



COVERSHEET

Minister	Hon Dr Megan Woods	Portfolio	Energy and Resources
Title of Cabinet paper	Progressing the Next Phase of New Zealand's Energy Transition: Release of Discussion Documents	Date to be published	9 August 2023

List of documents that have been proactively released		
Date	Title	Author
June 2023	Progressing the Next Phase of New Zealand's Energy Transition: Release of Discussion Documents	Office of the Minister of Energy and Resource
June 2023	Regulatory Impact Statement - Ban on new baseload fossil-fuel baseload electricity generation	Ministry of Business, Innovation and Employment
28 June 2023	Progressing the Next Phase of New Zealand's Energy Transition: Release of Discussion Documents DEV-23-MIN-0127 Minute	Cabinet Office

Information redacted

No

Any information redacted in this document is redacted in accordance with MBIE's policy on Proactive Release and is labelled with the reason for redaction. This may include information that would be redacted if this information was requested under Official Information Act 1982. Where this is the case, the reasons for withholding information are listed below. Where information has been withheld, no public interest has been identified that would outweigh the reasons for withholding it.

In Confidence

Office of the Minister of Energy and Resources
Cabinet Economic Development Committee

PROGRESSING THE NEXT PHASE OF NEW ZEALAND'S ENERGY TRANSITION: RELEASE OF DISCUSSION DOCUMENTS

Proposal

- 1 I am seeking agreement to release three papers for public consultation, which will progress the next phase of New Zealand's energy transition:
 - 1.1 Interim Hydrogen Roadmap
 - 1.2 Electricity Market Measures issues paper and
 - 1.3 Discussion document on implementing a ban on new fossil fuel baseload electricity generation.
- 2 I am proposing to release these papers as a package, as each paper addresses different aspects of New Zealand's energy transition. This will enable New Zealanders to see the closely interrelated nature of the issues and proposals, in order to inform their feedback.
- 3 This paper is a companion to "*Offshore Renewable Energy: Next Steps for Regulatory Proposals*". That paper progresses another aspect of the government's priorities for the transition, ensuring that offshore renewable energy can play a part in New Zealand's future energy mix. That paper will also be released as part of this package.
- 4 In the context of the release of the Interim Hydrogen Roadmap, I am also reporting back to Cabinet outlining the relationship of the green hydrogen consumption rebate recently announced in Budget '23 to the Interim Hydrogen Roadmap.

Relation to government priorities

- 5 The Government has committed to reaching net zero for all greenhouse gasses excluding biogenic methane by 2050, set a target that 50 per cent of total final energy consumption will come from renewable sources by 2035, and has an aspirational target of 100 per cent renewable electricity by 2030.
- 6 Reaching these targets will require a major effort across the New Zealand energy system and economy. This includes:
 - 6.1 Substantially increasing the supply of renewable electricity to respond to growing demand to replace fossil fuels, and ensuring this electricity can move around the country.

- 6.2 Enabling New Zealand to produce new green energy sources such as hydrogen or bioenergy for those situations where electrification is not possible or economic.
 - 6.3 Responding to the challenges of a more renewable and intermittent electricity system, such as ensuring there is sufficient dispatchable electricity generation, storage or demand side response for managing peaks, calm, cloudy periods and longer-term storage when renewable sources are scarce.
 - 6.4 Ensuring fossil gas usage is phased down to a low emissions future in a way that maintains energy security and supports the wider transition.
 - 6.5 Transitioning at pace, while maintaining security of supply and affordability of energy for all New Zealanders and their wellbeing.
- 7 The package of papers I am proposing to release considers how New Zealand can address these issues through different aspects of our energy system.
- 8 Each of the papers I propose to release also progresses a related action we have committed to in the Emissions Reduction Plan (ERP), and the Government's commitment to develop an Energy Strategy by the end of 2024. The discussion papers and any Government actions that result will both inform and make up aspects of this strategy.

Aotearoa faces an energy transition

- 9 Energy is critical to the way New Zealanders live, work, and get around, but it is also a major source of emissions. While our electricity system already starts from a place of strength (approximately 82 per cent of the electricity we produce comes from renewable sources), in 2020, emissions from wider energy use (including transport) made up 40 per cent of New Zealand's total gross emissions. Cutting emissions from energy is essential to meeting our international climate commitments and reducing the impacts of climate change.
- 10 Reducing these emissions will require substantial new electrification of the economy and, where electrification is not possible or economic, switching to other green energy forms like hydrogen or biomass that can replace fossil fuels.
- 11 In making this transition, there is also an opportunity to improve outcomes for all New Zealanders. The substantial increase in renewable electricity could reduce total energy costs for consumers, and could spur substantial economic growth and productivity. New industries could arise in the energy sector, particularly the production of green fuels such as hydrogen and biomass. There are also likely to be significant opportunities for Māori, who are already actively pursuing participation in the green energy economy.

We have already made substantial progress in decarbonising the energy system

- 12 This Government has already made substantial progress in decarbonising the New Zealand energy system, including:

- 12.1 The Government Investment in Decarbonising Industry Fund (GIDI), boosted by \$650 million over four years in Budget '22, has now co-funded 66 major industrial decarbonisation projects. These projects are anticipated to reduce carbon emissions by 391,017 t of CO₂ per year, the equivalent of taking approximately 144,700 cars off the road.
 - 12.2 Utilising GIDI, we have also announced a significant electrification partnership with New Zealand Steel in May 2023 that could reduce New Zealand's emissions by 1 per cent.
 - 12.3 Progressing improvements to national direction instruments for renewable electricity generation and transmission infrastructure in order to speed up consenting.
 - 12.4 Undertaking a significant programme of work to make a detailed assessment of options to solve New Zealand's dry year problem without using fossil fuels and to support a pathway to 100% renewable electricity generation, via the New Zealand Battery Project.
 - 12.5 Completing over 110,000 heating and insulation retrofits through the Warmer Kiwi Homes programme to reduce New Zealand's energy usage, and extending funding through Budget '23 to deliver around 26,500 extra insulation and heating retrofits each year and approximately 7,500 hot water heat pumps and 5 million LEDs by June 2027.
 - 12.6 Investing \$215 million in 124 projects to decarbonise the state sector, for 945,699 tonnes estimated ten-year carbon emissions reduction.
 - 12.7 Invested \$45.9 million in 233 projects through the Low Emission Transport Fund to fund more than 1300 EV chargers nationwide.
- 13 These examples are just a small fraction of the work the Government is doing to decarbonise the energy system. In addition, actors in the economy are also doing their part.

I now propose to progress the next phase of this transition through the release of several discussion documents

- 14 While we have made significant progress to date, we now need to consider whether several core elements of the energy system are fit for purpose to progress the next phase of New Zealand's energy transition. This will lead into the finalisation of a New Zealand Energy Strategy in 2024. I am proposing to release the documents described in the next sections to further this work at pace, as part of our Government's significant actions to decarbonise the New Zealand economy and meet our climate ambitions.

Releasing these documents as a package will enable the public to see the energy transition in full and give informed feedback on the relationships between options

- 15 The papers I am proposing to release are closely interlinked. They consider, from different areas of government policy, the key questions of how to meet growing

electricity demand, how to phase out fossil fuels from our system, and how to adopt new forms of renewable energy. I consider it important to release these papers together so that the public can see these interconnections, and understand how taking one course of action in one area can affect outcomes in another.

- 16 For example, the Electricity Market Measures paper addresses the capacity of the electricity market to produce enough renewable electricity generation at pace, and how to ensure the right investment to move this electricity around the country. The development of a hydrogen sector, considered in the Interim Hydrogen Roadmap, will be reliant on this capacity becoming available, but may also have impacts for wider electrification.
- 17 Some Iwi and stakeholders in the energy sector have asked for a more coordinated approach and narrative surrounding these issues. Releasing these documents as a coordinated package will respond to these calls, however I am conscious of the consultation burden that this will put on those who wish to input into the discussions.
- 18 For this reason I intend to open submission for a longer-than-normal twelve week period. The Ministry of Business, Innovation and Employment (MBIE) will also be undertaking an active programme of engagements and hui to discuss the issues and make inputting as easy as possible. The release of the papers will also be supported by an overarching context document that shows how each consultation fits into the New Zealand energy system and the challenges we need to resolve to decarbonise. This will enable stakeholders who are not technical experts to understand the key challenges and issues we are consulting on, and provide feedback on this basis, without needing to read all the papers in detail.

Electricity Market Measures Issues Paper

- 19 The Electricity Market Measures issues paper looks at how we can ensure electricity is affordable, reliable and resilient while we transition to an expanded and more highly renewable electricity system. This Government has set an aspirational target of 100 per cent renewable electricity by 2030.
- 20 A key issue for the energy transition is how to manage the phase out of fossil fuels in the electricity system, while responding to substantially increased electricity demand that is occurring through the electrification of other sectors (such as industry and transport). The paper sets out work already underway by government and relevant regulators, and seeks feedback on what else might need to be considered.
- 21 The Electricity Market Measures paper considers how to ensure New Zealand has:
- 21.1 Sufficient investment in new renewable generation to expand our electricity system for electrification and to replace retiring fossil fuel generation. Feedback is sought on whether and what additional approaches may be needed to support development of new renewable electricity generation.
- 21.2 Adequate dispatchable generation capacity, storage or demand side response as fossil fuel plants retire and intermittent capacity grows. Feedback is sought on whether and what additional approaches may be needed to ensure sufficient capacity for peaking, for calm, cloudy periods, and on managing the ‘dry year’

challenge ahead of any NZ Battery Project solution. This includes considerations for the phase down of existing thermal stations for security of supply. This section also looks at whether the electricity market can incentivise demand response for large industrial users of electricity (as has been the case in the recent contract between NZ Steel and Contact Energy as part of the Government's \$140m investment into NZ Steel's decarbonisation).

- 21.3 A competitive wholesale electricity market as we reduce our reliance on fossil fuels. Feedback is sought on what other policy measures beyond existing work by the Electricity Authority and Commerce Commission might be needed.
 - 21.4 Sufficient investment in the transmission network in the right place and at the right time as new generation supply comes online, industry electrifies and local networks' demand for electricity grows. Feedback is sought on issues such as whether there are options to enable more anticipatory investment in transmission outside current regulatory approaches, and whether the concept of Renewable Energy Zones might enable a more efficient approach to connection and transmission costs for electricity generation and large industrial users.
 - 21.5 Sufficient distribution network investment as transport electrifies and local electricity load grows. Similar issues to paragraph 21.4 are considered in relation to distribution networks.
 - 21.6 The development and uptake of "distributed flexibility" (flexibility from consumers shifting the time or volume at which they use electricity, or from distributed generation and storage), to ensure that the system can remain resilient. Feedback is sought on how to best enable the use of smarter networks and smarter technologies, for example, how best to manage charging infrastructure for electric vehicles.
- 22 The Electricity Market Measures paper is also accompanied by a separate paper that provides an opportunity for feedback on the design and implementation of the ERP action to ban new fossil-fuel baseload electricity generation. The previous Electricity (Renewable Preference) Amendment Act 2008 (which introduced a 10-year moratorium on new fossil-fuel baseload electricity generation) provides a useful reference point in designing the ban. This paper seeks feedback on whether features of the previous moratorium, for example an exemption for fossil-fuel cogeneration plants, are still relevant for today's context.

Next steps

- 23 Submissions on the Electricity Market Measures issues paper will help to determine next steps and identify priority policy issues to progress.
- 24 Following consultation on implementation issues relating to the ERP action to ban new baseload fossil fuel electricity generation, the Government will take final policy decisions later in 2023.

Interim Hydrogen Roadmap

- 25 The Interim Hydrogen Roadmap (the Interim Roadmap) sets out an emerging view on the potential role of hydrogen in New Zealand’s energy transition, to inform where the Government should best place its effort. Feedback is sought on whether stakeholders agree with the strategic context and direction of focus in the Interim Roadmap, or whether there are other circumstances Government should consider. Providing a roadmap for hydrogen in New Zealand will help to foster certainty for investors and project developers. There is also significant international interest in New Zealand’s potential for providing hydrogen to export markets.
- 26 The Interim Roadmap suggests that hydrogen has the most potential to play a role in decarbonising New Zealand’s hard-to-abate applications such as chemicals, fertiliser and parts of heavy transport (including aviation and marine), and that an industry in New Zealand could generate substantial economic activity. In modelling that MBIE intends to release alongside the Interim Roadmap, abatement could be up to 1.66-2.36 Mt CO₂-e per annum by 2050 (up to 7.5% of New Zealand’s 2021 energy emissions) and could support 11,400 to 20,500 jobs from \$2.2-3.9bn of economic activity generated per annum by 2050. These emissions abatement estimates do not include the additional reductions that would come if large industrial users were to substitute fossil gas and coal for hydrogen in the production of products like fertiliser, methanol and steel.
- 27 In addition, hydrogen could provide some resilience to the energy system through:
- 27.1 Demand response, where production of hydrogen is scaled down to provide electricity back to the grid.
 - 27.2 Substituting liquid fossil fuel imports for domestically produced hydrogen.
 - 27.3 Potential resiliency benefits from distributed hydrogen production and storage.
- 28 Despite these benefits, a key barrier to the establishment of a hydrogen industry in New Zealand is the availability of new renewable electricity generation required for production. Estimates from the associated modelling suggest that hydrogen production could at least double the amount of additional generation already forecast to be required by 2050, potentially adding another 12.5GW of generation capacity in the base case scenario that was modelled, and up to 23.4GW if a significant hydrogen export sector was to develop. In addition to whether New Zealand exports, the extent of these generation requirements will depend on the scale of hydrogen production established here, and whether there is production for green chemicals and products like steel.
- 29 For this reason, the Interim Roadmap also indicates that while private sector initiatives to explore hydrogen export are welcome, before taking any action to support export at scale, the Government will need to consider whether sufficient supporting renewable electricity generation could be built fast enough to support it. We will also need to be mindful how this will impact domestic electricity availability for other decarbonisation efforts, and how a hydrogen export sector would both impact electricity prices for consumers and the resilience of our system against international market changes.

- 30 The Interim Roadmap also summarises the Government’s current hydrogen initiatives, and commits to new actions, including:
- 30.1 Establishing a government and sector coordination body to and act as an advisory body for hydrogen matters across government, the hydrogen sector and other key stakeholders. Among other things, this body should contribute to building our understanding of the workforce and training requirements for the sector and potential infrastructure needs.
 - 30.2 Initiatives relating to hydrogen that were announced as part of Budget 2023, including the Regional Hydrogen Transition and the Clean Heavy Vehicle Grant scheme.
 - 30.3 A regulatory work programme to review and address, where needed, priority regulations relating to the safety of hydrogen equipment and near-term use cases such as heavy transport, where there are expected regulatory gaps. Ensuring the regulatory environment can facilitate the implementation of hydrogen initiatives announced in Budget 2023 will be a priority for this work.

Next steps

- 31 The results of submissions on this consultation will be analysed and taken into account in a final Hydrogen Roadmap. Officials will finalise the Roadmap by the end of 2024, alongside the Energy Strategy.

Report back on the relationship of the Roadmap to Budget funding for the Regional Hydrogen Transition initiative

- 32 Cabinet agreed through Budget 2023 to provide up to \$108 million over ten years to fund a consumer rebate for hydrogen in Just Transitions regions (the Regional Hydrogen Transition) [CAB-23-MIN-0139]. Drawdown of funding is delegated to the Minister of Finance, the Minister for Energy and Resources and the Minister of Economic Development, subject to a report-back to Cabinet outlining the initiative’s alignment with the Interim Hydrogen Roadmap. This paper fulfils this report back requirement.
- 33 The Regional Hydrogen Transition aims to support early adopters of hydrogen in niche, hard to abate sectors. It will help to reduce reliance on fossil fuels, support new renewable energy projects and create high value jobs, and build economic resilience. The programme will support firms that have piloted hydrogen-use capabilities but which face a cost barrier to commercial uptake. It will support the early development of supply chains and industry skills and capabilities which can be applied across the industry more broadly as it develops.
- 34 The rebate will cover the cost differential between green hydrogen and fossil fuel alternatives, to help support uptake and investment which over time will create downward pressure on capital costs and reduce the need for the rebate.
- 35 Adopters of green hydrogen in the industrial and transport sectors will be able to take part in a competitive auction process in 2024 to claim the hydrogen consumption rebate. The rebate is anticipated to be operational in the second half of 2025.

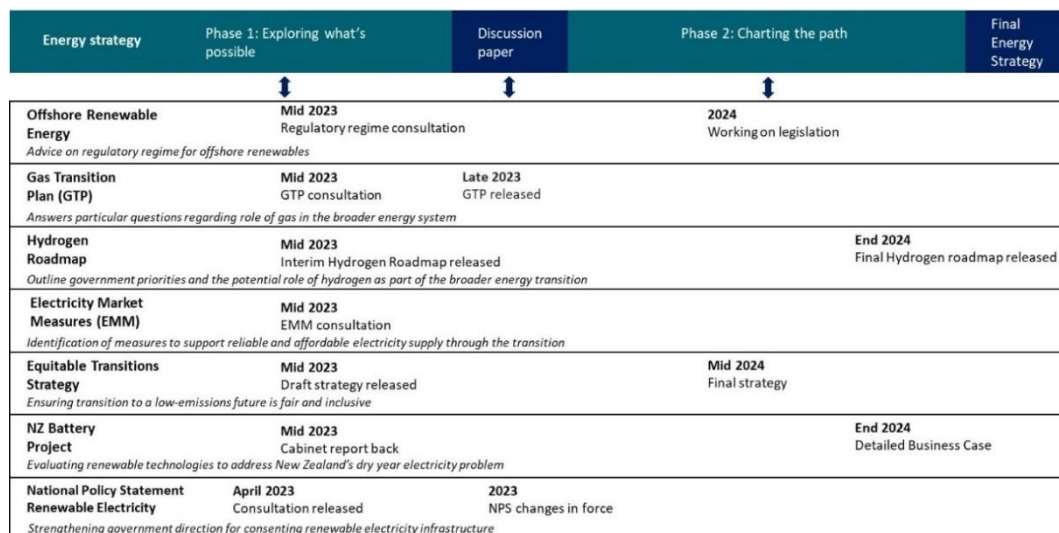
- 36 The Regional Hydrogen Transition is closely aligned with the Interim Roadmap in several ways:
- 36.1 It supports the Interim Roadmap’s objective of bringing forward and firming demand, linked to the most viable strategic use cases for the New Zealand context. As a market for hydrogen does not yet exist, private actors face considerable uncertainty on both sides of the market when making investment decisions. By creating demand, early adopters will be able to grow the skills and supply chains that will support future hydrogen deployment.
 - 36.2 Its focus on domestic consumption aligns with the Roadmap’s approach to hydrogen export until such a time as there are less constraints on renewable electricity.
 - 36.3 Funding from the Regional Hydrogen Transition will be allocated through a competitive process. Firms will only be eligible if they are contributing to the goals and outcomes of the Interim Hydrogen Roadmap.
- 37 As such, I am satisfied that the Regional Hydrogen Transition and the Hydrogen Roadmap are closely aligned and complementary.

Releasing this package will advance and inform New Zealand’s Energy Strategy

- 38 Through the Emissions Reduction Plan the Government also committed to the development of an overarching Energy Strategy for Aotearoa New Zealand by the end of 2024.
- 39 The Strategy seeks the following outcomes:
- 39.1 Energy affordability and energy equity for consumers.
 - 39.2 To transition at the pace and scale required to support a net-zero 2050.
 - 39.3 Secure and reliable energy supply, including as we adapt to the effects of climate change and in the face of global shocks.
 - 39.4 An energy system that supports economic development and productivity growth aligned with the transition.
- 40 The Strategy is being developed in two steps. The first phase – exploring what’s possible – will build a strong evidence base to ensure a shared understanding of New Zealand’s energy potential, limitations, and opportunities. The second phase – charting the path – will explore the key trade-offs between potential future scenarios for New Zealand’s energy system and identify the big choices for New Zealand to make. This phase will also set out government actions needed to achieve the net zero 2050 vision and provide direction to guide decisions by communities, businesses, and the energy sector.
- 41 The documents I am proposing to release address key questions New Zealand’s energy transition, and will enable us to achieve the outcomes that we have set for the

Strategy. Any Government actions that result from these consultations will both comprise a part of, and inform, and the development of the Strategy. While the documents I am proposing to release generally look at the medium term, the Energy Strategy will look to what New Zealand needs to achieve out to 2050.

42 The following diagram shows the interrelationship between these and other work streams as we work toward finalisation of the Energy Strategy:



Risks

- 43 While not making any proposals on the topic, the Electricity Market Measures considers how and when to reduce and remove the remaining fossil gas in our electricity system. Both consider whether a role for fossil gas may be needed until the mid-2030s.
- 44 As announced in the first Emissions Reduction Plan, the Government's aspirational target for a 100% renewable electricity system is being reviewed as part of the development of the New Zealand Energy Strategy, which is taking an evidence-based and energy-system-wide view to set direction for the transition to net-zero emissions by 2050.
- 45 I consider important that we continue to review, and discuss with the public, New Zealand's energy system needs in light of changing global circumstances and substantially increasing domestic demand for renewable electricity.

Financial Implications

46 There are no financial implications from this paper.

Legislative Implications

47 There are no legislative implications from this paper.

Regulatory Impact Statement

- 48 Treasury's Regulatory Strategy Team has advised that this paper does not require a regulatory impact statement. Regulatory impact analysis will be part of the policy development process for future work.
- 49 In relation to the discussion document on implementing a ban on new fossil fuel baseload electricity generation, MBIE's Regulatory Impact Analysis Review Panel has reviewed the attached Impact Statement prepared by MBIE. The panel considers that the information and analysis summarised in the Impact Statement partially meets the criteria necessary for Ministers to make informed decisions on the proposals in this paper.

Climate Implications of Policy Assessment

- 50 *Interim Hydrogen Roadmap*: The Climate Implications of Policy Assessment (CIPA) team has been consulted and confirms that the CIPA requirements do not apply to this paper. The Interim Hydrogen Roadmap aims to reduce greenhouse gas emissions, but the decisions sought in this paper do not directly reduce emissions. A CIPA will be undertaken for the final Hydrogen Roadmap and any policy decisions it seeks.
- 51 *Electricity Market Measures* (including implementation of the ERP action to ban new fossil fuel baseload electricity generation): The Climate Implications of Policy Assessment (CIPA) team has been consulted and confirms that the CIPA requirements do not apply to these papers as there is no clear, direct emissions impact that can be quantified. Instead, the emissions impacts are qualitative. These papers involve possible changes to the electricity market and subsequent adoption of policies. Some of these policies, if adopted, will have direct emissions impacts. These future emissions impacts will be discussed with the CIPA team and disclosed to Cabinet as the work progresses.

Human Rights

- 52 The proposals in this paper are not inconsistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

Consultation

- 53 The papers I am proposing to release have been extensively consulted with and incorporated feedback from the following government agencies including:
- 53.1 *Interim Hydrogen Road Map*: Treasury, Ministry for the Environment, Ministry of Transport, Waka Kotahi, Ministry of Foreign Affairs and Trade, Climate Change Commission, New Zealand Infrastructure Commission, The Energy Efficiency and Conservation Authority, New Zealand Trade and Enterprise.
- 53.2 *Electricity Market Measures Issues Paper*: Treasury, Ministry for the Environment, New Zealand Infrastructure Commission, The Department of

Prime Minister and Cabinet, Gas Industry Company, The Electricity Authority, The Energy Efficiency and Conservation Authority.

53.3 *Discussion Paper on Baseload Generation*: Treasury, Ministry for the Environment, Electricity Authority, The Department of Prime Minister and Cabinet, New Zealand Infrastructure Commission.

54 In developing these papers, officials also have undertaken targeted consultation with various groups, including some iwi, Transpower, and energy sector participants. This targeted consultation has been used to inform the consideration of some issues, but further, more comprehensive engagement will also be required.

Communications

55 I propose to release these documents in early July for a twelve week consultation period.

56 The documents will be launched on the Ministry of Business, Innovation and Employment's website with an accompanying press release and proactive release of this Cabinet Paper.

57 As mentioned earlier in this paper, responding to this package will be complex for interested parties. I consider this is outweighed by the need to show an overall picture of the policy issues New Zealand needs to face in achieving the transition to a net zero energy system. In addition to providing a longer than usual period for consultation, MBIE will be undertaking an active programme of engagements and hui to discuss the issues and make inputting as easy as possible. This is intended to include a combination of dedicated engagement with Māori, public webinars and social media, and engagements on specific papers. The overarching context document will also enable stakeholders who are not technical experts to understand the key challenges and issues, and provide feedback on this basis, without needing to read all the papers in detail. MBIE will also be looking to ensure that stakeholders who have interests across a range of papers are approached in a coordinated way to reduce the need for multiple discussions.

Proactive Release

58 This Cabinet paper will be proactively released in full in early July, alongside the relevant consultation papers. This meets the requirement for release within 30 business days of Cabinet's confirmation of this decision.

Recommendations

The Minister of Energy and Resources recommends that the Committee:

- 1 **Note** that while New Zealand has a highly renewable electricity system already, wider energy use makes up 40 per cent of our emissions and as such will require a significant effort to decarbonise.
- 2 **Note** that the Government committed through the first Emissions Reduction Plan to develop an Energy Strategy and supporting strategic products including a Hydrogen

Roadmap, a project to identify electricity market measures that may be needed to support a highly renewable electricity system (the Electricity Market Measures project), and a ban on new fossil fuel baseload generation.

- 3 **Note** that releasing a package of discussion papers on the issues in recommendation two will progress the next phase of New Zealand’s energy transition, and provide the public with a comprehensive view of the interrelated policy issues the Government will need to address to achieve this transition.
- 4 **Note** that the separate paper being considered alongside this one, “*Offshore Renewable Energy: Next Steps for Regulatory Proposals*” will also advance New Zealand’s energy transition by ensuring we have fit for purpose regulations to ensure New Zealand has the option for offshore renewable energy as part of our future energy mix.

Electricity Market Measures

- 5 **Note** that the Electricity Market Measures issues paper seeks feedback on areas for government focus to achieve the goal of an expanded and highly renewable electricity system, while ensuring an affordable, secure and reliable electricity supply.
- 6 **Note** that the Electricity Market Measures issues paper seeks feedback on a range of challenges relating to the electricity system as we transition including:
 - 6.1 Ensuring sufficient investment in new renewable generation to expand our electricity system for electrification and to replace retiring fossil fuel generation.
 - 6.2 Ensuring adequate dispatchable generation capacity, storage or demand side response as fossil fuel plants retire and intermittent capacity grows, including ensuring sufficient capacity for peaking, for calm, cloudy periods, and on managing the ‘dry year’ challenge ahead of any NZ battery project solution.
 - 6.3 Ensuring competitive wholesale markets during transition to a more highly renewable electricity system.
 - 6.4 Growing and enhancing our transmission and distribution networks at a sufficient pace to meet our needs for demand growth and new renewable generation.
 - 6.5 Supporting smarter use of networks and smarter technologies.
- 7 **Agree** to release the Electricity Market Measures issues paper for public consultation.

Implementation of the ban on new fossil fuel baseload generation

- 8 **Note** that the discussion paper on the ban on new fossil fuel baseload generation sets out specific design and implementation questions relating to the ban for feedback.
- 9 **Agree** to release the discussion paper on the implementation of the ban on new fossil fuel baseload generation.

Interim Hydrogen Roadmap

- 10 **Note** that the Interim Hydrogen Roadmap sets out an emerging view on the potential role of hydrogen in New Zealand's energy transition to inform where the Government should best place its effort, and seeks feedback on this strategic direction.
- 11 **Note** that the Interim Hydrogen Roadmap considers hydrogen has the most potential to play a role in decarbonising New Zealand's hard-to-abate applications such as chemicals, fertiliser and some heavy transport (including aviation and marine), and that an industry in New Zealand could generate substantial economic activity and emissions reductions.
- 12 **Note** that the Interim Hydrogen Roadmap considers the challenges of securing sufficient new renewable energy generation to grow the sector, in particular in relation to the export of hydrogen and whether Government should support this.
- 13 **Agree** to release the Interim Hydrogen Roadmap for public consultation.
- 14 **Note** that I am satisfied the Regional Hydrogen Transition initiative announced through Budget 2023 is aligned with the interim Hydrogen Roadmap.
- 15 **Note** that in line with Budget 2023 decisions, the Minister of Finance, the Minister of Economic Development and the Minister of Energy and Resources will agree to the drawdown of the tagged contingency for the Regional Hydrogen Transition initiative.

Other

- 16 **Note** that these documents and an overarching context paper setting out how they fit into New Zealand's energy transition will be released in early July for a three-month consultation period.
- 17 **Authorise** the Minister for Energy and Resources to make minor technical and editorial amendments to the papers before they are published.

Authorised for lodgement

Hon Dr Megan Woods

Minister of Energy and Resources

Annexes

Annex 1 - Energy Transition Context Document

Annex 2 - Interim Hydrogen Roadmap

Annex 3 - Electricity Market Measures Issues Paper

Annex 4 - Discussion Document on implementing a ban on new fossil fuel baseload electricity generation

Annex 5 - Regulatory Impact Statement: Banning new fossil-fuel baseload electricity generation