear acknowledgement that the afforestation projections are not up to date and have not taken in to account current policies. The claim that draft advice cannot take such policies in to account is presumably based on the statement made elsewhere in the document that policy, no matter how publicly broadcast, cannot be factored in until it becomes legislation, even if the pronouncements are already altering the projections. We take some reassurance that the Commission will take such matters into account before final advice is delivered at the end of the

year. We sincerely hope so because the evidence of significantly falling afforestation rates already exists, and a reliance on maintaining abnormally high levels of planting through to 2050 will have serious implications for achieving existing and future budgets.

The EB4 demonstration path represents a 32% reduction from 2021 to 2050 compared to the level implied from the reference scenario (or 64 MtCO₂e fewer emissions), excluding methane (Figure 3.9, page 75). It is thus considerably more ambitious and the additional reduction is expected to come from gross emissions reductions not forestry removals. The level of forestry removals remains roughly the same.

The Commission recognises the risk of underachieving emission reductions and exhorts the Government to overachieve with the budgets (page 53), particularly as the ability to “borrow” from the future is severely limited (1%). In our view, there is little political incentive for the Government to overachieve, and certainly no evidence of any appetite to date for this.

Nowhere does the document talk about the implications of an under-reliance on forestry and yet these consequences are very real, and very serious. We previously submitted that we expected the level of new planting would fall because of the comments and policy signals being made. This has proven to be the case.

Only a year ago year the Commission indicated that it considered planting 60,000 ha every year from 2022 to 2035 was a realistic scenario (page 57 of the Draft Advice on the Second Emissions Reduction Plan (2026-2030)). With only another year’s planting completed, and an acknowledgement that current levels will not be maintained, the Commission is now confident that the levels of planting will be sufficient to reduce afforestation.

We do agree with the Government position that it is not appropriate to create different classes of units within the ETS for a range of reasons, and also agree that limiting the total forest area accepted into in the ETS is a more effective and stable means of controlling forest removals if there is sufficient evidence that this is required. This could be reviewed on an annual basis. Our concern is that the current restrictions are excessive, are not subject to annual review and are being put in place at a time when it is clear forest planting has fallen dramatically.

The current Government policy settings for forestry are not consistent with the Commission’s conclusion that “*Government policies will need to encourage both gross emissions reductions and afforestation, as both have essential roles to play in an equitable and sustainable low emissions transition*” (page 55).

Sector contributions to meeting the fourth emissions budget

Biomass supply and demand

As noted above, any shortfall in forestry planting below the emissions budget for demonstration pathway projections (as we expect will occur) necessarily means lower levels of sequestration and also lower rates of livestock reduction. The third important area that is impacted is bio-energy, as the draft advice document notes (page 11).

Higher emitting industry transition to low emissions alternatives

We note that the Commission has significantly increased the fall in the use of fossil fuels under the EB4 demonstration path to 65% compared to 50% under the reference scenario. While we acknowledge the role of new technology, notably 50% of steel production switching to electric or furnace-based production, this still seems ambitious and uncertain given that the Commission also acknowledges that it had expected the NZAS aluminum smelter would close in 2024 but is now expecting it will remain open “*until at least 2050*”.

Agriculture - changes in farming practices would reduce emissions

Included in changed farming practices in this section is land use change. Rather than a change in farming practice, this is a move away from farming.

We have listed numerous reasons why we consider that recent trends in land use change will not be maintained and what the consequences of this will be the EB4 pathway. We note that the Commission estimate “*that by maintaining recent trends in land use change and reductions in stock numbers for the sheep and beef sector, meat production would reduce by 17% in the EB4 demonstration path in 2050 (relative to 2023 levels). This is similar to what we would expect under the reference scenario*” (page 97).

We remain concerned that the Commission (at least at this stage) is continuing to rely on recent land use changes being maintained. We contend that it is very clear that central and local Government policies, market forces and a reappraisal of what land is economically and environmentally sustainable for commercial forestry, means recent trends will not be maintained.

The Commission has previously recommended “*Advancing pricing of agricultural emissions to recognise emissions reducing practices and incentivise gross emissions reduction*”. The collapse of He Waka Eka Noa illustrates how difficult it is to implement such policy. We consider that the requirements of agriculture in the foreseeable future will be more modest, rather than more ambitious, with an associated risk for the Commission’s budgets.

Industrial processes and product use

We agree with statements made by the Commission that the current system of free industrial allocation for emissions-intensive, trade-exposed industries is inconsistent with the ETS incentivising net zero long-lived gas emissions by 2050 and is disproportionate to the risk of so-called emissions leakage. Accordingly, we support a review of the industrial free allocation policy.

The Commission refers to a reducing capacity for the ETS “*to drive gross or net emissions reductions to achieve the 2050 target beyond the mid-2030s, as the NZ ETS emissions cap will reach zero in 2037 under current policy and legislative settings*” (page 56). This strongly suggests that the free industrial allocation requires reviewing.

Forests

The FOA accepts the conclusion that “*more land converting to exotic forestry in recent years means overall less exotic forestry is needed in our EB4 demonstration path to 2050 to reach the same overall amount of exotic forestry that we modelled in Ināia tonu nei.*”

We agree that “*higher than projected rates of forestry planting (and least for exotic forestry) in the last couple of years mean that less afforestation would be needed in the future to reach the net zero component of our 2050 target*” (page 25) and that “*there is a high degree of confidence that this change is permanent for the duration of the emissions budgets*” (page 136).

We also agree with the projections for exotic deforestation.

We concur with the data that shows *higher than anticipated rates of forest planting between 2020–2022* but consider it is too early to determine if that this “*was expected to continue for 2023*”. We certainly agree that by 2024 the peak will have been past and planting will be lower.

We have seen, partly as a consequence of advice from the Commission, that the Government has committed to putting in place land use restrictions to constrain forestry. And, if there had been no change of Government, we would still have seen adjustments made to the ETS to bring about the same constraints meaning that there is consistency of intent by whomever is in Government to put the brakes on forestry.

It is clear that there will be a material drop in the level of planting because of this; it has already begun. Even though the policies have not yet found their way into regulations the proposals declared pre-election have already brought to a halt many intended forest investments. Any fall in new planting of this magnitude has to be critical to the Commission’s analysis, and advice on the fourth emissions budget, for the period 2036–2040. How can it not be?

In the discussion document the Commission states (page 17) that the details of the land use decisions are not yet available. They may not be in legislation, but the Government has provided sufficient detail of how it intends to impose the restrictions and confirmed to industry, since being elected, that those proposals still hold:

- There will be no limits on Class 7 land (but this is a relatively small category of around 3M ha with only a fraction suitable because of the topographic challenges).
- There will be a cap of around 15,000 ha of planting on Class 6 land (this category comprises around 55% to 60% of steeper NZ farmland) and is where the vast majority of forest planting would ordinarily take place, and is best suited. The figure of 15,000 is very modest.
- There will be a moratorium on planting on Land classes 1 to 5. (There is typically only a limited amount of planting that takes place on Class 5 land but this would remove that from the equation).
- The policy that the National Party campaigned on also included the proposal to ban overseas investors from registering any forest planting in the ETS.

As well as the above, the Special Forestry Test has also been removed. The reversion to the '*benefit to New Zealand*' test where an overseas investor has to be able to demonstrate that the investment would be superior to a domestic (and often hypothetical) investor has already seen several applications fail.

We have seen an example of a regional council proposing policies in their Freshwater Plans which will significantly constrain afforestation and reduce replanting impacting the viability of some forests in that region. It is plausible that other regional councils will follow the example of the first Freshwater Plans developed.

All of the above information is in the public domain and the drop in new planting can be forecast with a reasonable degree of accuracy based on the figures above. Given that, it is very clear to us Aotearoa New Zealand will fail to reach the minimum target required of new planting to meet the Commission's budget. It is imperative therefore we look to encourage forest planting rather than seek to reduce area planted (to 15,000 ha's). Failure to meet the minimum planting target set by the Commission's models will quite simply result in failure to achieve the budget.

The Commission has previously called on the Government to provide clarity on the role that forestry will play in achieving budgets and targets (2023 draft advice on the second emissions reduction plan (2026-2030) and recommended *the Government commit to specified levels of gross greenhouse gas emissions and carbon dioxide removals for the second and third emissions budgets..... and the approach extended to the fourth emissions budget*. This clarity has not been forthcoming. The only conclusion that can be drawn about the role that the Government sees for forestry from existing policies is – not a lot. Yet, the Government has also signaled that it will not back away from the international commitments Aotearoa New Zealand has made. This seems to provide adequate clarification to allow the Commission to evaluate the impact on its future budgets on the basis of a fall in planting from 2024 onwards of at least 50% from the 2020-22 years of very high levels.

The Commission acknowledges that, in contrast to the 2020-22 planting, *“the projected afforestation rate is uncertain”*. The document states that *“we do not assume that afforestation rates will remain at high levels beyond 2023”*. While the Figure 4.1 projections on page 101 are not at the level of 2020-22 they are nonetheless very high by historical standards at least until the mid-2030's.

As a result of 1,273,000 hectares of afforestation (all forest) projected to 2050 in the reference scenario (developed as of July 2023), removals of carbon dioxide by forests are projected to increase from 7 MtCO₂e in 2021 to 28 MtCO₂e in 2050. The figure of 1,273,000 equates to an average of 44,000ha/year over 29 years.

The Commission estimates on the basis of existing policy settings (which we know are about to drastically change) that *“the reference scenario would result in up to an additional 447,000 hectares of exotic afforestation compared to our 2050 scenarios (for the period 2021-2050). This is approximately 15,000 ha/year for the 29 years.*

In Figure 3.6 (page 69) the reference level of falls between the low systems and high systems change approach. Assuming the same proportions of exotic and native as the low systems approach this equates to 62% or 791,000 ha; at an average annual new forest establishment rate of 27,000 ha/annum. Of course, this also assumes an average annual rate of 17,000ha/annum of native planting for 29 years.

Our contention is that it is not credible to expect such figures for either exotic, or native afforestation, to be achieved in the next few years, nor maintained every year thereafter given the range of reasons provided above.

Native forest

The document makes it clear that “*Native afforestation will have to increase significantly from recent levels to meet the level in our EB4 pathway, which peaks at 2030 and maintains this level to 2050* (page 55). Accordingly, the Commission has “*analysed a large increase in new native forests on marginal and erosion prone land through planting and letting land revert to natives*” (page 101). Analysing the impact if it did happen is relatively easy. What we need is evidence to show that this “*large increase*” is realistic to achieve notwithstanding that most of the impact comes post 2050. The difficulties associated with establishing natives, laudable though the goal and post 2050 benefits, are orders of magnitude more than for exotic forestry.

Lower net emissions in the high systems change scenarios are driven by further effort to reduce emissions alongside greater native afforestation of marginal land to create a longer term, more enduring carbon sink (page 67). Indeed, this scenario envisages all land use class 8 and erosion prone land use class 7 being retired to natives. We consider there is zero chance of this being achieved.

The challenge of trying to establish native forest on better class land is difficult enough and, as acknowledged, afforestation rates of native are well short of what was hoped for by now despite the Commissions previous recommendations. This is not because of a lack of interest. To try to establish native forest on land that even commercial exotic forestry is now avoiding is totally unrealistic. Simply stating that “*new native forests can be established on less productive and more erosion-prone land to provide a long-term carbon sink*” (page 68) without also advising what the cost, and low probability, of achieving it are, borders on poor advice.

The EB4 budget is based on the premise that “native afforestation peaks in 2031 and then plateaus to 2050”. We consider that in period remaining to 2031 it would require a massive turn around to achieve the figures projected.

It should also be remembered that most of the re-establishment of native forestry will be on private land. Even steep class 7 land can have a productive vale, as can native harvesting. Expecting the land, much of it Māori-owned, to be allowed to revert, places significant opportunity cost on the landowner. It is reasonable to expect private provision of a public good benefit to be compensated for.

We have warned for several years about the challenges associated with assuming high establishment numbers for native forestry, and the actual numbers have borne this out. The planting levels are below what the Commission projected, and we see no reason to expect that this will suddenly change unless massive amounts of public money are directed that way.

The draft advice document also correctly notes “*More permanent or native afforestation may also generate fewer jobs than exotic production forestry, particularly if the land is left to revert rather than being planted*”.

We question the statement – “*some native forests have slower growth rates than radiata pine*”. We are unaware of any native forests that record faster growth rates than radiata pine.

Progress to date on emissions reduction

We have yet to see the annual progress report on emissions reduction from the Commission. This is due before the Commission provides advice in December and should be a key influence on that advice. Certainly, the only other measure - the GHG Inventory - does not provide us with an up-to-date assessment because it is based on information that does not reflect current state. As noted, the latest GHG Inventory data was published in April 2023 and that was based on data from 1990–2021. The next GHG Inventory is due to be published in April 2024 but that will be using data from 1990–2022.

Greenhouse gas emissions accounting and changing accounting rules

The Government has said it intends to make changes that will allow emissions and removals from pre-1990 forest management activities to be included when calculating Aotearoa New Zealand's emissions. It has started work to include new, additional sources of emissions and removals, which are not counted under current accounting rules (Page 28).

The FOA supports the Government decision (taken contrary to the advice the Commission's provided previously in *Ināia tonu nei*) to include forest management accounting. The sequestration is legitimately recognised internationally and, as the document notes, is included in Aotearoa New Zealand's NDC accounting. Such recognition can reduce land pressure and has the ability to provide sorely needed additional incentive for native forest restoration and to arrest degradation.

Additionality and Permanence - We agree that the principles of additionality and permanence (page 31) should be adhered to, and we support the Commission's intention of recommending to proposal to the Government that it adopt these two principles and include them as criteria when calculating removals.

Accuracy and Uncertainty - The FOA supports the recommendation that Government develops and implements a plan for how it will manage accuracy and uncertainty risks (page 31). We consider that there is currently considerable risk of over-estimation of emissions reduction efforts and no plan for how to deal with this if it eventuates.

We acknowledge the need for accuracy and robust measurement and monitoring (Box 7.1) but, in many instances, such data is available in forest company records in considerable detail. We agree that methodologies will need to be improved and aligned with the principles the Commission recommends, especially additionality and permanence. With respect to additionality, trying to assess whether a management decision was taken for solely for climate reasons sets a very high bar. If this interpretation was applied, we would also expect the same to be applied to determine on the same principle) whether any management decisions that reduced industrial emissions were taken for climate reasons and nothing else. This would also affect consideration of harvested wood products.

We also agree that new sources of removals are not used to weaken emissions budgets and the 2050 target. Furthermore, we expect that not all forest management (or other vegetation) will "make the grade". These are not reasons to conclude we should not proceed with the development.

Reaction to Chapter 4 sector contributions

We agree with the following conclusions by the Commission:

- Geothermal energy can make a significant contribution to replacing fossil fuel usage and, in general fossil fuels will be responsible for less, and less, emissions.
- Carbon capture and storage has the potential to make an appreciable difference but that at this stage there is insufficient evidence to determine when this might occur.

We have reservations about the statement that rising carbon prices will make it more expensive to run fossil power plants and therefore it will become increasingly cost effective to replace gas plants as a source of additional supply when needed, with an oversupply of renewable energy. While this general trend is likely we can see at the moment that the ETS is not functioning as it is and providing the signal for transition that it should, nor has it been allowed to in the past. On balance we consider that the influence of carbon pricing will continue to be less than optimal and lower than the Commission is relying on.

Closure

We do not object to the submission being made public. We welcome the opportunity for further discussion and engagement.



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