Energy Resources Aotearoa

ADVANCING NEW ZEALAND'S ENERGY TRANSITION

Submissions on a suite of energy and climate related policy consultation documents

November 2023

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Energy Resources Aotearoa
POWERING A BETTER NEW ZEALAND TOGETHER

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Cover note – Energy Resources Aotearoa submissions on *Advancing New Zealand's Energy Transition* consultation package

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This cover note provides some high-level contextual commentary on the *Advancing New Zealand's Energy Transition* on package, including our preferred approach to a National Energy Strategy.

3. This cover note should be read in tandem with our November 2023 submissions on the following consultation papers:

    a Gas Transition Issues Paper;

    b Measures for transition to an expanded and highly renewable electricity system;

    c Implementing a ban on new fossil-fuelled baseload electricity generation;

    d Interim Hydrogen Roadmap; and

    e Developing a Regulatory Framework for Offshore Renewable Energy.

Comment

The process following this consultation will be subject to decisions by the incoming Government

4. At the time of writing, the shape and composition of the incoming Government is yet to be finalised (special votes will be announced after the closing date of this consultation process, and formation of a government will come sometime thereafter). We note that whether and how each component of the *Advancing*

New Zealand's Energy Transition package will proceed is subject to consideration by the new Government and Minister.

5. Our expectation, based on preliminary results, is that the incoming Government will take a markedly different approach to energy policy that we would characterise as 'back to basics' – or a rebalancing of emphasis toward the security and affordability limbs of the energy trilemma. Its approach is likely to be underpinned by a conviction that New Zealand can 'grow to zero' – that is, it can (and should) achieve its net zero emissions targets while continuing to grow its economy based on secure and affordable energy. This can be achieved via policy settings that create a much more enabling and encouraging investment climate.

6. Of course, we are eager to engage frequently with officials and the new Government as decisions are made on how to proceed. We have welcomed ongoing engagement to date from officials working on each of the consultation package's constituent papers.

New Zealand is not on track for a successful, orderly transition

7. Both 2021 and 2022 demonstrated that meeting New Zealand's peak electricity demand is becoming increasingly challenging. New Zealand cannot continue to rely on the goodwill and presumed flexibility of large commercial gas customers to help keep the lights on – nor can it continue to rely on good fortune (not every year will be a wet year).

8. High hydro inflows in 2022/23, plus the scheduled outage of Methanex methanol plants, meant that in 2023 New Zealand had sufficient gas to meet electricity generation demand. This situation is not sustainable and New Zealand faces a deteriorating level of energy security if proactive measures are not taken.

9. The risk factors for an energy crisis are beginning to mount up, with several critical unplanned electricity generation capacity outages, a growing share of intermittent generation, and significantly dented investment confidence in upstream gas supply. Without meaningful action to restore supportive and stable policy and regulatory settings, these risks could begin to materialise. Any significant electricity outages or other system failures would seriously undermine the public's confidence in the sector and thereby slow the journey toward a net zero emissions economy.

10. As our suite of policy submissions makes clear, we strongly support a substantive shift in New Zealand's approach to energy and climate policy. This should be a priority of the incoming Government.

Our preferred approach to energy policy and a potential energy strategy

11. Given the current context of declining investment confidence in firms and households, a well-constructed energy strategy should be somewhat conservative and stabilising. It should re-enshrine key principles to promote confidence, by:

    a setting the direction of travel, but with a focus on credibility, stability, durability and predictability;

    b committing to technology and fuel neutrality, thereby preserving flexibility for private sector investment and innovation;

    c using the energy trilemma as its core analytic and accountability tool;

    d committing to a classical public policy approach, as distinct from arbitrary and capricious decision-making; and

    e setting clear 'no-go' parameters for government policy, as well as triggers and parameters for regulatory intervention.

12. A good energy strategy should be fundamentally aimed at delivering sound energy policy that supports energy outcomes. In our view this is one wherein the reliable supply of affordable energy meets demand in a way that meets social and economic objectives. To the extent that that there are negative externalities involved along the way, such as greenhouse gas emissions, then the right tool for the job should be employed to resolve that. For example:

    a in the case of emissions, the right tool is climate policy, which can and should be delivered through the ETS. Climate policy should not be achieved through energy policy, as it is not the optimal tool for the job; and

    b in the case of energy equity, the right tool (besides ensuring prices are efficient and reflect cost of delivery) is welfare and raising wages through economic growth.

13. In short, an energy strategy should not be a climate change or welfare strategy by proxy. Nor should it be a national socio-economic transformation strategy. It must focus on the fundamentals of the energy sector while demonstrating its connectedness to the wider economy. We are concerned that energy policy has lost its identity and focus – instead becoming a lever of climate policy.

14. The significant investment in new energy infrastructure that is required to deliver a growing and low-emissions economy over the coming decades will need to be driven by the private sector. Private capital – both domestic and offshore – requires stable, enabling policy settings that encourage innovation and risk-taking. The proper role of government is to deliver and preserve these settings, leaving investors to iteratively explore new solutions to meet consumers' energy needs.

15. For more elaboration on the thoughts laid out above, see our:

    a April 2022 Perspectives Series note on our preferred approach to a National Energy Strategy here: https://www.energyresources.org.nz/dmsdocument/212;

    b June 2021 Perspectives Series note on a 'least cost' approach to net zero emissions here: https://www.energyresources.org.nz/dmsdocument/178; and

    c November 2021 Perspectives Series note on the ETS 'waterbed effect' here: https://www.energyresources.org.nz/dmsdocument/202.

The energy sector is united in its view of the policy fundamentals needed

16. In August 2023, the energy sector's leading industry associations came together to issue a joint open letter to Energy and Resources Spokespeople across the political spectrum. The letter laid out a ten-point priority plan that showed unanimity across the sector on the policy fundamentals needed to support the energy sector through the journey toward a low-emissions economy.

17. Our package of submissions reflects these policy fundamentals – though we recommend officials refer to the open letter itself too.[1]

We have commissioned and/or produced a suite of reports that will directly inform any policy design post-consultation

18. Over the past 18 months Energy Resources Aotearoa has delivered a suite of evidence-based reports to inform the development of the National Energy Strategy. Officials will already be aware of these (we have welcomed their positive engagement on each report), but we have listed them below for ease of reference.

Report	Description	Links
Fuelling the Energy Transition	Lays out credible pathways for the transition and shows that a disorderly transition out of natural gas could cost $6.3 billion by 2036, compared to a technology-led transition that enables renewable gases and CCUS.	Summary report Full report

[1] See the joint energy sector open letter here.

Report	Description	Links
Building Energy's Talent Pipeline	An Industry Skills Action Plan for the energy sector, including oil and gas. Jointly prepared by Energy Resources Aotearoa and the Taranaki Regional Skills Leadership Group.	Summary report Full report
2035/2050 Vision for Gas (Castalia)	Explores potential pathways for the gas transition, holding energy security constant to identify trade-offs between energy costs and emissions reduction. Strengthens the evidence base in favour of an orderly transition that enables CCUS. Commissioned by Energy Resources Aotearoa, Gas NZ, and the Major Gas Users' Group Inc.	Summary report Full report
The Role of Gas in Electricity and Industry (EnergyLink)	EnergyLink's independent analysis of the range of potential scenarios for natural gas use in electricity generation over the long-term. It finds the best strategy is to retain gas-fired generation beyond the 2030s (including new peakers in all scenarios); switch Huntly to gas-only as soon as practicable; and concert all geothermal to include reinjection of CO_2.	Summary report Full report

Previous Energy Resources Aotearoa submissions

19. We suggest that, in addition to this package of submissions and the reports above, officials refer to the following previous submissions from Energy Resources Aotearoa.

    a Electricity Authority's Ensuring an Orderly Thermal Transition (July 2023);

    b Climate Change Commission's Draft Advice on Second Emissions Reduction Plan (June 2023);

    c Transpower's Draft Security of Supply Annual Assessment 2023 (May 2023); and

    d Commerce Commission's Options to Maintain Investment Incentives in the Context of Declining Demand (February 2023)

20. All our previous submissions are available here.

Conclusion

21. We appreciate the opportunity to submit on this suite of consultation papers, and officials' direct engagement to date with us and our members. We look forward to this continuing as the new Government establishes its priorities and work programme for the energy and transport systems.

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2 November 2023

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Submission on *Gas Transition Plan Issues Paper*

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This document constitutes our submission on the MBIE consultation document *Gas Transition Plan Issues Paper* (the Issues Paper).

Key points

3. The incoming Government should not try to produce a Gas Transition Plan that specifies the emissions or technology pathway it wants the sector to take. It should focus on policy settings that enable market participants to iteratively explore all opportunities to deliver safe, affordable, and reliable energy while continuing to reduce the emissions intensity of the gas sector.

4. Our analysis indicates that a market-led approach will deliver a more orderly and cost-effective transition that could outperform the indicative emissions budgets set for the gas sector. Businesses and consumers are best placed to make plans and decisions based on their own preferences and knowledge – and efficient price signals are the best means to coordinate those decisions. Government should focus on playing an enabling (rather than directive) role by setting the overall framework within which these plans and decisions can be made.

5. We recommend the incoming Government's efforts should be two-fold:

   - identifying and resolving areas where policy settings are undermining investment confidence in gas supply and demand (see paragraph 16); and

   - identifying areas where policy settings could better facilitate and enable material emissions reduction opportunities, including carbon capture, utilisation and storage as a priority, and adoption of renewable gas(es).

6. To capture this submission's recommendations briefly:

   - we question the need for a prescriptive gas transition plan – if one is produced, this should focus on articulating the 'guard rails' within which the sector can iteratively explore the trade-offs between energy security, affordability, and emissions;

   - the Government should focus on removing regulatory barriers and restoring investment confidence (see paragraph 16 below), which will support a more orderly journey toward a low-emissions economy;

   - particular attention should be given to the role of gas in the electricity system, with serious and urgent consideration given to the full range of options to restore confidence and encourage necessary investment in new peaking generation;

   - both biogas/biomethane and hydrogen will play a role in the low-emissions economy – to the extent the Government wishes to support their development and uptake, we suggest it should focus on removing regulatory barriers and using voluntary market measures like renewable energy certificates; and

   - carbon capture, utilisation, and storage (CCUS) is a critical opportunity that faces significant regulatory barriers – the best solution is a dedicated regulatory regime to enable CCUS and we encourage the Government to work closely with the sector to progress this as a priority.

7. We encourage Government and officials to consider opportunities for closer public-private collaboration to explore the trade-offs inherent in our energy future. We suggest that the *Energy Resources Sector Net Zero Accord* - which represents most of upstream oil and gas production in New Zealand – could function as a platform for such collaboration.[1]

Part 1: Introduction

The forthcoming 'plan' should be enabling, not prescriptive

8. Rather than setting out a prescriptive trajectory for the gas sector's transition, the incoming Government should focus on ensuring that its regulatory and policy settings enable iterative exploration of all the opportunities to reduce the sector's emissions intensity over time.

9. We suggest this might include modelling a range of credible scenarios, to help identify the range of possible pathways that are within acceptable parameters of the energy trilemma (affordability, security, and sustainability). For example, Castalia modelling commissioned by the gas sector controlled for energy security

1 See the Accord here and the latest Progress Report here.

(i.e., set this parameter as fixed so that energy security had to be maintained at current levels) on the basis New Zealanders have a very low tolerance for energy outages. This enabled Castalia to surface trade-offs between energy costs and emissions reductions.[2]

10. We are sceptical of the need for a prescriptive 'plan' and suggest what the sector instead needs is strategic clarity from government:

    - what is our objective(s) for the gas sector?
    - what are the parameters for the transition – i.e., the 'no-go' zones for each leg of the trilemma?
    - what are the stable, durable policy settings against which the sector can invest and explore opportunities with confidence?

The goal is to reduce net emissions, not necessarily to eliminate particular fuels

11. The Issues Paper features commentary on the need to 'transition away from', and 'avoid lock-in of', natural gas use. This suggests an underlying focus on pushing natural gas use to zero, rather than pushing net emissions to zero. We do not believe lock-in of future natural gas use is a significant concern because:

    - the energy sector is subject to a quantity-capped ETS, aligned with a trajectory toward net zero emissions by 2050;
    - all future natural gas use will be subject to a carbon price under the ETS;
    - if natural gas use increases – or does not decrease as quickly as is forecast or preferred by policymakers – the carbon price will drive emissions reductions or offsets elsewhere in the economy; and
    - our net emissions target allows for continued gross emissions (e.g., from natural gas) provided these are offset.

12. On this basis we have previously opposed punitive and fuel-selective proposals such as a ban on new gas connections and continue to do so.

13. We also note our concern that the Climate Change Commission's demonstration pathway and emissions budgets have become determinative and directive. Sub-sector emissions budgets have now been established, which appear to pre-judge where the most economically efficient emissions reductions will be available across the economy. In this regard we note the initial work on the Gas Transition Plan (which became this Issues Paper) focused on demonstrating that the gas sector would meet its allocated 'target'. This approach encourages siloed thinking and ignores opportunities for emissions 'overs and unders' between

2 See here.

sectors and fuels. In so doing, it may lead to a sub-optimal (more expensive and disruptive) emissions reduction pathway across the economy.

We have built a robust evidence base specifically to help develop the Gas Transition Plan

14. Over the past 18 months Energy Resources Aotearoa has delivered a suite of evidence-based reports to inform the key elements of the Gas Transition Plan (and other government work). Officials will already be aware of these (we have welcomed their positive engagement on each report), but we have listed them in Appendix 1 for convenience.

15. We have also dealt with many of the matters raised in the Issues Paper in previous submissions on a range of consultation papers from government agencies. We have selectively reiterated the most critical points in this paper, but Appendix 1 also includes a list of our previous submissions that may provide further detail on our views.

Part 2: Transition issues

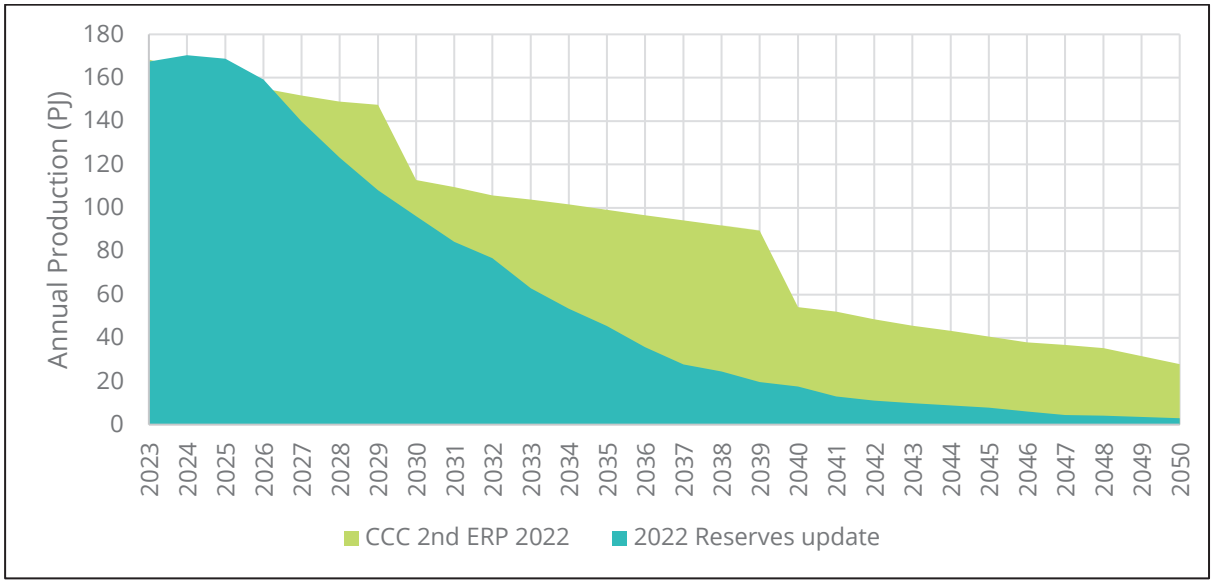
Sustaining investment in gas availability through the transition

16. We have consistently pointed to a cacophony of negative policy signals that have undermined investment confidence in upstream gas supply and undermined confidence in key demand sectors. Previous submissions detail these at length, but the key policies undermining investment confidence in gas supply, storage, and demand include:

    - a prevailing tone from Government about the 'phase out' of natural gas as a fuel, rather than phase down of net emissions;
    - the previous Government's aspirational target of 100% renewable electricity by 2030;
    - the 2018 ban on new oil and gas exploration outside onshore Taranaki;
    - onerous new decommissioning requirements on oil and gas installations;
    - the ongoing investigation of the Lake Onslow pumped hydro scheme;
    - a proposed ban on new fossil fuel baseload electricity generation; and
    - ongoing uncertainty about the Government's preferred balance between gross emissions reductions and offsets, and any measures it might take to achieve this (particularly through the emissions trading scheme); and
    - ongoing uncertainty about the long-term commitment to industrial allocation under the emissions trading scheme.

17. These have led to a predictable softening in the critical investment needed to sustain gas availability over the coming decades. The consequences of this are already clear. The figure below shows the latest gas reserves data, compared with the gas demand profile assumed under the Climate Change Commission's demonstration pathway to 2050. This shows a roughly 900 PJ cumulative shortfall between what the Climate Change Commission has suggested would be produced under its pathway to 2050, and what is currently expected to be produced. New and ongoing investment (estimated at around $200 million per year) will be required to address this shortfall.

Figure 1: Gas production forecast from 2022 reserves update compared to gas production under Climate Change Commission's demonstration pathway



18. Demand-side investment confidence is a critical piece of the picture. There is a mutually reinforcing relationship between upstream investment in supply and downstream investment in continued demand. Keystone users of natural gas – including petrochemicals (e.g., Methanex and Ballance Agri-Nutrients) and thermal electricity generation (e.g., Genesis Energy and Nova) need to be confident that reliable supply will continue; likewise, their ongoing investment in their sites and willingness to continue contracting for gas provides long-term confidence to upstream suppliers.

19. Given downstream gas users are so critical to the sector's overall ongoing success, a broader range of policy settings should be considered when it comes to an orderly long-term pathway for gas. This includes long-term commitment and stability in ongoing industrial allocation to EITE industries, and the overall shape and direction of ETS and emissions reduction policies.

20. We believe the primary role of the Government in supporting continued investment in the gas sector is to resolve the policy issues listed in paragraph 16 above. Fundamentally, this means a shift back to policy settings that are fuel

agnostic and focused on the outcomes sought – i.e., net emissions reductions at least cost to community welfare – rather than on eliminating natural gas as a fuel.

21. Our 2023 Briefing to the Incoming Government – to be published soon after submissions close on this consultation – details a suite of priority policy initiatives that would create a much more enabling environment for the necessary investment in the energy resource sector (including upstream, midstream, and downstream).

The role of gas in the electricity system

22. Thermal generation capacity plays – and will continue to play – a critical role as a back-up to our increasingly electricity system. Analysis we commissioned from Castalia confirms that achieving 95-98% renewable electricity generation is more cost-effective and less disruptive than pushing toward an arbitrary target of 100% renewable. This more cost-effective approach provides as smooth as possible a pathway for electrification of transport and industry.[3]

23. This aligns with what is by far the majority view among commentators and analysts in the sector, including:

    - the International Energy Agency (IEA)'s *New Zealand 2023 Energy Policy Review*, which said that "New Zealand should weigh its aspiration to achieve 100% renewable electricity by 2030 against the potentially considerable costs associated with achieving the last 2-5% of the target";[4] and

    - the Interim Climate Change Commission's *Accelerated Electrification* report, which said that "going from 99% to 100% renewable electricity by overbuilding would avoid only 0.3 Mt CO_2-e of emissions at a cost of over $1,200 per tonne of CO2e avoided. It is also likely to result in much higher electricity prices".[5]

Enabling investment in new fast-start gas-fired peaking generation

24. In its *Ensuring an Orderly Thermal Transition* consultation paper, the Electricity Authority acknowledges that while overall thermal (including gas) demand from electricity generation will fall over time, the relative importance of the role of fast-start gas-fired peaking generation as a back-up to our increasingly renewable electricity system will increase.[6] It notes the risk of disorderly thermal exit is currently low and expects demand for fast-start back-up will remain strong – but critically, it does not see an economic case for new capacity at least to 2032.

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3 See here.

4 See here.

5 See here.

6 See its *Ensuring an orderly thermal transition* consultation paper here.

25. In our submission on that consultation paper, we pointed out that this view is an outlier compared to a range of other forecasts that identify a need for at least 200MW of additional fast-start capacity by the mid-2030s, and in some cases much more.[7] The BCG's *Future is Electric* report suggested as much as 700 MW of new fast-start peakers, in combination with 400 MW of grid-scale batteries, might be required to meet the highest demand peak in 2030.[8]

26. Further, we note helpful contributions from others to this same consultation process, which we highlight here as relevant:

    - Mercury is concerned that the Electricity Authority's analysis may underestimate the risk to consumers of a 'black swan' event (e.g., an unplanned thermal outage coinciding with high peak demand and low solar/wind/hydro generation). It is also concerned the analysis does not fully account for the fact that only thermal generation can provide firm flexibility across all relevant timeframes (real-time, day/week, and month/year). It suggests more consideration should be given to the safeguard provided by investment in additional thermal peaking generation.[9]

    - Contact highlights the risks associated with gas supply flexibility over the coming years.[10]

    - Nova, which holds consent for 360 MW of fast-start peaking capacity at Otorohanga, emphasises that in lieu of significant improvements to investment certainty, this plant will not be built. This includes the issues we raised in the previous section, as well as the need for thermal generators to be confident they will benefit from high prices in periods of tight supply.[11]

Alternative technology options

27. We agree that the challenge of electricity generation variability across a range of timeframes (including seasonal) will require a combination of demand and supply side solutions. Low-emission technologies like energy efficiency, demand-side response, grid-scale batteries, and hydrogen or biomethane storage could all play varying roles in response to changes in relative price signals.

28. However, thermal generation is the only technology that provides flexibility across all timeframes – so unless the full suite of technologies above become much more cost competitive in aggregate, thermal will need to be part of the solution mix. We also note that (particularly new) thermal peakers may offer the opportunity to reduce overall thermal generation emissions by replacing older, less efficient

7 See page 4 of this submission for a collated table of forecasts of additional fast-start thermal peaking capacity required by the mid-2030s and by 2050.

8 See Exhibit 79 on page 124 of BCG's report.

9 See here.

10 See here.

11 See here.

assets; and by providing pathways to low-emissions fuels like biomethane and/or hydrogen, and could be paired with carbon capture, utilisation, and storage.

Part 3: Key opportunities

Renewable gas

Biogas/methane

29. We agree with the consultation document's conclusion that biogas/biomethane has a promising role to play in reducing the emissions intensity of the gas sector over time. While full replacement of natural gas with biogas/biomethane is unrealistic over the short to medium term, there are immediate economic opportunities to progressively blend biogas or biomethane into the network for consumers willing to pay a premium.

30. As the document itself notes, around 20% of current residential and commercial gas demand could be met by 2 PJ of biogas sourced from waste feedstocks at around $15/GJ compared to around $8/GJ for natural gas. This premium would be a relatively minor overall component of overall energy bills (given gas represents only about 20% of these customers' bills).

31. Supporting and accelerating uptake of biogas/biomethane blending, where this is commercially viable, clearly aligns well with New Zealand's overall emissions reduction ambitions as well as its proposed national waste strategy. The key question is how to achieve this (see *Renewable gas certificates* below).

Hydrogen

32. We agree that hydrogen will likely have a role to play in hard-to-abate applications such as heavy road transport, petrochemicals, and marine and air transport. Over the medium to long term, as with all other fuels and technologies, hydrogen will need to establish a durable role on a commercial basis – and we expect it will.

33. We note the Government is current supporting hydrogen uptake through several subsidy and other measures aimed at overcoming early investment and commercialisation barriers. At a high level, our view is that such measures need to clearly articulate what success looks like and identify the 'off-ramp' for Government support.

34. We note the Issues Paper discusses blue hydrogen (produced from natural gas paired with CCUS) and concludes that New Zealand is more likely to use natural gas directly for key domestic use cases. While we generally agree, if New Zealand sought to establish a hydrogen export market, blue hydrogen could offer a pathway. Blue hydrogen production is much lower cost than green hydrogen, which could be particularly important if hydrogen exports need to compete in a global market where the cost premium for green hydrogen (zero emissions) over blue hydrogen (low emissions) is small. Enabling blue hydrogen production would

radically strengthen investment confidence in ongoing gas supply and storage, and it would establish infrastructure that later supports uptake of green hydrogen.

35. For further information, see our parallel submission on the Interim Hydrogen Roadmap consultation paper.

Renewable gas certificates

36. Consistent with our previous submissions and advocacy, we support market-led solutions to support uptake of renewable gases (biogas, biomethane, and hydrogen) such as virtual trading of voluntary renewable energy certificates. We support GIC's ongoing work to explore a regulatory framework and monitoring regime to provide assurances to the market about the claims renewable gas certification providers make and the products that they sell to consumers. The government may in future have a role in ensuring any renewable gas trading schemes are compatible with international jurisdictions.

37. Government subsidies or investments need to be justified on the basis that they address a market failure, are additional (i.e., realise benefits that would not accrue under status quo settings), and represent good value-for-money compared to alternative investments.

38. We do not support renewable gas obligations or mandates. A key risk of mandating renewable gas blends, or mandating participation in a renewable energy certification regime, is that it imposes the associated premiums on consumers who are unwilling and/or unable to pay. This could create a more disruptive transition and accelerate disconnections from the gas network. In this way, well-intentioned policies to support the transition of the gas sector could heighten risks of asset stranding and increase the overall costs of the transition.

Carbon capture, utilisation, and storage (CCUS)

New Zealand should pursue CCUS as a priority

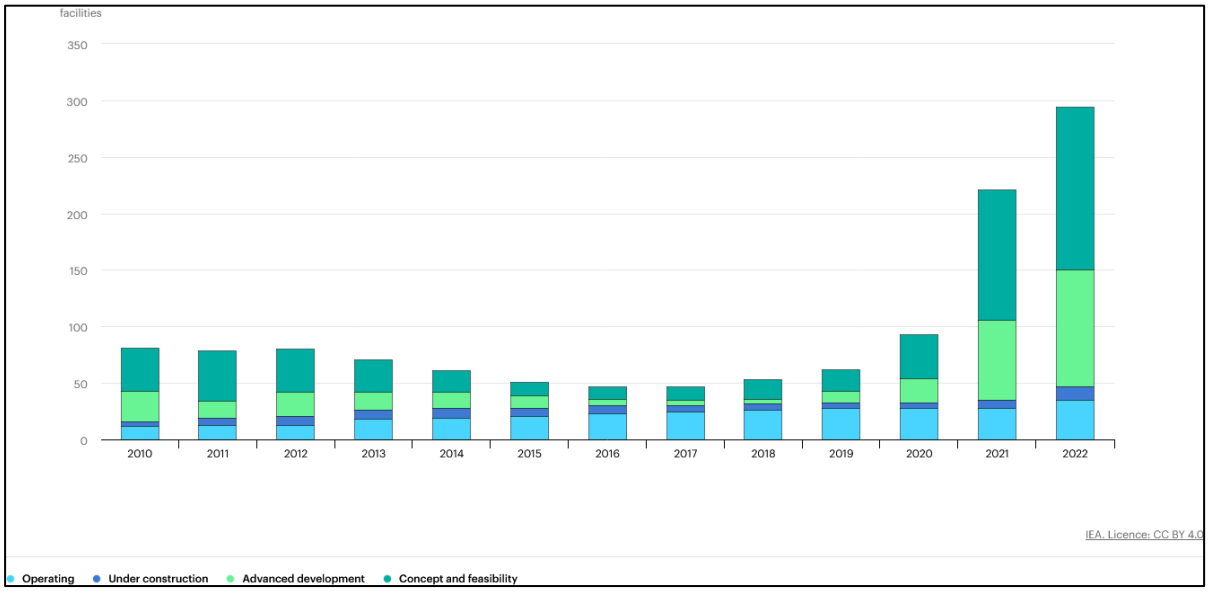
39. We have consistently advocated strongly for CCUS to be prioritised as a key emissions reduction opportunity. Some point capture projects may be commercial at current carbon prices (or nearly so) and enabling the establishment of a CCUS ecosystem now could lower barriers to commercialisation of direct air capture in the future.

40. Credible international voices, including the IEA and IPCC, point to CCUS as a critical element of a successful net zero transition. The high proportion of fossil fuels in New Zealand's primary energy supply means we will, like the rest of the world, need to achieve net zero emissions faster than it can eliminate fossil fuels. With commentary from some parties increasingly pointing to the risks and shortfalls of above-ground biological sequestration (e.g. forestry), it is critically important that

the role of permanent geological sequestration and carbon utilisation are given serious consideration.

41. CCUS is not new. Currently about 40 million tonnes of emissions per year are captured globally. The Global Carbon Capture and Storage Institute (GCCSI) lists 197 projects in their 2022 CCS status report.[12] Of these there are 30 operating projects worldwide, two thirds of which are enhanced oil recovery projects. A further 90 projects are under construction or in advanced development, the majority (64) focused on dedicated geological storage. This includes projects in the United States, United Kingdom, Iceland, China, Canada, Belgium, Sweden, and Australia.

Figure 2: Global carbon capture project pipeline[13]



42. Comparator jurisdictions are showing signs of urgency. For example:

- The United Kingdom has published a CCUS investment roadmap and pledged £20 billion in funding over 20 years into CCUS;
- The United States' Inflation Reduction Act increases subsidies for CCUS to US$85 per tonne (roughly NZ$145 per tonne), on top of $3 billion already committed to building four CCUS hubs; and
- Australia has launched a $250 million investment to deploy CCUS at scale.

43. We welcome the analysis that MBIE and GIC have commissioned to support the development of the Issues Paper. This analysis:

12 https://ccushub.ogci.com/ccus-basics/understanding-ccus/#howMatureIsCCUSTechnology

13 www.iea.org/commentaries/carbon-capturein-2021-off-and-running-or-another-false-start

- validates our own finding that it is technically and commercially feasible in a New Zealand context, and

- provides some indication of the regulatory measures that could be taken within the existing legislative framework to provide a pathway for CCUS to occur.

44. Both the Castalia report commissioned by the gas sector and the WoodBeca report commissioned by MBIE and GIC independently identified 2027 as a credible target date for implementation of CCUS. This is ambitious but reflects the high priority opportunity that CCUS represents. With sufficient motivation, infrastructure can be built much faster than usual – for example, when the Ukraine crisis meant Russian gas imports would cease, Germany consented and built LNG terminals faster than any infrastructure had been completed since the post-war period.[14]

45. Castalia estimated the total potential emissions reduction from CCUS in New Zealand industry and electricity generation at up to 15 million tonnes of avoided emissions to 2035, at a total energy cost to New Zealand 2.5% lower than its (no CCUS) reference pathway.[15] WoodBeca further estimated CCUS could avoid up to 4.4 million tonnes of emissions from upstream natural gas processing by 2035 at a cost of between $30-110 per tonne.

46. Taken together, these imply a potential upper limit of more than 19 million tonnes of economic emissions reductions by 2035. Achieving even a conservative portion of this opportunity would have a material impact on our ability to meet our emissions budgets.

Regulatory barriers to CCUS

47. We have not advocated for subsidies or specific incentives to support CCUS uptake in New Zealand. What sets us apart from many other jurisdictions is that we have an ETS that covers the entire energy sector, meaning that as the carbon price rises, the value of avoided emissions can be realised by CCUS projects. Our key focus has therefore been on ensuring regulatory settings enable CCUS to occur where it makes commercial sense.

48. The Barton report commissioned by MBIE and the GIC finds that:

> "…relatively specific changes to policy settings and amendments to statutes and regulations […] would result in a legal regime that would be viable for the early stages of CCS in New Zealand. It would not be ideal in its regulatory comprehensiveness for the protection of public interest, or in terms of

14 The Castalia report is here and the WoodBeca report is here. The Castalia report assumes CCUS captures 85% of gross emissions where it is deployed; and that it is deployed once economic in the following sectors: electricity generation; methanol; urea; steel; cement; and lime.

15 The Castalia report uses IEA cost estimates for CCUS available here.

investment certainty to encourage corporate investment decisions, but it would provide a path forward for CCS projects."[16]

49. We would support these changes as an immediate interim measure if they enable CCUS to begin more quickly.

50. However, our strong preference is for a dedicated CCUS Act. We recommend work on this begins immediately. This would:

- deal with the permitting and authorisation of projects;
- describe the reporting and inspection of operations during the feasibility and operational phases of the permit;
- facilitate the development of CCUS hubs for the geological storage of third-party CO2;
- clearly articulate and define ownership, and therefore responsibility, for CO2 storage and handling along the project value chain;
- set out the consultation requirements for iwi and affected stakeholders;
- outline the site closure and monitoring requirements for the regulator to verify carbon has been stored in a stable, long-term manner; and
- enable the transfer of liability for stored CO2 from the permit holder at the end of the verification and monitoring period.

51. We believe close collaboration between the public and private sector will be necessary to accelerate this work by identifying issues to be resolved in a regulatory regime. Again, we suggest the Energy Resources Sector Net Zero Accord could be a platform to enable this collaboration.[17]

Increasing capacity and flexibility of gas supply

Enhanced gas storage

52. We have consistently pointed to enhanced gas storage (whether expansion or conversion) as a low-cost option to add much more depth and flexibility to New Zealand's energy system. An additional 18 PJ of gas storage would enable gas to be the predominant fuel in dry years – this is equivalent to 5,000 GW, or roughly the storage capacity of the proposed Lake Onslow.

53. In *Fuelling the Energy Transition*, we noted that the Ahuroa Gas Storage Facility has 18 PJ of storage and was built for $177 million in 2011 (roughly $216 million in present-day dollars). The latest estimates are that Lake Onslow could cost over

16 See here.

17 For more on the Accord, see here.

$16 billion to construct and would provide roughly the same energy storage capacity to the system. Even if new gas storage was double the cost, this is a vanishingly small fraction of Lake Onslow.

54. As the Issues Paper itself notes, the key issue is investment confidence. Any new investment in enhanced gas storage would require stable policies that create an investment horizon of at least 15 years. Again, the first focus of the incoming Government should be addressing the cacophony of negative policy signals that currently make such an investment highly unlikely. Beyond this, there may be a role for government in supporting investigation of the case for enhanced gas storage and/or alternatives such as methanol storage for electricity generation.

Liquefied Natural Gas (LNG) import

55. We welcome the supporting analysis by Enerlytica into the feasibility of LNG import to address gas market imbalances. While we acknowledge it could provide an alternative back-up to cover planned and unplanned outages, our preference is for solutions that leverage greater use of our domestic natural gas resources.

56. Regarding domestic solutions – which we prefer – we agree with Enerlytica's conclusion that a new gas storage facility would provide the greatest scope to provide additional system flexibility at the lowest relative cost.

Conclusion

57. We appreciate the opportunity to provide input on this important work. Overall, we read the Issues Paper as a sober recognition of the challenges facing the sector as we transition toward net zero emissions – including those challenges created by prevailing policy settings implemented over the last several years.

58. We see remarkable opportunities ahead, but the sector needs to be able to take risks and invest in them with confidence. The Gas Transition Plan is an opportunity to provide clarity and stability for a sector that stands ready to do some heavy lifting on New Zealand's low-emissions journey.

Appendix 1: Reference Material

Energy Resources Aotearoa reports

Report	Description	Links
Fuelling the Energy Transition Energy Resources Aotearoa	Lays out credible pathways for the transition and shows that a disorderly transition out of natural gas could cost $6.3 billion by 2036, compared to a technology-led transition that enables renewable gases and CCUS.	Summary report Full report
Building Energy's Talent Pipeline Energy Resources Aotearoa	An Industry Skills Action Plan for the energy sector, including oil and gas. Jointly prepared by Energy Resources Aotearoa and the Taranaki Regional Skills Leadership Group.	Summary report Full report
2035/2050 Vision for Gas Castalia	Explores potential pathways for the gas transition, holding energy security constant to identify trade-offs between energy costs and emissions reduction. Strengthens the evidence base in favour of an orderly transition that enables CCUS. Commissioned by Energy Resources Aotearoa, Gas NZ, and the Major Gas Users' Group Inc.	Summary report Full report
The Role of Gas in Electricity and Industry EnergyLink	EnergyLink's independent analysis of the range of potential scenarios for natural gas use in electricity generation over the long-term. It finds the best strategy is to retain gas-fired generation beyond the 2030s (including new peakers in all scenarios); switch Huntly to gas-only as soon as practicable; and concert all geothermal to include reinjection of CO_2.	Summary report Full report

Previous Energy Resources Aotearoa submissions

59. We suggest that, in addition to this submission and the reports above, officials refer to at least the following previous submissions from Energy Resources Aotearoa. All our previous submissions are available here.

- Electricity Authority's Ensuring an Orderly Thermal Transition (July 2023)
- Climate Change Commission's Draft Advice on Second Emissions Reduction Plan (June 2023)
- Transpower's Draft Security of Supply Annual Assessment 2023 (May 2023)
- Commerce Commission's Options to Maintain Investment Incentives in the Context of Declining Demand (February 2023)
- Gas Industry Company's Gas Market Settings Investigation (July 2021).

Energy Resources Aotearoa
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2 November 2023

Ministry of Business, Innovation and Employment (MBIE)
By email: electricitymarkets@mbie.govt.nz

Submission on *Measures for Transition to an Expanded and Highly Renewable Electricity System*

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This document constitutes our submission on the MBIE consultation document *Measures for Transition to an Expanded and Highly Renewable Electricity System* (the Consultation Paper).

Overarching points

The Government's vision and strategy for the energy system

3. We welcome signals that the energy strategy due in late 2024 will set out a vision and "potential pathways" as we transition toward net zero long-lived gases by 2050. Rather than a strategy that specifies a particular pathway, we favour one that identifies key objectives and parameters, but preserves flexibility to iterate within those parameters.

4. We also welcome commentary throughout the Consultation Paper to the effect that the energy system is a means to an end – we produce energy to power livelihoods and businesses. Including economic growth and productivity alongside the classic energy trilemma makes clear that New Zealand should not achieve its energy security, affordability, or sustainability goals by shrinking its economy (and the associated wellbeing of its people).

5. In our view, the energy system is now facing heightened stress – particularly in the electricity system, where capacity in winter 2024 is looking under pressure. These stresses on the energy system highlight the importance of energy security and affordability, and in our view, point to a need for a rebalancing of policy focus as it relates to the energy trilemma. This submission lays out a range of proposals to

reset policy settings toward a more stable and investment-friendly environment for energy.

The Consultation Paper helpfully synthesises a wide range of familiar issues

6. Most of the issues and potential solutions addressed in the Consultation Paper are familiar. In most cases they are the subject of ongoing work across multiple agencies, and/or are being actively debated in the energy sector. The Consultation Paper has usefully synthesised these into one place, including with a stocktake of existing work already underway and the state of the evidence base. This is timely because the Consultation Paper, and submissions on it, will provide a comprehensive basis on which the incoming Government can prioritise its efforts.

7. We have dealt with many of the matters raised in the Consultation Paper in previous submissions. We have selectively reiterated the most critical points in this paper, but Appendix 1 also includes a list of our previous submissions that may provide further detail on our views.

8. Some of the matters raised in the Consultation Paper overlap or relate to others in the *Advancing New Zealand's Energy Transition* package. Where this is the case, we have pointed to our parallel submissions which may cover our views in more detail.

We have commissioned and/or produced a suite of reports that will directly inform any policy design post-consultation

9. Over the past 18 months Energy Resources Aotearoa has delivered a suite of evidence-based reports to inform the development of the National Energy Strategy. Officials will already be aware of these (we have welcomed their positive engagement on each report), but we have listed them in Appendix 1 for ease of reference.

Part 1: Growing Renewable Generation

Chapter 2: Accelerating supply of renewables

Addressing regulatory and market uncertainties hindering investment in electricity generation

10. The document discusses the regulatory and market uncertainties that may be hindering investment in renewable electricity generation. The Lake Onslow project is identified as a key uncertainty – we agree and have been clear it should be ruled out immediately by the incoming Government to clear the way for market-led investment.

11. We strongly support any efforts to encourage large scale investment in new renewable electricity generation capacity. We note though that this also carries a corresponding need for flexible peaking capacity (on current economics, gas-fired peaking generation will almost certainly play a key role here). In this regard, we

note that the Government's aspirational target of 100% renewable electricity by 2030 is not specified as a source of uncertainty in the Consultation Paper. We believe this should immediately be dropped because it represents a material risk weighing against necessary investment in new fossil fuel peaking generation to back up our increasingly renewable system. Our parallel submission on the Gas Transition Issues Paper addresses this issue in further detail.

Potential financing measures for renewable generation

12. We are generally sceptical about the merits of contracts for difference (CfD), feed-in tariffs, and renewable certificate obligations as government policy tools to incentivise renewable generation in the New Zealand context. The reasons for this include:

    a. our energy-only market has already delivered significant growth in renewable capacity, and Transpower's latest SOSA indicates that the pipeline of new development is progressing;[1]

    b. preferential treatment for specific kinds of new generation raises questions as to a level playing field with other existing (or new) generation that does not receive these government benefits; and

    c. proof of 'additionality'. It may be difficult, particularly given renewable generation capacity is growing already, to prove that these measures aren't simply supporting investments that would have happened anyway (or displacing others that would have otherwise been made in the absence of the measures).

13. To be clear, our reservations on the above are specific to government measures. Contracts for difference may be an effective means for private energy users and producers to establish long-term certainty that underpins both supply and demand side investments. We see the natural role for government here being two-fold:

    a. government might have a role in addressing any barriers to private parties identifying opportunities for, and entering, contracts that provide this long-term investment certainty; and

    b. government might wish to enter power purchase agreements or similar, using its own aggregated demand profile, to attract new investment in electricity generation capacity (though we would caution this should still seek a balance between incentivising desirable behaviour and delivering value-for-money to taxpayers).

1 Consistent with our view elsewhere, to the extent New Zealand's energy system has not built new thermal peaking capacity that most sector players agree is required, we see this as being due to regulatory/policy barriers rather than a fundamental issue with the energy-only market.

14. We suggest that to the extent intermittent renewables require de-risking, government's focus should be on ensuring the energy-only market provides sufficient timely incentives for dispatchable generation or storage (covered in the following sections).

Chapter 3: Ensuring sufficient firm capacity during the transition

15. The discussion document notes that the Climate Change Commission's demonstration pathway featured 200 MW of new natural gas peaking by 2035, but that recent Concept Consulting work for the Electricity Authority found no new investment would be economic at least until 2032. In our submission on the associated *Ensuring an orderly thermal transition* paper, we noted there are a wide range of views on this question, but most of these point to new gas-fired generation capacity being required.[2]

16. We believe new gas-fired peaking generation will be required to keep consumer prices affordable and to support new renewable investment. Our conclusion is driven by our understanding of the market and operational fundamentals – ideally, it is not one that government should mandate. We do not believe policy measures should be pursued to specifically incentivise or direct this – rather, we support fuel and technology agnostic settings that enable alternatives to compete on cost (with the carbon price factored in).

17. As a starting point, the key issue we see is the need for negative investment signals to be removed so that alternatives can compete on a level playing field. Rather than specific new interventions being required, we suggest the best way to support necessary investment in (fossil fuel or otherwise) firming capacity is to 'take grit off the gears' by addressing the suite of policies that are weighing down investment confidence across the energy sector – particularly in new gas supply and generation. These are variously covered elsewhere in this submission, but include:

    a. ongoing uncertainty associated with the Lake Onslow, the scale and operation of which would fundamentally change the electricity market;

    b. the Government's aspirational target of 100% renewable electricity by 2030; and

    c. a rolling maul of onerous and disproportionate policy and regulatory impositions on the upstream oil and gas sector, including the 2018 ban on new exploration outside onshore Taranaki and successive changes to decommissioning and financial assurance requirements.

18. If policy measures to further support or incentivise new firming/dispatchable capacity are pursued, these should include fossil fuelled firming on the basis that the emissions of this are already priced in the ETS. If fossil fuel firming or

2 See pages 2-4 of our submission here: https://www.energyresources.org.nz/dmsdocument/253

dispatchable capacity is lower cost, with its emissions priced in, it should not be precluded.

19. It might be argued that a risk of this approach is 'locking in' future emissions from new fossil fuel capacity. But emissions are capped under the ETS – if carbon prices rise rapidly in the future, this does create the risk of stranded assets. But this is a business risk to be borne by investors and not one regulators should be concerned with. The onus is on Government to set stable, durable long term policy settings (particularly around the ETS and the energy market) against which investors can make informed decisions about risk and reward.

20. For further detail, see our parallel submission on the Gas Transition Issues Paper.

Chapter 4: Managing slow-start thermal capacity during the transition

Investment in gas-fired peaking plant during the transition

21. We generally agree with the Consultation Paper's finding (based on the work of MDAG and others) that new measures are not currently required – but the risk of disorderly phasedown of thermal generation should be actively monitored and the existing programme of work progressed. There may come a point in the future where additional market-based mechanisms are warranted to strike the right balance between the commercial objectives of thermal capacity operators and the security requirements of the wider system.

22. In practice, market participants have signalled their intent well in advance. A minimum notice period – which is floated in the Consultation Paper – is in effect a regulatory mandate to run assets. Our preference is that the energy market itself incentivises running of capacity when it is economic to do so. If a notice period is introduced on the basis that it provides a buffer against system risks of rapid retirement, it should include an ability to apply to the regulator for an exemption where this is warranted.

23. We do not support a strategic reserve, on the basis that both MDAG and BCG independently concluded it would increase costs and undermine investment incentives without materially improving energy security.

24. For further detail, see our July 2023 submission on the Electricity Authority's *Ensuring an Orderly Thermal Transition* consultation paper, available at https://www.energyresources.org.nz/dmsdocument/253.

Chapter 5: The role of large-scale flexibility

25. In our view, large energy users and retailers are sufficiently incentivised to, and capable of, identifying and contracting large-scale demand response opportunities. The consultation document itself notes recent examples such as the NZAS-Meridian 50MW deal, and Contact's plans to contract more than 100MW

of flexible demand by 2026. We expect that this market will continue to mature without significant government support or intervention.

Part 2: Competitive Markets

Chapter 6: Workably competitive electricity markets

Existing work programme

26. Our submission on the MDAG's *Price discovery in a renewables-based electricity system* consultation paper details our views on these issues. To briefly recap here:

    a. we acknowledge MDAG's concern that an increasingly renewable electricity system may thin competitive incentives in the provision of shaped products (i.e., flexibility) – though noting its conclusion is based on scenario modelling, rather than observed market behaviour;

    b. we agree with MDAG's preferred initial focus on measures that address the exercise of market power (conduct) rather than structural market power at its source. Even where these less stringent transparency measures are explored, it will need to be demonstrated that their public net-benefits outweigh the private costs of forcing disclosure; and

    c. a very high threshold should be maintained for the more stringent 'back-up' structural interventions (e.g. virtual disaggregation of hydro storage and generation). We also caution that simply floating policies for further development can have a dampening impact on investment confidence.

Structural changes to the electricity market

27. We do not believe a case has been made for either vertical separation (generation from retail) or horizontal separation (amending the geographic footprint of any gentailer). While reaching a definitive conclusion on retail competition is difficult, we note that the Electricity Authority's comparative analysis of retailers' gross margins and internal transfer pricing do not readily suggest material competition issues exist. Continuing to monitor this over time will help to support market confidence and information asymmetry.

28. We do not believe structural changes should be looked at now to address competition issues 'in case they are needed with urgency'.

29. We particularly oppose further investigation of a single buyer model for the wholesale electricity market. This model would fundamentally undermine the necessary efficient price signals and would concentrate decision-making in a single entity. We prefer the current market model because it disaggregates decision-making among many actors, with a plurality of views about risk and risk management, and who directly bear the costs and benefits of their decisions. The current model also allows price variations that reflect the 'real' cost of delivering

electricity, based on location and timing. This will, over the long run, deliver much more efficient outcomes.

Part 3: Networks for the Future

Chapter 7: A transmission system for growth

30. We generally agree that the balance of risks between investing too late and too early in electricity transmission may have changed compared to historically – i.e., that the risk of investing too late has increased. This is why we strongly support efforts to streamline resource management consenting for generation, transmission, and distribution infrastructure, which will shorten the timeline to take projects from planning to commissioning.

31. However, we caution that the risk of investing too early, or over-investing in capacity that is not eventually needed at all, remains and is non-trivial in impact. Great care should still be taken to ensure that any efforts to pre-empt future demand by building infrastructure well ahead of time should be based on robust forecasts and realistic expectations.

Chapter 8: Distribution networks for growth

Removing barriers to new connections

32. Pricing and timing for new connections differs across EDBs, networks, and sub-networks, based on a range of factors including their location, capacity available, and reinforcement works required. EDBs receive significant volumes of new connection requests every year, across residential, commercial, large industrial, EV charging, and more. A key challenge for EDBs is negotiating price and timing for this large volume of new connections, ensuring equitable outcomes for as many customers as possible.

33. In some cases, new connections are not flexible in terms of their requirements (for example, existing large industrials) while others may be able to explore a range of options (location, solution) to fit their demand profile in with existing network capacity or planned works (for example, EV charging).

34. In our view, the priority should be ensuring that EDBs take a consumer-focused approach, working alongside project proponents to understand their energy demand, project constraints, and potential solutions. Process efficiencies may certainly be possible for connection processes, but there may conversely be very good reasons why this can take time. Early and frequent engagement between the EDB and project proponent is essential.

Visibility of network capacity and congestion

35. We generally support greater visibility of current network capacity and congestion, and more information being made available by EDBs to this end. We note some

EDBs are well progressed in providing increasingly granular open-source information about the current state of their networks to inform investment decisions. We also support greater information being made available about potential future demand, particularly from EV charging and process heat.

Chapter 9: Is the Government's sustainability objective adequately reflected for market regulators?

36. The consultation document asks whether the statutory objectives of the Electricity Authority and Commerce Commission adequately support the broader objectives of the energy transition – specifically, responding to climate change and reducing emissions.

37. These regulators are already empowered by section 5ZN of the Climate Change Response Act (the CCRA) to take the Government's emission reduction targets and plans into account, where these are not inconsistent with their core statutory objectives. The Commerce Commission has stated that it considers in practice there will be real scope to take account of the permissive considerations under section 5ZN of the CCRA while still promoting its core statutory objectives under Part 4 of the Commerce Act.

38. We believe this is appropriate, and ensures the regulators remain centrally focused on their respective core purposes. We agree with the findings of the 2018-19 Electricity Price Review, which found that adding to these core objectives with other non-discretionary considerations would pull them in too many directions, require difficult trade-offs between competing objectives, and blur accountability. Attempting to introduce additional mandatory objectives into these market regulation and competition focused regimes risks worsening their performance in achieving efficient market outcomes for consumers.

39. The reality is, though, that significant growth in demand for electricity is expected to occur over the coming decades, driven largely by a rising carbon price and the need to reduce emissions. We are supportive of the Electricity Authority and Commerce Commission exploring ways to enable more anticipatory investment ahead of demand, rather than 'just in time', to help accommodate this step change in scale and investment.

Part 4: Responsive Demand and Smarter Systems

Chapter 10: Increasing distributed flexibility

Further measures to support market access for distributed flexibility

40. We strongly support sector initiatives to explore the massive opportunities that distributed flexibility and energy efficiency offer. We note a significant programme of activity is already underway across the private sector and regulators, including

trials operating under regulatory exemptions. We support this 'regulatory sandbox' approach to enabling innovation.

41. We note that at this early stage it is not yet clear whether an integrated platform for distributed flexibility will emerge organically. Such a platform is likely essential to enable owners of distributed flexibility to realise (monetise) the full value of flexibility services they offer into the market.

42. As a starting point, we generally support government setting out the future structure of a common digital energy infrastructure to allow trading of distributed flexibility in an integrated market. Its approach, though, should retain flexibility so that this structure can evolve as the market, and the technologies within it, takes shape.

Smart device standards and regulation

43. We support voluntary information measures such as EECA publishing publicly available specifications for EV chargers and other devices, including specifications for 'smart ready' devices. We likewise support publishing of whitelists of devices that meet these specifications (modelled on the success of the Energywise programme).

44. We note MBIE is developing changes to the Energy Efficiency and Conservation Act 2000 to enable EECA to set standards mandating demand response capability in devices, and/or requiring default off peak charging settings. Any such standards should be carefully considered to ensure that the public and private benefits of mandating this capability (e.g., lower operating costs, lower electricity network costs associated with meeting peak demand) outweigh the costs (i.e., the premium for demand-response capable devices). We expect that the market will naturally gravitate toward 'smart' devices without compulsion as a market for demand flexibility emerges and enables consumers to monetise their associated benefits, but this assumption warrants monitoring and testing.

Feed-in tariffs for distributed solar and batteries

45. We do not support subsidies for distributed solar and batteries. New Zealand's energy-only market – in which all forms of generation compete on a level playing field on price – has fundamentally delivered an efficient, low-cost electricity system. We do not support undermining this by 'picking winners' through subsidies for particular forms of generation.

46. Likewise, we are doubtful that government support through financing measures is required. A number of New Zealand banks already offer concessionary loans for energy efficient retrofits, including installation of home solar and batteries. Solar providers themselves also offer financing options that can include low or zero interest loans. Grid-scale battery investments are already occurring – for example, Meridian plans to commission a 100MW battery at its Ruakākā Energy Park by September 2024 (more here).

Part 5: Whole-of-System Considerations

Chapter 11: Setting priorities and improving co-ordination

Cost-reflective pricing

47. We strongly support retaining cost-reflective pricing in the energy system. As the Consultation Paper itself acknowledges, markets achieve lower prices in the long run, incentivising generation, network, and technology investments in the right place and time.

48. The Consultation Paper asks if pricing below the cost of supply, or cross subsidisation in transmission and distribution pricing, could be justified to achieve energy affordability and address distributional impacts. It similarly asks if electricity prices could be reduced for households suffering energy hardship. On both counts, while we support the laudable intent of addressing energy hardship, distorting cost-reflective price signals in the energy-only market is not the best way to achieve them. Provided prices are not above what a competitive market would deliver, and some consumers still cannot afford electricity, this is not an electricity market issue and requires other measures to address it. Equity and affordability issues should be addressed through additional non-market measures, such as welfare or other transfers.

49. The Consultation Paper notes that current measures (such as the Winter Energy Payment) offer a similar level of support to all recipients, and do not provide extra support for customers in higher cost areas to ensure they do not pay more than consumers in lower cost areas. We suggest that these issues are best addressed through fixing the specified measures (e.g., by targeting the Winter Energy Payment to need and/or region). We also emphasise that the first question should be whether regional price variations are cost reflective (if they are, this narrows the range of problems warranting government intervention).

50. The Consultation Paper also notes the administrative costs associated with greater targeting, but this is an inherent trade-off if we seek to provide as much support as possible to the most vulnerable consumers. It is also not clear that targeted support through price regulation in the market would avoid this same issue.

51. Likewise, we do not support regulating lower electricity prices where this would help deliver the Government's emission reduction targets and plans. Putting aside the inherent difficulties involved in placing emissions reduction requirements ahead of the need to deliver secure and affordable electricity, the ETS already internalises the cost of emissions so that the cost of these fuels reflects their 'true' cost, with their emissions included. As the carbon price rises over time, the economic case for fuel-switching in industry and transport will improve. Artificially lowering electricity prices for particular sectors or users would significantly distort market incentives and raises the question of who cross-subsidises any concessionary pricing.

Concluding remarks

52. We appreciate the opportunity to submit on this Consultation Paper alongside the other components of the *Advancing New Zealand's Energy Transition* package. We are more than happy to continue engaging with officials as the process unfolds, particularly given the incoming Government will wish to assess the issues and to prioritise additional work – if any – it wishes to take.

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2 November 2023

Ministry of Business, Innovation and Employment (MBIE)
By email: electricitymarkets@mbie.govt.nz

Submission on *Implementing a ban on new fossil fuel baseload electricity generation*

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This document constitutes our submission on the MBIE consultation document *Implementing a ban on new fossil fuel baseload electricity generation*.

Key points

3. We oppose a ban on new fossil fuel baseload electricity generation.

4. It is highly unlikely any such generation will ever be built under the status quo. If it were built, this suggests it stacks up even with its carbon externalities priced in via the ETS. The fixed quantity cap in the ETS ensures we will remain on-track to reach net zero emissions regardless. This means the proposed ban has little or no 'upside'.

5. The proposed ban comes with the downside risk of disincentivising new fossil fuel peaking that may be required in the next decade – including potential new thermal baseload paired with carbon capture.

6. Given the points above, the proposal will unnecessarily occupy officials' and Parliament's limited time and resources for next to no expected benefit.

Submission

We oppose the proposed ban

7. We unequivocally oppose a ban on new fossil fuel baseload electricity generation. We agree with MBIE officials' assessment that it is highly unlikely any such new generation will ever be built anyway under the status quo. This means the ban will

unnecessarily occupy officials' and Parliament's limited time and resources, which could be dedicated to developing and implementing higher priority elements of the *Advancing New Zealand's Energy Transition* consultation package.

A ban on new fossil fuel baseload electricity generation is unnecessary

8. New Zealand has a well-established energy-only market without preferential treatment for any given fuel source. This allows different generation opportunities to compete on a level playing field, based on their returns from sale of electricity in the wholesale spot market and forward contracts. Other dedicated regimes deal with the externalities of these generation sources – for example:

    - emissions are internalised by the carbon price in the emissions trading scheme (ETS), which has a fixed quantity cap for NZUs that will decline over time consistent with net zero by 2050; and

    - environmental effects are managed through the resource management regime and land use planning.

9. This market approach has worked very well in New Zealand. The generation stack has been dynamically optimised over time and, without preferential intervention, has achieved progressively higher renewables share and lower overall emissions intensity. The carbon price signal from the ETS is expected to continue driving this trend as the investment case for fossil fuel generation, relative to renewables, becomes harder.

10. In practical terms, it is highly unlikely that any new fossil fuel baseload electricity generation will be built in New Zealand. This is because:

    - as the carbon price under the ETS rises, fossil fuelled generation is becoming less and less competitive with renewable electricity generation;

    - existing baseload fossil fuel generation assets are being progressively retired, and are run less;

    - fossil fuel baseload is not well suited to meeting New Zealand's 'peakier' demand profile as intermittent renewables grow their share of the generation stack (fast-start fossil fuel peakers are much more likely to be required and built);

    - like officials, we are unaware of any announced plans to build a new fossil fuel baseload generation asset; and

    - existing consents for new gas-fired generation assets are either highly unlikely to be built, and/or are vastly more likely to be built as open cycle gas turbines (i.e., peaking plants as opposed to baseload).

Great care should be taken not to disincentivise the construction of fossil fuel peaking generation, which could be required in the coming decade

11. Analysis we commissioned from EnergyLink found that New Zealand will need to build up to 320 MW of new fast-start peakers by 2038 to ensure the increasingly renewable electricity system can meet growing demand at peak times. EnergyLink suggests that gas-fired peakers are the most economic option.[1]

12. This analysis accords with most analysis conducted to date. To illustrate the point, the table below shows a range of analysis which, with one exception, identifies a role for new (fossil fuel) peaking capacity:

Date	Report	New thermal peaking capacity
May 2023	Concept Consulting's report for the Electricity Authority[2]	None, at least until 2032
Apr 2023	EnergyLink's Role of Gas in Electricity and Industry[3]	Low demand: 200 MW by 2035 High demand: 320 MW by 2035
Oct 2022	BCG's The Future is Electric[4] Preferred pathway (Smart System Evolution)	200 MW by 2030 400 MW by 2040 600 MW by 2050
May 2021	BusinessNZ Energy Council's TimesNZ 2.0[5]	Kea: 200 MW by 2030 / 1,830 MW by 2050 Tui: 400 MW by 2030 / 1,770 MW by 2050
May 2021	Climate Change Commission's *Inaia Tonu Nei*[6] Demonstration pathway	200 MW by 2035
Mar 2020	Transpower's *Whakamana I Te Mauri Hiko* base case[7]	400 MW by 2035

1 The EnergyLink report is available here: Summary report and Full report

2 https://www.ea.govt.nz/documents/3147/Appendix_C_-_Concept_Consulting.pdf

3 https://www.energyresources.org.nz/dmsdocument/243

4 https://www.bcg.com/publications/2022/climate-change-in-new-zealand

5 https://times.bec.org.nz/

6 https://www.climatecommission.govt.nz/public/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa.pdf

7 See Transpower's Whakamana I Te Mauri Hiko report, available at https://tpow-corp-production.s3.ap-southeast-2.amazonaws.com/public/publications/resources/TP%20Whakamana%20i%20Te%20Mauri%20Hiko.pdf?VersionId=FljQmfxCk6MZ9mIvpNws63xFEBXwhX7f

Date	Report	New thermal peaking capacity
Jul 2019	MBIE's Electricity Demand and Generation Scenarios[8]	Reference case: 490 MW by 2035 / 930 MW by 2050 Disruptive case: 940 MW by 2035 / 1,340 MW by 2050

13. The government should take great care to ensure that any ban on new fossil fuel baseload generation does not disincentivise or prevent the construction of fossil fuel peaking capacity.

Fossil fuel generation is not inconsistent with net zero

14. Fossil fuel generation is declining, and will likely continue to decline, in its overall contribution to electricity supply over the coming years. This will no doubt reduce the gross emissions of the electricity sector, and we welcome this.

15. However, if new fossil fuel baseload or peaking generation is built, this is consistent with New Zealand's legislated goal of net zero (as suggested in the consultation document and RIS). We make this argument for two key reasons:

    - on its current trajectory, the ETS should achieve net zero by the late 2030s. This is when NZUs will no longer be available by auction, so every NZU will be purchased on the secondary market and backed by forestry or other offsets.[9]

    - further, it may be the case that the rising carbon price will incentivise the inclusion of carbon capture with a new generation asset, or its retrofit in future, which would significantly reduce its gross emissions (with residual emissions offset through the ETS, per point above).

16. Blunt instruments such as fuel-selective bans constrain future optionality and require the Government to make bold predictions about an uncertain future. The proposed ban also drifts from a focus on the actual outcome (net zero emissions) toward a focus on the preferred solution (no fossil fuels, or even more specifically, no fossil fuels driving a particular electricity generation profile over time).

If a ban is implemented, legislation is the most appropriate means to implement it, and we support the full range of exemptions floated in the consultation document

17. Having registered our strong opposition to the proposal, we prefer Option 1 (legislation) over Option 2 (national direction) for the same reasons identified by

8 https://www.mbie.govt.nz/dmsdocument/5977-electricity-demand-and-generation-scenarios-report-2019-pdf (note this is currently being updated, but at time of writing, the 2019 EDGS is the most recent report.

9 This excludes industrial allocation, which is scheduled to continue to 2050. Yet unresolved is whether and how the free allocation of NZUs will be backed (the obvious starting point being that the Government purchases these units from foresters or other offsets).

officials – that it would be less complex and costly than a regionally focused planning mechanism.

18. We support development of all the proposed exemptions. In particular:

    - an exemption for new fossil fuel baseload electricity generation with carbon capture, utilisation, and storage should be implemented. This is on the basis that carbon capture could see such plants capture >80% of their emissions – the overarching policy intent, after all, is to avoid emissions-intensive electricity generation; and

    - an exemption for new fossil fuel baseload that uses blended fuels could enable a 'bridge' from lower-cost fossil fuel generation to increasingly renewable generation in the future (Genesis Energy's exploration of torrefied wood pellets at Huntly being an example of how such a 'bridge' to transition could work).

Consideration should be given to avoiding unintended impacts on co-generation

19. We note there is a risk that the thermal baseload ban inadvertently prevents the construction of new, or replacement of existing, fossil fuel co-generation. The measure should be designed to avoid this.

Conclusion

20. We appreciate the opportunity to provide some comment on this proposal. We strongly recommend it is abandoned so that the limited time and resource of officials and Parliament can be diverted toward higher priority and higher impact issues in the energy sector.

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2 November 2023

Hydrogen Team
Energy and Resource Markets Branch
Ministry of Business, Innovation, and Employment
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Submission on the interim hydrogen roadmap

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This document constitutes our feedback on the Interim Hydrogen Roadmap (the "roadmap"). We also refer the reader to our submission on the Regional Hydrogen Transition technical design paper.[1]

Overarching view

3. The roadmap outlines a range of interim actions and other issues the government is considering as a more durable long-term hydrogen strategy is developed. Despite a change of government, and a potential refocussing of the energy strategy work, some of the actions outlined in the roadmap are sensible and noncontroversial.

4. While the case is made for hydrogen as a means to decarbonise those hard to abate sectors, our strong preference is for policy that reflects fuel and technology agnosticism. In this respect we wonder why hydrogen has been singled out for the development of an adoption strategy while other high potential fuels, such as biomethane, have not. We believe officials should pause to consider how this roadmap fits with the preferences of the incoming Government.

5. We are concerned about the lack of consideration in the roadmap regarding interaction of any interventions with New Zealand's emissions trading scheme (the "NZETS"). In our view the NZETS provides important price signals and the appropriate incentives for firms to consider alternative, lower carbon energy

1 Available at https://www.energyresources.org.nz/dmsdocument/download/256 .

sources to meet their requirements. With many of the industries identified in the roadmap already covered by the NZETS, hydrogen uptake will likely reduce market pressure for units. With the overall number of units set as a maximum allowable amount, this creates the space for other sectors covered by the scheme to delay or increase their emissions. This is known as the waterbed effect.[2]

6. A key omission in the roadmap, and in the context of an emerging hydrogen economy, is a discussion of the warming potential of hydrogen. Hydrogen is a notoriously difficult gas to store and transport, so leakage during production and storage is expected. While the warming effects may be indirect, it is important for investors that the government determine how leakage from production, transport, and use will be factored into greenhouse gas accounting and the emissions trading scheme.

7. It remains unclear why the potential hydrogen rebate is part of a "just transitions" package specifically targeting the Southland and Taranaki regions. Given the potential use cases for hydrogen are national, we consider it unnecessary to limit the application of the rebate to a limited number of regions.

8. Finally, in our view the roadmap unnecessarily constrains the development of a hydrogen market in New Zealand to only considering green hydrogen. This approach unreasonably favours a higher cost solution, potentially at the expense of developing the domestic market at scale. We recommend that officials consider all forms of hydrogen production when finalising New Zealand's hydrogen roadmap.

Hydrogen has a niche role in New Zealand's energy transition

9. Much of the roadmap makes the case, and provides suitable examples, for hydrogen uptake as a means to decarbonise hard to abate sectors. We agree with the government view that there is sufficient potential for hydrogen in New Zealand – particularly in those areas where there is unlikely any viable economic low-emissions alternative – to warrant serious consideration of policy barriers to uptake.

10. As an emerging technology yet to achieve commerciality at scale, the government could play a role in supporting the development of New Zealand's hydrogen sector. This roadmap identifies the range of ways the government could support and influence the development of the hydrogen sector in New Zealand. This includes government acting in roles such as; strategic policy setter, regulator, funder and service delivery agent, major participant/procurer in the economy, owner and investor in infrastructure, diplomatic actor on the world stage, and as a public source of information.

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2 For a discussion of this effect, we refer the reader to our perspectives note on the waterbed effect, available at: https://www.energyresources.org.nz/dmsdocument/202

We agree that government should not invest directly in hydrogen projects

11. In principle we favour a least cost energy transition, whereby energy and decarbonisation projects proceed on their economic merits. Therefore, we support the decision that the Crown should not be a direct investor in hydrogen projects (therefore picking "winners") but will instead use its influence to identify and reduce barriers to entry for project proponents.

Government actions

12. The roadmap commits the government to undertaking six actions in respect to helping enable a hydrogen economy. We agree in principle with the overall approach that sees the Crown leveraging its influence and involvement to support the development of a hydrogen economy, without needing to invest directly in projects. These are listed below:

    a. establish a hydrogen government and sector coordination body;

    b. progress regulatory work to enable safe basic operation of common hydrogen infrastructure and near-term use cases;

    c. a hydrogen consumer rebate;

    d. a clean heavy vehicle grant scheme;

    e. develop or recognise, emissions-intensity standards, trading and guarantee of origin frameworks for hydrogen production; and

    f. continue and build on international relationships and cooperation.

The need for a coordinating body should not be overstated

13. While we do not agree there is a market coordination failure in New Zealand's nascent hydrogen sector, we do agree there is value in convening a coordination group to ensure regulatory barriers and other policy matters are surfaced and able receive appropriate attention from policymakers. Potential producers already appear to be lining up with potential buyers across a range of use cases, which suggests a coordination failure is not persistent.

14. We also agree that public support is essential to ensure hydrogen projects and hydrogen use have the necessary social licence to proceed. We have already seen

some delays due to consenting and cultural issues, as well as public reservations around the safety of having facilities near populated areas.[3]

If progressed, a hydrogen consumer rebate should be available nationally

15. We acknowledge the Government has taken the decision, as part of a just transitions strategy, to develop a hydrogen market, and that initially this market will be focussed on the Southland and Taranaki regions.

16. In our feedback on the design of the design of the regional hydrogen transition we agreed, in principle, with the proposal for a time and value limited rebate. This approach should alleviate any concerns an early mover might have with subsidising hydrogen uptake by any "fast followers". However, we question why this is regionally specific, when decarbonising hard to abate sectors is a national issue.[4]

International cooperation is vital to the success of New Zealand's hydrogen sector

17. With no domestic electrolyser or vehicle manufacturing capability New Zealand will be reliant on technology transfer and import from overseas. We are encouraged to see officials continue to actively engage with their counterparts in other jurisdictions, and to learn from their experience.

Government considerations in finalising the hydrogen roadmap

18. In addition to the actions noted above, the government has indicated a number of areas requiring further consideration in finalising a hydrogen roadmap. These areas for consideration are:

    a. how hydrogen fits into a wider mix of alternative fuels, to be considered in developing the New Zealand Energy Strategy;

    b. more detailed workforce and infrastructure consideration with input from the government and sector coordination body;

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3 For example, see the appeal by Greenpeace New Zealand against the resource consent granted to Hiringa Energy to produce green hydrogen in Taranaki on the basis that hydrogen may be used in the manufacture of nitrogen-based fertilisers. We note the irony that a project which will reduce net emissions and enable scale-up of a hydrogen economy is being opposed by environmental groups on the basis it is not a perfect solution – only a good one. See: https://www.greenpeace.org/static/planet4-aotearoa-stateless/2022/11/a8eb335c-notice-of-appeal-greenpeace-vs-hiringa.pdf and an article from the University of Canterbury https://www.canterbury.ac.nz/news/2022/nz-is-touting-a-green-hydrogen-economy-but-it-will-face-big-environmental-and-cultural-hurdles.html

4 We refer the reader to our feedback on the Regional Hydrogen Transition Draft technical design paper, available at: https://www.energyresources.org.nz/dmsdocument/download/256

c. opportunities to align hydrogen with New Zealand's national research priority-setting and investigating gaps in our funding support environment across research, development, and deployment;

d. whether further action from government is needed to support a green hydrogen industry in New Zealand to become commercially viable; and

e. the potential effect of hydrogen production on electricity prices, including for an export market.

19. We agree the issues listed above require consideration. We offer some feedback on certain issues below.

The premise of surplus electricity may be unrealistic

20. When considering how green hydrogen fits into New Zealand's energy mix, it is important to consider New Zealand's current electricity generation context. Currently, New Zealand has about 9,800MW of installed generation capacity, across a fleet of generating assets. The generation mix includes hydroelectric (60%), geothermal (18%), naturals gas (9.9%), wind (6.5%), and coal (2.9%).[5] Importantly, this generation capacity and distribution system was developed over the last 100 years.

21. The underlying premise of green hydrogen, and key to the economics of production, is a reliance on there being a surplus of electricity generated from inexpensive, low emission sources that can be used to produce hydrogen through electrolysis of water. Indeed, the roadmap estimates electricity prices need to fall to about 40% of the current average to meet a production cost of NZ$2/kg. It is unclear how or why this would happen when all evidence points to upwards pressure on electricity prices.

22. The growth of the domestic hydrogen sector is expected to be complimented by a growing international hydrogen demand. New Zealand appears to be well placed to help meet this demand by developing its significant renewable energy resources. However, exports must primarily be competitive on a price basis. Even if there is sufficient electricity generation capacity to produce green hydrogen, it is not clear how realistic it will be that hydrogen produced in New Zealand will be cost competitive as an export commodity.

5 See Section C of Energy New Zealand 23, available for download at: https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-publications-and-technical-papers/energy-in-new-zealand/

Grow the market or continuing pursuing a "green dream"?

23. In finalising New Zealand's hydrogen roadmap officials should consider whether the priority is to decarbonise those hard to abate sectors already identified, or whether the priority is to develop a market for green hydrogen.

24. We recommend officials consider all forms of hydrogen production as beneficial to the development of a domestic hydrogen market. Lower cost hydrogen production from natural gas, combined with carbon capture and storage, may prove to be the key to unlocking the domestic hydrogen market, particularly during the buildout phase for additional renewable electricity generation capacity. Given the economics of carbon capture and storage (CCS), as compared to the production and distribution of green hydrogen, this may provide a more feasible pathway to upscale hydrogen production.[6]

The effect of hydrogen uptake on the New Zealand emissions trading scheme needs to be considered

25. While we agree with the government providing some measure of support to the uptake of hydrogen those hard to abate sectors, it is important to also consider the potential impact on the NZETS. As firms move to lower carbon emissions energy sources to meet their needs, this reduction in emissions creates the space for other firms to maintain or increase their carbon emissions. This is known as the waterbed effect.

26. Many of the areas identified as suitable for hydrogen uptake are already covered by the NZETS. With a sinking lid on the maximum amount of carbon emissions in the scheme this neutralises most other polices to reduce emissions. For example, subsidising electric vehicles might lower our transport emissions but cannot lower New Zealand's *total* net emissions because transport is already covered by the ETS.

27. While difficult to forecast or model actual hydrogen uptake, we recommend officials remain cognisant of this effect when considering what policy interventions might be implemented.

Building the right skill base to support the sector is vital

28. We are pleased to see officials focussing on building the right skill base to support the sector. The engineering, operation, and maintenance of hydrogen production and using facilities will require the development of specialist skills and knowledge.

29. Energy Resources Aotearoa's industry skills action plan, referred to in the roadmap, is a timely report that recognises the transformational change happening in, not just New Zealand's energy sector, but across the globe. In the

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6 For more on this see our submission on the *Gas Transition Plan Issues Paper*

plan we identify the key barriers, gaps, and opportunities for our energy sector workforce.

30. It is critical over the coming decade that we retain the skills we have so that they are available to transfer to new industries as they develop. Otherwise, we risk having to compete in a global market to attract the necessary skills, at international prices, when they are needed domestically.

31. The action plan outlines an ambitious industry skills action plan with the strategic goals of attracting and developing talent, as well as identifying areas for collaboration.[7]

The global warming potential of hydrogen cannot be ignored

32. The focus of the emerging hydrogen economy is on how hydrogen is produced and the potential to displace carbon-based fuels. While hydrogen is not directly considered a greenhouse gas there is increasing attention being paid to the atmospheric and environmental consequences of potential hydrogen leakages.

33. In a recent scientific paper published in the journal *Nature*, the authors, led by Norway's Centre for International Climate Research (CICERO), estimated the GWP100 of hydrogen to be 11.6 ± 2.8, suggesting hydrogen is a far more potent greenhouse gas than previously thought.[8]

34. The warming effect of hydrogen is a result of hydrogen's interactions with other atmospheric compounds, which has the effect of prolonging the life of atmospheric other greenhouse gases and increasing ozone production.

35. We also note that a study by the Center on Global Energy Policy at Columbia University[9] found that despite hydrogen being expected to play a key role in decarbonising the energy system, there has been very little attention paid to hydrogen leakage in the hydrogen value chain. The authors found their 2050 high-risk scenario led to a 5.6% (about 30 million tonnes), economy-wide, leakage rate.

36. These findings pose a serious issue for the nascent hydrogen economy and may have a chilling effect on investment. Clearly further scientific and technical work is needed to understand the atmospheric chemistry and the potential leakage rates for hydrogen use, but significant policy work is also required to determine how hydrogen will be treated as a potential greenhouse gas.

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7 Our report can be downloaded from: https://www.energyresources.org.nz/assets/Uploads/Building-Energys-Talent-Pipeline-Skills-Plan-5-October-22.pdf

8 That is the 100-year time-horizon Global Warming Potential (GWP100) of hydrogen as compared to the GWP100 for carbon dioxide. (ref: Sand, M., Skeie, R.B., Sandstad, M. *et al.* A multi-model assessment of the Global Warming Potential of hydrogen. *Commun Earth Environ* **4**, 203 (2023). https://doi.org/10.1038/s43247-023-00857-8)

9 See https://www.energypolicy.columbia.edu/publications/hydrogen-leakage-potential-risk-hydrogen-economy/

Conclusion

37. Thank you for the opportunity to provide feedback on the interim hydrogen roadmap. In our view the range of actions and areas identified for further consideration while finalising the hydrogen roadmap follow a sensible line of reasoning that recognises the government's significant role in supporting and influencing the development of a hydrogen sector.

38. Should you wish to discuss anything in this submission further, or seek clarification, please contact Craig Barry, policy director upstream and climate, at craig.barry@energyresources.org.nz.

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2 November 2023

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Submission on *Developing a Regulatory Framework for Offshore Renewable Energy - 2nd Discussion Document*

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.

2. This document constitutes our submission on the MBIE consultation document *Developing a Regulatory Framework for Offshore Renewable Energy Second Discussion Document* (the "Discussion Document").

3. Energy Resources Aotearoa was born out of PEPANZ, the former peak body for the New Zealand upstream oil and gas sector. As such we have significant experience and insight into the administration and regulation of offshore petroleum exploration and production permits. We offer our suggestions and feedback from this perspective.

Key points

4. It is important offshore renewable energy project investors have the confidence to undertake the necessary detailed long-term investigations in a prospective area, secure in the knowledge they will have the opportunity to commercialise the resources. The approach to permitting outlined in the Discussion Document, including a feasibility permit holder having the right to apply for a commercial permit, supports this.

5. While we support proposals to centre the permitting regime on a feasibility permit followed by a commercial permit, some of the regulatory proposals covered in the Discussion Document appear to stray beyond the intent of enabling the development of offshore renewable resources. This is largely because the permitting regime appears premised on a competitive bidding environment, coupled with a desire by the Crown to optimise (and influence) the development of offshore renewable resources by comparing projects.

6. For example, the discussion of project comparison, and concerns relating to land banking, environmental standards, and access to infrastructure, are beyond the scope of the permit administrator. Ultimately this has the effect of blurring regulatory responsibilities and has the potential to undermine investor confidence. Clarity of regulatory purpose is important, and more likely to deliver optimal outcomes.

7. Given the scale and cost for an offshore project, and the high bar for applicants to meet technical, environmental, health and safety, and financial capability requirements for a permit, we suggest competition will be limited.

8. We support the proposal to limit the duration of the feasibility permit to five years on a "use-it-or-lose-it" basis. However, we recommend providing an option for a limited extension (say up to two years) as market conditions and consenting processes, beyond the control of the permit holder, may affect the decision to apply for a commercial permit.

9. Despite including a section on compliance, the Discussion Document is worryingly vague on permit conditions, particularly during the feasibility stage. We recommend the following for feasibility permits:

    a. an application for a feasibility permit must include a work programme, and the permit holder must comply with that programme;

    b. baseline environmental data, such as wind speed and direction, wave and current measurements, geotechnical survey results, and marine flora and fauna surveys must be provided to the regulator; and

    c. this data will become publicly available on surrendering a feasibility permit (without applying for a subsequent commercial permit), or after a prescribed time.

10. In designing the permitting system, we caution about regulatory overreach which may blur the lines between regulatory responsibilities. Given the preferred, developer led approach, the permitting system should focus on allocating exclusive rights to permit holders to investigate or develop the renewable energy potential of a defined offshore area. Operating in a high-cost environment and with a limited electricity market size, project developers are already incentivised to seek optimal development solutions, so the government does not need to fixate too much on optimising the resource through the permit system.

11. We have residual concerns that the role of the regulator or permit administrator has not been adequately defined in this Discussion Document. Throughout the proposals outlined, there are numerous examples where the boundaries between a new regulator and any existing regulators may be blurred. We recommend careful attention is paid to developing an intervention logic that identifies the administrative gaps in a permitting regime, and how the new

regulator is expected to fill those gaps. This will help inform the roles and responsibilities when operating within the system.

Changes made based on feedback from the first Discussion Document

12. We are pleased to see some feedback from the first discussion document incorporated into the government's thinking about the design of the regulatory framework.

A "use-it-or-lose-it" approach to permit durations is appropriate

13. We agree that a use-it-or-lose-it approach to a feasibility permit is an appropriate way of ensuring permit holders don't "landbank" areas with the highest potential. However, we offer the following for consideration when considering the design of the overall regulatory regime:

    a. feasibility permits should be granted for a primary term (say five years) with permit holders having the option, on application, for an extension of up to two years; and

    b. feasibility permit applicants are required to submit a work programme outlining how studies will progress towards an application for a commercial permit.

14. We also recommend the regulator preserve the flexibility to grant permit holders an extension to retain their permits to recognise situations where permit holders are constrained in carrying out their activities by significant external events. Possible externalities may include supply chain issues, vessel availability, and consenting delays.

Chapter 3 – The overall permitting process

15. We agree in principle with the approach to permitting proposed. In our view it is important that feasibility permit holders should be able to conduct their studies and investigations with the comfort of having the subsequent right to apply for a commercial permit.

16. We are also pleased to see a "launch phase" for the regulatory regime that recognises there are firms already active in assessing New Zealand's offshore renewable energy potential. We expand further on this in the following sections.

Chapter 4 - Further detail on feasibility permits

17. Feasibility permits perhaps play the most important role in enabling offshore renewable energy projects. Uncovering the key environmental and technical data to inform and shape the development of a viable offshore project is the vital first

step in project development. However, it is important to bear in mind this is only one piece of the puzzle in putting together a viable project.

18. Permit area studies will necessarily need to occur in parallel with various other market and societal studies, as well as the development of the necessary supporting skills and infrastructure. The regulator needs to bear in mind the granting of feasibility permits provides a strong indication of credibility for the permit holder, which in turn shapes the commercial and competitive environment for the sector.

19. Therefore, we believe to maintain credibility of the sector the barriers to entry need to remain sufficiently high to ensure New Zealand's offshore renewable energy potential is properly explored by firms with the right financial and technical capabilities.

Allocating areas for feasibility studies

20. We support a process through which firms that are already investigating the potential for offshore renewable energy in New Zealand are given consideration in securing feasibility permits in their current area of interest. This recognises the importance of those early movers in establishing the offshore wind opportunity in New Zealand and the subsequent need to develop this regulatory regime.

21. After this initial launch of the permitting regime, our preferred approach is through a priority in time (or 'first in, first served') application process.

22. While this creates an issue for regulators of dealing with applications on an ad hoc basis, an annual or multiyear "block offer" type process is premised on there being a competitive bidding environment. We are not convinced that, beyond the initial launch, this will be the case.

23. That said, we also see benefit in the Crown reserving the right to periodically seek applications to investigate a specific area in consultation with the grid operator to meet a specific national interest. On those rare occasions the government may also choose to provide some measure of support to any potential project – as these would have an identified national interest.

Areas available for permitting

24. There appears to be little difference in the design of the two options presented in setting feasibility permit area size. We expect any applications will be required to conform to standard conditions, such as areas need to be contiguous, and are defined using graticular blocks. Whether or not a maximum size is set, or assessed for "reasonableness" is somewhat moot, given the preferred developer led approach to permitting.

25. However, we believe the discussion of option 2 mischaracterises the purpose of a feasibility permit. At the feasibility stage it is important to remember the

purpose of the permit is to study the area for its development potential. It is therefore difficult to assess the applicants ability to deliver on this project.

26. It would not be unreasonable for there to be guidance that specifies an upper limit on block size while retaining the flexibility to assess variations to this guidance. Regardless, the regulator will need to ensure that any assessment of an application follows a transparent and repeatable process.

27. On balance therefore we support option 2, where developers put forward proposals, which are assessed for reasonableness.

Feasibility and commercial permit sizes may vary

28. One issue that is not adequately addressed in the Discussion Document is the relationship between the area of a feasibility and the subsequent commercial permit.

29. Given the area of a commercial permit is the result of feasibility studies, it would not be unreasonable for a commercial permit area to represent an optimal, and therefore smaller, project area. This is particularly true if commercial permits attract a lease or rental charge based on permit area.

30. We also note that a feasibility permit does not, for the most part, limit the use of the offshore areas for other users while feasibility studies occur. This is expected to be quite different for a commercial permit where significant amounts of infrastructure are expected to be installed. It may be that other marine environment users will object to larger offshore areas being unreasonably locked up by commercial permits.

31. There is the opportunity for a commercial permit to increase in size, and therefore expand the project capacity through an extension of lands, at a later date. This provides the permit holder with an opportunity to phase their development, while minimising their costs.

Feasibility permits should require a work programme

32. We are surprised to see no discussion of permit conditions and work programmes in the Discussion Document.

33. One of the best ways to ensure offshore areas are not unreasonably tied up is by requiring applicants to submit a work programme. Helpfully a work programme also informs both the reporting requirements and any subsequent compliance matters.

34. We recommend work programme, including milestones, be explicitly included in the application for a feasibility permit.

Data collected should be made available in certain cases

35. An important role of the permit regulator is to collect and maintain any data provided by permit holders in relation to their reporting requirements. This data is likely to have both general and commercial value.

36. If a feasibility permit holder elects not to exercise the right to apply for a subsequent permit, any baseline data collected – such as environmental (wind, waves, and current) and geotechnical data – should be made publicly available on the basis that others may wish to apply for a feasibility or commercial permit.

37. For the avoidance of doubt, any intellectual property developed by the permit holder, such as field layout or other engineered solutions, should remain the property of the former permit holder.

Chapter 5 – Commercial permits

38. The point made in the opening paragraphs of this chapter ruling out a bidding process for commercial permits doesn't make sense in the context of the proposed approach to permits. Essentially it reaches the right conclusion for the wrong reasons – that is, you can't have a feasibility permit regime premised on having an exclusive right to study and then apply for a subsequent commercial permit, then consider competitive bidding for commercial permits.

39. We agree with the use it or lose it premise. But there needs to be some opportunity for an extension in the event there has been a significant movement in the market (domestic electricity, international procurement for equipment or some other externality). This would be by application of the permit holder and at the discretion of the regulator.

40. Grid capacity coordination is not the role of the permit regulator as this is clearly the role of the system operator, Transpower. We note there would be no equivalent requirement for the developers of onshore renewable energy resources, so we question the requirement here.

It is not the role of the permit regulator to compare power projects

41. It is highly unlikely any offshore renewable energy project will receive a final investment decision with significant commercial issues outstanding. This includes resolving any uncertainties with supporting infrastructure and electrical transmission grid access. The financial commitment is too significant and the downside too costly for these issues not to have been surfaced prior to the application for a commercial permit. We do not see a role for the offshore renewable resource permit regulator in comparing projects.

42. At this early stage it is unclear who will be the regulator for this regime, and what the capabilities of that regulator are. It is difficult to support an option that seeks to have the option to "pick winners" when this is premised on:

a. no understanding of who the regulator is, and how they will coordinate with other regulators and part of government;

b. competing projects in the same geographical areas; and

c. competing projects having the same levels of maturity.

43. We do not support Option 2, which allows nearby or adjacent feasibility permit holders to make what is effectively a counter proposal once an application is received. This would effectively set up a de facto capacity auction, which is not a feature of the proposed permitting regime. This would also diminish any first mover advantage, a powerful incentive in an emerging sector with a low number of participants.

44. An assessment process which deals with each application on its merits, provides a more transparent and risk-free process for both the applicant and the Crown. Particularly when you consider an unsuccessful applicant will likely be inclined to challenge any decision, leading to further, but avoidable delays.

45. Therefore, we prefer Option 1. This provides far more certainty for investors and advantages firms with more developed projects to proceed. Firms are incentivised with a potentially significant first mover advantage. This is an important incentive for a nascent industry in New Zealand.

Chapter 6 – Economics of the Regime

We do not see a case for the Crown to provide projects with supporting measures

46. While cognisant of the longer term economic and environmental benefits large scale offshore renewable energy projects could provide, we do not believe it is the role of government to provide commercial support to these projects.

47. It is generally accepted offshore renewable energy projects are high cost and need to be executed at scale to be economic. New Zealand has a relatively small, islanded electricity market, so any large scale offshore renewable energy project will likely have a significant market impact.

48. Direct government financial support for these projects has the potential to distort the electricity market, creating a tilted playing field for these new entrants. This also significantly increases the risk of overbuild, and therefore over supply into the electricity market which will have a chilling effect on further investment.

Revenue collection

49. It is important to remember encouraging the development of offshore renewable energy projects is not about monetising a specific resource. Rather, this regime is about use of the offshore commons by project proponents for

commercial purposes. In effect the Crown is acting like any landowner where a third party wants to make use of their land.

50. In the offshore environment the Crown, as steward of the offshore lands, is essentially acting as a landowner. Therefore, it is not unreasonable for the Crown to require a permit holder to pay the larger of:

    a. an occupation charge, which may be in the form of a permit fee based on area; and
    b. a royalty calculated on the profitability of the authorised renewable energy project.

51. An accounting-based profit royalty recognises the need for a project to recover the significant investment costs needed to develop the project, even before seeking a return on an accounting profit. This approach has parallels with the petroleum royalty regime. However, care is needed to ensure any revenue collected is fair and proportionate to the risk the Crown, and the inconvenience to other marine users.

Cost recovery

52. It is not unreasonable for the regulator to recover administrative and assessment costs, provided the basis for determining these costs are reasonable and transparent. In principle we support the approach taken by the regulator for the Crown Minerals Act, where an annual fee is calculated on the basis of permit area, with a minimum fee set to cover administrative costs.

53. An application for a feasibility or commercial permit will require specific, detailed analysis by the regulator to undertake a meaningful assessment. This is particularly true given the proposed criteria outlined in the Discussion Document. This has the potential to be a complex and costly process and would be in addition to the already onerous and expensive (and likely publicly notified) marine consenting process.

54. We recommend a fixed fee approach for assessing applications. In our experience fixed fee cost recovery incentivises regulators to make decisions in a timely manner, and ensures applicants are well informed about the necessary information requirements to support their application.

Chapter 7 – Māori Rights and Interests and Enabling Iwi and Hapū Involvement

Care needs to be taken to ensure potential conflicts of interest are managed

55. It is not clear how the Crown intends to manage the tension between providing or encouraging economic participation for iwi and hapū, and their role as kaitiaki for their rohe.

56. Any process involving iwi and hapū in a decision-making process will need to be open, transparent, and subject to challenge. It also needs to be clear to developers how decisions are being made and what influence and weight the Crown is giving to input from iwi and hapū.

Economic opportunities for Māori

57. We do not support any form of mandated partnering being imposed on project proponents. If a project proponent wishes to partner with iwi and hapū, that is their prerogative. Further, it is imperative that any application be treated in a fair and consistent manner, regardless of the permit participants (assuming this would be a joint venture arrangement).

58. It is important for the integrity of the regulatory regime that all applicants are subject to the same scrutiny and standards as any other. This includes any decommissioning securities requirements as well as an assessment of the financial, technical, environmental, and health and safety capabilities.

59. Treaty of Waitangi issues are complex, and constantly evolving. Regardless, it is vital the Crown remains central to the treaty partner relationship and does not seek to use permit holders as an agent in this regard. Therefore, any revenue flows to iwi and hapū as a result of any Treaty considerations or obligations are the responsibility of the Crown and should not flow from a permit holder.

Chapter 8 – Interaction with environmental Consenting Processes

60. Our submission on the first Discussion Document outlined our preference for a spatially planned regime, rather than a developer led approach. This preference is founded on the proactive identification of overlapping interests and areas where development potential will be limited.

61. While we have no preference on whether developments that cross regulatory boundaries should be a single consenting authority, our preference is the decision-making process is clearly signalled, transparent, and least cost.

62. We note these developments will generally of a scale such that they are likely be considered a “proposal of national significance”. For such a proposal it is important to note that resource management and environmental effects legislation already has provisions to manage these cross-boundary consenting issues. When considering the consenting process these provisions should be the starting point for assessments, and any changes to streamline the process recommended.

63. As we noted in our comments relating to feasibility permits in the first discussion document, specific attention should be given to where the consents should be notified or non-notified.

64. For example, activities carried out under the authorisation of a feasibility permit will likely have minimal environmental effects and are unlikely to infringe on the and the rights of other marine users. Whereas a commercial permit has a significantly greater environmental impact and restrictions of the rights and access of other marine users. The latter should be notified.

The permitting regime does not set environmental standards

65. We recommend the permitting regime focus exclusively on allocating the rights to undertake particular studies or activities in a defined geographical area. It is important to recognise these permits give the right, but not the permission to undertake these activities, and that appropriate marine consents are required to ensure the environment is protected.

66. In recent times we have seen the Crown Minerals Act 1991 gradually turn from being a clean regulatory regime focused on the allocation and administration of rights and collection of royalties, to a regime with blurred regulatory responsibilities. This risks having critical issues fall between the cracks, possibly leading to suboptimal outcomes.

67. We also refer the reader to our comments made in relation to Chapter 10, which deals with decommissioning. Here, we outline our recommendations to align the decommissioning obligations and alignment with a most proactive, life-cycle approach to marine consents.

Sequencing of permits

68. We do not support MBIE's preferred Option 3, which requires marine consents to be obtained prior to applying for a commercial permit. Our preference is for Option 2.

69. Given the time, cost, and resources required to prepare a marine consent application it is an unreasonable for this to be a condition precedent for an application for a commercial permit.

70. In our view Option 1 requires the applicant to commit to an expensive and detailed marine consenting process, prior to having the comfort they have the right to commercialise the offshore renewable resources. Essentially the permit applicant has the permission, but not the right to build and operate an offshore renewable energy project, in a yet to be granted geographical area. This will undoubtedly undermine investor confidence, particularly if the regulator reserves the right to apply a "national interest test", as suggested in this document.

Chapter 9 – Enabling transmission and other infrastructure

71. It is unclear what policy issue this section is seeking to address. The suggestion is there may be a coordination failure between project proponents, supporting infrastructure owners, and the transmission system operator (Transpower).

72. In our view this is highly unlikely. Potential developers already have an excellent understanding of the challenges and infrastructure needed to enable the development of offshore renewable energy projects. This includes engaging with Transpower to ensure access to the transmission system and port authorities.

73. It is not the role of the permitting regime to look to optimise transmission system and infrastructure use, particularly at this early stage of investigations. Where cooperation makes commercial sense project proponents, infrastructure owners, and the system operator, all are incentivised to look for cost saving, and value add opportunities.

The cost and time to develop the supporting skills and infrastructure is challenging

74. The delivery of the necessary infrastructure, such as upgrades to port facilities, will require significant time and investment. This supporting infrastructure is crucial for the safe, reliable, and cost-effective development of offshore renewable energy projects. Project developers will need the comfort that service providers, such as port authorities, are planning and making suitable investments as the sector develops.

75. This is not however without risk. For example, ports may need to reconfigure existing customer storage requirements to accommodate new service offerings. In doing so it is possible those investments made by infrastructure owners may not be fully realised as there are no guarantees proposed projects will take a positive final investment decision. On the other hand, without these investments it is possible developer will look to more favourable project locations.

76. In managing these issues, we see a potential role for government to work with project developers and supporting infrastructure owners to help coordinate provision of the necessary skills and infrastructure needed to support offshore renewable energy development in New Zealand.

Chapter 10 – Decommissioning

77. We agree that a commercial permit should have a condition that places an explicit obligation on the permit holder to decommission the facilities and infrastructure at the end of its economic life.

78. However, we do not agree the party who constructs and operates the offshore renewable energy project infrastructure should be the ones to decommission. This obligation should be explicitly against the permit holder.

79. A shortcoming of the marine consenting process is an apparent inability of the legislation to consider a lifecycle approach for applications. What that means is project proponents are required to seek consents to install, operate, and remove structures and equipment, but each of these steps are considered as a unique and separate processes.

80. Not unreasonably, regulators should have an expectation that permit holders adopt a "good industry practice" approach to operating and maintaining facilities and equipment. We see this approach applied in the Crown Minerals Act 1991. Importantly, what is considered good industry practices now is likely to change in the future, as methods and technology are constantly evolving. A relevant example of this can be seen in the design of offshore oil and gas facilities, which typically consider how the facility will be decommissioned in the initial design.

81. It is appropriate therefore for the regulator to periodically require an updated decommissioning cost estimate to ensure the magnitude of the decommissioning liability is quantified and understood. This also provides an opportunity for the permit holder to incorporate new decommissioning techniques and practices, as they evolve.

82. We recommend an approach in the offshore renewable sector that seeks to align the marine consenting process with the decommissioning obligations. This removes the need for the permit administrator to set an arbitrary environmental standard when determining the Crown's exposure decommissioning costs, and ultimately what type of financial security type and amount may be required.

83. We recommend therefore the design of the regulatory regime, as it relates to decommissioning that requires:

    a. an explicit obligation on the permit holder too fund and undertake any decommissioning;

    b. permit holders to supply an asset register that details the type and quantity of infrastructure covered by the decommissioning obligation;

    c. a decommissioning plan that aligns with the marine consent conditions;

    d. a decommissioning cost estimate that is consistent with the asset register and decommissioning plan; and

    e. permit holders to be able to demonstrate the financial capability to meet decommissioning costs, and to provide financial security, if required, by the regulator.

A potential approach may be to develop an "infrastructure permit" regime

84. Much like the CMA, where the permit area relates to the underlying resource, we expect commercial permits will define an area where the offshore renewable

energy resource is to be developed. It is likely, if not unavoidable, that supporting infrastructure (such as subsea cables) will be installed outside of the permitted area. It is also possible that different parts of the project may not be owned by the commercial permit holder. In these circumstances we suggest an "infrastructure permit" may be a suitable regulatory tool.

85. Such a permit will provide a right to install, operate, and maintain infrastructure and equipment (with the appropriate resource and marine consents of course), but also creates the obligation to decommission at the end of the useful economic life. We believe this approach would provide a suitable means to accommodate bespoke commercial structures, particularly in the event that infrastructure may be shared between projects.

86. In designing this type of framework careful consideration should also be given to opportunities to reuse and repurpose facilities. For example, the potential to repurpose offshore oil and gas structures for use in renewable energy projects is being investigated by a number of early movers in the sector. It is appropriate to consider a process through which ownership, and therefore the decommissioning obligation, can transfer across the different regulatory regimes.

87. This approach may have applicability across other sectors.

Financial assurance should seek to manage, not eliminate risks

88. Any financial assurance required by the regulator, and this should be on a case-by-case basis, should avoid imposing unnecessary costs on developers in order to avoid the risk of the Crown having to meet the cost of decommissioning. While it is possible to design a regime that effectively minimises and protects the Crown in any and all situations, such a regime comes at the cost of disincentivising investment in the first place.

89. We recommend progressing the offshore permitting regime for renewable energy projects in a way that **seeks to manage** the risk that the Crown or a third party is required to undertake and fund decommissioning. The alternative risk minimisation / elimination approach currently being progressed in petroleum sector will undoubtedly act as a deterrent to investment.[1]

Chapter 11 – Compliance

90. The application of the VADE model to a new offshore renewable energy permitting regime is a continuation of the approach used successfully by NZP&M in regulating the petroleum and minerals sectors. We agree this approach is likely to translate well into the new permitting regime.

[1] We refer the reader to our feedback to New Zealand Petroleum and Minerals on the proposed guidelines for financial securities for decommissioning in the petroleum sector, which traverses many of the same issues. Available at: https://www.energyresources.org.nz/dmsdocument/258

91. While endorsing a proportional approach with clear escalation pathways, we also note permit holders will be subject to other reporting and regulatory compliance requirements from electricity market, health and safety, and environmental regulators. With reporting and other permit conditions remaining undefined in this Discussion Document, we caution care should be exercised to ensure minimal overlap and duplication of requirements.

Chapter 12 – Other Regulatory Matters

Decision making in the regime

92. We support the preferred hybrid decision making approach to permit decisions (Option 3 in the Discussion Document). Again, we note this approach works successfully with the petroleum and minerals regime and we see no reason this approach should not be replicated here.

Public notification

93. We do not agree a formal, publicly notified process prior to the granting of either a feasibility or a commercial permit is required. This is for several reasons.

94. The first is these permits give the permit holder the exclusive right, but not the permission, to undertake an activity in a geographically defined area. Importantly, permit holders will need to acquire the appropriate marine consents in order to undertake activities. These applications will be subject to the appropriate notifications and consultation under the environmental effects legislation.

95. Second, we expect regulators to require significant iwi, hapū, stakeholder, and community engagement to have already been undertaken by applicants in support of an application for a commercial permit. Again, we highlight the grant of this permit does not give the holder the permission to proceed with any project or development.

96. Our views are premised on the supposition that the development of New Zealand's offshore renewable energy resources is an activity to be encouraged as we look to decarbonise our economy.

97. Overall, position is the primary role of the permit regulator should be to ensure permit holders have the financial and technical capabilities to undertake these studies and developments, and that offshore renewable resource potential is assessed and developed in a timely manner. To venture beyond that risks further blurring the boundaries of regulatory responsibility.

Non-interference with offshore infrastructure

98. In terms of exclusion and non-interference zones around offshore infrastructure, we expect renewable energy infrastructure to be treated no differently to other structures in the offshore environment.

99. The issue of freedom of navigation for leisure vessels has been a source of controversy for a number of European jurisdictions. Current practice for windfarms in Europe appears to be leisure craft are permitted to transit through the area but are not permitted to anchor. We note there are regulations specifying minimum turbine blade heights above the water surface to minimise the likelihood of a turbine blade striking a mast. These appear to be sensible and pragmatic accommodations for other marine users.

100. We also note the subsea cables and connectors will likely be afforded the same the protections as those covered by the by the Submarine Cables and Pipelines Protection Act 1996 in territorial waters.

101. Expectations for freedom of navigation and transit through commercial permit areas will need some careful consideration to ensure the minimum of impact for other marine users. However, there appear to be a number of other jurisdictions that can provide suitable direction in making policy choices.

Conclusion

102. We appreciate the opportunity to provide input on this important work. We see enormous potential in the development of New Zealand's offshore renewable energy resources, and we recognise the important role the government plays in giving investors the confidence to invest.

103. It is a feature of the New Zealand's legislative environment that decision-makers responsible for assessing the social and economic benefits of an activity are distinct and separate from those assessing and managing the effects. This important separation of responsibilities underpins the whole legislative environment. In designing a regulatory regime to enable offshore renewable energy projects policy makers needs to be cognisant of, and respect where the regulatory responsibilities lie.

104. Further blurring of those responsibilities, such as we have seen with amendments to the Crown Minerals Act, will undermine the purpose of this consultation – which is to enable and encourage investment in an important, but nascent sector.

105. Should you wish to discuss anything in this submission further, or seek clarification, please contact Craig Barry, policy director upstream and climate, at craig.barry@energyresources.org.nz.

Energy Resources Aotearoa
POWERING A BETTER NEW ZEALAND TOGETHER

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1 November 2023

The Environment Committee
Parliament Buildings
Wellington

via e-mail: en@parliament.govt.nz

Submission on the *Inquiry into Climate Adaptation*

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our mission is to create a successful and sustainable energy resources sector that makes New Zealand a better place, through and beyond the transition to lower emissions. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050. With 42 members, Energy Resources Aotearoa represents energy intensive businesses, from explorers and producers to distributors, sellers, and users, of energy resources like oil, LPG, natural gas, biomass, refined products, and hydrogen.

2. New Zealand's diverse energy sector provides a vital role for all New Zealanders, their livelihoods, prosperity, social, environmental, and sustainable development, including towards achieving climate mitigation and adaptation goals and climate resilience in the face of increasing and more intense climate impacts.

3. At the time of writing, the shape and composition of the incoming Government is yet to be finalised (special votes will be announced after the closing date of this consultation process, and formation of a government will come sometime thereafter). We note that whether and how each component of the *Inquiry into Climate Adaptation* package will proceed is subject to consideration by the new Minister and Government.

4. Energy Resources Aotearoa would like to appear before the Select Committee, should this item be continued under the new Government.

Climate Change Adaptation and New Zealand's Energy Sector

Efficacy of the Current Approach to Adapting to the Impacts of Climate Change

5. Energy Resources Aotearoa cannot understate the importance of 'getting adaptation right' for New Zealand. The current approach to adaptation in New Zealand is inadequate with too much focus on existing efforts, disaster-risk reduction approaches, and comparing the opportunity of adapting systems to climate change to 'responding to earthquakes'.[1] These approaches will not allow New Zealand to make the most of the opportunity of investing in and benefitting from long-term, effective climate change adaptation measures.

6. In preference, we recognise the Intergovernmental Panel on Climate Change (IPCC) definition of adaptation, which goes beyond disaster risk reduction, and responding to natural hazards such as earthquakes:

> 'Adaptation In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effect'.[2]

7. We note that Adaptation options entail:

> 'The array of strategies and measures that are available and appropriate for addressing adaptation. They include a wide range of actions that can be categorised as structural, institutional, ecological, or behavioural'.[3]

8. We further note the IPCC definition of adaptive capacity:

> 'The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences'.[4]

9. Energy Resources Aotearoa also recognises that New Zealand's investment in climate change adaptation should avoid maladaptation and maladaptive actions:

> 'Maladaptation: Actions that may lead to increased risk of adverse climate-related outcomes, including via increased greenhouse gas (GHG) emissions, increased or shifted vulnerability to climate change, more inequitable

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1 Not to mention the almost myopic focus on mitigation, when New Zealand's mitigation efforts, while important, will make little difference to globally driven climate impacts that will be felt in New Zealand. Although we can take climate action to synergistically achieve our mitigation and adaptation goals, our mitigation efforts are not directly linked to the climate impacts that we have and will experience in New Zealand.

2 IPCC Glossary

3 *ibid*

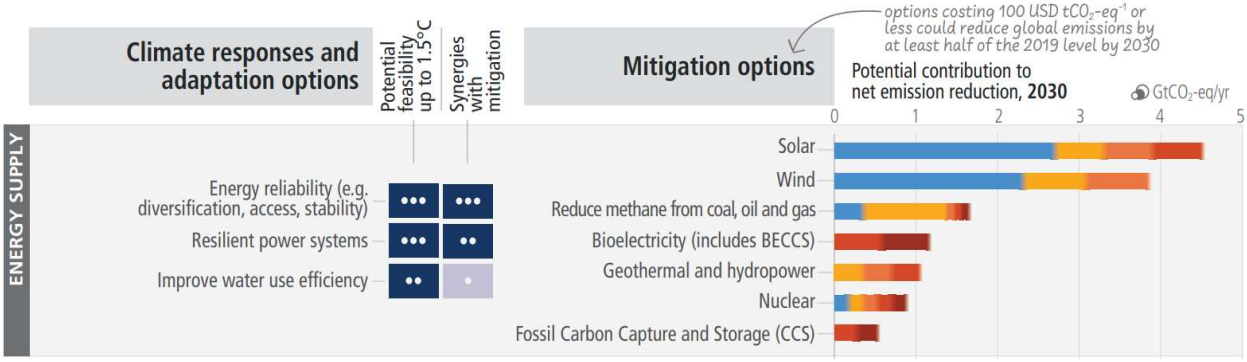
4 *ibid*

outcomes, or diminished welfare, now or in the future. Most often, maladaptation is an unintended consequence'.[5]

10. In the absence of appropriate consideration of these issues, we are concerned that the vital role that the energy sector plays in ensuring New Zealand's climate resilience will be underestimated. Without appropriate central government leadership the sector may also not be adequately prepared to adapt to the impacts of climate change, now and in the future, resulting in increased economic and non-economic costs for New Zealanders, energy shocks, and missed opportunities for the development of adaptation innovations and technologies. Simply setting up a fund for adaptation action and/or managed retreat without appropriate framing and consideration of long-term systemic climate adaptation needs, as well as adequate collaboration across levels and sectors may result in lack of action, maladaptation, and moral hazard.

11. Energy Resources Aotearoa further recognises the wealth of useful activity, knowledge resources and efforts internationally on climate adaptation in the private sector and energy sector, including under the UNFCCC and as captured by recent IPCC analysis.[6] The diagram below shows that specific climate actions in the energy sector can have both mitigation and adaptation benefits synergistically. The use of natural gas in the early stages of the transition of a low carbon future as well as the inclusion of carbon capture and storage (CCS), alongside renewables, will not only lower emissions in the long term, but will also ensure energy reliability (e.g. diversification, access and stability) as a key adaptation response.

Figure 1. Multiple Opportunities for scaling up climate action[7]



5 *op cit*, IPCC Glossary

6 IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland

7 *ibid*, Figure SPM.7: Pg 27.

The Vital Role of the Energy Sector in Adaptation Has Not Been Given Adequate Recognition

12. Energy Resources Aotearoa observes that the energy sector is not mentioned *at all* in the Ministry for the Environment's issues and options paper, even though the sector plays an obvious and vital role in New Zealand's climate resilience and achievement of climate mitigation and adaptation goals. We note the crucial role that the energy sector plays in responding to extreme weather events and climate impacts, and ensuring New Zealand's prosperity, sustainable development, and transition to a low carbon future, for all New Zealanders, including adapting energy systems and supporting managed retreat.

The Interests of the Energy Sector

13. Energy Resources Aotearoa expresses deep and active interest in engaging and collaborating across all sectors and levels, as relevant on climate adaptation and resilience efforts, including with central and local government, Iwi/Māori, and local communities.

14. In particular, Energy Resources Aotearoa and its members has an interest in, and expectation of collaborating on the following:

    a. better understanding climate risk on New Zealand's energy sector, including data and science to better inform decision making;

    b. development of standardised risk assessment methodology;

    c. building climate resilience in the energy sector, for the benefit of all New Zealanders, for instance ensuring supply of energy in extreme weather events, as well as a future-proof, resilient energy system;

    d. developing new innovation and technology on climate adaptation in the energy sector and exploiting market potential to help grow New Zealand's economy; and

    e. contributing to supporting communities, Iwi/Māori with community and ecosystem-based adaptation

    f. ensuring a context-specific approach to adaptation is available, recognising the localised nature of climate impacts, and therefore the responses needed.

15. To showcase some of the adaptation actions already underway in the energy sector in New Zealand, which take a long-term, effective and systems approach to climate adaptation, a compilation of examples of relevant activities has been included in Appendix One. This compilation is not comprehensive, but merely captures work of some of our members, amongst the numerous examples of activity on adaptation in New Zealand's energy sector. We have explained the adaptation links in relation to the examples.

Summary

16. Energy Resources Aotearoa's members understand the importance of adaptation, and the risks and opportunities associated with it. We look forward to fruitful engagement on this submission, as well as on the next steps on advancing New Zealand's climate change adaptation efforts.

Appendix One: Current Examples of Adaptation Actions Already Underway in the Energy Sector in New Zealand

Methanex - NZ$2 million Investment in Neonatal Unit to Support Taranaki, New Zealand Community.
https://www.methanex.com/news/release/methanex-makes-nz2-million-investment-in-neonatal-unit-to-support-taranaki-new-zealand-community/

Methanex Corporation, the world's largest producer and supplier of methanol, is pleased to announce it has made a NZ$2 million investment to support the building of the new neonatal unit at Taranaki Base Hospital in New Zealand. The 10-year partnership provides funding for state-of-the-art treatment to care for the most vulnerable newborns and their families, including in the face of climate impacts such as heatwaves and risks to unborn children. As part of this investment, the new unit will be called The Methanex Neonatal Unit and is expected to be completed in 2025.

"We truly believe in the vision of the Taranaki Health Foundation and the neonatal unit is an area of the hospital that so many of us have had personal experience with, including members of our Methanex New Zealand team," said Stuart McCall, Managing Director of Methanex New Zealand. "Our operation in New Zealand employs over 200 people and represents almost 10% of the Taranaki economy. Our approach is to look to our region and provide as much assistance as we can to projects that will be most beneficial to Taranaki for decades to come."

Powerco – Ensuring reliable and resilient energy networks and supporting vulnerable customer groups to be resilient to weather events and climate change
https://www.powerco.co.nz/what-we-do/ensuring-reliable-and-resilient-networks**;**
https://www.powerco.co.nz/what-we-do/engaging-with-communities

Powerco are committed to ensuring networks are reliable for our customers and resilient to weather events, climate change and cyber threats. Powerco are also supporting customers to be more energy efficient. Powerco will implement a support plan for vulnerable customer groups by the 2023 financial year and have partnered with WISE Charitable Trust to provide free coaching for households at risk of energy hardship.

Mobil Auckland join Conservation Volunteers New Zealand
https://www.exxonmobil.com.au/community-engagement/local-outreach/new-zealand-community-news/mobil-team-joins-conservation-volunteers-new-zealand-tree-rescue-effort

Mobil Oil New Zealand's Auckland team recently joined Conservation Volunteers New Zealand (CVNZ) for a day of tree rescue work along the Papakura stream restoration project in Brookby. Mobil is proud to be a long-time supporter of CVNZ's work and over the years, the partnership has resulted in many positive outcomes in addition to

volunteer work including for biodiversity and climate adaptation. Mobil's support has assisted with CVNZ's youth education programme around the longfin eel, educational resources for classrooms and on-site conservation experiences for school children. This large-scale restoration project aims to restore and protect stream banks and water quality through fencing, planting of native trees, shrubs and grasses, water quality monitoring, weed control and community engagement on both public and private land. Last winter, approximately 41,000 trees and shrubs were planted by CVNZ along the stream to protect stream banks, water quality and to provide important food and habitat to the creatures that call the area home.

Genesis Energy - protecting nature and advancing climate goals for a sustainable, equitable and low-carbon future
https://www.genesisenergy.co.nz/about/sustainability

Genesis Energy have a Sustainability Framework to six of the UN SDGs, including SDG 13 on climate action, chosen as areas that Genesis can make the most positive impact in for New Zealand. This includes a focus on SDG targets 13.1 'Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries'; 13.2 'Integrate climate change measures into national policies, strategies and planning' and 13.3 'Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning'.

To achieve these targets, Genesis Energy are undertaking a number of actions:

- Science Based Targets to reduce annual carbon emissions by 1.2 million tonnes by FY25 tied to the international benchmark of limiting global warming to below 1.5C;
- Investment in renewable energy generation;
- Understanding and adapting to climate change risks and opportunities;
- Supporting a just and equitable transition;
- Disclosing climate risks in line with the Task Force on Climate-Related Financial Disclosures (TCFD) since FY20; and
- Educating and engaging New Zealanders on climate change through our Climate Hub.

OMV NZ – supporting long term, sustainable community initiatives
Our approach | Sustainability targets & commitments | OMV.com

Sustainability and circularity are at the centre of OMV's Strategy 2030, a strategy that is underpinned by its sustainability framework which focuses on five areas: Climate Change; Natural Resources Management; Health, Safety & Security; People and Ethical Business Practices.

In New Zealand, OMV aims to contribute to the sustainability and wellbeing of the communities that they operate in, with a focus on long term partnerships that support the communities needs and contribute to the UN sustainable development goals and

the themes of; Environment and Sustainability, Community Development, Health and Wellbeing and Education and Culture. For example:

- Through a 1.5million NZD partnership with Project Crimson, OMV NZ enabled 193,417 native trees to be planted over two years, via two large scale planting and restoration projects in Taranaki and Wairarapa;
- OMV's long-term support of Rotokare Scenic Reserve assists with sanctuary biosecurity and the reintroduction of vulnerable native birds and lizards to the area;
- The Moawhitu Wetland Restoration Project on D'Urville island is another long standing partnership between OMV, Ngāti Koata and DOC, to restore the lake and wetlands on this remote island, by improving the water quality and habitat through planting native trees; and
- To help address the healthy homes issue in Aotearoa, OMV partnered with WISE Charitable Trust to provide insulation and energy solutions to low-income families whilst creating employment and training opportunities throughout Taranaki.