SUBMISSION

STRATERRA™
NATURAL RESOURCES OF NEW ZEALAND

Submission from Straterra
To the Ministry for the Environment
Phasing out Fossil Fuels in Process Heat
May 2021

Key points

- We are opposed to the proposals in the Consultation Document to phase out coal from process heat.
- These proposals are counterproductive when imposed alongside the Emissions Trading Scheme now that it has been reformed with the introduction of a sinking lid.
- Delegating decision making to councils under the RMA to implement the phase-out has significant risks. We think the 2020 amendments to the RMA that enabled this should be repealed.
- In reducing emissions, it is a loss for New Zealand, and the global effort, if our policies lead directly to increased global emissions. The forced and premature phase out of coal from industrial process heat risks this outcome because of the impact it would have on the international competitiveness of affected sectors of our economy.

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 the MfE Consultation Document, Phasing out Fossil Fuels in Process Heat (the document).
3. We support the government's goal for New Zealand to achieve net zero emissions by 2050 with the caveat that reaching the goal is not at the expense of global emissions, and that the country takes the least cost path. We think the proposals in this document to ban and phase out coal from process heat are not consistent with that.
4. We are surprised this consultation has been released before the Climate Change Commission has provided the government with its final advice.

Submission

5. Our submission focuses on the proposals in the document to ban new low and medium temperature coal boilers, and to phase out coal use at existing sites, both of which we oppose.

6. We have been aware of the government commitment to ban new low and medium temperature coal boilers (as set out in the Labour Party Manifesto for example), but the proposal to phase out coal in existing sites by 2037, through re-consenting out to that date, is a new proposal.

7. We comment on the proposal for sites to have emissions plans which we generally support.

8. We also answer specific questions asked in the consultation document at the end of this submission.

Coal and Process Heat

9. Coal use in New Zealand has contracted in the last 15 years. Today it is used largely for commercially rational reasons – often being the only available option for particular industries (e.g. steel and cement) or certain businesses in specific locations (e.g. South Island food processors).

10. As an industrial heat source, coal has an important role in maintaining the international competitiveness of our agricultural sector – dairy in particular. Energy intensive export industries employ more than 100,000 people including indirect jobs and are responsible for a significant proportion of New Zealand's exports. Policies such as the proposed prohibition of coal, undermine the competitiveness of these industries and put jobs at risk.

11. A key criteria is that the stringency of New Zealand policies to reduce emissions match those faced by our international trade competitors and partners as much as possible so that New Zealand industry is not made uncompetitive, and emissions leakage does not result.

12. The reality is while some countries have been implementing policies to reduce emissions and have made good progress, most of the world - including many of the countries with which New Zealand competes - has not. This means that if our policies are too stringent, economic activity and carbon emissions will too easily transfer to those other countries.

13. The document argues that in order to reduce emissions, it will be essential to "capture abatement opportunities at the lower end of the marginal abatement cost curve (MACC)". While it might be true that coal fired process heat is at the lower end, this is an industry average that does not apply to every company, plant, location and situation. For example, as will be discussed in the Alternative Technologies section below, companies located near a biomass supply will have a lower MACC than ones located further away.

The Emissions Trading Scheme

14. The consultation document asks if we support the proposals to phase out coal from process heat as a "regulatory backstop" that will act in conjunction with existing decarbonisation policies. <u>We do not</u>.

15. Regulations aimed at reducing emissions, such as those proposed in this document, are unnecessary now that the Emissions Trading Scheme (ETS) has been reformed with a "sinking lid volume cap" introduced, and risk further economic damage to the New Zealand economy without having a positive impact on global emissions reductions (via carbon leakage).

16. The volume cap means the quantity of emissions for New Zealand in any one year is set with a limited volume of units (permits) allocated across emitters. The sinking lid means that the volume will be phased down over time. This means that additional policies and regulations such as prohibitions on coal boilers cannot, as a matter of arithmetic, reduce emissions below the ETS cap. If emissions are reduced in one area as a result of coal boiler prohibitions, the rights to emit will be relinquished and used by

someone else. The phase down of units will achieve a reduction in emissions, not the coal boiler bans and phase outs as proposed in the document.

17. All they will do is remove choice and flexibility for businesses in deciding how they will reduce emissions. The higher costs they impose on businesses increase the risk of them reducing output and/or closing down. The result of this will be leakage offshore of not only the economic activity and jobs, but also the emissions.

18. The purpose of the ETS is to incentivise least-cost emissions reductions but these non-ETS proposals undermine the functioning of the ETS, and largely defeat its purpose. The ETS should be allowed to function as the Climate Change Response Act 2002 (CCRA) intends, and in consideration of international climate change action or the relative lack of it. We return later to this last point.

Problems with forcing conversions from coal

19. 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. Such prohibitions are a blunt instrument as they take no account of individual circumstances and take no account of abatement costs for individual companies.

20. We are alarmed that 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. MfE's marginal cost curve analysis was a good starting point, but these relied on industry averages and contained too many assumptions to be useful beyond illustrative purposes. That is a natural limitation on any modelling and is not a criticism of the analysis per se.

21. As mentioned above, businesses and industries using coal for their industrial process heat do so for rational (and sometimes unavoidable) reasons.

22. These reasons include geographical constraints (e.g. reticulated natural gas is not available in the South Island), process requirement (e.g. biomass may not be able to reach required temperatures because it contains too much moisture) and economic reasons – both capital cost (e.g. existing boilers are expensive to convert, and operating cost (e.g. coal is more cost effective than alternative fuels). Switching is either challenging, or simply not feasible in the current environment.

23. A higher carbon price will increase the likelihood of conversion away from coal but there would then inevitably be a cost to competitiveness. The document quotes modelling undertaken by the Interim Climate Change Committee (ICCC) which indicates that fuel conversion occurs at $60 /tCO2e. But many businesses will be more likely to go out of business long before that (noting the average global carbon price is 63 cents/tCO2e).

Alternative Technologies

24. The crux of the issue is that alternative technologies to coal are not economically viable now or in the immediate future for all companies.

25. Biomass and electrification are usually offered as the alternative sources of industrial process heat. But the proposed move away from coal to biomass and electricity presents challenges, physical as well as financial, that will be insurmountable for many businesses even with government assistance.

26. We note that this is at least the fourth round of consultations aimed at reducing emissions from process heat within the last 10 years. In each of these consultation rounds, companies and industry organisations pointed out the serious challenges of fuel switching. Other reports, both private sector and government, have reinforced the arguments outlining these barriers.

Biomass

27. Biomass is limited by its quality (e.g. moisture content), the available supply, reliability of supply, transport logistics, and cost. There is also uncertainty over its long-term availability.

28. If coal users did convert to biomass, those businesses currently using biomass – which do so because this is the fuel that best suits their needs – will find they are competing for a limited supply of biomass. The price will increase accordingly, and for marginal users, to unaffordable levels.

29. The maps on pages 128 and 129 of the MBIE document, *Accelerating renewable energy and energy efficiency*, show the significant regional mismatches in supply and demand of biomass. Forestry residue is low density and highly dispersed. It is not localised at scale or over time.

30. There is no evidence that a biomass supply chain is workable, except in a few boutique instances, e.g. Fonterra's dairy processing plants at Brightwater (small plant, mostly still using coal, across the road from a source of forestry waste) and Te Awamutu (wood pellets dried with waste heat from the geothermal energy industry).

Electrification

31. Barriers to electrification of industrial process heat include the cost of arranging transmission to a site; the capital cost of boiler conversion; electricity capacity at places; and the price of electricity for industrial consumers.

32. For an idea of the costs involved, Fonterra has stated publicly that converting the Edendale plant in Southland to electricity would cost $160 million, and energy operating costs would increase by at least 50%. Furthermore, major grid upgrades would be required to route capacity to industrial sites.

33. The additional electricity that will be required for industrial processes will compete against electricity demand elsewhere in the economy, which is likely to grow in response to, e.g. greater uptake of electric vehicles. Both factors would spur higher electricity prices, a further deterrent to industrial conversion to electricity, as well as posing risks to households including lower-income households being unable to afford to heat their homes in winter.

34. Examples of conversions to electricity are enlightening. Consider:

- Synlait has an electrode boiler at Dunsandel, however, our information is that it largely does not operate. Coal does the heavy lifting at this plant, and electricity plays a limited, peaking role. The company is co-investing with government in replacing a coal-fired boiler with wood, however, the effectiveness of this subsidised approach will take time to demonstrate.
- Open Country Dairy has installed a new electrode boiler at its Awarua plant in Southland. The economics work because of the plant's proximity to the national grid, and a commercial arrangement reached with Contact Energy, and because most of the processing capacity will remain coal fired. Once more, a singular set of circumstances.

35. Essentially, the electricity to replace coal on a national scale is not available nor affordable. More generation will be required but this will be needed to meet the demand of the increasing use of electric

vehicles that are expected. The Battery Project has been proposed to provide the shortfall but there is no certainty that this project will proceed.

Switching should be industry-led

36. The point of highlighting these challenges of alternative technologies is not to deny that alternatives to coal could be appropriate in some cases.

37. Fuel switching has occurred in New Zealand already, but it has been industry-led to suit the circumstances of each company concerned. Firms located near forestry and electricity transmission are more likely to convert to those fuels and this is what has occurred.

38. As pointed out in the document, and above, firms like Synlait and Fonterra are increasingly switching away from fossil fuels in anticipation of higher emission prices and to meet their emissions commitments which further illustrates that the ban and the other measures proposed are not necessary. As the carbon price rises, such conversions will be more frequent. The point is that policies, such as those in the document, which force companies to convert when it is not economic will not have the desired impact on emissions reduction and will do more damage than good as leakage occurs.

39. Essentially the government should be 'fuel neutral' in its approach, that should take account of the volume of Greenhouse Gas emissions (GHG) emissions from an operation rather than the source of fuel.

RMA and National Direction

40. The proposals in this document are novel in that they are proposing the use of the RMA, including National Direction, to achieve the government's aim of phasing out fossil fuels from process heat. We do not support this approach of delegating the decision making with an unfunded mandate to councils in this way.

41. Currently under the RMA, regional councils are prevented from considering the effects of emissions on climate change when considering consent applications. We were concerned when these provisions were amended in April 2020, due to take effect from 31 December 2021, effectively requiring councils to have regard to emission reduction plans.

42. The changes were inserted late in the select committee process with no opportunity for public consultation and it was in the midst of the April Covid-19 lockdown. It made a mockery of the Resource Management Review Panel's process that was occurring at the same time and we think they should be repealed.

43. There are real risks with a policy which passes the government mandate on to councils to achieve fossil fuel reductions, which is essentially what these proposals do, because we suspect most if not all councils will be ill equipped to do so.

44. We ask if councils will have the ability to factor the climate change effects of business activities into their decision making, from the point of view of capability and capacity. Even with the National Direction as proposed in the consultation document in the form of NPS and NES, the risks are too great.

45. While council-appointed commissioners will be required to make objective decisions on applications for renewal of resource consents for coal users out to 2037, regions that have declared climate emergencies will make it politically difficult for decision-makers to be objective.

Emissions plans

46. It is proposed that industrial sites above a threshold have an emissions plan to encourage energy efficiency, best practice, and transition to low-emission fuels.

47. We agree with this approach which should include energy efficiency measures, as the government seems to be proposing. Greenhouse gas management plans that support best practice to reduce emissions and transition to low emissions are a good idea because it allows emitters to better understand their carbon footprint, and, therefore, to better understand how best to reduce it.

Consultation questions

Problem definition, objectives and scope

1) Do you agree with this characterisation of the status quo? If not, please provide evidence to support your views.

We agree with the document's assessment that firms will switch away from fossil fuels due to the higher carbon price. We do not agree that a higher price above the ETS price or additional polices should be used where the government considers there are inadequate drivers for transition. As outlined in the submission, the proposed measures are counterproductive because they undermine the functioning of the ETS and will not reduce emissions due to the way the ETS operates as set out in paragraphs 14-18 of this submission.

The key point is, the ETS has recently been strengthened to incorporate a sinking lid volume cap and this should be allowed to run its course.

3) Do you agree with the characterisation of the problem regarding the regulatory gap in the RMA? If not, why not?

We agree there is a regulatory gap but only as a result of the 2020 RMA amendments, to come into effect in December 2021, which we oppose. We do not support the requirements on councils in relation to climate change mitigation imposed by those amendments, nor the proposal to introduce national direction or guidance for implementation.

4) Do you agree with the characterisation of the problem regarding the regulatory backstops to support the NZ ETS? If not, why not?

No. Regulatory measures to achieve climate change mitigation imposed in addition to the ETS undermine the functioning of the ETS, and largely defeats its purpose, which is to incentivise least-cost emissions reductions. The ETS should be allowed to function as the CCRA intended (and in consideration of international climate change action or the relative lack of it).

6) Do you agree with the scope of industrial emissions proposed to be subject to national direction instruments? If not, why not?

No. A fuel-neutral approach to incentivising direct emissions reductions is preferable and the arguments against them are weak. Just because an approach is considered easier for regulators does not necessarily make it a good approach. Adopting a fuel-neutral approach would allow businesses to reduce emissions in a least-cost way.

The RMA should not be used in a way that prevents businesses from making logical and rational decisions around energy use, and improvements in energy and emissions intensity.

Preferred RMA national direction instrument

9) **Do you agree that the preferred option (a NES supported by a targeted NPS) will be the most effective way to achieve the policy objectives and to reduce implementation costs and uncertainty for local authorities, applicants and consent holders? If not, why not?**

The NPS and NES approach is a standard RMA method for achieving outcomes, such as the ones the government proposes.

If the policy objective is for New Zealand to make direct emissions reductions to meet successive emissions budgets, then the government should remove climate change considerations from the RMA and leave the ETS system to incentivise least-cost pathways for emissions reductions, in consideration of international climate change action or the relative lack of it.

10) **Do you agree with the impact analysis of this option?**

No. The document overlooks the impact on planning long-term and significant capital investments. An example is coal mines. Knowing that coal users will be forced to start transitioning from coal earlier than 2037 (against the risk of resource consent renewals out to 2037 not being granted), domestic coal producers will have an incentive to deplete their existing resources and invest less in developing new ones. This will likely cause a significant increase in coal imports to meet ongoing demand for coal.

If the object is to directly reduce emissions, businesses should be free to choose the least-cost path to them of doing so. The government has failed to consider this alternative in any detail, nor is there any assessment of the opportunity cost to businesses of being forced to avoid economic efficiency in their decision making.

11) **In your view, what is a fair and reasonable duration for consents that would balance the need for investment certainty with the need to improve energy efficiency and reduce emissions over time?**

We suggest consent durations out to 2050, however, we prefer the ETS system as the mechanism for achieving climate change action in New Zealand, as stated elsewhere in our submission.

Preventing discharge of GHG emissions from new fossil fuel assets

12) **Should the ban on new coal-fired assets for low and medium temperature requirements be implemented through a prohibited activity rule in national direction? Should there be any exemptions for small-scale coal-fired assets (for example, below 50kw, 2 MW or 100 tonne/year) or flexibility to consider site specific constraints through consenting processes?**

We state here, as elsewhere, that the government should rescind the 2020 amendment to the RMA and the current proposals. Note that the proposal favours existing users over companies wishing to enter the market and is, therefore, an anti-competitive measure. As discussed elsewhere, we consider the entire approach via amendments to the RMA to be flawed.

13) Do you agree with the approach to avoid new fossil fuel assets (excluding coal) unless it can be demonstrated there are no feasible alternatives, and where the applicant prepares a GHG emission plan, and complies with relevant best practices? Are there more effective and efficient ways to achieve this outcome?

We prefer a fuel-neutral approach to incentivising direct emissions. If the government introduces this scheme for gas users, it should do the same for coal users. A molecule of fossil CO_2 is the same regardless of how it is generated.

14) How can national direction and guidance best assist applicants and consent authorities to assess economically and technically feasible alternative fuel options?

This would require consent authorities to have the capability and capacity to effectively assess applications for, e.g. consent renewals. So, in theory, it could be done. In practice, councils may source external advisors, at the applicant's cost, to make the envisaged assessments, if such suitably qualified people can be found.

15) Should the policy approach for new process heat assets target specific fossil-fuel sources or should it take a fuel neutral approach? In your view, what is the best approach to define thresholds and requirements?

Again, we favour a fuel-neutral approach across the economy. A molecule of fossil CO_2 is the same regardless of how it is generated. An emitter should be able to choose their least-cost path towards reducing emissions and improving energy efficiency.

For example, it may make better economic sense to improve efficiencies in the use of electricity, petrol and diesel, and move to lower-emissions and renewable alternatives in transport and electricity generation. The government's policy approach will stymie progress in some of these areas by forcing the allocation of capital into less cost-efficient emissions reduction channels.

17) What supporting initiatives are needed to transition away from fossil fuels in new industrial sites?

The only way to bring these businesses into the country would be to use taxpayers' money or borrowings to support these businesses to be competitive. New Zealand would then end up in the same position as countries that subsidise production and exports, e.g. dairying, an approach to international trade that New Zealand has consistently argued against.

Phasing out fossil fuels in process heat

19) Is 2037 an appropriate 'phase-out' date for low and medium temperature coal process heat requirements? Is it necessary to include a review date within the national direction instrument (potentially around 2025) to assess the development of alternative fuel markets closer to the phase out date?

No. As discussed elsewhere, the entire approach is flawed. In order to achieve net zero by 2050, New Zealand should be enabling least-cost direct emissions reductions, instead of a non-market focus on coal and gas that disregards basic principles of economics.

20) Should there be a longer lead-in time for existing coal-fired assets that are currently permitted before these are subject to the NES consent requirements?

At issue with existing coal-fired assets is that they come with high capital cost, and, therefore, a long boiler life. A boiler can last 100 years or more if regularly maintained.

The timeline for introducing NES consent requirements can be managed by allowing coal users to roll over their consents as per normal RMA practices while they apply for an extension to 2037, if they need it.

24) Should the NES require regional councils to review consent conditions of significant GHG emitters with long-term permits to help reduce emissions? What are the benefits and risks?

Regulatory reviews are a good idea in principle, however, not in this case.

As a minimum, we suggest more certainty over what a review would entail.

In general, introducing a review clause could act as a disincentive for coal and gas users to explore transition. The logical approach for them would be to await the outcome of the review before taking any action.

For domestic coal producers and suppliers, a different incentive applies. The continued lack of certainty could further disincentivise extending the life of existing coal mines, or seeking to develop new mines, or reopening old mines.

If that occurred, coal users would have a greater reliance on coal imports, undermining New Zealand's energy security, including for the electricity system, and increasing the risk of blackouts in Auckland.

For these reasons, we think the review clause is not a good idea. It would make more sense for the government to revise its problem definition around direct GHG emissions reductions and develop more effective solutions.

As stated elsewhere, the government should rescind the 2020 amendments to the RMA, drop the current proposals, and strengthen the ETS system (under the CCRA) in consideration of international climate change action or the relative lack of it.

25) What are the appropriate size (operating capacity and/or volume of emissions) and/or consent duration thresholds to trigger a review of existing discharge permits? What is a realistic and achievable timeframe for regional councils to undertake a review of the discharge permits for large emitters in their region?

As above.

27) Is there anything that has been overlooked in this section with regards to the reality of business practices? For local government: is there anything that you feel has been overlooked in this section with regards to the reality of consenting practices?

Businesses operating with large capital plant require long lead times for decision making on those assets. In that respect, 2037 is an adequate lead time, especially for smaller coal users, e.g. commercial greenhouses, hospitals and the like, subject *to* the following qualification. The alternatives to coal need to be affordable and

available in a timely manner and we do not consider any of these conditions to hold at the present time, based on numerous previous industry submissions on several rounds of process heat consultations.

GHG emissions and best practice requirements

35) Is there anything that has been overlooked in this section with regards to the reality of business practices? For local government: is there anything that you feel has been overlooked in this section with regards to the reality of consenting practices?

Yes. We must not assume New Zealand's trade competitors are reducing their emissions at the same rate as or faster than New Zealand. As at May 2020 (World Bank report, *State and Trends in Carbon Pricing*), the global average carbon price was 63 cents a tonne of CO_2 equivalent. The New Zealand Unit price currently exceeds $37. This is the reality many emissions-intensive businesses face when working to remain in business. Imposing higher marginal costs of abatement on coal users risk putting them out of business, exporting jobs and emissions offshore (carbon leakage) for no benefit to global climate.