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Mineral West Coast submission on MfE consultation document *Phasing out fossil fuels in process heat, National direction on industrial greenhouse gas emissions, 20th May 2021*

Introduction:

1. Minerals West Coast is an industry group representing the minerals sector on the West Coast. Our mission is to promote, encourage, and support the mining industry on the West Coast. We are governed by a group of voluntary trustees with a direct interest in the industry in the region.

2. Our members include gold and coal mining companies, as well as those with an interest in quarrying and civil earthmoving. These businesses range from small scale, solo operators, to larger firms employing anywhere up to one hundred staff across different sites, as well as New Zealand's largest mining companies. Other members include training institutes, engineering and mechanical support services, and geologists.

3. It's estimated the West Coast minerals sector employs about 600 people directly, in doing so supporting about as many contractors and support units. Mining jobs in the region pay about double the median annual salary, and in total the sector contributes to 8.5% of gross regional product – the third highest contribution overall.

4. The median annual salary in the mining sector is $80,020. Accommodation, for comparison's sake, pays about $20,790, half the median salary.

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Understanding the context

There is an embedded narrative in Aotearoa New Zealand, particularly among the present government, that this country is not 'doing its bit' when it comes to climate change and emissions reductions. This assumption is used as the licence for much of the policy currently being considered or put in place. To quote the New Zealand Labour Party's 2020 election manifesto:

"if we don't take action on climate change, we will be left behind and lose our reputation for being clean, green and internationally responsible. The United Kingdom's emissions were 44 percent below 1990 levels in 2018 and the European Union's 25 percent below 1990 levels in 2019. In comparison New Zealand's gross emissions have increased 23 percent since 1990." [1]

Devoid of context, this paints New Zealand as a laggard. International comparisons should be treated carefully. Indeed, this discussion document itself states:

"New Zealand has among the highest per capita GHG emissions in the world." [2]

Such statements as those above ignore what the 1990 baseline emissions were for the countries concerned, what the energy, economics, and emissions profiles of the countries concerned are, and what options are available for reducing GHG emissions internationally.

Gross CO2 emissions have been increasing in the following jurisdictions since 1990: Africa, China, India, the rest of Asia, North America (excluding the USA), Oceania, and international transport[3].Emissions have reduced in the United States, South America, and Europe.[4]New Zealand's gross carbon dioxide emissions have continued to grow since 1990, but population growth has been a driving factor.

From 1990 to 2020, New Zealand's population grew by about 42%[5]. Western Europe's population, in the same period, grew merely 11%[6]. New Zealand's per capita CO2 emissions have actually fallen since 2005 and are at similar levels to the early 1990s (between 7.0 and 8.0 tonnes of CO2 per annum depending on the availability of renewable electricity in our national grid, and the extent to which natural gas and coal are used to meet the gap between renewable supply and consumer demand).

Greenhouse gas emissions remain high in Aotearoa due to our high number of livestock per capita. It should be noted though, much of our milk (95%)[7] is exported to 130 countries worldwide. We live in a global economy and a global climate; these matters are far from straightforward.

The following two pages give the context of Europe's primary energy supply in 1990, in comparison with New Zealand's, and the same for 2018. The data that has provided the basis of these graphs has been sourced from International Energy Agency information on Europe[8] and New Zealand[9], respectively.

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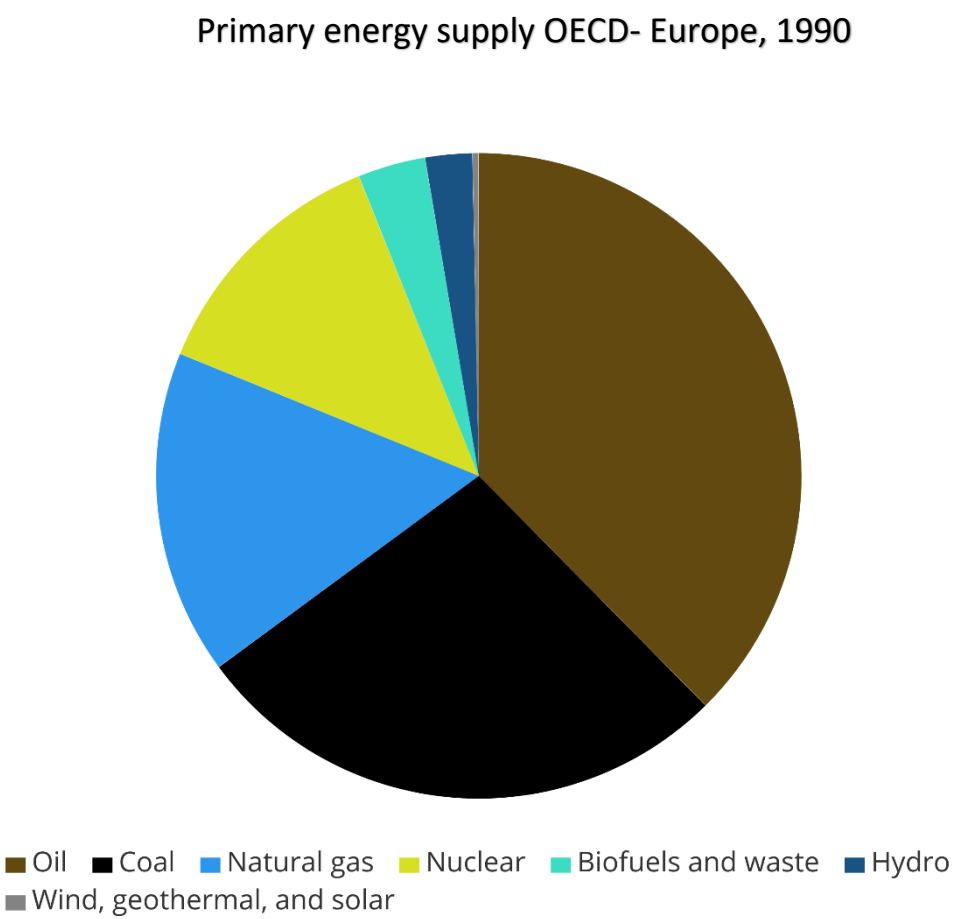
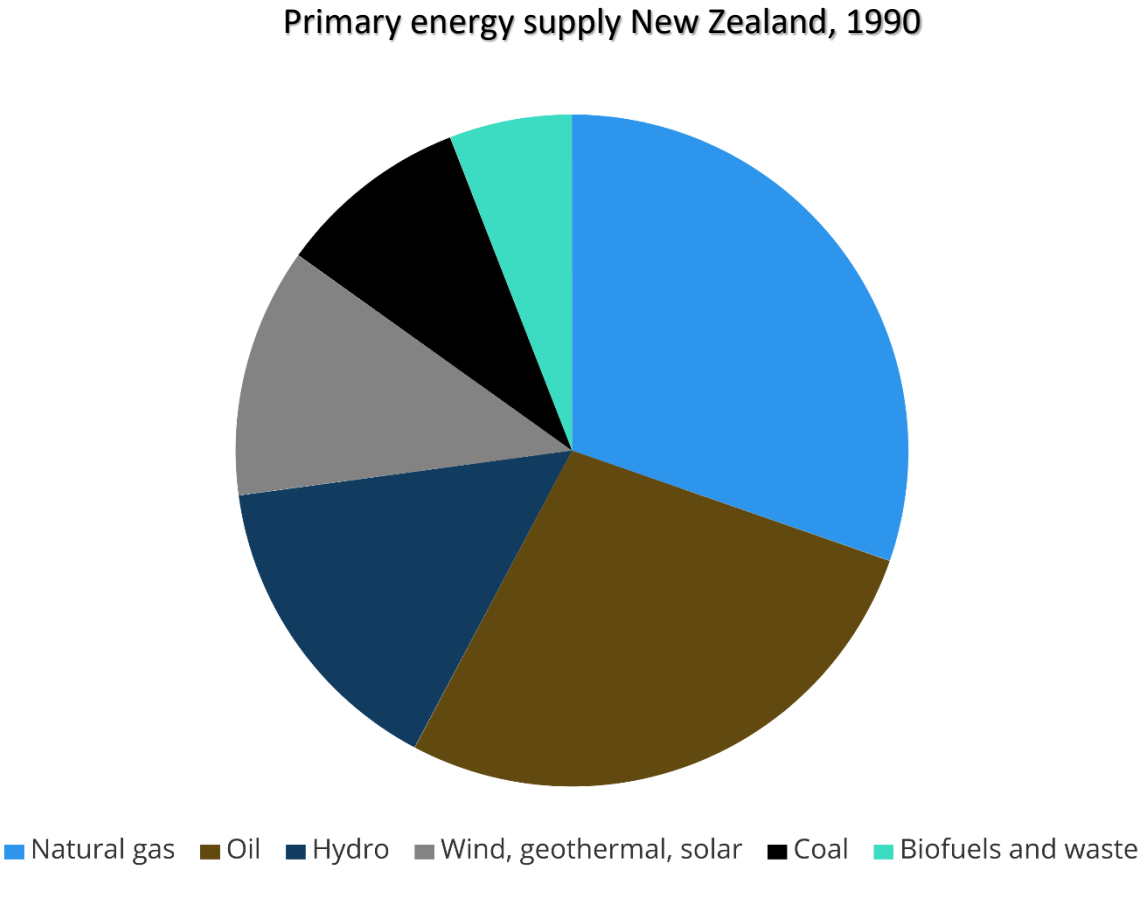
[1] (New Zealand Labour Party, 2020)
[2] (Ministry for the Environment, 2021)
[3] (Our World in Data, 2021)
[4] (Our World in Data, 2021)
[5] (United Nations, 2019)
[6] (United Nations, 2019)
[7] (Dairy Companies Association of New Zealand, 2021)
[8] (International Energy Agency, 2021)
[9] (International Energy Agency, 2021)

Figure 1: 1990 OECD-Europe and New Zealand primary energy supply comparison

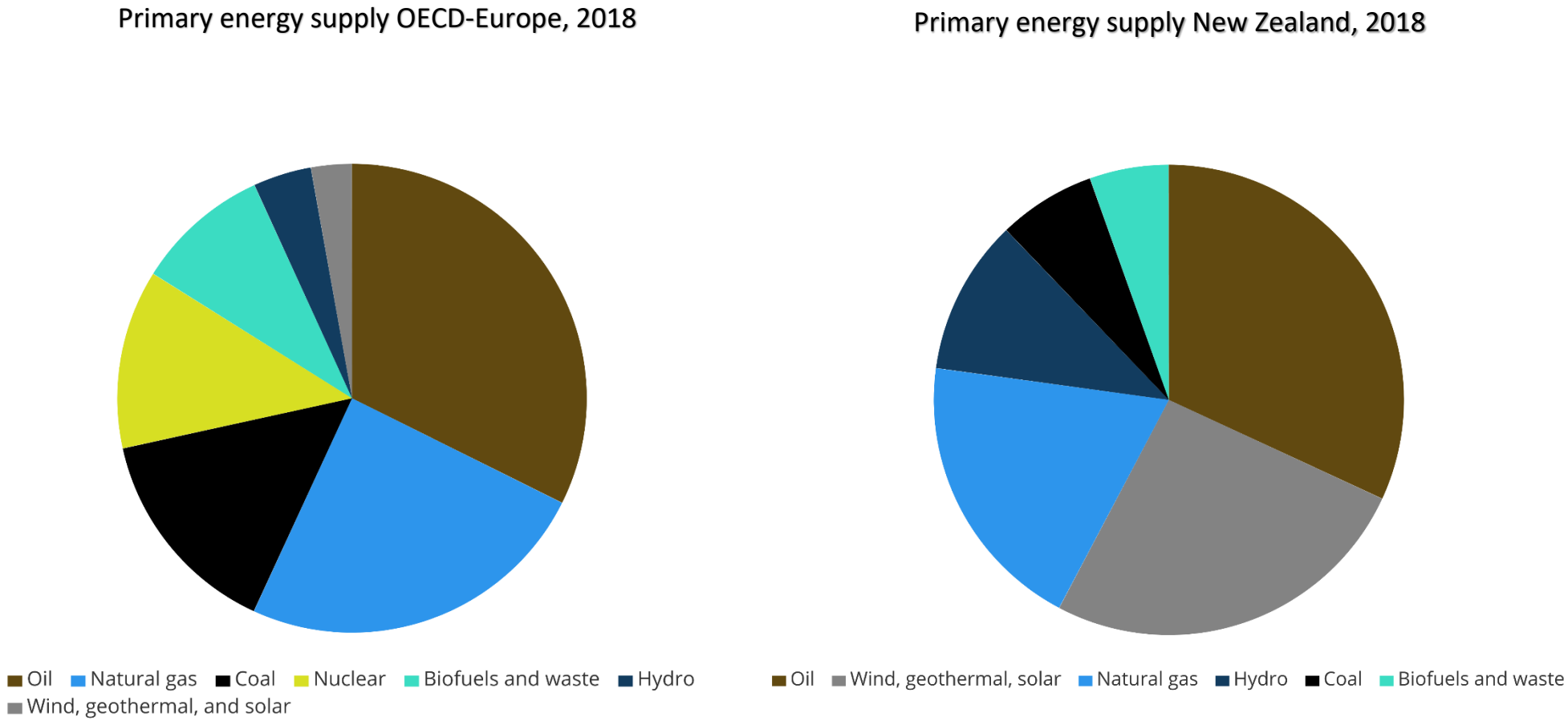




As a breakdown of these graphs, OECD-Europe's primary energy supply in 1990 comprised as follows: **oil** (37.59%); **coal** (27.31%); **natural gas** (12.76%); **nuclear** (12.76%); **biofuels and waste** (3.38%); **hydro** (2.36%); **wind, geothermal, and solar** (0.31%).

New Zealand's primary energy supply in 1990 comprised as follows: **natural gas** (30.2%); **oil** (27.31%) **hydro** (15.05%); **wind, geothermal, solar** (11.95%); **coal** (9.2%); **biofuels and waste** (5.87%).

Figure 2 2018 OECD-Europe and New Zealand primary energy supply comparison



As a breakdown of these graphs, OECD-Europe's primary energy supply in 2018 comprised: **oil** (32.37%); **natural gas** (24.50%); **coal** (14.68%); **nuclear** (12.36%); **biofuels and waste** (9.25%); **wind, geothermal, and solar** (2.02%), and **hydro** (2.80%).

New Zealand's primary energy supply in 2018 comprised: **oil** (31.89%); **wind, geothermal, and solar** (25.83%); **natural gas** (19.43%); **hydro** (10.68%); **coal** (6.70%); **biofuels and waste** (5.44%).

What can be drawn from these comparisons?

The message from the factual data is that care should be taken with *any* international comparisons. Each country has a peculiar – if not unique – profile when it comes to available natural resources (New Zealand's endowment with hydroelectricity potential compared to Australia to name one.

When looking at the 1990 graphs, New Zealand clearly already had a large proportion of primary energy being sourced from renewable resources, and the total share of renewable primary energy was about 33%. By 2018, this had increased to 41.95%.

This has largely been driven by greater use of the country's geothermal resources, with geothermal now accounting for 21.7% of New Zealand's primary energy – wind generation has grown from a low base, but accounts for a mere 0.9%, and solar only 0.09%[10].

In Europe, emissions have fallen from a very high 1990s base, because, as can be seen, coal played a very large part in Europe's energy profile.

Europe's emissions reductions have on the margins been aided by a growth in biofuels and waste, wind, solar, and geothermal, and hydro. The most substantial factor, however, has been an effective 'fuel switch'. As the government has previously noted, *in countries with access to natural gas networks, substituting natural gas for coal is one of the most cost effective ways for reducing emissions*[11]. This has less to do with climate change policy, and everything to do with rational, economic decision-making.

Natural gas has gone from 12.76% of OECD Europe's primary energy, to 24.50%, and coal has fallen from 27.31% to 14.68%. The combined share of the two fuels in 1990 was 40.0% and is now 39.18%. This is a reduction, but not a substantial one.

Population growth is another major factor – New Zealand's energy supply has had to increase about 60%[12] since 1990 to keep up with our growing population, with transport emissions rising. Western Europe has had relatively flat population growth, and as such its energy supply has only increased 6%[13].

New Zealand's unique profile

Such comparisons, if followed to their conclusion, are shown to be misleading when only glanced at on the surface level.

The basis of transport in New Zealand remains individual vehicle ownership, and as such decoupling transport emissions growth from population growth is very difficult, particularly outside main centres where public transport, cycling to work, and working from home are simply much less practical.

The food production and processing base of our economy and production of critical materials remains energy and carbon intensive.

Natural gas and coal make a combined contribution of 92% to dairy processing, 92% to meat processing, and 87.5% to hothouse horticulture, and, with diesel, 90% to production of non-metallic minerals.

All these sectors have in previous consultations and discussion documents explained the barriers to shifting from natural gas and coal to government prescribed solutions such as wood waste and electricity.

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[10] (Ministry for Business, Innovation, and Employment, 2020)
[11] (Ministry of Business, Innovation, and Employment, 2020)
[12] (International Energy Agency, 2021)
[13] (International Energy Agency, 2021)

Fonterra has ruled out electrification at a large scale due to economics[14]. The Climate Change Commission has stated the cost of electricity is about 3-5 times the cost of thermal fuels. Last year, New Zealand consumed 150PJ of natural gas and coal[15], while forecast recoverable biomass in 2022 is about 22PJ, falling to 15PJ in 2035[16].

We simply have no alternatives to coal and natural gas with technology available today, and to remove these energy sources, or the ability to use them, from the energy profile of New Zealand before alternatives become commercially available is economic self-immolation.

Furthermore, the likely impact on global greenhouse gas emissions will be negligible, as goods produced for domestic consumption or export will be simply produced somewhere else, potentially with a greater impact on the climate.

One of the pillars of New Zealand's economic development in the previous two centuries has been cheap, reliable energy. If that changes, everything changes. Importantly, there appears to be no plan for New Zealand to replace the jobs that will be lost from our energy-intensive and productive industries.

[14] (Fonterra, 2021)
[15] (Ministry for Business, Innovation, and Employment, 2020)
[16] (Scion, 2017)

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Answers to set questions:

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

No. In addition to the context of international comparisons outlined above, the arguments and justifications presented in this document are inconsistent or self-contradictory. For example:

"Process heat currently contributes about eight per cent of New Zealand's total GHG emissions and makes up 17 per cent of emissions covered under the net zero target." (page 6)

"New Zealand has among the highest per capita GHG emissions in the world." (page 11)

"Industrial process heat generates around 8 per cent of New Zealand's GHG emissions and is the second largest source of energy-related emissions after transport (approx. 27 per cent of energy Related emissions)." (page 15)

To prioritise process heat emissions with the above statements as justification is disingenuous. Either agriculture (including biogenic methane and nitrous oxide emissions is included or it's not).

If agricultural emissions *are* included, it should be noted New Zealand's dairy and meat products have the lowest emissions in the world, and largely feed a global market.

If we simply want to focus on gases covered under the net zero target (namely carbon dioxide) it's worth noting New Zealand's CO2 emissions per capita are, although above average, coming in at 15th highest in the OECD on a per capita basis (of 35 countries) and 14th when taken on CO2 per unit of GDP basis.

As is stated, ***transport accounts for more than three times the emissions of process heat***, and has grown substantially since 1990, whereas process heat has not. Surely, this sector should be the focus for the Government's policy interventions, if it really cares about directly reducing emissions by force.

2. How would you describe the status quo? What other factors should be considered?

The status quo is that New Zealand's emissions have risen since 1990 primarily due to a growth in transport emissions, underpinned by population growth. New Zealand's industrial coal consumption in 1990 was about 1,019,499 tonnes, and in 2019, about 1,011,201 tonnes.
The remainder of coal use in New Zealand comprises electricity generation, steel production, and to a lesser extent cogeneration, agriculture, forestry, and fisheries, and residential use, in total about 2.6 million tonnes.
Until either greater uptake of public transport, electrification of transport, or a halt to population growth and in turn the vehicle fleet can be achieved, this will continue.
Industrial use of coal underpins significant sections of the New Zealand economy – and where it doesn't it is natural gas, of which the country will likely face shortages in the coming decade, as the Government itself acknowledges responsibility for in this consultation document. Coal use in electricity generation is up on the 1990 base, but this is outside the scope of this discussion.
For industrial use, the consumption has remained about the 1,000,000 tonnes per annum mark in the past 30 years. Quite why a ban on new coal boilers or a phase down of existing boilers is a priority for this government is beyond any reasonable understanding, other than that coal makes

an easier and more convenient political target than an individual's private vehicle. Given the environmental, economic, and social impacts of getting this wrong, if this is about votes and politics, then that is truly disappointing.

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

Not answered.

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

No, the New Zealand ETS should be left to work as a market tool, government interference will simply lead to distortions of the market. The 2020 amendments to the RMA should be repealed and the current policy process dropped, in favour of a rational and logical and effective approach to climate change action.

5. In your view, what is an effective and efficient threshold for low-GHG emitting process heat sites that would be out of scope of the requirements? Options and combinations of options include: below 100 tonne CO2-e/year, 50kW, 2 MW, assets operating fewer than 400 hours per year. Please explain why.

Not answered.

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

Not answered.

7. Should commercial sector water and space heating (above an appropriate size threshold) be included in the scope of national direction? If not, why not?

Not answered.

8. What is your view on the proposal to exclude emissions from other sectors in the current scope (note: intention is for a more fulsome package of national direction on climate change to be developed through the new resource management system).

Not answered.

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?

Not answered.

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

Not answered.

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

Not answered.

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?
Not answered.
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?
Not answered.
14. How can national direction and guidance best assist applicants and consent authorities to assess economically and technically feasible alternative fuel options?
Not answered.
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?
Not answered.
16. Referring to each option, what are the likely compliance costs and impacts on your firm? Who are the small to medium size industry users that could struggle to meet the requirements?
Not answered.
17. What supporting initiatives are needed to transition away from fossil fuels in new industrial sites?
Not answered.
18. Is there anything that you feel has been overlooked in this section with regards to the reality of your businesses' industrial practices? Or for local government: is there anything that you feel has been overlooked in this section with regards to the reality of consenting practices?
Not answered.
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?
Picking any one year – 2036, 2037, or 2038 – is arbitrary. No one person can know when there will be a low-emissions, cost-effective alternative to coal and natural gas for process heat users in New Zealand. Users of coal and natural gas have previously drawn attention to the constraints of these fuels in several previous government policy consultations. If this ban is implemented as proposed, then the government would simply be ignoring that advice. Either the Government thinks industries have been seeking to deceive the Government, or it thinks it knows more about running these industries than the industries do. This is an appalling conclusion to have to draw, and is an indictment on the Government in terms of its obligations towards New Zealanders to ensure our country's ongoing economic prosperity. The combined effect of existing policies or coming proposals is that coal producers may consider it most prudent to simply finish mining where existing permits and resource consents allow, and make no further investment. The result will be a surge in coal imports, placing the supply chain

and logistics under extreme strain.
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?
Not answered.
21. Is it appropriate to phase out other (non-coal) fossil fuels in existing industrial assets through consenting processes and best practice requirements?
Not answered.
22. Is a more flexible approach for the re-consenting of other (non-coal) fossil fuel-fired assets warranted/needed?
Not answered.
23. Should there be a set phase-out date for other (non-coal) fossil fuels, including natural gas? What are the potential benefits and risks?
Not answered.
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?
Not answered.
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?
Not answered.
26. Referring to each option, what are the likely compliance costs and impacts on your firm? Who are the small-to-medium size industry users that could struggle to meet the requirements?
Not answered.
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?
Not answered.
28. Do you agree with the proposed thresholds for small sites being between 100 and 2,000 tonne CO2-e/year and large sites, being over 2,000 tonne CO2-e/year, in the preparation of a GHG emissions plan?
Not answered.
29. Do you agree with the proposed requirement that GHG emissions plans for large sites be reviewed/certified by a 'suitably qualified expert'? Should this be limited to larger sites?
Not answered.
30. What guidance and templates would be useful to help industry and councils prepare and review GHG management plans?

Not answered.
32. For large boilers and combustion plants, should an emission limit value be included in the consent conditions, based on the specific application outlined in the GHG emissions plan (fuel use x emission factor), as occurs in Europe and the US?
Not answered.
33. Referring to each specific schedule, do you agree with the content of the GHG emissions plans for small (Schedule 1) and large (Schedule 2) sites?
Not answered.
34. In your view, are the materials referenced in Appendix Two appropriate for each sector and across sectors?
Not answered.
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?
Not answered.
36. Do you support the development of non-statutory guidance on how to consider wider GHG emissions (direct and indirect) through RMA planning and consenting processes?
Not answered.
37. What are the key areas that guidance needs to cover?
Not answered.
38. How can this guidance complement work underway to support emission reductions in other sectors, including urban development, transport and electricity generation?
Not answered.
39. 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?
Not answered.

ENDS

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