



Meridian.

Meridian submission

Climate Change Commission: 2021 Draft Advice

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This submission by Meridian Energy Limited (**Meridian**) responds to the He Pou a Rangi – Climate Change Commission (**Commission**) consultation on their 2021 Draft Advice to the Government.

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Nothing in this submission is confidential.

Executive Summary

Meridian's purpose is clean energy for a fairer and healthier world. Meridian is Aotearoa's largest renewable electricity company. We produce energy from 100 percent renewable sources – wind, water, and sun. Our hydro stations generate enough electricity to power around 1.7 million homes each year and our wind farms generate enough electricity to power around 200,000 homes each year. We are also a major nationwide electricity retailer through our Meridian and Powershop brands.

Meridian is committed to meeting future energy needs with renewable energy and taking bold action on climate change.

“As a 100% renewable energy generator who is committed to protecting our environment, we're committed to playing our part in supporting our customers, from large businesses who need to invest in technology and transition from fossil fuels, to every day New Zealanders.

We believe that the electricity sector is a huge part of the solution to decarbonise our economy and support New Zealand businesses and individuals to make the changes they need.

The industry can and will build the renewable generation and transmission assets required to power growth in the number of electric vehicles on our roads and the electrification of stationary energy uses, ending our country's current dependence on fossil fuels. But our focus needs to be on projects that will help to transform our society and economy in the next decade as we reduce our reliance on fossil fuels and transition to clean energy to respond to the climate emergency facing us all.”

Neal Barclay, Meridian Chief Executive

Meridian strongly supports the Commission's work and sees huge value in the independent and robust analysis presented in the draft advice. The Commission has demonstrated Aotearoa has a viable pathway to a future in which we achieve our emissions reduction targets while continuing to grow as a country. Critically, the Commission's pathway will see

New Zealand contribute our part to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial¹ levels.

The Commission has also shown that this future is achievable with existing technologies if we take the opportunities we already have to evolve and change at scale and pace. Failing to take those opportunities will increase the burden on future generations. Meridian plans to be at the leading edge of this transformation and to ensure we are a key enabler of emissions reductions in Aotearoa.

Meridian strongly supports the budgets proposed in the Commission's draft advice, as well as the advice that the Government must pick up the pace with decisive policy action. We agree that priority areas for action include increasing the number of electric vehicles on our roads and increasing our total renewable energy use, particularly in industrial heating and in other areas where fossil fuels are still used. We see a fully developed and all-encompassing Emissions Trading Scheme (ETS) as the key policy tool but we also acknowledge that additional policies will be necessary – for example in transport and industrial heat additional policies are needed to ensure that investments in vehicles and heating infrastructure today do not lock in emissions for the next 30 years. We also strongly support the requirement that Aotearoa goes through this transition in an equitable and inclusive way, to ensure we build a thriving future for all New Zealanders.

This submission comments on the budgets proposed by the Commission and the strategic policy recommendations that the Commission makes to the Government. We have focused on sectors and policies where Meridian has experience and expertise. Appendix 1 of this submission briefly addresses the specific consultation questions asked by the Commission.

Finally, it is vital that for Aotearoa as a country, current and future Governments ensure that we have policy stability, transparency and continuity on climate change. Meridian has consistently called for cross party consensus to ensure that consumers and business have the certainty we need to successfully make the transition to a low emissions future. Meridian strongly supports the Commission's draft advice. We ask that this Government and future Governments heed that advice and act accordingly. We believe that only by doing so will we achieve the cleaner, fairer and healthier world that we should all strive for.

¹ We note the IPCC Special Report on Global Warming of 1.5°C reference period 1850–1900, to represent pre-industrial temperature.

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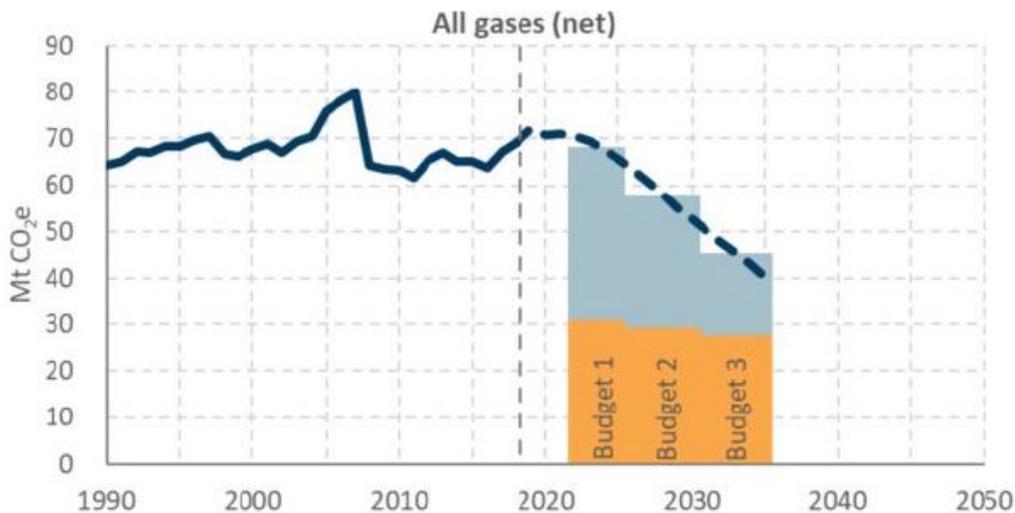
Emissions budget advice

Meridian supports the budget recommendations

The Commission has proposed the first three emissions budgets for Aotearoa. Each budget sets the maximum amount of greenhouse gases Aotearoa can emit over a five-year period and charts the course for stepping down emissions. The recommended budgets are consistent with putting Aotearoa on track to meeting the 2050 target of net zero emissions of all greenhouse gases other than biogenic methane (and the targeted reduction in biogenic methane) under a wide range of different future scenarios.

Meridian supports the budgets recommended in the Commission’s draft advice and considers them to be achievable. Meridian encourages the Government and industry to accept the need for widespread change and begin to tackle the challenge of reducing emissions.

Figure 1: The Commissions proposed emissions budgets (all gases combined CO2 equivalent, grey is long lived gases and orange biogenic methane)



	2018	Emissions budget 1 (2022 – 2025)	Emissions budget 2 (2026 – 2030)	Emissions budget 3 (2031 – 2035)
All gases, net (AR4) (Mt CO ₂ e)		271	286	223
Annual average (Mt CO ₂ e/year)	69.2	67.7	57.3	44.6
Average reductions on 2018 levels		2%	17%	36%

Meridian acknowledges the considerable work and extensive modelling that sits behind the Commission's budget advice. The Commission is right that:

- gross emissions must be reduced to meet and sustain the country's emissions targets, and to avoid pushing the burden to future generations; and
- relying heavily on exotic forestry before 2050 is likely to make maintaining net zero long-lived greenhouse gas emissions after 2050 difficult.

If anything, there is scope for the Commission to be more ambitious in its budget advice to ensure that New Zealand not only meets its 2050 targets but also, as a developed country, makes a more meaningful contribution to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels.

Transparent and stable budget settings enable businesses to plan

While Meridian supports the Commission's draft budget advice, the budgets themselves will be set by the current and future governments. The Commission notes that:²

“There will be ten elections between now and 2050. Abrupt changes of course as government changes would not give businesses and individuals the predictability they need to make decisions.

It is critical that emissions budgets are non-partisan and set transparently to ensure enduring progress.”

We could not agree more. Meridian has high expectations for non-partisan and transparent budget settings in line with the expert advice from the Commission. Businesses like Meridian will be a key to delivering New Zealand's 2050 targets and our contribution to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels. For businesses, well-signalled emissions budgets that are as stable as possible, will be the first step in providing certainty so that we can plan the transition.

² The Commission's 2021 Draft Advice for Consultation, page 38.

Direction of policy

Current policies do not put Aotearoa on the right track. The Commission has delivered comprehensive advice on a range of policy settings that will achieve the proposed budgets. Meridian strongly supports the Commission's policy recommendations and agrees that implementation of those recommendations will put New Zealand on a path that will achieve our emissions reductions targets.

Meridian looks forward to the Government's emissions reduction plan to be developed by 31 December 2021 under section 5ZG of the Climate Change Response Act. Meridian hopes that the emissions reduction plan will provide greater certainty for all sectors of the economy regarding how the Government intends to meet the emissions budgets, including the balance between what will be done under the ETS and what will be done via other policy interventions. Meridian supports the balance struck in the Commission's advice. The ETS should be the central policy tool but complementary policy measures will be necessary where responses to emissions pricing will not on their own achieve emissions reduction targets. Policy measures that complement the ETS should be adopted on a principled basis, for example where consumers do not respond as expected to ETS price signals and there is a need to influence investments in long-life assets (such as vehicles or boilers) that will lock in emissions for the next twenty to thirty years.

Emissions Trading Scheme

We agree with the Commission that emissions pricing is a powerful tool and an essential component of an effective policy package to reduce emissions. As stated by the Productivity Commission in the *Low-emissions economy* report:³

“Emissions pricing is a powerful policy instrument to reduce emissions. Emissions pricing provides strong incentives to reduce emissions at least cost. It decentralises decisions to invest, innovate and consume across the economy to people who have the best information about opportunities to lower emissions given their circumstances. An emissions price is also pervasive through the whole economy – shaping resource and investment decisions across all emitting sectors and sources.”

³ Productivity Commission *Low-emissions economy* page 4.

Meridian considers the ETS to be the primary policy tool to reduce greenhouse gas emissions in New Zealand and to enable the achievement of emissions targets and budgets. However, to be effective, the ETS must operate to step down emissions over time and send increasingly strong price signals to reduce emission.

Meridian therefore agrees with the Commission that ongoing refinement of the ETS is necessary and that the Government should:

- Align emissions budgets with ETS unit supply volumes and price control settings.
- Increase the cost containment reserve trigger price to \$70 as soon as practical and then every year by at least 10% plus inflation.
- To maintain continuity with recent prices, increase the auction reserve trigger price to \$30 as soon as practical, followed by annual increases of 5% plus inflation per year.

Over time, significant increases in unit price will be necessary to accurately reflect the real cost of emissions and to ensure our emissions reduction goals are met. As the Commission's modelling indicates, unit prices will need to reach \$140 by 2030.

In the absence of these increases in unit prices, New Zealand will either:

- not meet its emissions budgets and be off track for the 2050 target; or
- need other more direct and disruptive policy interventions for example through increased prohibitions on specific activities – interventions of this kind will generally come at higher cost to the New Zealand economy than a transition driven by pricing signals.

Meridian also agrees that complementary policies in addition to the ETS will be required. The challenge for the Government will be to identify the situations in which emissions pricing signals alone will not provide sufficient incentive to meet emissions budgets and targets. The Government, and the Commission in its advice, should resist central planning type policy interventions where possible and rely on pricing, except where a failure of emissions pricing is identified. Where complementary policies are necessary care should be taken that they do not stifle innovation or lock New Zealand in to a single way forward.

There are good examples of the need for complementary policies in the transport sector. Emissions costs make up a relatively small portion of overall transport costs such that, even if emissions prices increase significantly, consumers are likely to remain more motivated by the upfront capital costs of purchasing a vehicle rather than the whole of life costs including

fuel, emissions, and maintenance costs. Given the long life of vehicles entering the national fleet, vehicles purchased now will lock in their associated emissions for most of the next 30 years. All the modelling undertaken by the Commission, Productivity Commission, government departments, Meridian, and others shows that to meet 2050 emissions targets it is critical that we make the right vehicle purchase decisions now and over the next few years i.e. almost all light passenger vehicle imports have to be electric by 2035 in order to meet 2050 emissions targets. Given current ETS pricing we know that the ETS alone will not achieve that outcome and therefore further policy measures are needed (see the Transport section of this submission below).

The electricity industry

Summary

This section of Meridian's submission addresses the following:

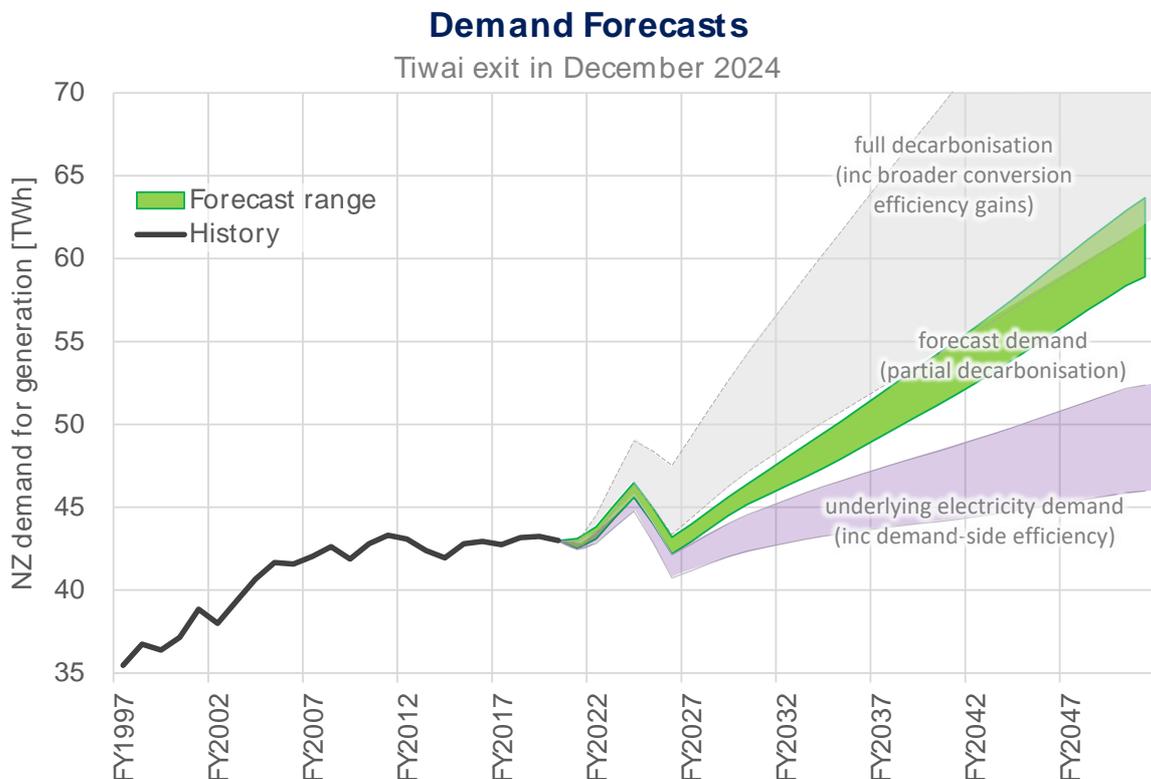
- Renewable generation is already the cheapest generation option to build and will replace baseload thermal generation from fossil fuels.
- The market has a history of delivering new generation to meet demand growth and we expect this to continue – several parties have recently made decisions to build or are in the process of building renewable generation.
- A faster and more flexible approval process for new renewable generation as well as greater recognition of the national importance of existing renewable generation will help in the fight against climate change.
- While Meridian supports 100 percent renewable electricity, a renewable *energy* target across all sectors is far preferable and in that context we agree the Government's electricity target should be aspirational – pushing too hard for 100 percent renewable electricity risks destabilising the electricity industry, crowding out investment in innovative market-led solutions to dry-year risk, and may lead to an increase in emissions to the extent that the cost of electricity increases and disincentivises switching from fossil fuels to electricity.
- Meridian is investigating market-led solutions that will enable the transition to a low emissions Aotearoa at least cost to consumers and taxpayers. For example, how we could contract with a large hydrogen producer post-Tiwai and include in that contract the ability to call on demand response when lake levels are low. Flexible hydrogen production on this scale has the potential to solve a significant portion of the dry-year hydro risk that defines much of the New Zealand electricity market and opportunities like this will only increase in future.

Accelerating renewable electricity generation

Aotearoa has one of the lowest emission electricity systems in the world. This low emissions electricity can be used to reduce emissions elsewhere in the economy through electrifying transport, process and space heating. To meet the anticipated increase in demand for electricity, companies like Meridian will need to build much more new renewable generation. This is an enormous opportunity and responsibility for Meridian, and we are excited about playing our part in helping to reduce emissions across Aotearoa.

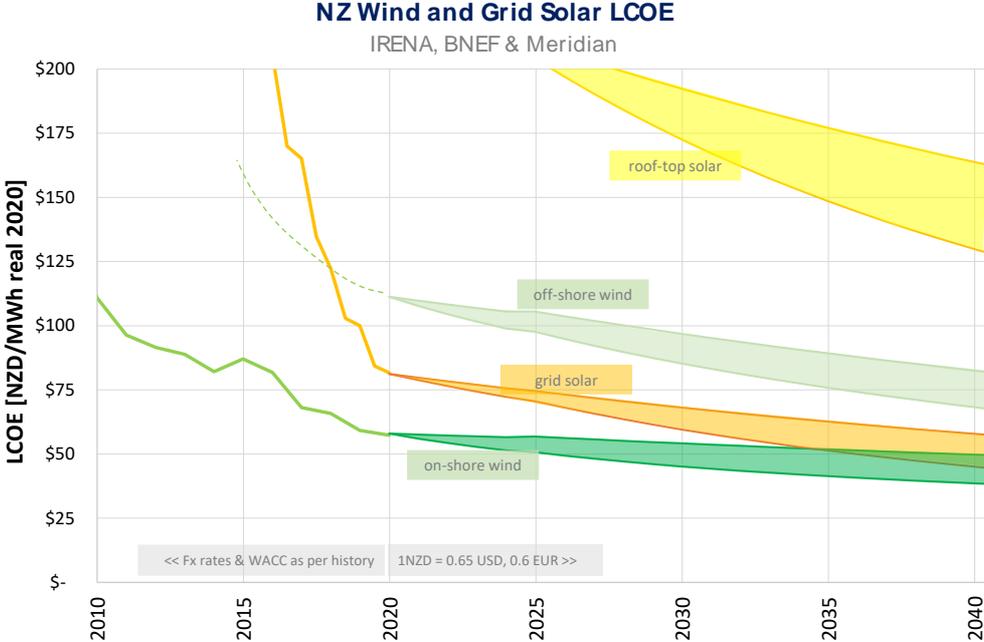
Meridian’s electricity demand growth expectations and our own internal modelling are broadly consistent with the Commission’s. For example, both the Commission’s “Headwinds” scenario and Meridian’s “Evolution” scenario assume total electricity demand of around 47 TWh in 2035, with Meridian’s “Revolution” and the Commission’s “Tailwinds” scenarios both assuming higher levels of electrification. Figure 2 below summarises Meridian’s view of the range of potential change in electricity demand assuming a Tiwai exit at the end of 2024.

Figure 2: Meridian electricity demand forecasts



As shown in Figure 3 below, the levelized cost of energy (LCOE) for new renewable options is falling significantly. Renewable generation options are already the most economic form of electricity generation and will progressively result in the retirement of existing baseload thermal generation as well as being built to increase supply in order to meet demand growth.

Figure 3: Historic and forecast LCOE for wind and solar



Meridian has announced that it will soon begin construction of a new \$395 million wind farm in Hawke’s Bay, boosting New Zealand’s ability to take action on climate change and accelerating the transformation of the economy to clean energy sources. The Harapaki Wind Farm will be New Zealand’s second-largest wind farm with 41 turbines generating 176 MW of renewable energy, enough to power over 70,000 average households. The construction will take around three years and is expected to create over 250 new jobs during construction. Harapaki will use advanced direct drive wind generation technology to set new benchmarks for turbine efficiency and sustainable construction practices.

Meridian is the country’s largest and most experienced owner and developer of wind farms, with five currently in operation around New Zealand. In addition to Meridian’s existing generation and the recently announced Harapaki project, Meridian is developing a pipeline of renewable generation options for future growth with up to 2,000MW (4,500GWh) of development options in its pipeline of wind, solar and hydro projects. This includes 240 GWh of consented options, 2,800 GWh of secured sites, and 1,500 GWh of opportunities. We also continue to investigate smaller scale commercial solar developments with our

customers.⁴ Meridian's competitors are of course developing their own renewable generation pipelines and some have recently announced or commenced construction of their own projects.

The New Zealand electricity industry has a strong track record of building the necessary renewable generation to support increases in electricity demand. Since 1996, the market has seen the New Zealand electricity sector invest in over 20,000 GWh of new electricity generation at a cost of over \$9 billion. This investment has been diversified and has not been dominated by any particular technology or fuel source or by any single company or companies. The risks of these investments have been borne by private investors rather than by taxpayers. We note that:

- ten years ago, around 65 percent of New Zealand's electricity was from renewable sources (compared to around 85 percent today);
- since 2012, 1026 MW of thermal capacity has been retired and replaced by new, largely renewable, generation; and
- between 2003 and 2014, Meridian alone commissioned over 400 MW of wind generation.

We are confident that the market can continue to deliver new generation as and when required to most efficiently meet the expected growth in electricity demand as we move towards the 2050 target in Aotearoa.

A key challenge that needs to be overcome is the consenting pathway for new renewable generation options. Meridian encourages the Commission to provide advice to the Government regarding the need to develop a faster and more flexible approval process for new renewable generation as well as greater recognition of the national importance of existing renewable generation in the fight against climate change. The proposed reforms to the Resource Management Act 1991 (RMA) are an opportunity to implement these changes sooner rather than later, to ensure transformation at the pace required occurs. Currently, renewable energy and climate change are not listed in the RMA as matters of national importance, oddly this is despite clear importance given to this matter elsewhere in the national policy mix. As such any future policy framework must provide more certainty to encourage and provide for renewable generation. Appendix 2 of this submission includes

⁴ Under Meridian's commercial solar power purchase offer Meridian designs, installs, and maintains a solar system for a business. The business has no upfront capital cost but purchases the generation output at an agreed c/kWh rate. Examples include the 185kWp solar array on the Northlands Mall in Christchurch and the 102kWp solar array at Lincoln University – Te Kete Ika.

further detail on the RMA reforms that would better enable Aotearoa to meet its emissions budgets and targets. This appendix is a briefing note prepared jointly by electricity generators in New Zealand and was delivered to the Minister for the Environment on 8 March 2021.⁵

Meridian strongly supports a renewable energy target

Meridian strongly supports the Commission's recommendation that the Government set a renewable energy target to increase renewable energy to at least 60 percent by the end of 2035. For the reasons the Commission gives, this is a much better climate change target than a narrow focus on electricity. We therefore agree with the Commission that the Government's 100 percent renewable electricity target should be treated as aspirational and considered in the broader context of the energy system that takes account of renewable energy applications across multiple sectors, and the lowest cost means of abatement of emissions to ensure New Zealanders do not face unnecessarily high costs and the transition is as equitable as it can be. While achieving 100 percent renewable electricity generation across Aotearoa is the desired long-term end point, the timing, sequencing, and cost of the transition is important.

Modelling by the Commission, MBIE, the ICCC, Meridian and others consistently shows that even under business as usual scenarios, renewable generation will increase to between 90 and 97 percent market share by around 2035.⁶

Figure 4 below shows Meridian's evolution and revolution modelling scenarios for renewable generation market share. The evolution scenario includes an emissions price of \$50/t CO₂e (consistent with the proposed cost containment reserve price in the ETS for the period of the first interim emissions budget). As can be seen this scenario forecasts around 97 percent renewable generation by 2032. Under the revolution scenario with an emissions price of \$100/t CO₂e and higher penetration of demand response 99 percent renewable generation is achieved by 2032 and 100 percent renewable generation is achieved by 2041. Meridian's modelling is consistent with that undertaken by the Commission to the extent that some gas generation remains in the system to cover dry year risk beyond 2035.

⁵ Please contact us if you would like the original copy of this briefing note.

⁶ For example, MBIE *Electricity demand and generation scenarios* p29; ICCC *Accelerated electrification* p47; Meridian *Wholesale market outlook 2020* extract in Figure 2 below.

Figure 4: Market share of renewable electricity generation in Meridian's modelling

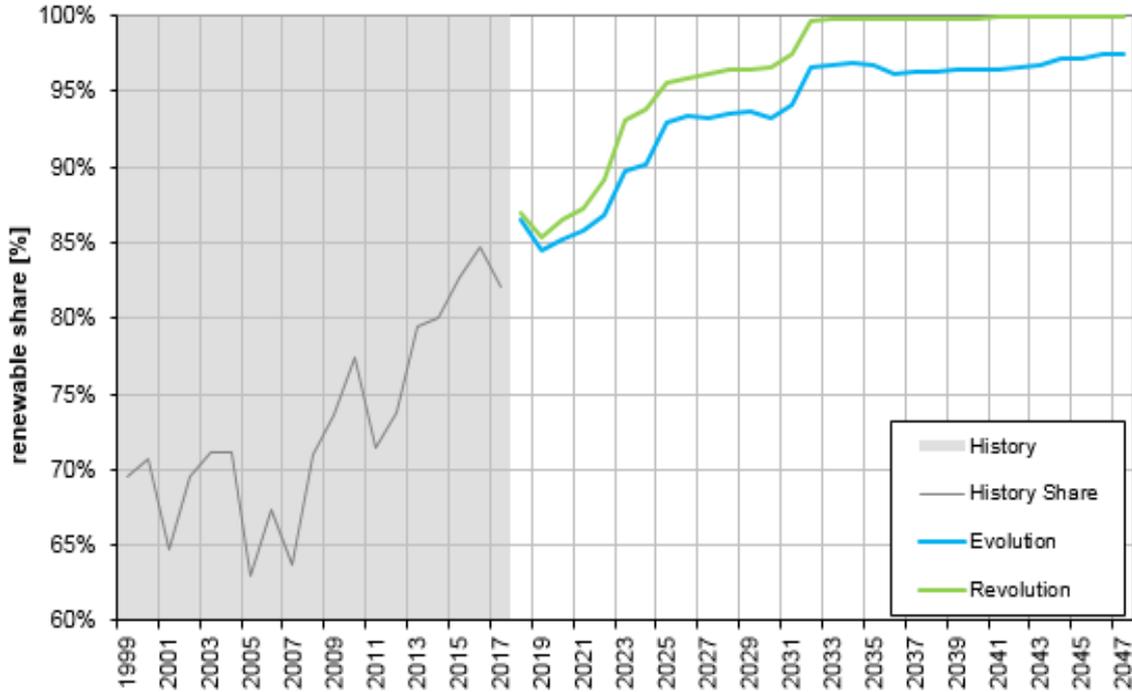
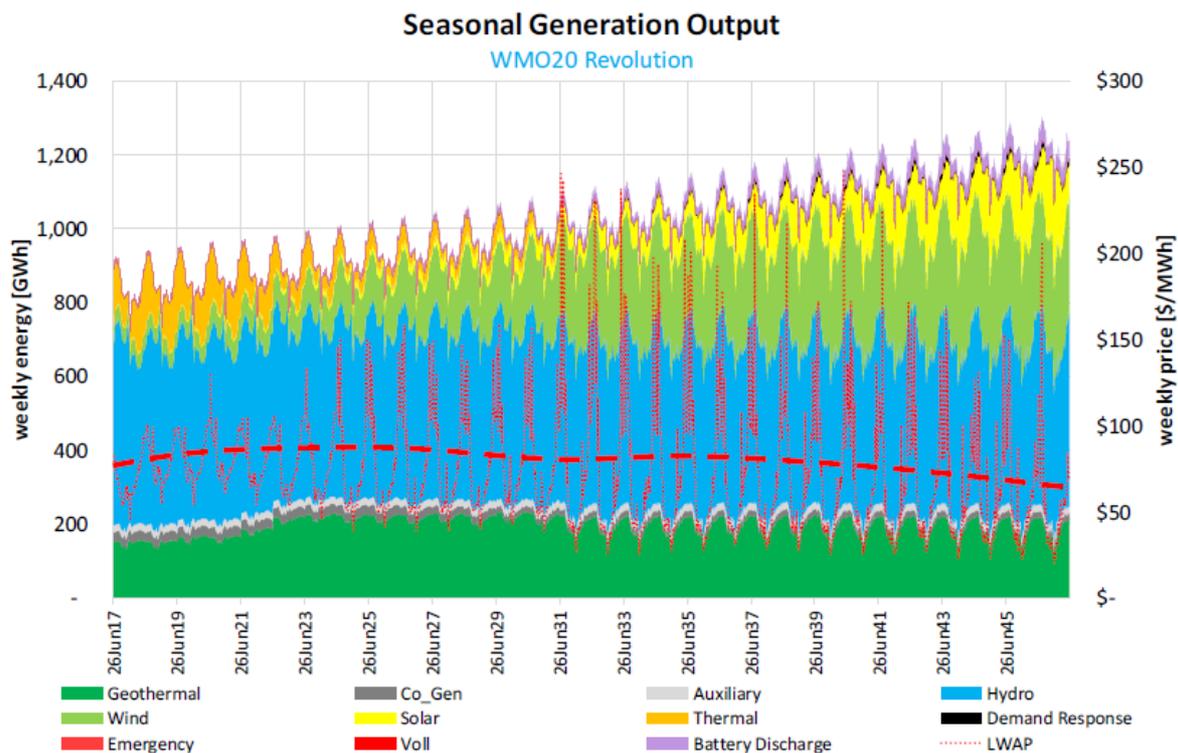


Figure 5 below shows Meridian's modelling of the revolution scenario, whereby 100 percent renewable generation is achieved. Figure 5 shows the most efficient seasonal mix of generation and demand response to deliver security of supply and maintain low power prices. As can be seen by the thick dashed red line, on average, prices are projected to be the same or lower as current less efficient plant retires and is replaced with more efficient renewable generation. Demand response (through a range of sources) and the flexibility of hydro generation and storage will become increasingly important to manage price volatility.

Figure 5: Seasonal generation mix in Meridian’s Revolution scenario



The Government’s target of 100 percent renewable electricity generation by 2030, depending on how it is pursued, risks creating higher costs not just in the electricity sector but in other sectors that will need electricity to decarbonise. A fair and just transition to a low-emissions economy means limiting the costs of mitigation where possible in order to avoid raising the cost of living for New Zealanders more than is strictly necessary. Pushing too hard for 100 percent renewable electricity at the expense of the broader energy target recommended by the Commission also:

- risks destabilising the electricity industry – problematic given the importance of electricity to emissions reductions across the rest of the economy;
- risks crowding out investment in innovative market-led solutions to some of the issues we currently face (e.g. new technology or new industrial solutions to dry year risk in the form of flexible demand response); and
- may lead to an increase in emissions to the extent that the cost of electricity increases and disincentivises the switching of transport and industrial heating from fossil fuels to electricity.

The Commission’s advice shows that the 2050 target can be achieved at low cost and that a focus on energy from all sources (rather than just electricity) is a key part of that pathway. Meridian therefore strongly supports the Commission’s advice that the Government target 60 percent renewable *energy* (rather than just electricity generation) no later than 2035. We

agree that setting a target for renewable *energy* enables the Government to signal the required emissions reductions across the full energy system.

Meridian has considered the Commission's key principles that have guided the advice on the transition to a thriving, climate-resilient and low emissions Aotearoa. Principles 3 and 4 are particularly relevant to any Government proposed interventions:

- **Principle 3: Create options.** As the Commission says, there is much uncertainty in embarking on this decades-long transition and there is value in creating options for meeting the targets and having the ability to adjust course as the transition proceeds. Government interventions should preserve this optionality as far as possible rather than locking in a single way forward to the exclusion of others
- **Principle 4: Avoid unnecessary cost.** As the Commission says, "the actions Aotearoa takes to meet emissions budgets and targets should avoid unnecessary costs."

Market-led solutions will enable the transition to a low emissions Aotearoa at least cost

Market-led options are emerging to solve issues such as dry year risk at zero taxpayer expense and without raising electricity prices. For example, Meridian has been investigating how we could contract with a large hydrogen producer post-Tiwai and include in that contract the ability to call on demand response when lake levels are low. A commercial arrangement like that, by Meridian's estimate, could solve much of New Zealand's dry year risk at no cost to taxpayers or consumers.

Meridian has modelled the potential for different sizes of flexible electrolysis plant in Southland. Specifically, we examine the following theoretical scenarios:

- New hydrogen electrolysis load in Southland: either 585MW, 610MW, or 750MW, all consuming around 5.1TWh annually, but with different levels of flexibility offered back to the power system.
- Electrolysis load is assumed to be either inflexible; or available to flex consumption down as lake levels fall in the face of prolonged low inflows, with flexible demand response dispatched according to the level of stress in lake levels; or able to flex both up in times of renewable energy surplus and down in times of deficit according to simple market price thresholds.

We found that flexible hydrogen production on this scale has the potential to solve between 35 and 45 percent of the dry-year hydro risk that defines much of the New Zealand electricity

market. When combined with other dispatchable demand opportunities, renewable spill, and distributed batteries the power system can deliver 100 percent renewable electricity generation at little additional cost to taxpayers or electricity consumers, when compared to alternatives. Flexible hydrogen production therefore represents a viable alternative to a large pumped hydro storage investment.

Meridian is aware of some of the scepticism around the economic viability of hydrogen production but is working with credible companies on the options for investment following any smelter exit.

Flexible demand response has the potential to be a diversified resource with many providers of different scales to provide dry year cover on a commercial basis. Opportunities will increase as industry and transport electrify. Under necessary action 5(b) the Commission suggests the Government decide how to progress solutions to the dry year problem, when this should happen, and at what cost. Meridian questions whether the Government has the best information available to it to progress dry year solutions and make decisions about timing. The better role for the Government is that described by the Commission in necessary action 5(f) to ensure measures are in place to keep system costs down, such as demand response management. In this manner, the Government will be able to help incentivise markets for flexible demand response and enable the market to identify the least cost solutions to dry year risk.

Transport

Meridian shares the view that transitioning transport away from fossil fuels will be critical to ensuring New Zealand has a net zero future and that multiple levers are required to get there. We are committed to doing our bit to support the shift to electrified transport in Aotearoa.

Meridian strongly supports electrification of the light fleet at scale and enabling access

New Zealand's high renewable electricity generation underpins the rationale for light fleet decarbonisation. Various studies have shown that switching the light fleet to EVs is a low-cost emission mitigation option in New Zealand. Concept Consulting and Retyna modelling indicates that accelerating the uptake of EVs could save New Zealanders \$10bn in vehicle

and fuel costs out to 2050, with a further \$5bn reduction in carbon costs.⁷ So it would be a win-win for the climate and the economy. This evidence supports the transport policy recommendations in the Commission's draft advice.

At Meridian, we have recently converted 100% of our light passenger fleet to pure electric vehicles, with supporting charging infrastructure at our sites. We are committed to doing more and are actively in the process of converting our broader fleet now.

Meridian also acknowledges that EV affordability needs to be addressed. The future should be one in which EVs are the norm and affordable choices for all New Zealanders. Current EV price tags are a barrier for many New Zealanders. Meridian therefore supports the introduction of a feebate scheme for newly imported vehicles to offer discounts for low-emissions vehicles funded from increases in the purchase price of high emissions vehicles. Low income households do not tend to buy newly imported vehicles, so the social impact of a feebate on new imports is likely to be manageable. Welfare or tax policies can also be considered to complement a feebate if any unforeseen adverse distributional impacts arise. Additionally, if New Zealand corporates and Government can lead the way on EV fleet conversions at scale, more affordable, second-hand EVs will be available faster for lower income households. Meridian also supports the scale up of Mobility-as-a-Service (MaaS) as a means of providing people access to low carbon transport, without the requirement to purchase and own.

The scale up of EVs in New Zealand will also need substantive investment in the roll out of charging infrastructure to cover various modes and demands including DC fast charging, at home charging, and destination charging. Meridian recently announced the launch of a nationwide AC EV charging network which will include more than 200 chargers being installed within the next three years.⁸ These will be ideally suited to destinations like shopping malls, retail and business parks and community facilities and we are committed to working with government, communities, like minded businesses and customers to deliver this. The EECA funding that is available to support initiatives such as this helps in the early stages of establishing an industry.

We support smart pricing structures for EVs to avoid issues with peak charging and are committed to helping solve this challenge by offering an Electric Car Plan to customers to

⁷ https://www.concept.co.nz/uploads/1/2/8/3/128396759/ev_study_rept_1_v1.0_1.pdf

⁸ <https://www.meridianenergy.co.nz/news-and-events/meridian-to-launch-nationwide-ev-charging-network>

deliver highly competitive electricity rates overnight, incentivise off-peak charging, and help with a start-up package to incentivise making the jump to an EV. To further incentivise efficient EV uptake and charging practices the Commission should recommend that the Government urgently repeal the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004. This was a recommendation of the Electricity Price Review that the Government has accepted. However, progress to repeal the regulations has been slow. As long as they exist, the regulations will hold back EV uptake by punishing high users of electricity.

Meridian supports lifting the quality of our existing transport fleet and the eventual ban of new petrol and diesel internal combustion engine vehicles.

In conjunction with electrification, we also strongly support the Clean Car Standard for newly imported vehicles to prevent Aotearoa becoming a dumping ground for cheap high emission vehicles. We are one of only two OECD countries that don't have such import standards. Meridian also supports an eventual ban on the importation of light internal combustion engines, to clearly signalling the required transition and providing confidence for large scale investments (i.e. to scale up EVs imports, extend charging networks, and build the electricity generation to support EV demand). We note that many large vehicle manufacturers have made public commitments to cease making fossil fuel powered vehicles by the 2035 timeframe providing some confidence that EV supply will substantially grow.

Industry and heat

Our electricity system is one of the lowest emission systems in the world. Meridian agrees with the Commission that New Zealand needs to make the most of electricity as a low emissions fuel to reduce emissions elsewhere in the economy through electrifying transport, process, and space heating.

For industrial processes and space heating, Meridian supports the Commission's recommendation that in the first budget period the Government take steps to reduce carbon emissions from fossil fuelled boilers by:

- a. Urgently introducing regulation to ensure no new coal boilers are installed.
- b. Introducing measures to help reduce process heat emissions from boilers by 1.4 Mt CO₂e over 2018 levels by 2030 and by 2 Mt CO₂e by 2035.
- c. Increasing support for identifying and reporting on emissions reduction opportunities in industry, including energy efficiency, process optimisation, and fuel switching.

- d. Helping people to access capital to reduce barriers to the uptake of technology or infrastructure upgrades such as boiler conversions, energy efficiency technologies, and electricity network upgrades.

Electrifying boilers is a viable, secure means of decarbonising process heat in many applications for businesses that want to switch away from fossil fuel. This is particularly the case where there may be constraints on the supply of biomass to a particular location.

For large scale electrification the Commission is correct to point out that network investments may increase costs. Meridian considers this to be an area where the Government could play a more direct role as the owner of Transpower. Because of the natural monopoly nature of lines companies, Government investment in network infrastructure to enable a low-emissions future would be low risk and not come with the same unintended consequences as Government investment in energy generation or storage (which are competitive markets and in which incentives for private investment need to be maintained).

Increasing emissions prices will help to bring forward business cases for switching industrial heat to electricity or low-emission fuel sources. The funding and support provided by EECA can also help. Meridian is also assisting through a recently launched programme to support the reduction of emissions from New Zealand's fossil fuel-fired industrial boilers.

The first projects of Meridian's Process Heat Electrification Programme will see us work with companies targeting the removal of more than 15,000 tonnes of carbon emissions from process heat production per annum.

The major barriers for companies that want to electrify their process and space heating are long-term price certainty and the new capital investment required (especially where sunk investments have already been made in fossil fuel assets). Meridian's programme is intended to help overcome those barriers and make electrification stack up commercially as well as environmentally. The programme will assist customers by providing long term electricity contracts at highly competitive prices, on the proviso that customers use the electricity to help replace fossil fuels and reduce carbon emissions. Meridian has been in talks with companies including ANZCO and Meadow Mushrooms, who have signed up as pilot customers for the programme.

Meridian's Process Heat Electrification Programme is open to expressions of interest from commercial and industrial customers who are looking to electrify their process heat and reduce their carbon emissions profile.⁹

Forestry

Meridian agrees that relying heavily on plantation forestry before 2050 is likely to make maintaining net zero long-lived greenhouse gas emissions after 2050 difficult. It would delay action, lead to higher cumulative emissions and make the job ahead of us more difficult.

Meridian supports the Commission's recommendations that would incentivise the establishment of permanent native forests. These recommendations align well with Meridian's Forever Forests programme. Forever Forests is Meridian's commitment to plant 1.5 million trees across the country. The trees will be a mix of natives and exotics. The exotics will sequester carbon faster initially and create a canopy to protect the natives in their early days so they can flourish later in life. In the long term, the natives will take over as the majority, leaving a permanent native forest. Work has begun and 70,000 trees have been planted near Meridian's hydro stations and wind farms. Meridian is now securing land to plant the rest of the trees.

Since 30 June 2019, Meridian has been carbon neutral across the operations of the Meridian Group (for all scope 1, 2 and 3 emissions). This has been achieved through the purchase of certified carbon offsets. Given the challenges of funding emissions offsets under the Paris Agreement, the intention is to use Forever Forests to offset Meridian's carbon emissions. This goes hand in hand with up front effort to reduce emissions throughout Meridian's supply chain. Meridian has set a bold target to halve operational emissions by 2030 based on a 2019 carbon footprint.

Meridian therefore strongly supports the Commission's advice that the Government clarify the role and avenues for voluntary mitigation in Aotearoa. Meridian considers it important that businesses be able to undertake voluntary action to go above and beyond emissions reduction obligations and voluntarily exceed the country's emission reduction targets. If the Government does not enable such voluntary action it would be a missed opportunity. Meridian has been engaging with the Ministry for the Environment on potential policy options to enable voluntary offsetting through permanent native forestry.

⁹ www.meridian.co.nz/process-heat

Ensuring a fair and equitable transition

Meridian notes and strongly supports the Commission's focus on ensuring there is an inclusive, equitable, and fair transition to a low-emissions economy and that this means:

- honouring the principles of Te Tiriti o Waitangi;
- working collaboratively and inclusively when planning the transition and developing and implementing policy, in line with kotahitanga and tikanga;
- ensuring the low emissions transition takes opportunities to reduce inequalities, builds strong communities, and meets the needs of current and future generations over time;
- prioritising support to those most adversely impacted and least able to adjust;
- sending clear and stable policy signals to provide predictability for communities and businesses, and allow time to plan and respond;
- investing in people, their skills, and providing opportunities for transitioning to viable work that is environmentally and socially sustainable; and
- acting now to ensure a thriving, productive and climate-resilient economy.

Meridian recognises that achieving this at the pace required, will need a genuine and enduring commitment, and we are ready to scale up the role we play to help Aotearoa manage this transition.

We acknowledge that there are people who will need targeted support to be a part of the transition and not left behind. Our experience supporting the Electricity Retailers Association of New Zealand (ERANZ) EnergyMate programme is one example where targeted support for those in need is provided by in-home energy coaching – making a real difference in people lives with resulting lower power bills and warmer, healthier homes. Meridian is also committed to directly supporting customers that are struggling – we have dedicated expertise in the business to identify hardship issues early and provide the necessary support. Meridian offers solutions like LevelPay and other flexible payment arrangements, checks to ensure customers are on the best plan for their needs, and liaison with Work and Income and budgeting support services through FinCap.

We also recognise that the impacts of the transition will not be equal across sectors and we acknowledge the privileged position we are in with an existing renewable energy generation base. However, in enabling the transition, we are committed to investing in more renewable generation, providing new jobs for New Zealanders in doing so. Our recently announced

Harapaki wind farm development is the first project announced and will provide over 250 new construction jobs. We look forward to this being one of many such opportunities where we could create opportunities for New Zealanders.

Attachments

Appendix 1: Responses to consultation questions

	Question	Response
1	Do you support the principles we have used to guide our analysis? Is there anything we should change, and why?	<p>Yes, Meridian supports the Commissions guiding advice principles: align with 2050 targets, focus on decarbonising the economy, create options, avoid unnecessary cost, transition in an equitable and inclusive way, increase resilience to climate impacts and leverage co-benefits.</p> <p>Another principle, the essence of which the Commission has captured elsewhere in the report, but could be explicitly called out as an additional principle, is to “factor the unique characteristics of NZ” versus other countries i.e., as per the ‘important national circumstances’ identified for biogenic methane emission reductions. This principle could inform high level choices and trade-offs.</p>
2.	Do you support budget recommendation 1? Is there anything we should change, and why?	Yes, Meridian supports the principles and approach adopted to inform the proposed emissions budget to 2035, resetting Aotearoa at a pace and scale to ensure we have a sustainable future.
3.	Do you support our proposed break down of emissions budgets between gross long-lived gases, biogenic methane and carbon removals from forestry? Is there anything we should change, and why?	Yes, Meridian supports the principles and approach adopted to inform the proposed reductions by greenhouse gas to meet the emissions budgets to 2035. Particularly the underlying focus on reducing emissions at source and ensuring due consideration of all other factors is accounted for in guiding advice principles.
4.	Do you support budget recommendation 4? Is there anything we should change, and why?	Yes, Meridian supports the recommended limit on offshore mitigation for the first three emissions budgets.
5.	Do you support enabling recommendation 1? Is there anything we should change, and why?	Yes, Meridian supports the Minister for Climate Change seeking cross-party support on emissions budgets and that the emission budgets are debated in the House of Representatives for the purposes of capturing on parliamentary record.

6.	Do you support enabling recommendation 2? Is there anything we should change, and why?	Yes, Meridian supports the Commission's recommendations to ensure coordination of efforts across Government to address climate change. Principally, Meridian supports the underlying rationale that these recommendations would: ensure each emissions reduction plan factor multiple emission budgets, enhance clarity and transparency on who is accountable for what (and therefore mitigate against inefficiencies or confusion with impacts progress) and ensure clear line of sight and access to the necessary funding to deliver the budgets.
7.	Do you support enabling recommendation 3? Is there anything we should change, and why?	Yes, Meridian supports the Commission's recommendations to ensure a genuine, active, and enduring partnership with iwi/ Māori as we transition to a low-emissions, thriving and climate-resilient future.
8.	Do you support enabling recommendation 4? Is there anything we should change, and why?	Yes. For further detail on Meridian's view of RMA reform and national direction see Appendix 2.
9.	Do you support enabling recommendation 5? Is there anything we should change, and why?	Yes, Meridian supports the principle of incorporating the views of all New Zealanders to ensure climate change action decisions impacting their lives are balanced, and have given due consideration to all people's circumstances and perspectives.
10.	Do you support our approach to focus on decarbonising sources of long-lived gas emissions where possible? Is there anything we should change?	<p>Meridian supports the shift to a focus on reducing gross emissions and abate emissions at source where feasible, the ambition to 'lock in net zero' by 2050 and for strong action at scale to deliver this.</p> <p>We note that what is 'feasible' could mean different things for different people. Going back to the Commission's guiding advice principles, we believe is it particularly important that the decarbonisation choices avoid unnecessary cost</p>

		<p>and are such that they ensure an equitable and inclusive transition. The Commission already notes that the impacts of this transition will not be even across Aotearoa and so it is critical that those most impacted, and least able to respond, are kept front of mind.</p>
<p>11.</p>	<p>Do you support our approach to focus on growing new native forests to create a long-lived source of carbon removals? Is there anything we should change, and why?</p>	<p>Meridian supports the shift to a focus on reducing gross emissions and abating emissions at source where feasible, the ambition to ‘lock in net zero’ by 2050 and for strong action at scale to deliver this.</p> <p>The shift in approach for exotic plantation forestry to support emission reductions prior to 2050, and focus on new permanent native forests for hard to abate sectors / cases from 2050 is a direction of travel Meridian supports in principle and we note that how far that shift goes would be dependent on respective values that could be gained from each type of forest.</p> <p>The only consideration we would add for the Commission is an approach adopted in our own Forever Forest programme, which we will use to offset some of our operational emissions. The programme scope includes 1.5 million seedlings and will be a mix of natives and suitable exotics. The intention from the mixed planting is to allow rapid carbon abatement from the exotics in the early years, which create a continuous canopy to protect the natives in their early years.</p> <p>Over time the majority of exotics will be thinned and ultimately we will have a permanent native forest base. Rather than large scale harvesting or clear cut, this canopy will be maintained on a continuous basis with selective removal of exotics over time and their replacement with an increasing number of natives. We would advocate for consideration of the continuous canopy suitable exotic/native management model in New Zealand to support our climate change goals and believe it is worthy the Commission factoring into final advice.</p> <p>In addition to carbon sequestration, Meridian also acknowledges other values associated with native forests such as biodiversity and recreation, and in</p>

		general supports an uplift in permanent native forests in New Zealand.
12.	Do you support the overall path that we have proposed to meet the first three budgets? Is there anything we should change, and why?	Yes, Meridian supports the overall path proposed by the Commission to meet the first three budgets.
13.	Do you support the package of recommendations and actions we have proposed to increase the likelihood of an equitable, inclusive, and well-planned climate transition? Is there anything we should change, and why?	<p>Yes, Meridian supports the package of recommendations and actions proposed to ensure an equitable, inclusive, and well-planned climate transition.</p> <p>We also support more urgent progress (before 31 Dec 2025) on many elements listed under Necessary action 1. In particular:</p> <p><i>“d. Assess the Government’s current standards and funding programmes for insulation and efficient heating to determine whether they are delivering at an appropriate pace and scale, and how they could impact housing and energy affordability. The Government should give particular consideration to potential flow through costs to tenants, and to government owned housing stock.”</i></p> <p>Meridian sponsors the ERANZ EnergyMate pilot programme which has provided in home energy coaching to over 150 whānau to help them decrease bills and increase the warmth of their home. Scaling up programmes such as this to increase the quality of housing stock is a low hanging fruit opportunity that could be implemented quickly to support those most in need.</p>
14.	Do you support the package of recommendations and actions for the transport sector? Is there anything we should change, and why?	<p>Yes, Meridian supports the Commission’s recommendation for substantial decarbonisation of the transport sector.</p> <p>Various studies have shown that switching the light fleet to EVs is a low-cost emission mitigation option in New Zealand and a recent one by Concept Consulting and Retyna concludes that doing so could save New Zealanders \$10 billion in vehicle and fuel costs out to 2050, with a</p>

		<p>further \$5 billion reduction in carbon costs. It would be a win-win for the climate and the economy.</p> <p>To enable EV uptake of sufficient scale and speed, Meridian strongly supports specific the Commission’s draft recommendations to:</p> <ul style="list-style-type: none"> - put a time limit on the importation of light internal combustion engines – none after 2035 at the latest; - implement a fleet emissions standard for light vehicles new to Aotearoa, requiring importers to supply vehicles whose average emissions across the fleet are below a target, including being backed up by a financial penalty for falling short; and - introduce a feebate scheme so discounts are offered on low emission vehicles, funded by increases in high emission vehicle purchase prices. - support the roll out of charging infrastructure, such as through the funding provided by EECA. <p>We note that many large vehicle manufacturers have made public commitments to cease making fossil fuel powered vehicles by the 2035 timeframe providing some confidence that EV supply will substantially grow. On the demand side, a <u>growing number of Governments</u> have set targets for phasing out all new sales of ICE passenger cars. Together, this represents a well-signalled commitment to change that will enable the necessary supply chain to be established.</p> <p>Meridian also suggests a role for Government and the private sector to demonstrate leadership and commit to electric fleet conversions, enabling a faster scale up of the second hand EV market in New Zealand.</p>
15.	Do you support the package of recommendations and actions for the heat, industry and power sectors? Is there anything we should change, and why?	Yes. Meridian supports the Commission’s package of recommendations and actions for the heat, industry and power sectors.

16.	Do you support the package of recommendations and actions for the agriculture sector? Is there anything we should change, and why?	<p>Yes, Meridian supports the direction of travel outlined in the recommendations and actions for the agriculture sector. Principally reducing biogenic agricultural emissions through on-farm efficiency and technologies (Time Critical Necessary Action 4).</p> <p>Regarding the creation of options for alternative farming systems and practices (Necessary action 11), Meridian supports strong engagement with all potentially impacted stakeholders to ensure the risks and opportunities of any land use change are well understood.</p>
17.	Do you support the package of recommendations and actions for the forestry sector? Is there anything we should change, and why?	<p>Meridian supports the principles behind the Forestry sector recommendations and actions, namely: a focus on reducing emissions at source and using forestry to abate emissions where removals are not feasible, and a focus on increasing permanent native forests though the right incentives and enablers.</p> <p>Refer consultation question 11 for consideration of a mixed forest model, to establish what will ultimately become, permanent native forests. Meridian is happy to share learnings and insights as we scale up our afforestation work in our Forever Forest programme.</p>
18.	Do you support the package of recommendations and actions for the waste sector? Is there anything we should change, and why?	<p>Yes, Meridian supports the direction of travel signalled in the waste sector recommendations focused on reducing waste at source, increasing the circularity of resources in Aotearoa, reducing waste emissions, and transitioning away from hydrofluorocarbons.</p>
19.	Do you support the package of recommendations and actions to create a multisector strategy? Is there anything we should change, and why?	<p>Yes.</p>
20	Do you agree with Budget recommendation 5? Is there anything we should change, any why?	<p>Yes, Meridian supports the Commission's recommended package of rules for measuring progress towards emissions budgets and the 2050 target.</p>

21.	Do you support our assessment of the country's NDC? Do you support our NDC recommendation?	Yes, Meridian supports the rationale adopted by the Commission to assess New Zealand's NDC and inform the recommendation to strengthen it.
22.	Do you support our recommendations on the form of the NDC?	Yes, Meridian supports the Commission's recommendation on the form of the NDC.
23.	Do you support our recommendations on reporting on and meeting the NDC? Is there anything we should change, and why?	Yes, Meridian supports the Commission's recommendations on reporting and meeting the NDC.
24.	Do you support our assessment of the possible required reductions in biogenic methane emissions?	Meridian believes the Commission has factored in a robust range of critical considerations, such as the detailed important national characteristics, in developing a recommended range of biogenic methane reductions for 2100 to be consistent with a 1.5°C future and is generally supportive of the principles used to form this recommendation.

Appendix 2: RMA Reform

Electricity Sector Group Briefing Note - Ensuring the drafting of the Natural and Built Environments Act enables electrification and the achievement of climate change commitments

Climate change is the defining environmental issue of our time. Decarbonising Aotearoa's economy is the defining challenge of our time. Accelerated electrification through renewable generation represents our best opportunity to meet both that challenge, and international and statutory climate change commitments.¹ The scale of the electrification task is unprecedented however – building the equivalent of one new Turitea Wind Farm (222 MW) every year until 2035.

To succeed, we must have an environmental statutory framework that prioritises decarbonisation. The framework must provide clear, firm and coherent policy direction. The Natural and Built Environments Act (NBA) must resolve the inevitably competing national policy directions – decarbonisation to address climate change and biophysical limits to address environmental degradation.

Members of the Electricity Sector Environmental Group have a range of perspectives and interests. We rarely speak with one voice. However, on this issue we are all agreed: the current drafting of the NBA fails to provide the necessary policy coherence and direction required to achieve accelerated electrification and decarbonisation, across society and the economy. In fact, the current drafting represents a barrier to achieving the transformational blueprint proposed by the Climate Change Commission, in order to meet the Zero Carbon Act and New Zealand's international climate change commitments.

The issues at stake can be complex, but simply stated. What are decision-makers to do when a new transmission line must unavoidably traverse an Outstanding Natural Landscape? Do landscape values defeat the use of extensive areas with important wind resources? How are indigenous biodiversity values to be protected where geothermal development necessarily occurs in areas with such values? The NBA currently provides no direction on how decision makers are to traverse the inevitably value laden conflicts within these questions. Delivering on the accelerated electrification challenge will only exacerbate the tensions that already exist. To invest, the sector will need the certainty of how these conflicts and tensions are to be resolved.

The Group has prepared a paper addressing the most recent NBA drafting.² This is enclosed and represents a considered assessment of the risks and opportunities that the NBA poses to electrification and decarbonisation. Renewable generation and transmission projects are by their very nature highly likely to come into conflict with potential biophysical limits. In short, we cannot think of an electrification project of scale (past or proposed) that has not raised such conflict. If limits are to be strictly enforced without recourse to mitigation, compensation or offsetting, the overwhelming majority of such projects would be un-consentable. A dossier of case studies is also enclosed to demonstrate that the issues raised are real, and not overstated.

The paper also outlines the outcomes and options that would help manage the identified risks as we transition to a decarbonised economy. It confirms the view that the Spatial Planning Act cannot, and will not, provide a workable solution. Instead, it is essential that the NBA itself provides the approach for climate change mitigation through electrification.

Based on the paper, the key issues with the NBA drafting and the necessary responses that the Group considers appropriate, include:

- Providing a pathway for electrification projects to achieve the NBA's s5 purpose.
- Inclusion of the climate system and its biophysical limits in s7, in a manner that is consistent with the Climate Change Response Act 2002 and the plans and budgets under it.

¹ Climate Change Response Act 2002, s5Q.

² Reforming the resource management system: Cabinet paper, February 2021.

- Setting decarbonisation of the economy, including through electrification, as an express outcome in s8 by:
 - increasing the directiveness of those outcomes relating to climate change and the transition to decarbonising the energy system so that they are at least equal to the 'protection' directives in other outcomes;³ and
 - amending ss8(1)(r) to (t) to prioritise decarbonisation and to protect existing, and accelerate new, renewable energy development and transmission.⁴
- Ensuring mandatory direction to decision makers is provided in s9 as to how conflicts are to be resolved. The current drafting provides limited statutory direction with respect to the otherwise inevitably competing outcomes in section 8, and biophysical limits required by s7. Amendment is needed to s9 to ensure the national policy direction, to enable decarbonisation through renewable electricity generation and transmission, is coherent and achievable, alongside that aimed at protection of sensitive environments (such as the coast, freshwater, landscape and natural character, and indigenous biodiversity).

A specific 'red lined' version of the NBA is not provided but we would be happy to work with officials towards that outcome and any assistance we might give to the drafting process.

The Group recognises and accepts appropriate and detailed consideration of the effects of renewable generation and transmission activities should occur. Effects assessment, together with appropriate mitigation, offsetting and compensation, must be part of the future system. There must also be rights of participation for affected parties. Further, there may be projects where effects on the local natural environment, or a biophysical limit, should prevail over the benefits that project might otherwise provide. Experience shows us however that there will be cases where they should not. What the Group is seeking to ensure is that the NBA provides the cohesive policy toolkit necessary to resolve these inevitable difficulties, so that we can tackle climate change via the energy system and electrification.

This paper has been prepared following discussions, a workshop and deliberation among sector representatives and our highly experienced expert advisors. We thank Robert Schofield, an experienced senior resource management practitioner, and Catherine Somerville-Frost and Luke Hinchey at Chapman Tripp, Martin Williams at Shakespeare Chambers, David Allen at Buddle Findlay, and Andrew Beatson at Bell Gully for their legal input. The environmental expertise from within Transpower has also participated in our discussion, workshops and deliberation on the paper.

The current reform is a once in a generation opportunity. That includes the ability to design a system that will deliver on climate change targets, enable nationally essential electrification projects, and avoid locking in a narrow and automatic focus on local and short-term issues to the detriment of longer term climate impacts. We look forward to working with officials to realise these outcomes.



³ We understand that one option under consideration may be the removal of all verbs in the section. This will require the resolution of conflicts instead in the context of the National Planning Framework and therefore provide less certainty.

⁴ For example the outcome of "increased use" of renewable electricity in s8(1)(t) ignores the need to increase generation and transmission and (counterproductively from an energy efficiency perspective) purely looks to increase end usage.

THE CRITICAL ROLE OF A REFORMED RESOURCE MANAGEMENT SYSTEM IN RESPONDING TO THE CLIMATE CRISIS

A Paper by the Electricity Sector Environment Group

March 2021

Introduction

Among the objectives for the current reform of our resource management system are those to –

- better prepare for adapting to climate change and risks from natural hazards, and better mitigate emissions contributing to climate change
- improve system efficiency and effectiveness, and reduce complexity while retaining appropriate local democratic input
- protect and where necessary restore the natural environment (including its capacity to provide for the wellbeing of present and future generations).

The country's principal electricity generators (Meridian Energy, Mercury, Contact Energy, Trustpower, Genesis Energy, and Tilt Renewables), together with Transpower and the NZ Wind Energy Association (The Electricity Sector Environmental Group is collectively referred to in this paper as the Group), fully support the objectives of the resource management system reform.

The purpose of this paper is to underscore the criticality, urgency and scale of the task ahead in regard to the electrification of the New Zealand economy in response to climate change, and to red flag those aspects of the proposed reform which could frustrate the outcomes sought.

This paper outlines the risks that the current reform of New Zealand's resource management system presents for enabling the decarbonisation of the country's energy system to meet our climate change targets. The primary risks include:

- Absence of a clear outcome for the electrification of the economy to enable a reduction in greenhouse gas emissions.
- Inadequate recognition of the importance of renewable electricity generation and transmission in Part 2
- Inadequate protection of the capacity and output of our existing electricity infrastructure, which provides the baseline of electrification and on which our future modelling and targets are founded
- Outcomes for renewable energy and climate change that are too passive in the context of other more directive expressed outcomes
- Biophysical limits which are absolute in their application
- National direction will not resolve the existing and inevitable conflicts between biophysical limits and electricity infrastructure unless it is anchored to clear, definitive and unequivocal provisions in Part 2
- The limitations of spatial plans in providing for future renewable electricity generation and transmission

If we are to achieve the Climate Change Commission's blueprint for the country's decarbonisation, New Zealand will need to build the equivalent of one new Turitea Wind Farm – our largest wind farm at 222 MW – every year until 2035. The Group has grave concerns that it will not be able to deliver the required uplift in capacity if the resource management system reform progresses without a number of key changes.

To realise a renewable energy future, clear and decisive policy is needed to provide the electricity sector with certainty and confidence: this certainty includes an environmental regulatory framework that is better prepared for enabling electrification, providing a more efficient and effective consenting system, and reducing complexity while retaining appropriate local democratic input.

Ultimately, the sector is at the precipice of a major transition. It is essential that the settings are correct for the sector to transition in a desirable way and that the sector we are left with is well positioned to deliver future needs [Sector State of Play: Energy, Discussion Document, NZ Infrastructure Commission | Te Waihangā, February 2021]

Part A

The Criticality of a Renewable Energy Future

The electrification of our economy and society is critical to decarbonising New Zealand and addressing the climate change crisis – as fundamental an issue as turning around our degrading environment or solving our housing problem. Indeed, electrification will also assist us in meeting those other challenges. Getting the reform of the resource management system correctly calibrated will be crucial to realising a renewable energy future for New Zealand.

New Zealand has two principal climate change commitments:

- Our Paris commitment: A 30 per cent reduction of gross greenhouse gas emissions below 2005 levels for the period 2021-2030; and
- Our domestic 'net zero' commitment: Net zero emissions of all greenhouse gases other than biogenic methane by 2050.

We currently are not on track to meet either commitment.

New Zealand will be unable to meet its statutory climate change commitments¹ without electrifying our economy with low-emission renewable electricity. Among the actions needed is for New Zealand to accelerate its investment in and approvals for the development of renewable electricity generation capacity to ensure lowest cost electricity and security of supply. In its recent draft advice to the Government, the Climate Change Commission (CCC) has identified that nearly 60% of New Zealand's total energy requirements will need to be from electricity in 2050, up from 25% in 2016. The Commission estimated that there will be a 68% increase in the demand for electricity².

Transpower's most recent modelling estimates that achieving an accelerated electrification future will require 40 new grid connected generation projects by 2035 – to put this in perspective, as much generation will need to be built in the next 15 years as was built in the past 40 years.

Over the same period, approximately, 70 new grid-scale connections will be required: 40 to connect the new power stations and 30 connections to accommodate increased electricity demand on the grid due to electrification. This represents an average of close to five new connections per year, a significant increase above the connection workload that Transpower has delivered over the last 30 years.

With approximately 80% of electricity already generated from renewable sources, and with a wealth of future renewable electricity options, New Zealand is well-positioned to lead the world in decarbonisation through electrification and renewable generation investment.

It is important to stress that the road map to a decarbonised future based on renewable electricity will require large-scale renewable electricity generation and transmission projects. While enabling domestic and community scale renewable electricity generation should be an element of our strategy, for New Zealand to meet its targets will require a step change in the generation of renewable electricity, increases that can only be achieved through major new energy projects and the repowering and upgrading of generation assets, as well as upgraded and new transmission infrastructure.

Accelerating investment in renewable electricity, transmission and associated infrastructure will necessarily entail a transition. During the transition there is a role for thermal energy to support the build of more renewables, and ensure security of supply to customers and underpin consumer price affordability during times of renewable fuel shortage. The CCC has identified that following transition, thermal energy would be significantly reduced or phased out and the broader objective of increased decarbonisation of energy would be enabled.

¹ Section 5Q Climate Change Response Act 2002.

² Whakamana I Te Mauri Hiko – Empowering our Energy Future, Transpower, March 2020.

Part B

Key Messages from the Electricity Sector for the Reform

As the Government progresses with the replacement legislation, there are several key messages the Group wishes to convey, focusing on the proposed Natural and Built Environments Act (NBA) Part 2 as contained in the February 2021 Cabinet paper. The Group is happy to engage with officials on an ongoing basis, to test ideas and provide feedback.

➤ Section 5 - Purpose

The purpose of the new Act will establish the overarching outcome of the new legislation. Specific points are provided below:

- The Group supports the recognition of the built environment's contribution to our wellbeing in the purpose of the NBA.
- The Group support the definition of the 'built environment' clearly encapsulating the facilities or infrastructure needed for the generation and transmission of renewable electricity, with 'wellbeing' having a wide meaning.
- The requirement to ensure the use, development and protection of resources is within biophysical limits is problematic, being very dependent on the form and scope of the limits.
- A requirement to otherwise "avoid, remedy or mitigate adverse effects" is a barrier if this opens the door for plans and the consenting process to seek to avoid or otherwise minimise every possible adverse effect (for example, on every neighbour's amenity values) – there should be some form of qualifying matter to this otherwise general catch-all part of the purpose.

As an essential part of our built environment, renewable electricity infrastructure is fundamentally important to the wellbeing of New Zealand, as well as contributing to reducing our greenhouse gas emissions. This importance should be an inherent element of the purpose of the NBA³.

Suggested Changes to Proposed NBA:

In order to achieve an enabling framework for electrification of the economy, including transport, industrial process heat, renewable electricity generation and transmission, the Sector Group suggests that the proposed NBA Part 2 be amended to:

- Ensure the purpose of the NBA embeds renewable electricity and transmission as part of the built environment's contribution to the wellbeing of the country.
- Recognise our energy system, in its entirety, as part of the built environment, critical to the wellbeing of New Zealand.
- Recognise the criticality of the reliance on renewable energy resources to achieve the electrification of the economy.
- Ensure the development and operation of renewable electricity generation and transmission to decarbonise the energy system is recognised as a critical outcome.

³ This paper focuses on renewable 'electricity', acknowledging the wider need for New Zealand to move to renewable 'energy' on a wider basis, including biofuels and solar water heating. This paper focused on the particular issues facing the renewable electricity sector.

➤ Section 7 - Biophysical limits

Setting biophysical limits is a cornerstone of the new legislation and is strongly supported in principle by the Group as one way to provide certainty. This support is qualified, however.

The Review Panel recommended making it impossible to grant consent to any proposal breaching such limits, effectively making such activities prohibited. The Panel also recommended that such limits may be expressed quantitatively or qualitatively. A past failure to apply environmental limits to broad categories of activities that were permitted by the RMA with corresponding cumulative effects, does not now warrant uniform prohibition of effects from activities that have always been authorised by consent and with corresponding mitigation. The Group urge caution that biophysical limits are not introduced that are indiscriminately applied and result in capturing a wide range of situations in which renewable electricity generation and transmission will inevitably be involved. Without the NBA actively and purposively addressing renewable energy development, biophysical limits may prevent new electricity generation and curtail existing renewable electricity generation.

For the electricity sector, the following elements of the proposed biophysical limits are of concern and need to be considered:

- A singular focus on avoiding any breach of biophysical limits without regard to countervailing environmental benefits through achievement of positive climate outcomes and overall environmental enhancements provided through offsetting and compensation would render many, if not most, renewable electricity generation projects unconsentable. The relationship between limits and outcomes will be critical and the Group is concerned that the NBA framework will not allow for achieving of the overarching and preeminent outcome of responding to climate change and decarbonising if limits outright prevail. As noted in the Randerson Report, *Outcomes and targets are needed to orient the management approach towards continuous environmental improvement.*
- Biophysical limits are but one tool to protect the natural environment and its life supporting capacity: the focus on biophysical limits risks it being used to manage other effects better addressed by other tools – for example, wetlands and habitats of significant indigenous biodiversity.
- The provision of rigid biophysical limits has no regard to the nature and scale of the activity or the degree of effect and does not allow for recognition or consideration of those circumstances in which absolute avoidance cannot be achieved. The National Grid (being linear infrastructure) is constrained by the location of existing lines, new generation, and new demand, with which it must connect. Similarly, renewable electricity generation activities are constrained by the location of natural resources, such as wind, geothermal or water. These constraints and scale of the activity often mean it will not always be possible to locate, design and manage renewable electricity generation activities such that adverse effects are all avoided, and limits met, particularly in natural environments.
- Biophysical limits will be able to be expressed quantitatively or qualitatively: given the sector's experience with the very broad definition of wetlands under the NPSFM and NESF (which is under appeal to the High Court), as well as the all-encompassing nature of the draft National Policy Statement for Indigenous Biodiversity, there is real potential for biophysical limits to pose a significant risk that new or re-consenting renewable electricity generation proposals will be unconsentable (i.e. consent cannot be granted).
- If biophysical limits must not be breached, with no allowance for mitigation, offsetting or compensation, then the existing problems under the RMA will not have been remedied, and the renewable electricity sector will continue to face the time, cost and risk difficulties in bringing new renewable electricity generation and transmission projects and even having the projects considered within the consenting framework.

- If biophysical limits are already exceeded as part of the existing environment, would existing and new renewable electricity generation activities and proposals be able to meet the s5 purpose of the NBA (that is, be within biophysical limits) notwithstanding the activity itself would not exceed the limits?
- If local authorities are allowed under s7(3) to prescribe more stringent standards than that prescribed in the National Planning Framework (NPF), this creates potential uncertainty within plan development and inconsistencies across regions and gives rise to potential consent ability issues. The Group would prefer as much certainty as possible within the NPF.

Given biophysical limits will be a cornerstone of the new legislation, the relationship between limits, targets and outcomes will be critical. The Group is concerned that the NBA framework will not allow for achieving of the overarching and preeminent outcome of responding to climate change and decarbonising if limits outright prevail.

Suggested Changes to Proposed NBA

In order to achieve a workable framework for renewable electricity generation and transmission in the context of biophysical limits, the Sector Group suggests that the proposed NBA Section 5 and Section 7 relating to limits be amended to:

- Establish clear targets for climate change and renewable electricity that are consistent with New Zealand's international and national commitments and targets.
- Provide a consenting pathway for renewable electricity generation and transmission that enables some form of consideration of the overall outcomes to be achieved for proposals, including when proposals may affect identified biophysical limits.
- Enable practical means for offsetting and compensation to be considered as part of the broader outcome-based approach to consenting renewable electricity projects.
- Provide as much certainty as possible within the framework including limiting the ability to use qualitative biophysical limits and the ability of plans to prescribe more stringent standards.

➤ Section 8 - Outcomes

The Group fully supports embedding positively expressed outcomes in Part 2 of the new Act, including for climate change and renewable energy, which should be given clear and coherent national direction in the National Planning Framework which is then consistently translated down at regional levels of planning and decision-making.

While the provision of outcomes is supported, for the Group the outcomes expressed in the Act need to include some key elements:

- The NBA needs to be clearer in the outcomes sought. There needs to be clearer and stronger direction to provide for infrastructure and renewable electricity as an outcome under the built environment: the outcomes should include specific ones regarding providing for renewable electricity generation and transmission and for protecting the capacity of generation and transmission. The Outcomes (h) and (t) are both vague in their application and intent and are non-directive.
- A renewable energy system should be an essential outcome of managing our built environment and the benefits it brings to our well-being. It is directly related to improving our environment and New Zealand's contribution to reducing greenhouse gas emissions.
- It is noted that it will not be sufficient to address climate change and the need for decarbonisation in the Climate Change Response Act (CCRA). The CCRA, and similarly the

NBA, are or will be stand-alone statutes which do not require decision-makers to have recourse to, or indeed to consider, other legislation. The considerations that decision-makers should apply to resource consenting will need to be contained within the NBA itself. The Group is concerned that while the CCRA may have clear outcomes, the structure and framework of the NBA (and the associated NPF) will not be sufficiently directive so as to ensure the outcomes are achieved, particularly in context of other more directive outcomes.

- While the outcomes were not intended to have any hierarchy, with any conflict between outcomes to be resolved through national direction and plans⁴, the verbs used for the different recommended outcomes range from passive 'enabling' types through to proactive protect and enhance types: the wording indicates that any national direction or combined plans will eventually have some prioritisation for some outcomes over others, reflecting recent case law. This has been the challenge to date in the existing RMA framework for renewable electricity generation and transmission in that such activities typically affect natural landscapes and features, lakes and rivers, and indigenous vegetation and wetlands. The specific nature of the outcome wording will therefore be crucial. For renewable electricity generation and transmission it should be suitability directive and proactive.
- Where the consenting for a renewable electricity project involves potential conflict with other outcomes (for example, (d) maintenance of indigenous biological diversity and restoration of viable populations of indigenous species), some form of policy consideration and consenting pathway is likely to be needed to enable the benefits of the proposal to be brought into the process of decision-making. There needs to be a means to reconcile tensions between outcomes and biophysical limits. It needs to be recognised that if we do not decarbonise the economy by electrification biodiversity will decline and many "natural values" will be adversely affected on a wide scale.
- Rewording of (t) to include not just the increased use of renewable energy, but increased renewable electricity generation, transmission and associated infrastructure.

Given the outcomes focus of Part 2 will be translated down at regional levels of planning and decision making, the Group fully supports embedding positively expressed and clear outcomes. However, the Group is concerned that the drafted outcomes for climate change and renewable energy are vague and non-directive.

Suggested Changes to Proposed NBA

In order to ensure climate change and renewable energy are given clear and coherent national direction in Part 2 of the new Act, the Sector Group suggests Section 8 Outcomes be amended to:

- Provide clear and strong positively expressed **outcomes** to provide for infrastructure and renewable electricity as outcomes under the built environment of Section 8.
- Incorporate a specific outcome for the **electrification** of the economy to enable a reduction in greenhouse gas emissions and address climate change.
- Provide express and proactive provisions for renewable electricity generation, transmission, and associated infrastructure as a specific **outcome** sought by the NBA.
- Provide express provision for **protecting** the capacity of existing electricity generation and transmission.
- Enable practical means for offsetting and compensation to be considered as part of the broader **outcome-based approach** to consenting renewable electricity projects.

⁴ Page 76

- Provide policy consideration and an appropriate mechanism for nationally important development in addressing conflicts between outcomes – this could be in the form of enabling the benefits of the proposal to be brought into the process of decision-making.

➤ Section 9 - Implementation Resolving Competing Outcomes and the NPF

The Group emphasises that, in any system in which development is managed to meet environmental objectives, there will always be tensions in resolving competing outcomes, particularly when development and land use occurs within the natural environment. In particular, further development of our renewable electricity generation and transmission infrastructure will always interact with the natural environment, due to the functional requirements of electricity infrastructure having to locate on mountains and hills, traverse our countryside, and use our hydro and geothermal resources.

There will therefore be a need to have clear policy direction for renewable electricity generation and transmission within sensitive environments (such as the coast, freshwater, landscape and natural character, indigenous biodiversity, and urban areas). Decision-making should focus on whether there will be a net overall positive outcome of renewable electricity projects, where you can weigh a negative natural environmental impact against positive social and economic factors, together with the ability to use offsetting and compensation as critical means to achieve net overall benefits. Such an approach would align with the broader outcome-based approach envisaged by the Review Panel.

The Group strongly supports mandatory direction on the achievement of climate change outcomes and targets as per the Government's Emissions Reduction Plan. The Group also recommends that targets for renewable electricity generation and transmission comprise part of the broader National Planning Framework.

The planning mechanism in which to address the current form of national direction is the proposed NPF. Its purpose will be to address matters of national significance or matters where national consistency would be desirable. The Group supports the NPF as the guiding document for national direction. Some key comments from the Group are as follows:

- One current issue within the current RMA framework is the inherent tensions at a national directions level. While Section 9 of the Randerson Report provides that conflicts are to be first reconciled and clarified in the national direction (NPF), and by the provisions in Regional Combined Plans, the Group has concerns that conflicts between competing outcomes will not able be resolved without resort to a consenting pathway that reconciles conflicting outcomes using an evidence-based approach, open to a full suite of mitigation options. The experiences to date are that, whilst in some instances the conflict may be resolved to a point through plan development, in many instances, renewable electricity infrastructure is afforded no specific policy recognition within plans when faced with more directive policies from other National Policy Statements (such as the NPSFM and NZCPS) or more specific Part 2 matters that are not specifically addressed in the NPSREG. The situation is worse for other infrastructure providers (who do not have the benefit of an NPS). Given the urgency of providing greater generation and its transmission, clear resolution of the tensions at a national level through the NPF would be supported and would address the time, costs, and uncertainties with resolving tensions at the plan development and subsequent resource consent stages. If national direction is not an output from clear, definitive, and unequivocal Part 2 provisions, national direction will not address the existing and inevitable conflicts.
- Related to the tension issue between various national policy instruments is the age and 'fit for purpose' nature of some of the older national policy instruments (such as the NPSET, NPSREG, NESETA, NESTF, NES Air Quality), particularly in light of significant case law which gives greater weight to those instruments that have more directive wording (and removes the broad judgement approach), as well as the lack of integration and recognition between the instruments themselves. The Productivity Commission's Low-emissions Economy

report finds that the NPS-REG has made no difference to the time, complexity and cost of obtaining consents for renewable electricity generation, and that resource consenting processes are likely to hinder expansion of renewables⁵. Also of relevance is the nature of wording in the NPSs themselves. 'Protect' and 'avoid' policies simply do have a much stronger weight than 'enabling' and 'provide' policies.

- The issue of layering NESs is evident in the lack of recognition and clarity between the NESF and NESETA. While the NESETA was intended to provide a near comprehensive management regime for the existing electricity transmission lines, the NESF provides an additional regulatory layer.
- The Group would be concerned with an NPF based on existing national direction with no modification and no resolution of the potential competing policy tensions. A review of the content of the current national instruments (with clear and explicit directive wording provided), their application and relevance to emerging renewable electricity generation technology, and their respective relationships to each other could well address the tensions, reflecting the clear outcomes from s5.

The Group supports the NPF as the guiding document for national direction. The Group strongly supports mandatory direction on the achievement of climate change outcomes and targets as per the Government's Emissions Reduction Plan, and clear direction in resolving tensions.

Suggested Changes to Proposed NBA:

In order to ensure an effective national direction framework, the Sector Group suggests the section 9 Implementation approach and NPF be framed so as to:

- Establish a mandatory framework of national direction which provides for renewable electricity generation and transmission and recognises its importance, and ensure it is then consistently translated down at regional and local levels of planning.
- Consider including a strategic overarching part of the NPF to provide clear direction on conflicting priorities and resolving competing tensions.
- Ensure that the national policy framework providing for renewable electricity and addressing climate change is coherent and achievable, alongside national direction aimed at protection of sensitive environments (such as the coast, freshwater, landscape and natural character, indigenous biodiversity, and urban areas).
- Introduce a nationally consistent enabling regulatory framework for renewable electricity generation and transmission across New Zealand such as through national regulation and/or standards, including reconsementing proposals.
- To provide a consenting pathway for renewable electricity generation and transmission that enables some form of consideration of the pre-eminent outcomes to be achieved for proposals, including when proposals may affect identified biophysical limits.
- To enable practical means for offsetting and compensation to be considered as part of the broader outcome-based approach to consenting renewable electricity projects .
- To provide efficient consenting processes for new proposals that reflects the scale and impact of the proposed development.

⁵ New Zealand Productivity Commission. (2018). Low-emissions economy: Final report. Available from www.productivity.govt.nz/low-emissions. Page 401-402

- To provide a more standardised and enabling regime for existing generation, including reconsenting, to protect and grow our existing base of renewable electricity generation
- To protect the existing capacity and output of electricity infrastructure, including consented unbuilt electricity infrastructure
- The protection of existing renewable electricity generation and transmission from the adverse effects of other activities

➤ The Limits to Strategic Planning

The Group supports the use of strategic planning as a mechanism for recognising and protecting existing and consented renewable electricity generation and transmission assets, and in enabling their ongoing operation, maintenance and upgrading.

However, the Group emphasises that strategic plans have limitations in terms of recognising and providing for future electricity assets: In particular, spatial plans are not flexible nor timely enough for responding to new proposals. This will be even more problematic if there is a lack of clear direction within the NBA itself (specifically the purpose, outcomes and the National Planning Framework) for electricity generation and transmission and to achieve the Government's Emissions Reduction Plan, and if biophysical limits are not met. The planning and investment in renewable energy occurs within a commercial environment, with business and financial imperatives, along with ever changing technology.

The Group expresses caution about using spatial plans to map energy resources or zones where future generation may be located. It is almost certain that there will be future projects that will not be identified in spatial plans but which require resource consent. This could be very problematic in particular for future wind development where matching technology with wind resources is highly variable and an area of constant technological innovation. The RMA prevents trade competition and that is widely recognised as an important feature of the current legislative regime: poor spatial planning could reintroduce trade competition into New Zealand's environmental regulation.

The use of GIS mapping to identify no-go areas should be used sparingly and with caution, for natural values and features that are truly exceptional and iconic at a national level (such as nationally rare geothermal features and ecosystems within Protected Geothermal System). This is to avoid unforeseen circumstances where biophysical limits and values of lesser importance (such as at a regional or local level) may prevent or curtail generation or restrict the ability to initiate a consenting process. Notwithstanding the use of no-go areas, provision must be made for the operation, maintenance and upgrading of existing renewable electricity generation and transmission assets, some of which occurs in or has an influence on nationally important values and features, such as National Parks.

Suggestions for the Proposed Strategic Planning Act (SPA)

In order to ensure strategic planning is an effective tool in addressing climate change and renewable energy the Sector Group suggests that spatial plans:

- Provide clear and strong direction to inform spatial planning in relation to new infrastructure and renewable electricity generation and transmission activities.
- Identify no-go areas sparingly and with caution to ensure only those areas/values that are truly significant, exceptional and iconic at a national level are identified.
- Clearly recognise and provide for the operation, maintenance and upgrading of existing renewable electricity generation and transmission assets.

Note: The information in this paper on our climate change targets and future energy requirements is drawn from the following sources:

- 2021 Draft Advice for Consultation, He Pou a Rangi – Climate Change Commission, February 2021
- Sector State of Play: Energy, Discussion Document, NZ Infrastructure Commission | Te Waihanga, February 2021
- Whakamana i te Mauri Hiko: Empowering our Energy Future, Transpower, March 2020
- A Roadmap for Electrification, Transpower, February 2021