Economic factor

Savings from reduction in farm emissions and carbon sequestration

The Applicant considers the Investment is likely to deliver an economic benefit to New Zealand of between $10.9m and $17.5m[1] by reducing the Government's need to purchase offshore carbon units to meet its Nationally Determined Contribution (**NDC**) under the Paris Agreement. The Applicant claims it will do this by both reducing the existing farming emissions and increasing carbon sequestration on the Land through afforestation.

The Emissions Trading Scheme (**ETS**) is one of the tools available to the Government to meet its NDC under the Paris Agreement. When the Applicant registers eligible land in the ETS, it will receive New Zealand Units (**NZUs**) in proportion to its carbon sequestration activities. LINZ considers that the NZUs issued to the Applicant can be on-sold to emitters allowing them to maintain higher emissions than they would otherwise. As a result of this on-sale of NZUs, total net carbon emissions (emissions minus removals) in New Zealand would not necessarily decrease, in which case the effect on the NDC would be neutral.

The Applicant disputes the rationale that the carbon sequestered through afforestation by the Applicant can be sold to another emitter. The Applicant argues that the unknown future actions of a hypothetical third party industry emitter should not be relevant to, or invalidate, the Applicant's known emission reductions. The Applicant's proposal for this Land will reduce net emissions for New Zealand via its carbon sequestration compared to the Vendor's farming activities.

LINZ considers that retiring the Land from grazing will likely result in a reduction in gross emissions. However, the grazing activity could be moved elsewhere, and the emissions from farming these animals simply be relocated to another property. In any event, given the small size of the property, any impact on the NDC from retiring the land from grazing is unlikely to be significant. Despite this the Applicant maintains that its proposal for this Land will reduce net emissions for New Zealand via its carbon sequestration compared to the Vendor's farming activities.

The Treasury does not report New Zealand's NDC commitment as a liability in the financial statements of government as there is no financial sacrifice if the target is not achieved. More broadly, Governments have the ability to modify or change the obligation before it crystallises. It is within the discretion of Government to adjust the timing and nature of the costs that will be incurred to meet targets by selecting from a range of policy options available to reduce emissions. A recently published joint report by the Treasury and the Ministry for the Environment makes it clear that the cost of achieving New Zealand's first NDC is highly uncertain. This includes significant uncertainty regarding the degree to which offshore mitigation may be required and at what cost. ~~The NDC is not a strict fiscal liability on the Government's accounts. There is a commitment to meet the NDC however it is not a legislated debt and the obligations may eventually be met without the purchase of offshore mitigation. The actual economic cost of meeting the NDC through the purchase of offshore mitigation is also uncertain as the price of carbon units fluctuate.~~

Commented [MC[1]: However, given the Vendor's ability to on-sell these emissions, it is not clear that this activity would result in a net-emissions reduction.

As noted above this is the key point – sequestration that earns units that are then able to be sold through the ETS does not inherently reflect reductions in New Zealand's whole-of-economy net emissions – which are the metric against which NDC achievement is measured.

[1] The $17.5 m claim is based on a 'shadow value' calculation, which the Applicant considers to be a more realistic measure of the cost of increased emissions. 'Shadow value' is a term referring to the value to society of avoiding climate disaster. The loss of value to New Zealand society, the environment, and the economy of increased carbon emissions include known and unknown effects (eg cost of extreme weather events and economic disruptions impacting on world peace).

The Applicant proposes that its original national economic benefit claim (based on the price of carbon units) is conservative and should be increased to $17.5m (based on shadow values, the more realistic measure of the cost of increased emissions) based on Treasury guidance to the Government and all Government agencies. As noted in Treasury guidance to agencies, the Treasury's recommended shadow prices for use in CBAx are intended for use by central government agencies' use, rather than for any other purpose. Treasury's guidance is also clear that these emissions values are broadly based on the estimates of the anticipated future costs of emissions reductions (abatement) required to reach New Zealand's *domestic targets*, as reflected in the Climate Change Commission's final advice on the first emissions budgets and first emissions reduction plan. They do not represent estimates of what potential costs for offshore abatement to achieve the NDC could be (which, as noted in the Treasury and Ministry for Environment's recent report, could be both more or less expensive than anticipated domestic costs). For these reasons LINZ does not consider the Treasury's shadow values as appropriate to be applied by the Applicant for the purpose of supporting its specific national economic benefit claim. Rather than its original national economic benefit claim being conservative, due to the Applicant's ability to on-sell NZUs to emitters and the uncertainty that the Applicant's proposed activity would decrease New Zealand's net emissions that this creates, LINZ further considers that this updated estimate and the Applicant's original estimate are likely to be overstated.

~~- 'Shadow value' is a term referring to the value to society of avoiding climate disaster. The loss of value to New Zealand society, the environment, and the economy of increased carbon emissions include known and unknown effects (eg cost of extreme weather events and economic disruptions impacting on world peace).~~

We consulted with Manatū Mō Te Taiao Ministry for the Environment (**MfE**), and Manatū Ahu Matua Ministry for Primary Industries (**MPI**), and Te Tai Ōhanga The Treasury (**Treasury**) in preparing this advice.

Commented [MC[2]: If this is how the **Applicant** defines this shadow value (i.e. "the more realistic measure") then this should be clear.

The shadow values are not appropriate to be applied in this instance, given their intent is solely for the purpose of supporting government agency cost benefit analysis, as made clear in the CBAx guidance.

Commented [MC[3]: This is the definition of the social cost of carbon, which is one (but not the only) way to think about a shadow value.

A shadow value is the cost that "is not paid" that reflects a given cost (or benefit) of something to someone.

The Treasury's recommended shadow values are only recommended for use by central government, given they reflect the potential whole-of-economy costs of additional (or reduced) emissions, from the perspective of meeting national targets.

Critically, the Treasury's shadow values only monetise and do not quantify. Given the logic clearly stated above that earning additional units in the ETS may not lead to net emissions reductions for New Zealand, regardless of what price is applied, the value to New Zealand could be $0 (if all emissions that are sequestered are on-sold to emitters and therefore no net-emissions reductions are actually gained).