

**Submission to the New Zealand Productivity Commission on
“LOW-EMISSIONS ECONOMY: DRAFT REPORT”
JUNE 2018**

Introduction

Straterra is the industry association representing the New Zealand minerals and mining sector. Our membership is comprised of mining companies (including coal), explorers, researchers, service providers, and support companies.

We welcome the opportunity to make this submission on the New Zealand Productivity Commission’s Low-emissions economy: Draft report released in April 2018 (the draft report).

Straterra acknowledges the global imperative of reducing carbon emissions but believes more can be achieved if New Zealand acts in concert with global progress. The challenge ahead is how to reduce New Zealand's emissions without increasing global emissions.

We support the approach the Commission has taken to writing this draft report. It is a comprehensive discussion of the issues and we welcome many (but not all) of the findings and recommendations made. Our submission responds mainly to the issues impacting on coal and the broader minerals sector.

Executive Summary

Mining is an essential part of a low emissions economy - providing minerals needed for green technologies including wind turbines, electric vehicles and computer technology etc.

Coal is a cost competitive source of energy and an important input for much of our primary sector export industries.

We are pleased the report recognises the limited opportunities to directly reduce emissions from iron and steel production and the challenges of transitioning away from coal particularly in the South Island.

New Zealand must be cautious where options will simply encourage both investment and jobs to go offshore. That would be a loss for New Zealand, and no benefit for global emissions.

Submission

General Comment – Old Economy vs New Economy

While we support the general approach of the Commission in writing this report, there is some language that we think is unhelpful - namely “old economy” and “old industries”. While not specifically named there is an inference that coal sits in those categories. We acknowledge that an economy transitioning to a low emissions economy will change but it will be an evolution not an abrupt change. The path taken and exactly what the end point looks like are not certain and what is “old” and “new” may not be so clear-cut. We see a strong future for the minerals sector, including coal, which is not only consistent with a low emissions economy but a key driver of it as is set out in this submission.

We acknowledge the draft report’s focus is a low emissions economy for *New Zealand* as opposed to *the world*. If the focus were on the latter (and in some ways it should be as we argue in this submission) then New Zealand coal would have an even greater role than it does now. Even with the focus on a low emissions economy for *New Zealand* coal will make an important contribution and we dislike inferences that it is an old industry or old technology.

Mining’s contribution to a low emissions economy

Mining and minerals are an essential part of a low emissions economy. This fact needs to be part of the public discourse on climate change as currently there is a misperception among many people that all mining has a negative impact on emissions. While coal obviously has its own set of issues around carbon emissions, other minerals do not and not only this they are fundamental to a low emissions economy as they are used for the production of clean technology (e.g. wind turbines, solar panels and electric battery) as well as technology associated with low emissions industries (e.g. computer technology).

Demand is strong around the world for minerals which are used in clean-tech and which can aid our transition to a low carbon economy. That demand represents a real economic opportunity for New Zealand.

While outside the scope of this submission, Straterra would like to record its concern about the proposed ban on new mines on conservation land. This would limit the opportunities to discover high value deposits of rare earths and green minerals, which, according to recent information released by the government are likely to be concentrated under conservation land.

Carbon / Emissions Leakage (Chapter 4)

Section 4.3 of the draft report discusses issues around carbon / emissions leakage. This is an important issue for New Zealand’s export dependent economy and for the coal sector. Coal, as an important energy source, is a significant input for a number of New Zealand export sectors

New Zealand's export economy is relatively energy intensive and much of it is dependent on coal as a cost effective fuel particularly in the South Island where there are fewer viable alternatives. High levels of energy are used to produce heat for industrial processes. The dairy and steel sectors for example are dependent on New Zealand's competitive advantage in energy.

If these energy-intensive, trade-exposed (EITE) sectors are disadvantaged by the government's policy response to climate change making them less competitive in the international markets in which we compete, production may re-locate from New Zealand and increase in jurisdictions that do not have robust climate change policies – i.e. the carbon emissions would 'leak' to another country. While New Zealand emissions would fall, the net impact is global emissions will stay the same - or even increase if production in other countries is more emissions intensive than the lost New Zealand production.

At the same time the New Zealand economy will suffer as jobs and investment are transferred offshore, for no environmental benefit.

The Paris Agreement might 'allow' this outcome, but policies that do not result in a reduction in net global emissions are not doing anything to achieve the global climate change objective.

As the draft report says, even when a level playing field in terms of policy response in the other countries is achieved (i.e. emissions price parity is reached). It is likely to be hard to reverse shifts in production away from New Zealand and attract it back here.

It is crucial government policies take account of the problem of emissions leakage. It is clear that it would not exist in the presence of a uniform global emissions price but this does not currently exist. In the meantime, we agree with the draft report, allocation of free units is a better approach than total exemption to address the negative impacts emissions pricing has on competitiveness.

Not only is coal an important input into many New Zealand exports but it is exported directly - particularly coking coal which is an essential component of steel manufactured offshore (as well as New Zealand). Coal exports are not counted in terms of New Zealand's emissions account. If New Zealand reduces its coal exports, customers will purchase elsewhere. That means the steel will still be produced by overseas manufacturers and the coal will still be burned. So in other words New Zealand reducing its coal exports has no impact on New Zealand emissions (as they aren't counted), and more importantly will not reduce global carbon emissions either. In fact global emissions could rise if the coal is replaced by inferior coal sourced from producers with lower environmental standards as is likely the case.

This isn't technically emissions leakage but it illustrates the futility of curtailing New Zealand's export coal production as it would have a detrimental impact on the New Zealand economy. Our export receipts would suffer and New Zealand workers,

regions and government would lose out in terms of employment and revenues - as well as the global environment.

Electricity Generation / Security of Supply (Chapter 12)

Currently around 85% of electricity in New Zealand is generated from renewable sources with coal and gas playing an important role as a backup.

The technology does not exist to completely shift to 100% renewable or eliminate greenhouse gas emissions from electricity generation, without greatly increasing wholesale electricity prices and so the role of fossil fuels as a backup is likely to continue for the foreseeable future. In fact as electricity demand increases greatly in New Zealand (as it is expected to with the advent of electric vehicles etc.), coal's importance is likely to increase.

As a back up to renewable sources, coal plays an essential role in providing energy security. As an example, in April this year lightning strikes halted gas processing and gale-force winds at the same time reduced wind farm output meaning coal fired generation had to come into play.

Heat and Industrial Processes (Chapter 13)

Much of New Zealand's export economy (including agriculture, aluminum and steel) has grown on the back of New Zealand's comparative advantage in energy.

As stated, coal plays an important role in producing heat for industrial processes. It is a cost competitive source of energy and an important input for much of our primary sector export industries. Without cost effective energy, production costs for many of our exports would be higher and New Zealand less competitive in the international markets in which we compete.

Natural gas and geothermal energy are options for some users in the North Island but there are fewer opportunities for businesses in the South Island to switch to lower-emissions energy sources (barring a major discovery).

Electricity is the lowest-carbon source of energy in New Zealand for industrial purposes, but it is a poor substitute for coal. The document (Finding 13.3 and elsewhere) says that In the South Island, switching to electricity may be feasible for firms whose heat needs are negatively correlated with electricity prices, however, the scope for this is limited.

Natural gas emits about half as much carbon as coal per unit of energy produced. As such, gas is a good substitute where it is available in the North Island. However, the recent decision to ban gas exploration means that coal will need to be considered as an alternative to Natural Gas in the North Island.

Modelling (Chapter 5)

Chapter Five of the draft report reports on the modelling work undertaken for the Commission on New Zealand's transition to a low-emissions future.

We are concerned with some aspects of this modelling. Firstly we think it could have benefited from broader consultation in terms of scenarios modelled and assumptions made. We are also concerned about assumed closure in 2025 in one scenario and closure in others of New Zealand Steel, with no transparency in reporting on the basis for this. We have made comment in this submission elsewhere around the quality of New Zealand coking coal and other issues around steel production and the implications if it were to transfer offshore and the associated emissions leakage and the economic implications for New Zealand. While it is just a scenario, we think more useful ones could have been adopted.

We would be pleased to provide input and our views on any further modelling the Commission chooses to do on this subject.

Comment on Other Selected Findings / Recommendations

In this section we make comment on some of the Findings and Recommendations in the report

Finding 5.2 – Coal Subsidies

Fossil fuel subsidies act in direct opposition to New Zealand's transition to a low emissions economy. New Zealand provides approximately \$78-88 million per year worth of government support to fossil fuel production and consumption.

While coal is a fossil fuel, it needs to be stated that it does NOT receive any subsidies from the New Zealand government and so this finding does not apply.

We also dispute that the government has tilted the playing field for fossil fuels in its favour relative to any other New Zealand industries. We agree with the general sentiment of the discussion that subsidies should not be applied to fossil fuels or any other energy sector and in this regard we support Recommendation 12.1 as discussed further in our response below.

Recommendation 7.8 – Climate Commission

A Climate Commission should take an advisory role. Decision rights should not be delegated to such a Commission.

We agree an advisory role is preferable to a decision making role and will make submissions to the government on this issue as part of the Ministry for the Environment's current consultation process on the Zero Carbon Act.

Recommendation 12.1 – Electricity Subsidies

Given rapid changes in electricity-generation technology and potential effects of rising electricity prices on adoption of low-emissions technology in other parts of the

economy, the Government should not use subsidies or regulation to favour particular technologies that generate low-emissions electricity.

We support this recommendation. The rapid technological changes mean that government can't know which technologies will be best in the future. The UK experience of subsidising renewable technology and the costs now being faced, as discussed in the draft report, is very enlightening in this regard. It could well be that a currently unpopular but highly efficient fuel such as coal can be made to be more environmentally friendly whether that be through carbon capture and storage (see below) or some other new technology.

Finding 13.4 – Biomass

Significant technological and logistical improvements will be needed before biomass becomes a cost-competitive and emissions-neutral alternative to fossil fuels for large industrial heat plant.

We agree with Finding 13.4 about the weaknesses of Biomass (essentially wood and plant waste) which is often floated as an alternative to coal.

Biomass will have a role in favorable circumstances, but does not provide options at scale. It is difficult to transport and store due to its bulk. This is compounded by the fact it is not localised at scale or over time, and dilute- it would take 90,000 hectares of trees planted specifically for biomass harvesting to fuel South Island dairy production. Its quality can also vary widely due to moisture content in wood waste, affecting consistency of combustion and heat production.

Finding 13.6 - Steel Production

Barring technological breakthroughs, opportunities to significantly reduce emissions from iron, steel and aluminum production remain limited.

We agree with Finding 13.6 about the realities around iron, steel and aluminum production and the limited opportunities to reduce emissions from their production.

Iron and steel are particularly relevant for the coal sector. While an increasing amount of steel is being recycled, there is currently no technology to make steel, at scale, without using coking coal.

This reinforces the point made earlier in the submission that until technology develops coal will be burned to produce these products and so it is better for the global environment as well as global emissions that the coal is sourced from a jurisdiction which has strong environmental regulations such as New Zealand. New Zealand has a comprehensive framework for managing coal mines in terms of fugitive emissions.

Recommendation 13.3 and 13.4 - Carbon Capture and Storage

R13.3 - New legislation should be prepared to regulate carbon capture and storage activities (CCS).

R13.4 - Once new CCS legislation is in place, the New Zealand Emissions Trading

Scheme should be amended to make CCS a recognised removal activity, no matter the source of emissions being captured and stored.

Carbon capture and storage (CCS) is a rapidly-evolving and potentially significant mitigation technology, which could be well-suited to large-scale, single-source emitters such as iron, steel and aluminum production. Such technologies would also enable New Zealand to continue exploiting its comparative advantage in coal with reduced emissions.

We encourage the development of carbon capture and storage technologies and support the two recommendations above.

Appendix - New Zealand's Coal Industry

Of the sectors we represent, the coal sector is most affected by the findings in the draft report. In order to give some context to this submission, we provide here some background information on New Zealand's coal sector and its relevance to climate change.

New Zealand produces thermal and coking coal:

- Thermal coal is an important and traditionally low-cost input to our export sector. These industries compete in international markets where our exporters are price takers who cannot pass on additional costs.
- Coking coal is an essential input into the production of steel, for which there are currently no substitutes at scale. This means as long as the world needs steel, coking coal will be produced. Given the coking coal market is global and demand-driven, demand will always be met by supply somewhere (subject to regular economic constraints).

Coking coal accounts for around a third of New Zealand's coal production - all of it from the West Coast - and virtually all of the country's coal exports. As an export this coal does not register on New Zealand's emissions account.

New Zealand has 18 producing coal mines, all of which are open cast mining operations. The major coalfields are located in the Waikato, the West Coast, Otago and Southland.

Coal is an essential input into diverse industries and commercial uses in New Zealand:

- **Electricity generation:** Genesis Energy's Huntly power station operates two Rankine units for coal-fired generation. This residual capacity manages the risks of fluctuations in renewables, particularly in dry years, i.e. it contributes to energy security by managing supply risk.
- **Steel-making:** The Glenbrook mill uses coal and ironsands to make iron and steel. Coal is both a heat source, and a metallurgical input. Steel, with cement, are necessary ingredients for almost all infrastructure, including renewable electricity generation and transmission.
- **Cement and lime-making:** Coal is a source of heat and is a chemical input into Golden Bay Cement, and a number of plants making lime for fertiliser.
- **Food processing:** In the South Island, coal is used as process heat in the manufacture of milk powder and other dairy products, chocolate, meat processing, vegetable canning, salt, gelatine, dried herbs, breweries, and more.

- **Hothouse horticulture:** Tomatoes, rocket, capsicums, chillies, flowers, and numerous other plants and vegetables are grown in commercial hothouses, which are heated during the winter, and the production of carbon dioxide encourages plant growth.
- **Other industrial processing:** Wood, timber, other construction materials, wool, and leather are among products processed with the use of coal as a source of industrial process heat.
- **Heating of commercial facilities:** In the South Island, schools, universities, hospitals, museums, laundries, hotels, offices, swimming pools, and other facilities are heated using coal.

As a source of industrial process heat, coal is used because of its cost advantage, being roughly one-third the price of electricity per unit of heat produced. It is also a reliable source of energy, and is easy to transport, store and handle when compared to other solid fuels, e.g. biomass.

Coal represents only 7% of New Zealand's emissions. New Zealand makes up 0.2% of global emissions.