

Investment View: Our rating is outperform.

We expect the price of carbon globally to continue to rise. The Carbon Fund will provide investors with exposure to the rising carbon price via its holdings of NZ Units traded in the NZ Emissions Trading Scheme (NZ ETS), and/or, exposure to any offshore carbon markets that the Manager chooses to invest in.

Description of the Carbon Fund

On listing, the Carbon Fund will be an NZX listed portfolio investment entity (PIE) managed by Salt Investment Funds Limited. The Carbon Fund's investment objective is to provide investors a total return exposure to movements in the price of carbon credits. The Fund has the ability to buy carbon credits in emissions trading schemes in New Zealand and offshore. As a result, the Fund may also provide exposure to the price of carbon offshore.

Brief background to the NZ ETS & how it facilitates NZ carbon compliance

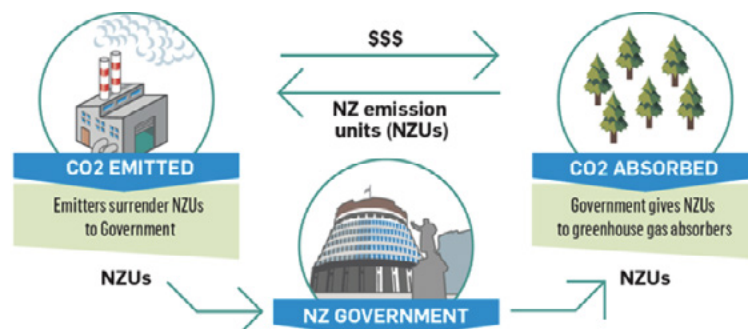
The New Zealand Emissions Trading Scheme (ETS) was introduced by the Labour government in late 2008 as New Zealand's primary mechanism for dealing with climate change. Whilst it was amended and changed by the incoming National government when they subsequently took office shortly thereafter - the mechanism remained and was re-launched in July 2010.

Our ETS is an intensity-based scheme covering all major greenhouse gases with no cap on emissions and a quasi-price cap per tonne of CO₂ of \$25.

At present, New Zealand's annual emissions are approximately 80 million tonnes per annum. Agriculture, which represents close to 50% of New Zealand's emissions, is required to report its emissions but is financially excluded from the ETS. It is possible that agriculture will be financially included in the ETS in the future. During the financial crisis the National Government introduced a carbon subsidy that allowed some businesses to surrender one NZU for every two tonnes of emissions. This subsidy has been phasing out since 2017 and will end on January 1, 2019.

In our scheme, most of the emission unit supply comes from forestry. That is, forest owners grow trees which sequester (absorbs and traps) carbon. They can claim emissions units (NZUs) annually from the government. They can sell those to emitters who then surrender the NZUs to the government. The government also gives a portion of NZUs free to certain trade-exposed industries as compensation for facing a carbon price domestically which is not present in the markets they sell in to.

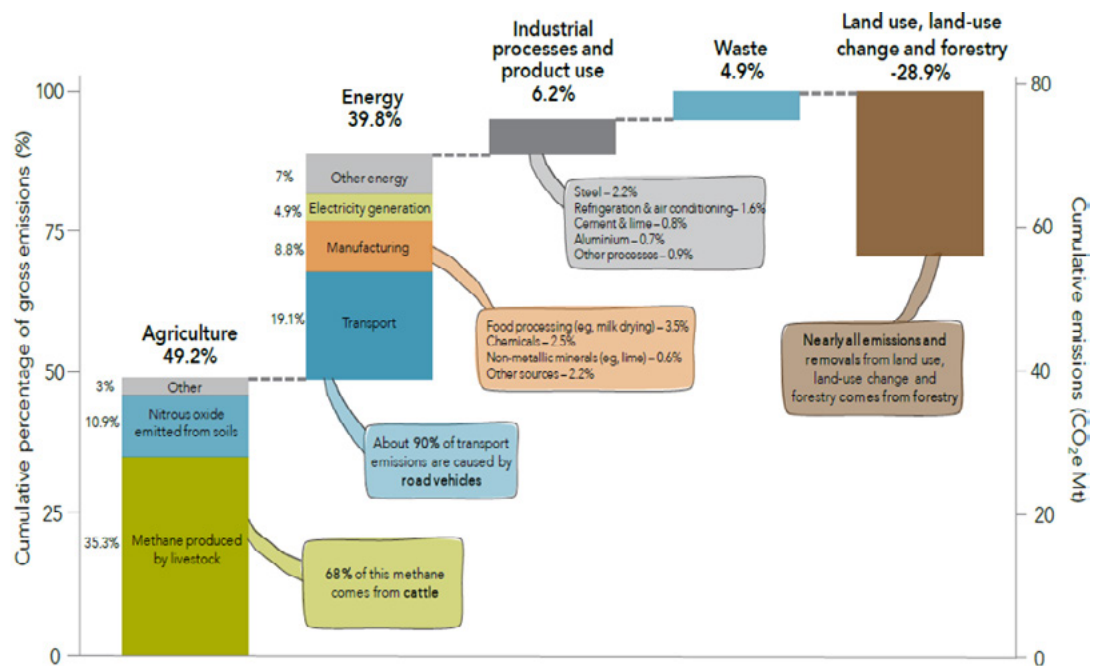
The following image provides a visual overview of our Emissions Trading Scheme:



New Zealand's Emissions profile

New Zealand's emission profile is unique given approximately 85% of electricity generation comes from renewable sources, and around 50% of our emissions come from agriculture. Transport accounts for approximately 20%, and then the rest is stationary energy (power plants), landfills, imported gases and some other sources.

The chart below depicts New Zealand's emissions profile as measured in 2016:



Source: New Zealand Productivity Commission. (2018). Low-emissions economy: Final report. Available from www.productivity.govt.nz/low-emissions

New Zealand's commitments under the Paris Agreement

New Zealand is on its third climate target under the Paris Agreement, having met the first Kyoto Protocol commitment period from 2008 to 2012 and it will meet its second target for the period 2013 to 2020. Under the Paris Agreement, New Zealand has agreed to reduce emissions 30% below 2005 levels by 2030, which equates to approximately 200 million tonnes of carbon. This won't be easy given our high agricultural emissions to which there is no present cure for the majority of these emissions. Our very high renewable electricity level means it will be difficult and expensive to get to 100% given the need to maintain security of electricity supply in abnormally dry years.

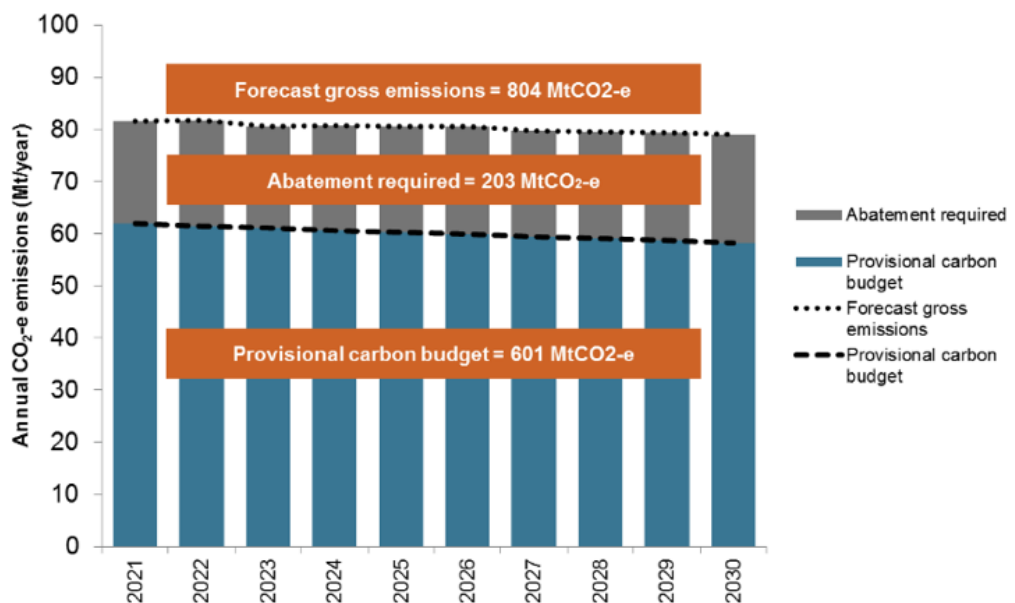
There is little low hanging fruit in New Zealand to reduce emissions. It is likely that New Zealand will need to access international carbon markets to meet its Paris goal.

Carbon budget over Paris commitment period and the abatement gap

New Zealand's emissions have continued to rise for most of this century and we have met our first commitment through our forestry sinks and use of international units. We will meet our 2020 target through the carryover of units from 2012 and further sequestration, however it's a different scenario under our Paris commitments. New Zealand's Nationally Determined Commitment (NDC) is to reduce greenhouse gas emissions by 30 per cent below 2005 levels by 2030.

The following diagram from the MFE shows New Zealand's projected "business as usual" path from 2021 to 2030 as the top dotted line and our target under Paris (NDC) as the dashed line. The blue bars below this line represent our carbon budget. The grey bars represent our required abatement.

New Zealand's NDC under Paris equates to a reduction of approximately 200 million tonnes of emissions by 2030. Some of this required reduction will be met by forestry, and some by domestic abatement, but the majority will likely come from accessing international markets.



Source: Ministry for the Environment

The role of forestry, and why it is unlikely to be the abatement solution for Paris period

As mentioned previously, the majority of New Zealand Unit supply (NZUs) comes from forestry. New forests grown since post-1989 can be entered voluntarily into the ETS and earn NZUs which may then be sold to emitters. Currently ETS rules require that the majority of these NZUs must be surrendered by the forest owner at harvest.

The government is presently reviewing the ETS in relation to its architecture and ensuring it is fit for our Paris commitment and our track to net zero emissions by 2050. The government is also reviewing how forestry will be accounted for in the ETS. This doesn't change our view on the likely price track for NZUs, but forest owners may see a structural change which enables them to better manage future liabilities. Under the proposed average accounting approach, forestry participants would earn NZUs representing an average level of carbon stock stored through the long term.² This differs from the current methodology where NZUs are earned through to peak carbon stock, but then the full liability is worn at harvest. This change would align with how New Zealand accounts for forestry sinks at an international level.

As carbon prices rise, this becomes an incentive to use land for the growing of carbon which remains permanent (never harvested), or makes the combination of carbon & fibre (logs) more attractive as a land use.

However, the growing of trees under the current trend will only see this method most likely contribute to around 40% of our Paris NDC-based net emissions reduction. This may increase slightly with higher ambition, but the cost and availability of land, seedlings and mobilisation of planting workforce will mean we almost certainly won't meet our entire Paris target and will likely need access to international carbon markets to make up the difference.

Demand side pressure for NZUs and what happens when/if free allocations are reduced to emission intensive producers (incl. agriculture)

The New Zealand Government currently provides free allocations of NZUs to Emission Intensive Trade Exposed Industries (EITEs). Companies which fall under this umbrella and face a domestic carbon price receive a free allocation of units ranging between 60% and 90% of their emissions. This policy may change as we move into the Paris commitment period. Free allocations may reduce or be replaced with an auction-based system. This would likely add to further demand for NZUs.

Agricultural emissions are not currently financially liable under the ETS. We think this is likely to change from 2021 where we may see an initial phasing in of agriculture. This may be a net neutral situation initially as the agriculture sector may still initially receive free units. We think this change will add to demand over the medium-long term as agriculture starts to manage emission price risk.

Bipartisan support for strengthening the NZ ETS and what could happen next (e.g price cap, lifting, linking to international markets, allocations etc)

The New Zealand ETS has always had bipartisan political support. Under the new coalition government, the Greens are in charge of the climate portfolio which in effect provides the ETS with very firm political support as the primary mechanism for dealing with climate change. At present there are a raft of measures and changes underway which will see the NZ ETS strengthened from what it was under the previous National government. It remains to be seen whether it has Opposition support, but the current government will likely have more than enough parliamentary support to bring in the changes it desires.

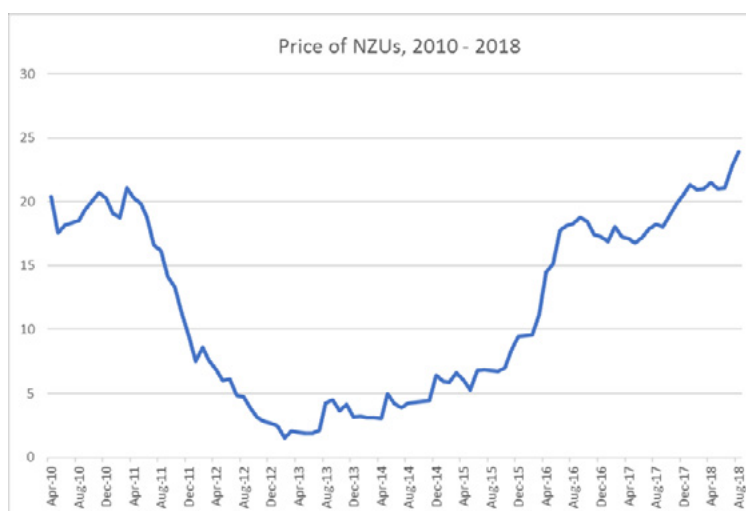
At present the following measures are being planned;

- a) The Zero Carbon Act which will see New Zealand move to net zero emissions by 2050,
- b) The establishment of a (UK-styled) Climate Change Commission to assist the government in meeting its targets,
- c) A review of the ETS, followed by consultation with changes to take effect late 2019 which may see the inclusion of agriculture in the ETS, changes to forest accounting for NZU sequestration and the lifting or removal of the price cap, and;
- d) Decisions around auctioning of units into the ETS and further free allocations.

In addition, at an international level, it is expected that rules around the development of international carbon markets could be finalised by the end of this year. The linking to these markets will be at the discretion and agreement of countries involved. Not all countries will link and there may be a formation of several "carbon clubs" that allow linking of their emission trading schemes.

New Zealand Unit price history and outlook 1/2

Since the New Zealand ETS delinked from the Kyoto market in mid-2015, New Zealand Units have (NZUs) experienced meaningful price appreciation.



Source: OM Financial Limited

New Zealand Unit price history and outlook 2/2

In August 2018, the New Zealand Productivity Commission released their final report titled Low-emissions Economy. As part of the report, the Commission attempted to quantify the level of future emissions prices that are needed to drive decarbonisation behaviour and transition to a lower emission economy in order to meet not only New Zealand's Paris Agreement objectives, but longer dated emissions targets set for the year 2050.

The Commission's future emissions price review lent heavily on work completed by the Concept-Motu-Vivid (CMV) consortium. CMV looked at modeling price trajectories and tried to understand what carbon price was required to enable New Zealand to reach both a low emissions environment and a net zero emissions environment by 2050.

This modeling is dependent on the forecasting of many variables including; technology developments, forestry, economic growth and the change in key contributors to New Zealand's economy over time. For this reason, there is a wide range of potential carbon price outcomes.

CM Concept-Motu-Vivid's modeling concluded that New Zealand could reduce its emissions to 25 Mt of CO₂e per annum at an emissions price in a range between \$75 a tonne of CO₂e and \$152/t of CO₂e by 2050. Similarly, New Zealand may be able to achieve a net-zero emissions target by 2050³ with emissions prices rising to between \$157/t of CO₂e to \$250/t of CO₂e by 2050. This compares to a current NZU spot price of \$25/t.

In a global context, similar work has been undertaken by The Carbon Pricing Leadership Coalition, supported by the World Bank Group. Their commissioned report concluded that the explicit carbon-price level consistent with the Paris temperature target in a supportive policy environment lies between US\$50/t of CO₂e and US\$100/t of CO₂e by 2030.⁴

- 1) <https://www.mfe.govt.nz/climate-change/new-zealand-emissions-trading-scheme/about-nz-ets>
- 2) Ministry for Primary Industries; <https://www.mpi.govt.nz/news-and-resources/consultations/a-better-ets-for-forestry/>New Zealand Productivity Commission. (2018). Low-emissions economy: Final report. Available from www.productivity.govt.nz/low-emissions
- 3) Source: New Zealand Productivity Commission. (2018). Low-emissions economy: Draft report. Available from www.productivity.govt.nz/inquiry-content/low-emissions-draft-report
- 4) Source: High-Level Commission on Carbon Prices. 2017. Report of the High-Level Commission on Carbon Prices. Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0 IGO

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