EnergyResources Aotearoa
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Submission on the *Phasing Out Fossil Fuels in Process Heat* consultation document

Ministry for the Environment
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Introduction

1. Energy Resources Aotearoa[1] ("Energy Resources") represents people and firms in the energy resources sector, from explorers and producers to distributors and users of natural resources like oil, LPG, natural gas and hydrogen.

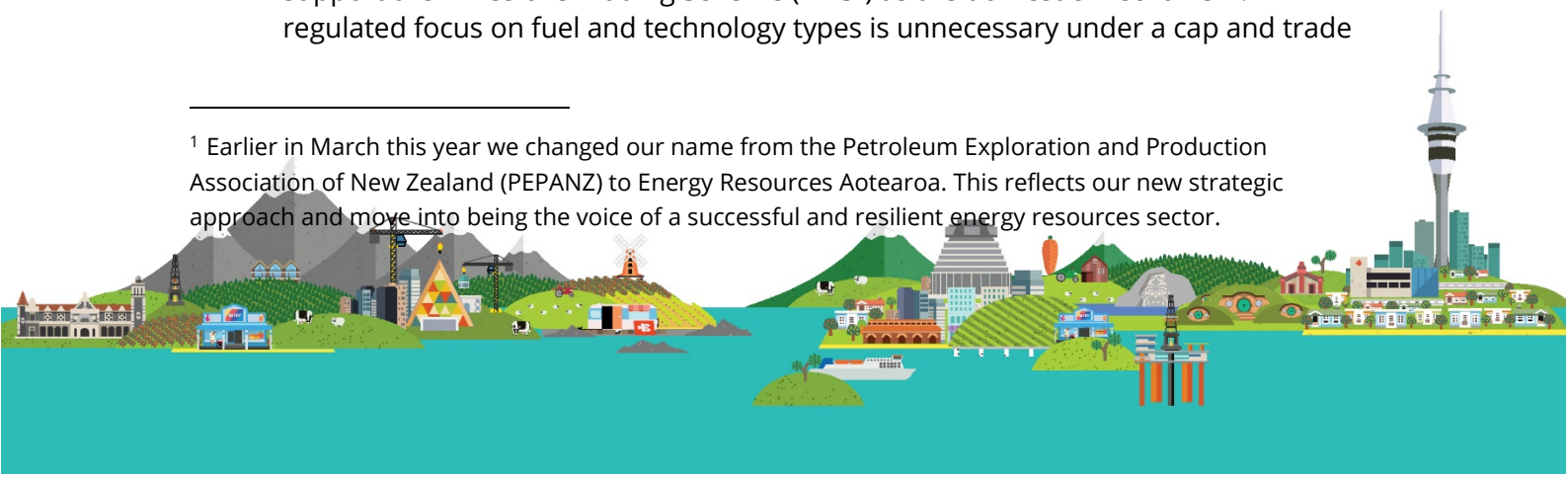
2. This document constitutes Energy Resources' submission to the Ministry for the Environment on its *Phasing Out Fossil Fuels in Process Heat* consultation document. It offers our perspectives on appropriate emissions policy in New Zealand, focussing on the case for use of the cap and trade scheme and our concerns about further interventions. The submission then addresses some specific questions posed in the consultation document in Appendix One.

We support the goal of net-zero emissions

3. We unequivocally support the objective of transitioning to a low emissions economy. The status quo emissions makeup needs to change, and we agree on the end point of net zero emissions.

4. The question therefore becomes one of pace and method, and our view is that a cap and trade market-based instrument is the best tool to reduce net emissions, so we support the Emissions Trading Scheme ("ETS") as the domestic mechanism. A regulated focus on fuel and technology types is unnecessary under a cap and trade

[1] Earlier in March this year we changed our name from the Petroleum Exploration and Production Association of New Zealand (PEPANZ) to Energy Resources Aotearoa. This reflects our new strategic approach and move into being the voice of a successful and resilient energy resources sector.



system and will inevitably lead to higher cost abatement and unintended consequences.

Consultation process

5. We note that this departmental consultation was released shortly after the Climate Change Commission ("CCC") received submissions on similar issues in its Heat, Industry and Power topic. As a matter of good process, we consider the CCC should have been given time to deliver its final advice (scheduled for 31 May this year) before departments put out new proposals concerning emission reductions.
6. A key tenet of the CCC's work is that it is independent and can provide relatively objective advice, and giving it the chance to do so would help to promote the bedding in of the CCC as an institution. Instead however, the Ministry's proposals in its consultation document cut across the CCC's work, and makes it difficult for stakeholders to understand how emissions policy is shaping and where it is being driven from.
7. As we will address further later in defence of the ETS, it is less than ideal when firms have to factor in unexpected policies and processes rather than being governed by the ETS and reasonable projections of future emission prices.

"Phasing out fossil fuels"

8. The consultation document uses the language "phasing out fossil fuels in process heat", but we do not consider this is the appropriate starting point from a policy perspective. It diminishes the importance of emission reductions and offsets and can set the scene for a myopic focus on eliminating particular technologies and fuels in specified sectors.
9. We note that in addition to the expression "phasing out", other normative views about 'acceptable' fuel switching are present in the consultation document. It states on page 35 that:

> "This review would identify and monitor any perverse outcomes (for example, industries switching from coal to natural gas)"
>
> and
>
> "A firmer phase out date for natural gas could then be provided through national direction if the desired reductions in natural gas were not being achieved." [emphasis added]

10. These comments about natural gas reflect a pejorative view that all fossil fuels are simply 'bad', rather than being legitimate commercial choices governed by an ETS. The mere *fact* that a firmer phase out date for natural gas is already being floated undermines confidence in the ETS as a tool to inform planning and decision-making. This will immediately be factored into decision making and may lead to unintended consequences and unforeseen outcomes.
11. The Climate Change Response Act, which should govern all climate policy, is emphatically *not* about phasing out oil and gas (although the industry recognises and accepts that a significant reduction is almost certainly required). Instead, the task and challenge should be to reduce emissions' impact on the environment by lowering net emissions through achieving an efficient mix of reduced use, more

efficient use, improved management of fugitive emissions, offsets, and bio and geo sequestration etc.

12. Going back to fundamentals, the core issues associated with the combustion of fossil fuels is the uncontained release of greenhouse gas emissions. Emissions are a public policy problem because the beneficiaries of goods and services that involve emissions do not directly face the social cost of excessive emissions. Emissions are therefore a negative externality, and the goal of policy should be to internalise the costs (climate change) of emissions.

13. Focusing on technology/ fuel use (as opposed to emissions, through reductions or offsets) comes at the expense of other worthwhile objectives for reducing emissions. A technology/fuel focus undermines lowest cost abatement pathways. This will have welfare and wellbeing implications for New Zealanders as it imposes higher costs for the same emissions outcome. A focus on net emissions through pricing, by contrast, allows and promotes investment in various offsetting methods and technology.

Economy wide emissions and the 'waterbed effect'

14. We consider it critical (and ultimately self-evident) that emission reductions must happen at the level of the national economy, and not just in particular sectors.[2] In considering this point, it is critical to bear in mind that New Zealand has just recently (and rightly) instituted a genuine cap and trade scheme. This emissions cap means a new and important dynamic in climate economics must be carefully considered – the 'waterbed effect'.

15. The waterbed effect is an analogy showing that under a capped system, **regulations further to the ETS cannot reduce overall emissions**, because 'pushing down' on one part of the 'waterbed' (through a sector-specific ban for example) means that the displaced set of emissions simply 'pops up' somewhere else in the economy as the overall volume of emission units does not change.

16. Given the cap in New Zealand is so new, it is possible that the waterbed effect may not have been engaged with or understood domestically, but it is now a crucial factor that warrants serious engagement in all emissions policy both now and going forward.

ETS is the Best Policy tool to Solve the Problem of Reducing Emissions

17. We are concerned that the Ministry for the Environment, which administers the Climate Change Response Act, lacks confidence in the simplicity and effectiveness of the ETS in reducing emissions. Given a distrust in the ETS underlies the case for direct regulation in the process heat sector, we offer below our view on why the ETS is the appropriate tool, especially given it now has a cap.

ETS incorporates emissions costs using a method endorsed with a Nobel prize

18. An ETS is a proven way to solve the environmental externality problem associated with greenhouse gas emissions. Emitters are made liable for their emissions and face a price incentive to either abate their emissions or obtain more carbon credits.

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[2] A key insight from the Interim Climate Change Committee was that the focus of decarbonisation should not be on electricity but rather on the wider energy system. We argue that thinking should be elevated up another level again, from the energy sector to the broader New Zealand economy.

Consumers of goods and services that involve emissions in turn face price increases where the emitter has to meet emissions costs.

19. Economist William Nordhaus was awarded the Nobel Memorial Prize in Economic Sciences in 2018 for his work demonstrating that carbon pricing is the most efficient tool for reducing emissions. Nordhaus found that carbon pricing:
    a. sends signals to consumers about which goods and services are more carbon-intensive;
    b. sends signals to producers about which activities are most carbon-intensive (such as coal burning) and which are less carbon-intensive (like solar or wind);
    c. sends signals to propel innovation to find new, affordable alternatives; and
    d. … is the best means to convey these signals within well-functioning markets.[3]

ETS sends price signals regardless of the complexity of economic activity

20. The most effective way that policies are translated into behavioural change is through prices. To efficiently shift the emissions in our economy, price signals distil and convey complex, dispersed and dynamic information. Prices that include the cost of emissions will ensure that, at any point in time, the most efficient abatement opportunities are realised by firms and people.

21. We note the sceptical view in the consultation document, which states that:

> "…there are also many emissions reductions options available that are not responsive to the NZ ETS price signal, due to the presence of barriers at the prevailing price level." and "there is strong evidence through MACC modelling and stakeholders confirming that NZ ETS and emissions price have had minimal impact on process heat investment decisions to date. (p17)

22. The above focus and concern about a perceived lack of action in a particular sector is not evidence of the ETS failing, but is instead a normative judgement about 'what ought to be' in a particular sector of the economy. Again, the perspective should be raised away from particular sectors to the level of national emissions.

23. We are somewhat perturbed that the consultation document uses perceived failures of the *pre-cap* ETS as a means for justifying further regulatory interventions, as the regime without a cap has little bearing on how the ETS is going to operate in the future.

24. Given the ETS has only been operating with a cap since last year it is far too short a period of time to conclude it is insufficient to drive the required emissions reductions. In recent months we have noticed a number of major investments decisions clearly influenced by the ETS, including First Gas's plans to decarbonise the gas network by using hydrogen and new plans to develop solar energy fields in the North Island.

25. There is clearly a concern that consumers are not switching process heat choices at an adequate pace or scale but this does not necessarily represent an actual failure of the ETS:

[3] https://www.iisd.org/articles/nordhaus-nobel

- Decisions are typically made at the margin so are not always particularly 'visible'.
- If there is low price elasticity of demand at a sectoral level, then this simply suggests that lower cost abatement opportunities are being pursued elsewhere in the economy. The point of New Zealand's net zero ambition is not to achieve net zero emissions in *every* sector, but in total across the country.
- If seriously demonstrated that consumers are not making optimal choices (to the extent that optimal choices really exist at all when viewed in aggregate) then there may be information failures to investigate and to correct, and this should be done before restrictive regulations are made.

Increasing complexity necessitates systems thinking and simple signals

26. The economy and various markets for energy use are becoming increasingly complex and increasingly interwoven. Traditionally, transport fuel, electricity and process heat were quite clearly delineated but this is no longer the case, and this complexity must be front of mind for policy makers.
27. An example of the greater interconnection is that with increasing electrification, the electricity market is now relevant to both process heat and transport; and similarly, natural gas becomes more important for affordable electricity in terms of peaking. Another example of interconnectedness is that using gas or electricity for hydrogen production would put upward pressure on the prices of the fuel used for feedstock.
28. This increasing complexity means that simple signals are in fact preferrable, and the ETS aligns with this much better than centrally planned interventions. Price signals through the ETS are most likely to promote dynamic efficiency (efficiency over time) and this should be enabled wherever possible.
29. The consultation document itself makes an important point which highlights the unintended consequences of direct sectoral interventions:

> "The options all have some common likely impacts. Firstly, the options have the potential to substitute for the emissions price, and this could suppress the price elsewhere in the economy or other sectors, likely reducing abatement in other areas." (p25)

The ETS needs consistent support

30. It is important that the ETS continues to enjoy wide support. Durable climate change policy is essential for ensuring stability and predictability of policy settings for consumers and firms. Without political stability behind climate policy, economic actors will likely delay making important actions to reduce emissions, or they will raise prices as risk is factored in.
31. If the government undermines the ETS with direct measures without providing any robust evidence, it sends a strong signal that the ETS can be diluted again in future. This would severely undermine confidence in the ETS by the public and investors who we need to make the capital investments in the technology we require for the transition.
32. A perverse consequence of constant tinkering through regulations, bans and interventions is that the market signals from the ETS are muddied. Firms will likely spend time and resources trying to factor in unpredictable political changes to

regulation rather than being governed by reasonable expectations about the price signals delivered through the ETS regime. This is to say, direct regulations can in fact undermine the ETS rather than genuinely complement it.

33. Ongoing support for the ETS cannot be expected to endure if the actions of policy makers continues to undermine its efficacy and then point to undermined effectiveness as a reason to support even more changes to undermine it further.

34. We note that the consultation document makes the claim that:

> "The NZ ETS remains a critical lever to drive emissions reduction in New Zealand. Pricing emissions is an efficient and effective tool that works as part of a wider policy package to ensure a cost-effective and just transition." (page 16)

35. If the policy position matched the rhetoric that the ETS is "critical lever", then we would not expect to see the interventionist policies as proposed in the consultation document. We note the footnote which says that a range of other measures are deemed as "required", which include incentives and support and regulatory backstops:

> "Government has identified that an effective approach to decarbonising process heat will require an effective emission price, incentives and support, and 'regulatory backstops' that act as bottom lines to ban and phase out the further use of fossil fuels." (page 6)

Risks to consider when contemplating further policies

36. Care must be exercised when considering regulation beyond the relatively simple policy of an emissions trading scheme. Specifically, the weaknesses of political and bureaucratic institutions must be recognised and carefully considered. Too often the costs of government regulations are assessed simply in terms of direct administrative and compliance costs, but this is far too narrow.

37. Interventions throughout the various sectors and aspects of the economy begin to interact in ways that government cannot realistically envisage. This can lead to an intertwined set of interventions that produce unintended outcomes, and which may be too difficult to reform or repeal should they subsequently prove to be misguided.

38. It can be tempting to focus on a particular policy goal (such as decreasing fossil fuel use in process heat) through regulations, but this will almost inevitably have a ripple effect into other parts of the economy or energy system. Any ripple effects considered inconsistent with future government aspirations may interventions in the affected sectors, to "fix" the incentives and new behaviours. Before long, we may end up with a nested web of interventions that are impossible to predict the effects of, and from which we may not be able to extract ourselves.

39. Indeed, a pathway of multiple direct interventions sets us on as a country has been reasonably well foretold in the UK's Helm Report. In his key findings, Professor Helm notes that:

> "The scale of the multiple interventions in the electricity market is now so great that few if any could even list them all, and their interactions are poorly understood. Complexity is itself a major cause of rising costs, and tinkering with policies and regulations is unlikely to reduce costs. Indeed, each successive intervention layers on new costs and unintended consequences. It should be a central aim of government to radically

simplify the interventions, and to get government back out of many of its current detailed roles." [4]

40. Interventionism is also more likely to have a chilling effect on commercial investment, as there becomes greater risk of other interventions impairing assets or interfering with commercial plans. Stability and predictability is important given New Zealand's reliance on foreign capital and the lengthy capital-intensive developments involved in the energy sector.

41. Regulated interventions are always likely to be more unpredictable and unforeseeable than changes to the ETS. This increased uncertainty increase sovereign risk and the cost of capital (which is often of overseas origin given lack of depth in local market and therefore particularly attuned to headline impressions of country risk), which can affect all developments, even in renewables.

Complementary measures bear a high risk of government failure

42. In addition to the direct costs, transaction costs and opportunity costs of resources spent on compliance, it is crucial to consider the risks of *government failure*, which can occur because of:

    a. *political failure*: legislation responds to interest groups at the expense of the general public;

    b. *bureaucratic failure:* government agencies tend to advance their own interests (e.g. expanding budgets and influence) rather than addressing the original problem that warranted intervention in the first place;

    c. *judicial failure*: slow, costly and uncertain legal processes can arise from new regulations;

    d. *regulatory capture*: regulatory agencies can end up captured by stakeholders in the regulated industry; and

    e. *regulatory creep*: where additional costly regulations are needed to manage unintended consequences of the original policy).

43. The consultation document should carefully engage with the risks of government failure which could compromise its own preferred path of regulation.

44. If there are other market failures in relation to emissions (most plausibly these would be related to imperfect information), it must be demonstrated that these are residual and material following the primary intervention (the ETS). The problem definition must be clearly articulated and then the marginal costs and benefits of intervention must be clearly demonstrated.

We do not support bans and regulated phase-downs

45. As the reader will anticipate based on the preceding sections, we oppose the proposals to ban new coal boilers and to regulate the phase down of natural gas, LPG and diesel.

Bans are blunt instruments with high costs and limited political durability

46. Bans are overly blunt instruments which reduce optionality and hide the true cost of abatement. Bans may also have significant unintended consequences which cannot be easily unwound, and even if such consequences are identified, it is very difficult to

[4] Sir Dieter Helm, The Cost of Energy Review, 25 October 2017, page 8, paragraph 3.

unwind in a manner that restores investor confidence if the policy is subject to party politics. What may be a good choice for one firm may not be good for another, and because information is dispersed only the firm in question can best make decisions on what technology to use.

47. Costs must be carried - either by consumers (where it can be passed through) or by the regulated firm (with lower profits, which are due to either reduced quantity demanded or, in the case of exports, having to absorb costs which cannot be passed through).

48. Bans do not tend to be politically durable which also means they are ultimately an ineffective tool. We believe that the ETS is the best tool to internalise the externalities associated with emissions. Should there by a genuine lack of confidence in the existing ETS to deliver New Zealand's targets across the national economy then revising the ETS should be the first port of call before promoting a series of sectoral interventions. We note comments from the New Zealand National Party saying it will reverse bans in the draft advice from the CCC, and based on that consider it unlikely that climate-related bans under other processes will also not be durable on a bipartisan basis.

Firms already face the cost of carbon

49. Fundamentally, businesses already face the cost of carbon through the ETS and it should remain up to individual firms to determine their response to that. In addition to the price signal faced, firms also face the increasing awareness of climate change issues, and this is heightened with introduction of legislation for mandatory climate-related disclosures. Emerging corporate culture reduces the chances that boards and management are unaware of emission-related issues that should be considered.

50. In terms of costs, the consultation documents acknowledges that:

> "a strong 'phase-out' date for natural gas, LPG and diesel could have significant impacts and make some operations unviable due to the lack of alternative fuel options." (p35)
>
> and
>
> "…firms will be affected as a result of the capital expenditure required to replace existing infrastructure, and the increased costs of low emissions energy sources. However the options are designed to ensure that the activity remains viable and compliance costs would not be so large that they could result in industry closures." (p25)

51. It is correct to identify that firms will be affected and that industry closure is a risk. However only firms possess the precise knowledge of what will financially compromise them, so attempting to design regulations to manage this will be unlikely to work in all instances.

Regulations can have wider ripple effects

52. The consultation document considers that

> "Fossil fuels other than coal warrant a more flexible approach due to: …the likelihood that there will be a decrease in gas use due to the impact of the oil and gas exploration ban imposed in 2018 through amendments to the Crown Minerals Act 1991."

53. As this excerpt identifies, the petroleum sector is already under pressure. Natural gas is widely recognised as being important for electricity firming and high

temperature process heat, even out to 2050 by the Climate Change Commission. If the gas market is particularly attuned to ongoing regulatory changes, regulations on its use in process heat may be damaging and compromise the availability of gas being available when needed for firming in decades to come.

The waterbed effect means it is particularly difficult to justify additional regulation of externalities

54. Given the waterbed effect, whereby direct regulations cannot reduce whole-of-economy emissions, there is a particularly high evidential threshold to cross before regulations can be justified.

Taking care to differentiate general commercial challenges from genuine market failures

55. If there are other market failures in relation to emissions (most plausibly these would be related to imperfect information), it must be demonstrated that these are residual and material following the primary intervention (the ETS). The problem definition must be clearly articulated and then the marginal costs and benefits of intervention must be clearly demonstrated. We do not support regulation to require the development of corporate emission plans and the like.

56. In terms of identifying residual 'problems' remaining after the ETS has been established we share a few words of caution. Some alleged barriers may just be a normal part of the commercial sector and not evidence of any market failure. Emission reduction projects, for example, may compete for internal capital, but this does not represent an actual barrier *per se*. Competition for capital is axiomatic as everything faces competition, as all decisions involve an opportunity cost.

57. We accept that it is important that firms have information to ensure they can make informed decisions about energy but consider that firms already have the right incentives to pursue and use this information. General information can be obtained online, tailored advice can be sought from consultants or sometimes government agencies where policy has deemed that appropriate.

Appendix One: Energy Resources Aotearoa Response to Certain Consultation Questions

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 higher emitting fuels due to the higher carbon price. We do not agree that abatement should be forced or compelled where government has a normative view about inadequate emission reductions. As outlined in the submission, the proposed measures are counterproductive as they undermine the functioning of the ETS and will not reduce emissions due to the way the ETS operates under its cap.

Indeed, the characterisation of the status quo does not even acknowledge the newly capped ETS and the waterbed effect this creates. Using the status quo ante (i.e an uncapped ETS) as justification for direct regulation is unreasonable given a cap has just been introduced.

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

No. Regulated interventions generally undermine the ETS and force higher cost abatement.

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

No. We strongly prefer a neutral approach to fuel and technology.

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?

An NES And NPS are standard tools under the RMA, but we strongly prefer not covering emissions through the RMA and instead relying on the cap and trade ETS.

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 policies that are neutral towards fuels and technologies, so prefer the use of the cap and trade ETS.

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?

We prefer a fuel-neutral approach. CO^2 equivalent is the same regardless of how or where it is generated. Under an ETS, emitters will find lowest cost abatement and are incentivised to be more efficient with fuels and to invest in technology. Sectoral and technology-specific interventions will force higher cost abatement.

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. We do not support the approach of proposing specific phase-out dates. The overall goal is net zero emissions across the economy and the ETS is the best tool to achieve this.

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?

Ex post reviews are generally good practice but in this case it would create uncertainty. Review clauses will likely disincentivise emitters from investing in emission reduction activities within their current fuel choice as they may prefer to await the outcome of scheduled reviews before taking action.