

Submission from Straterra

To MBIE

Accelerating Renewable Energy and Energy Efficiency

February 2020

Executive Summary

This submission focuses on the proposals for phasing out fossil fuels in process heat, particularly coal-fired boilers.

It argues that New Zealand needs to balance economic and environmental priorities in our emissions reduction initiatives. Ad hoc policies that seemingly ignore the ETS, such as banning of new boilers and phasing out of existing ones as well as a levy on coal consumers send confused and uncertain signals to the market.

The outcome sought by these initiatives is more appropriately addressed in the upcoming reset of the emissions trading scheme.

Companies are switching from coal now, and/or investing in this transition. This will continue. Imposing a ban and phase out would be detrimental for businesses for which the use of coal is, at present, key to their competitiveness. If these businesses are forced to switch from coal, that would damage the international competitiveness of New Zealand's export sectors without reducing global emissions.

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 submit on the Government's discussion document, [Accelerating Renewable Energy and Energy Efficiency](#) (the document).
3. This submission focuses on:
 - Section 4: Phasing out fossil fuels in process heat, and
 - Section 6: Cost Recovery Mechanisms.

General comment on government approach to emissions reductions

4. Straterra acknowledges the international imperative to reduce carbon emissions and we support New Zealand's obligations to reduce our emissions. In reducing our emissions however, it is essential that:
 - the competitiveness of effected sectors of the economy is maintained, and
 - reducing New Zealand's emissions does not lead directly to increased global emissions.
5. In this regard, we welcome the government's consultations on how to reduce emissions but we question the apparent priority focus on emissions from industrial process heat when this is responsible for just 8% of New Zealand emissions (a quarter of which come from coal). In comparison transport accounts for 20% of the country's emissions but is politically difficult because of the high visibility it has with all New Zealanders.
6. Industrial processes are perceived as a soft target yet companies using them directly and indirectly employ hundreds of thousands of people and are responsible for the bulk of our exports. Policies which undermine the competitiveness of these industries put these jobs at risk.
7. Coal is a focus internationally because of its high emissions intensity and the fact that it is responsible for 40% of global emissions. Coal use in New Zealand contributes around 4% of our gross CO₂ emissions and 26% of our industrial heat emissions. Coal might be the single biggest source of emissions internationally, but it is not here.
8. Emissions from private motor vehicles in New Zealand are almost three times as much as emissions from coal. New Zealand emissions from international flights have risen significantly and now exceed those from coal burned in New Zealand.
9. In our view, the government's response to climate change has too much emphasis on business and industry and not enough on consumers. The key to reducing emissions from the use of fossil fuels is to change (reduce) demand. This will happen as regulations require, and competitiveness and cost burdens allow. Further, these ad hoc proposals pre-empt the more considered and evidence-based approach we expect the Climate Change Commission to adopt.

Coal in New Zealand

10. Coal as an industrial heat source has an important role in maintaining the international competitiveness of our agricultural sector – dairy in particular – and in domestic food production. Relatively small amounts are used to heat institutions such as schools and hospitals.
11. Coal also plays a role in providing energy security and steel manufacture, but the proposed boiler ban does not impact on these activities.

The Emissions Trading Scheme

The ETS is the key to reducing New Zealand Emissions ...

12. The government's main tool for reducing New Zealand's emissions is the emissions trading scheme (NZ ETS) which creates a financial incentive for businesses to reduce their emissions by putting a price on carbon / greenhouse gas emissions (the right to emit). It allows emitters to decide whether they wish to reduce their emissions by seeking out least-cost emission reduction opportunities, or to purchase the right to emit.
13. Allowed to work properly, emissions pricing is the least cost way of reducing emissions. It is at the centre of the strategy to reduce emissions and the government priority should be to provide an investment environment that businesses can work with.
14. The document says that the ETS to-date has not been effective in encouraging large-scale switching from fossil fuels to lower emission fuels and makes the case for complementary policies to help address market failures and to remove barriers to reducing emissions. The policies we are focused on in this submission aim to deter investment in new coal-fired process heat.

... and so complimentary policies aren't necessary ...

15. While there will be some exceptions, we do not agree with the premise that complementary policies are needed and believe that many of these are counterproductive or duplicative.
16. We are also concerned that the overlapping nature of many of them is causing policy incoherence and there are often incompatible goals. The decarbonisation fund for the public sector to switch out of coal was announced just after the proposed ban on new coal-fired boilers was being consulted on which is being considered before the ETS changes have commenced is an example of this.
17. Ad hoc policies such as the possible coal boiler ban and phase out, as well as the levy on coal consumers are not only unnecessary to achieve the government's aims but can inflict damage on a number of fronts.
18. Not only do they come at significant costs to businesses concerned and the people they employ, policies and regulations imposed on top of the ETS disrupt the efficient working of the scheme, throwing up distortions and unforeseen outcomes. For example, the reduced consumption brought about by a coal boiler ban could depress the carbon price which would increase emissions, or at least reduce abatement, elsewhere in the economy.

... especially with revised ETS settings about to be implemented

19. These complimentary policies also overlook that the government is taking steps to strengthen the New Zealand Emissions Trading Scheme (ETS) with major revisions to its settings, including the removal of the price cap and a newly introduced volume cap. These amendments to the ETS need to be allowed to run their course before complementary measures are imposed. Many of the proposals in the document – not least those relating to coal boilers – undermine the ETS.

20. In addition to the revised ETS settings, increased certainty about the direction of government policy in the form of the function of the Climate Change Commission and an increasingly bipartisan party approach have contributed to several conversions having been made even with the existing ETS settings and current carbon price. This further suggests that the policies such as the coal boiler and levy on coal consumers are unnecessary.
21. The document says uncertainty about future carbon prices and policy has contributed to the on-going attractiveness of maintaining fossil fuel technologies. We argue, and we see no evidence to counter the argument, that maintaining competitiveness has underpinned retention of existing technologies.
22. The main reason for the lack of switching from coal to alternative fuels is the economic 'gap' between fuel options with coal being so much more cost effective than alternative fuels. A higher carbon price will likely bridge that gap but there would then inevitably be a cost to competitiveness, jobs and export revenue.

Issues around forcing conversions from coal

23. An intended outcome of a ban on new boilers or a phase out of existing ones is to push/compel businesses and industries to switch from coal to alternative fuels for their industrial process heat. A ban is a very blunt instrument as it takes no account of individual circumstances and take no account of abatement costs.
24. The government has recently announced its \$200 million Clean Powered Public Service fund to help hospitals, schools and other public organisations move out of fossil fuels. While this will come at some cost to taxpayers it is the prerogative of government as owners and funders of the institutions and is a reasonable response given the government's emissions reductions goals.
25. When it comes to imposing conversions on private businesses, however, not only are there property rights at stake, the costs to our internationally competitive export sector are felt more widely.
26. We are disappointed the discussion document does not contain any cost benefit analysis of the feasibility and costs of alternative sources of process heat and the switching costs, as well as the impacts on the competitiveness of these businesses and their ability to fund these and future investments.
27. Businesses and industries use coal for their industrial process heat for rational (and sometimes unavoidable) reasons. The cost to businesses in the form of one-off capital conversion costs as well as ongoing operating costs will make them less internationally competitive. Switching is either challenging, or simply not feasible in the current environment.
28. These reasons include geographical constraints (e.g. natural gas is not available in the South Island) and process requirement (e.g. some fuels are not able to reach required temperatures) and economic reasons – both capital cost (e.g. boilers have been installed and

are expensive to convert, and operating cost (e.g. coal is more cost effective than alternative fuels).

29. There are few alternatives available to switch supply, especially in the South Island where there is a heavy reliance on coal given the absence of natural gas (as shown in the map on page 127 of the document). Electrification and biomass are usually floated as alternatives, but these have significant weaknesses / problems as set out below.

Problems with biomass

30. Biomass as a fuel source is limited by its quality, the available supply, cost, reliability, and transport issues.
31. There is simply not enough biomass for it to be an effective alternative, at scale. The map on page 128 of the discussion document supports this and shows the regional disparities that exist. Fonterra reports 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. 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 in the document.
32. Furthermore, if coal users did convert to biomass, those businesses currently using biomass – who do so because this is the fuel that best suits their needs - will find they are facing competition for a limited supply of biomass.
33. Transport difficulties relate to biomass's bulk compounded by the fact it is not localised at scale or over time. Approximately three truckloads of biomass have the equivalent energy value for a single truckload of coal. Storage and wood handling systems take up more space than coal and other boiler fuels.
34. The quality of biomass can also vary widely due to moisture content, affecting consistency of combustion and heat production.
35. As well as being bulkier, biomass is more expensive than coal on a per unit of energy basis. This means that in addition to upfront capital costs, there are higher ongoing operating costs associated with biomass. Anecdotally, it would cost between \$600,000 - \$700,000 for a South Island horticulturist to convert coal boilers to wood chip and increased ongoing variable energy costs 30-40% higher than their current costs.
36. We note the Clean Powered Public Service fund, as discussed earlier, has so far allocated \$10 million to 8 schools and two hospitals to help them switch to biomass. The announcement did not say much about the increased operating costs that those schools and hospitals will have to pay as a result.
37. In conclusion, biomass could have a greater role in favorable circumstances, but it does not provide options at scale. Significant technological and logistical improvements will be needed before biomass becomes a cost and business risk-competitive alternative to fossil fuels for large industrial heat plant.

Problems with electrification

38. The main problems of electrification relate to cost relative to (cheaper) coal and gas, and the inability of the existing electricity network to cope with increased demand.
39. It is estimated that the cost of electricity from an operating cost perspective is roughly 3-4 times that of coal per unit of heat produced.
40. There would also be significant capital costs for processing sites as they changed their internal infrastructure away from coal to electricity.
41. To give an idea of the costs involved, converting Fonterra's Edendale operations to electricity would require an initial capital investment of \$160 million, and annual operating costs would increase by at least 50%.
42. Network and lines companies do not have the reticulation in place. In many cases, local network infrastructure is already near peak capacity. Major grid upgrades would be required.
43. Most importantly the additional electricity that will be required for industrial processes will have to compete against electricity demand elsewhere which is likely to grow as other parts of the economy electrify, including transport.
44. Increases in electricity demand would result in higher electricity prices. Volatility in electricity prices is also a factor deterring businesses from wanting to convert.

Problems with Natural Gas

45. Natural gas is only available in parts of the North Island. Even where it is available, investment in new natural gas infrastructure is expensive. Furthermore, the government's recent decision to ban offshore gas exploration means that this potential is limited.
46. The disruptions to supply, which regularly occurs with gas, means coal provides a useful risk management role.
47. In **conclusion to this section**, coal use is not large in the scheme of things – it is only 4% of New Zealand emissions - but businesses use it for good reason. Converting to other fuels, which is the intended outcome of a ban on new boilers or a phase out of existing ones, is just not possible in many cases. Where it is possible, and access to commercially viable alternatives exist, conversions have already occurred, and more will occur as conditions change. A ban, however, would inevitably lead to businesses closing or taking their activities offshore. This would not only result in reduced economic activity and the reduced jobs and tax revenues that go along with it, but also carbon leakage as the emissions would simply occur elsewhere instead.

Arguments presented in favour of a coal boiler ban are weak

48. The document makes some interesting arguments for the ban and phase out which we refute in this section.
49. To justify a ban, the document argues that if carbon prices rise faster than expected emissions-intensive assets might become stranded before the end of their economic life

(page 40). While this is true, it is a business risk and does not justify government banning or phasing out coal boilers. It is a mischievous, circular argument that there is a case for government to intervene in this way to protect businesses from higher carbon prices which will be largely influenced by government policy anyway.

50. The document argues that a ban on new coal-fired equipment would simply encourage existing equipment to be used for longer than it otherwise would (page 40). This is one of the rationales given for requiring existing coal fired process heat equipment to be phased out. This would be inefficient for the business concerned but more cost effective than alternative fuels. It could also result in increased emissions as older equipment is likely to be less efficient.
51. The document points out a number of large businesses e.g. Alliance, Fonterra and Synlait have already voluntarily committed to not build any more coal-fired boilers (page 41). As these three companies make up a large portion of the market for low and medium temperature heat, it argues further costs to industry (i.e. the remaining companies) won't be great. A ban / phase out will however have major financial impacts on each of those individual companies (particularly those that do not have the ability to readily switch to other fuels). At the same time, a ban on remaining companies won't make much difference in terms of overall emissions. Such a ban in this case makes no sense – so will discourage investment of any type!
52. The document implies that 'lower emission goods' are a viable alternative to higher emission goods, and it gives the example of a factory making cheese rather than milk powder (page 41 and 42). The dairy industry is driven by market demand and there are a range of factors that will influence a company's product mix and it would be extraordinary if the government thinks it is appropriate to influence, or suggest, what a company's product mix should be in this way.
53. At another point in the document (page 42), it says that many boilers run long past 'retirement age' and so the proposed phase out seems to be presented as a way to prevent this from happening. But this ignores the reality that businesses make decisions on when to retire an asset based on business conditions and individual circumstances i.e. there is no pre-determined retirement age / economic lifespan for coal fired boilers. The carbon price will influence this decision. It is not for the government to second guess the market!
54. Another outcome of forced conversions is the risk of long-term emissions lock-in which would be negative for emissions if future technology advances enable better solutions for lowering emissions. For example, a coal user switching to natural gas, when long term electrification would be the better alternative. Businesses could be compelled to spend large capital costs converting to an alternative fuel which itself does not have a long life.
55. Rapid technological changes mean that neither government nor industry can know which technologies will be viable in the future. Businesses could be forced to abandon coal boilers for an alternative source e.g. biomass, which may in turn become obsolete in the near future by unanticipated conditions.

Answers to Specific Questions

Question 4.1: Do you agree with the proposal to ban new coal-fired boilers for low and medium temperature requirements?

56. We disagree with this proposal. While there may be a case for the cessation of coal fired boilers for lower temperatures, we are totally opposed to a ban on coal fired boilers for the reasons given in this submission. Under the revised settings of the ETS, new boilers would only be used by businesses that have no alternatives and the emissions from that boiler would have to be accounted for through the ETS by the purchase of units.

Question 4.2: Do you agree with the proposal to require existing coal-fired process heat equipment for end use temperature requirements below 100 degrees Celsius to be phased out by 2030? Is this ambitious or is it not doing enough?

57. We disagree with this proposal. While there may be a case for the phasing out of coal fired boilers for lower temperatures, cessation of coal fired boilers with end use temperatures below 100 degrees would impact negatively on industrial coal uses many of which, as outlined in the submission, will have no economic alternatives if coal can't be used. Further, this is telling a business how to run the business, rather than providing the settings and incentives that business can then respond to.

Question 4.3: For manufacturers: referring to each specific proposal, what would be the likely impacts or compliance costs on your business?

58. The term compliance cost, which is used throughout the document as part of the options' assessment criteria, is misleading as it implies an administrative cost for business whereas the costs will be significant and will influence whether the business is able to carry on.
59. This question is targeted at individual manufacturers to give their perspectives and their answers will be determined by whether alternative sources are available.

Question 4.4: Could the Corporate Energy Transition Plans (Option 1.1) help to design a more informed phase out of fossil fuels in process heat? Would a timetabled phase out of fossil fuels in process heat be necessary alongside the Corporate Energy Transition Plans?

60. We are opposed to this and other proposals which involve government involvement in business activities whether it is how to phase out fossil fuels or what products a company should produce.

Question 4.5: In your view, could national direction under the RMA be an effective tool to support clean and low GHG-emitting methods of industrial production? If so, how?

61. While the Resource Management Act is an important piece of environmental legislation, its purpose, promoting the sustainable management of natural and physical resources, is and should remain quite separate from the focus to reduce carbon emissions.
62. There are significant risks in incorporating climate change objectives into the RMA. Councils would not be well equipped to arbitrate on the climate change effects of activities. What expertise will councils have in considering potential effects of emissions? Will every consent application have to negotiate climate change effects? How would a council consider the effects of limiting the production of food or coking coal with respect to CO₂ emissions and the benefits to be derived from these products (though those may occur outside New Zealand).
63. We are totally opposed to the idea on page 43 of the document of developing national standards.

Section 6 – Cost Recovery Mechanisms

Question 6.1: What is your view on whether cost recovery mechanisms should be adopted to fund policy proposals in Part A of this document?

Question 6.2: What are the advantages and disadvantages of introducing a levy on consumers of coal to fund process heat activities?

64. We are totally opposed to this proposal. We see it as an additional tax imposed on top of the ETS which will only serve to undermine it. The implication is that it will be levied at a low rate relative to the ETS which means it would be administratively costly to collect relative to the small amount of money that would be raised.
65. The proposals are inconsistent with other levies on petroleum, gas and electricity which are linked to EECA carrying out activities to improve the energy efficiency of the use of those energy sources.
66. The fact that the revenue from the tax would go back to coal consumers to encourage them to shift to an alternative fuel source or increase efficiency is presented in the document as beneficial to them but manufacturers will not see it this way. Firstly, as stated elsewhere in this submission, the capital costs to make the conversion and the ongoing operating costs from alternative fuels are so large that the contribution able to be afforded from the \$2-4m raised by the levy would be immaterial.

67. It will not help those businesses that do not have access to switching options as discussed earlier. It would not have a significant impact on overall emissions reductions. Yet the cost to the coal users would be significant – who will either absorb it or, where they can, pass it on to their customers.