Submission from Straterra to the Ministry for the Environment Emissions Reduction Plan

August 2024

Introduction

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

2. We welcome the opportunity to comment on New Zealand's second emissions reduction plan (ERP) discussion document (the document) covering the second emissions budget period, from 2026-2030. We note that the final plan will published by the end of this year.

Key points

- We support the shift in emphasis away from gross emissions towards net emissions.
- We support the introduction of non-forestry removal mechanisms including carbon capture utilisation and storage.
- We support reinstating the New Zealand Emissions Trading Scheme (NZ ETS) as the main tool to determine where and how to reduce net emissions rather than the use of complementary policies which distort market signals and discriminate against sectors of the economy.
- Coal is a reliable and flexible energy input, with many advantages over gas, and coal has an ongoing role in providing backup to New Zealand's renewable electricity generation system.
- The proposed move away from coal to biomass and electricity as sources of industrial process heat presents challenges that are insurmountable at present, including price and availability.
- Government policy and actions must not discourage the production of New Zealand coal before alternative sources are readily available, accessible and affordable, and while the energy system is prone to creating high prices.

Submission

3. Our submission focuses on the Energy chapter (Chapter 5) of the document but we also make comments on a number of key issues that the document raises.

4. First, we make some general comments on mining and climate change and outline our position on emissions reduction.

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General comments

Straterra's position on emissions reduction

5. We support global action to reduce carbon emissions and New Zealand's goal of achieving net zero emissions by 2050. New Zealand needs to play its part in global commitments to meet the objectives of the 2015 Paris Agreement.

6. In reducing New Zealand's emissions, it is essential that policies do not lead directly to increased global emissions through domestic economic activity closing down and/or shifting offshore (carbon leakage). Integral to this is that we maintain the international competitiveness of the energy intensive sectors of our economy.

7. Any initiative to reduce emissions should be assessed in terms of its impact on both global and local emissions, as well as its impact on the local economy.

Mining and climate change

8. Mining plays an important role in reducing global emissions. Mined minerals are needed in increasing abundance to make wind turbines, solar panels, batteries, electric vehicles etc. as the world transitions towards a lower-carbon future. Such minerals include those traditionally mined in New Zealand, including coal and gold as well as new mineral opportunities as set out in the Government's draft Minerals Strategy.

9. Minerals also have an important role in helping New Zealand adapt to the effects of climate change as we outline later in this submission. For example, coal (used to make steel) and aggregates – sand, gravel, and rock – are needed to make infrastructure more resilient to resist greater-intensity storms and extreme weather events.

Global context

10. There is very little comment in the document on what is happening internationally – particularly the degree to which New Zealand's trade competitors and other countries are reducing their emissions in line with their commitments.

11. According to the World Bank's State and Trends of Carbon Pricing 2024, carbon pricing schemes still only cover 24% of global emissions. The average price provided by ETS schemes and carbon taxes was US$8.00 (NZ$13.21) compared with New Zealand's of around NZ$51.00 (US$31.00). This is important because there is no point in New Zealand moving faster than other countries to decarbonise if the outcome is leakage, as discussed above.

12. For this reason, we are pleased to see, on page 38, the potential to link the NZ ETS with other countries. Even though an international carbon market is not possible at this time, we consider New Zealand's ETS should be amended to allow some trading in international carbon units (from credible sources) by market participants. Introducing a mechanism into the ETS to benchmark the NZU price with a weighted average of our trading competitors is a policy proposal to consider.

The emissions reduction plan

Net vs gross

13. We support the plan's shift in focus toward's net emissions, away from gross, and the newfound emphasis on removals of carbon dioxide alongside reductions.

14. The Climate Change Response Act 2002 has a 'net zero' emissions target not a 'gross' target so this shift in focus is entirely appropriate.

15. Climate science dictates that removing carbon from the atmosphere is just as important as reducing gross carbon emissions; therefore, net emissions matter more than gross. As it says top of Page 24, "under our climate change targets, removing one tonne of carbon dioxide through forestry, for example, is recognised as equivalent to preventing the emission of one tonne of carbon dioxide in the first place".

16. Focusing on net emissions provides options for both reducing and removing emissions.

Carbon sequestration / Mineral use in technologies to store carbon dioxide

17. We agree Carbon Capture, Utilisation and Storage (CCUS) technology is one of many tools that should be available to New Zealand to help it achieve the net target, and that sequestration opportunities other than forestry be considered.

18. On page 22 the document says: "In future, we may have other viable options for removing emissions, such as restoring wetlands, and capturing and storing carbon". In fact, there are several sequestration options that should be explored.

19. We support the discussion in Chapter 9 – Non forestry removals. There are a number of non-forestry removal mechanisms that can and should be considered. Many of these involve the minerals sector. For example the absorption of atmospheric CO2 by exposed hardened concrete and lime.

    - Currently, carbon dioxide emitted from the manufacture of lime from limestone (which is substantial per unit of product) is captured by the ETS but the regime does not recognise that when the lime is applied in industry there is significant reabsorption of the CO2 generated during production – 100% in the case of lime applied to water treatment.
    - Exposed surfaces of hardened concrete absorb atmospheric CO2 in a natural process recognised by the Intergovernmental Panel on Climate Change (IPCC).
    - Subsurface carbon mineralisation is a developing technology that captures and permanently removes CO2 and other greenhouse gases from the atmosphere. This uses ultramafic rock formations rich in certain minerals (e.g. dunite, olivine and basalt) present in New Zealand.

Emissions Trading Scheme

20. We are pleased that the ERP asserts that emissions pricing through the NZ ETS is the main tool to determine where and how to reduce net emissions (e.g. page 25). We agree with this.

21. Many regulations and policies to reduce emissions are not necessary given the Emissions Trading Scheme's sinking lid on NZU supply. It is this approach, by definition, that will bring New Zealand emissions down, not the array of proposed interventions contained within the ERP.

Complementary policies

22. We accept that complementary policies may have a role alongside the NZ ETS but these should be used sparingly. The examples given on page 25 i.e. research and development, removing regulatory barriers or addressing market failures such as lack of information, may all be appropriate but we disagree with the heading on this page stating that complementary policies have an important role alongside the NZ ETS.

23. Many of the proposals contained within the previous ERP would result in market distortions, create unintended consequences, and be hugely disruptive to the economy and the people of New Zealand. They are also likely to contribute to a NZU price lower than it would otherwise be for a given amount of reductions. The Government Investment in Decarbonisation of Industry (GIDI) Fund, which we did not support, is a good example of money spent for little gain given the companies' decarbonisation was occurring any way in most cases.

Review of the NZ ETS

24. As well as fewer complementary policies, for the ETS to work efficiently regulatory predictability is needed. For this reason we are pleased to see the review of the NZ ETS discontinued.

25. Significant changes on a frequent basis create uncertainty which impacts on confidence in the market and participants investing in the scheme. Stable and predictable ETS settings are needed for the scheme to work efficiently.

Vintaging

26. We support the Government's decision to rule out vintaging NZUs. NZU holders should retain the ability to surrender units when they deem it appropriate. Changing the rules and setting an expiry date reduces holders' flexibility in how they reduce their emissions and the value of their NZUs.

27. Likewise, we do not agree with the Government's rationale for a drawdown of the stockpile. Banking is a valuable feature of cap-and-trade systems (and markets generally) around the world. It supports risk management and market liquidity and does not prevent the eventual surrender of the unit.

Sector Plans – Energy

28. This section of the submission comments on Chapter 5 of the document relating to the energy sector plan.

Coal and electricity generation

29. Coal's role in electricity generation is limited but it makes a crucial contribution to energy security as a backup fuel to meet peak demand in winter; to cover dry years when the hydropower is limited; at times when the wind isn't blowing and the sun is not shining; and also, in times of gas outages. As shown in Figure 5.2 on page 50, only 2.9% of electricity generated in New Zealand in 2022 was sourced from coal. 84.5% of electricity generated came from renewable sources.

30. We argue coal should continue to be used as a back up fuel for electricity generation, even, as we explain below, as part of a strategy to lower energy emissions.

Coal vs gas

31. The document accepts there is a role for fossil fuels as a backup in electricity generation for security of supply, but it sees gas playing this role. "Natural gas will continue to play a role in keeping electricity affordable and secure, leading to lower emissions and a productive, growing economy." (page 49).

32. As matters stand, there is uncertainty over future gas supply in New Zealand. Gas is subject to outages at existing producing assets. There is currently talk of importing gas to make up the shortfall. Due to these factors, it would be unwise not to allow coal to continue to play a role to safeguard New Zealand's energy security as well as gas.

33. Coal is a reliable and flexible energy input, easily stored, handled and transported so can be used at short notice. It may be true that coal has twice the emissions impact of gas (per unit of energy)

but these properties mean it should not be dismissed as a complement to gas and renewables in what would be relatively small quantities.

34. The 2.9% referred to above equates to a relatively small quantum of emissions for the benefits of keeping the lights on and avoiding the current electricity crisis.

Future demand for electricity to assist in decarbonisation

35. We agree with the document – electricity demand is likely to increase significantly in the future as increased electrification of transport and industry occurs. Figure 5.3 has electricity demand increasing by around two-thirds between now and 2050, largely due to this.

36. We also agree with the document that the bulk of the new generation capacity will be renewable which is positive for New Zealand's emissions path. However, as discussed, we think it is likely that coal should, and will, continue as a backup to this new renewable electricity, as well as gas. In fact, in volume terms – if not as a proportion – there is a case for it to increase alongside renewable growth as a back up to meet the growing demand.

37. In spite of an increase in fossil fuel use in electricity generation (coal and gas), lower emissions for New Zealand would still result overall through greater electrification, i.e. as transport and industry switches to electricity.

38. We note the comment on page 50 of the technical document that renewable electricity may accelerate the displacement of coalfired generation, particularly for baseload and intermediate generation. This is misleading as coal is only ocasionally used for baseload and intermediate generation. It may be that some coal could be displaced by new renewable generation capacity but, as the Government knows, it is unwise to invest "too much" in renewables. Decarbonising the last few percent of the electricity mix comes at a very high marginal cost of abatement. For this reason, we are pleased the previous Government's unrealistic goal of 100% renewable energy has been abandoned. Moving towards 100% renewables would make electricity increasingly expensive, thereby disincentivising the electrification of transport and industrial heat.

39. In other words, to reiterate our earlier point, a limited amount of coal / fossil fuels used as a backup to our renewable resources is actually a step towards achieving emissions reductions overall. Paradoxically, continuing with coal can make the increased electrification goal easier to achieve and reduce emissions in the process.

Industrial process heat

40. Thermal coal is used as an industrial heat source and so has an important role in maintaining the international competitiveness of our manufacturing sector – in particular domestic food production for domestic consumption and export.

41. Government policy is aiming to phase out thermal coal from industrial process heat and replace it with alternative sources, such as biomass and electrification. This is being carried out through the *National Policy Statement for Greenhouse Gas Emissions from Industrial Process Heat* (NPS-GHG) which has banned the installation of new low and medium-temperature coal boilers and is phasing out existing coal boilers by 2037 (no renewals of resource consents beyond 2037).

Impact of high energy prices

42. A number of issues need to be considered if New Zealand is to transition out of thermal coal for industrial process heat. Not least, as touched on earlier under General comments, any policies to transition out of coal must avoid carbon leakage.

43. That is, they must not result in company closures and economic activity and the emissions simply being transferred offshore. The industrial disruption currently occurring as a result of high energy prices (associated with low lake levels and gas shortages) shows the importance of maintaining competitive energy prices as the risk of company closures increases. With those company closures go jobs and economic contraction locally and across the country.

44. Current high wholesale electricity prices and uncertainty in the gas market are also raising questions for the industrial process heat sector as companies transition out of coal and it may be that the need to retain coal as an option will continue for longer.

Challenges posed by alternative fuels

45. The anticipated move away from coal to alternatives such as biomass and electrification, as brought about by the NPS-GHG, presents many challenges.

Biomass

46. Challenges associated with biomass include its limited quality (e.g. moisture content), the availability and reliability of supply, transport, handling and storage logistics, and cost.

47. It should also be noted that biomass emits more CO2 than coal when combusted to produce a unit of energy, according to recent research[1]. The reason for this is that the calorific value of the biomass is lower and with higher total moisture, efficiency is lost in driving off the water. The impact of this is the huge volume of biomass that is required, and that has an impact on transport emissions and other associated costs to truck larger volumes of biomass to industrial sites (more transport miles).

48. While we know some individual users have switched, or have signalled their intentions to switch to biomass, we are not aware of any evidence that supports the replacement of coal with biomass at the scale proposed. Fonterra once said that to replace its coal-fired boilers with wood biomass it would need access to a forest the size of Belgium, every year, to keep them running. That's just one company. There is not enough biomass currently and new plantings will take decades to mature – a timeframe which does not align with the phasedown period proposed.

49. Add to this the fact that other industries will still need wood products, which biomass to replace coal may be taken away from. It seems unlikely that New Zealand will be able to create enough biomass at the right places to meet the anticipated switch.

Electrification of boilers

50. In the case of electrification of boilers, challenges include the cost of arranging transmission and insufficient electricity capacity in places. The capital cost of boiler conversion is significant as is the onging cost of electricity for industrial consumers. It has been estimated that the cost of electricity in terms of operating costs is roughly 3-4 times that of coal per unit of heat produced.

Risk that coal supply ends before alternative energy sources are available

51. While we are pleased with the steps taken by the Coalition Government to end the discrimination against the production of coal in New Zealand, "demand side" instruments such as the NPS-GHG are

[1] We are happy to share this with the Government.

causing many coal producers to consider scheduling closure of their operations earlier than they otherwise would, in anticipation of the reduced demand for coal these instruments would bring about.

52. It needs to be realised that this could have the unintended consequence of squeezing the supply of coal while demand from coal users remains high. In other words, if these alternative sources of heat energy are not available, or in place when the supply of domestic coal ends due to the premature closure of New Zealand coal mines, significant disruption to industry (food producers, steel makers, schools, hospitals etc.) could occur, likely requiring large volumes of imported coal to fill the gap.

Adpatation

53. We are pleased with the emphasis the Coalition Government is putting on adaptation to climate change. This approach recognises that New Zealand's ability to change the climate is limited, but that climate change is with us/happening and we need to address its impacts by increasing infrastructure resilience and community preparedness etc. Having said that, we question why adaptation is within the scope of the Emissions Reduction Plan.

54. Minerals have an important role in helping New Zealand adapt to the effects of climate change particularly to make infrastructure more resilient to withstand greater intensity and frequency of extreme weather events.

55. New and strengthened sea walls, stopbank and flood protection elements, and other such protections made from rock and/or steel-reinforced concrete will be required as sea levels rise. Sand, limestone and aggregates are essential to make concrete. Coking coal and iron ore (including ironsands) are key ingredients of steel. Demand for these products will undoubtedly increase as climate change occurs.

56. The document gives a focus on adaptation in sectors where emissions are occurring. One example is in the electricity sector where climate change is likely to intensify seasonal and intraday weather conditions, further testing the resilience of the national grid as the country becomes more reliant on renewable generation. This issue further strengthens the case discussed earlier to continue using coal (and gas) to provide backup.

Distributional impacts

57. We support the attention given in the document to the distributional impacts from emissions reduction policies. Needless to say the higher energy prices that will result from emissions reduction policies impact on different sectors of the community to varying degrees.

58. Focus is needed on communities under increasing pressure as emissions reduction polices start to bite. On the West Coast for example, coal mining represents a significant part of the region's employment and economic output. Mining in Buller directly contributed 19.9% of the district's total GDP in 2023. This means Buller's economy is more dependent on mining than Wellington's is on the public service. As discussed elsewhere, we are particularly concerned that policies to end coal mining will simply result in increased imports of coal to be burned locally meaning the net effect is both no decrease in emissions, as well as economic contraction which would have major impact on the regional development of such communities.