3 June, 2015

Ministry for the Environment
via email climate.contribution@mfe.govt.nz

Setting New Zealand's post-2020 climate change target

Meridian Energy welcomes the opportunity to comment on the Government's emission target for New Zealand.

Meridian is the largest generator of electricity in New Zealand and produces this electricity from 100% renewable resources. This is the cornerstone of Meridian's business and the company's most significant commitment to being a sustainable business. As a company that believes in a better energy future, Meridian supports initiatives to decrease the nation's carbon footprint.

There are opportunities in the electricity sector to reduce carbon emissions, and Meridian is playing its part in achieving this goal. In practical terms, this means:

- **Promoting energy efficiency**. Meridian encourages electricity consumers to use electricity by providing information and in some cases, providing expertise on-site. For example, Kiwirail can now manage their electricity spend and supply more easily − and in much less time − giving them more time to spend on strategic matters[1].
- **Building and maintaining emission-free generation**. Over the last decade, Meridian has developed over 60% of New Zealand's wind capacity and has consents to build more. Meridian's Mill Creek[2] wind farm near Wellington was commissioned in 2014 and provides about 10% of New Zealand's wind energy alone. Meridian also owns and operates hydro plant which generates around half of New Zealand's hydro energy and plans to maintain those assets well in to the future. For example, the Benmore[3] power station is now 50 years old and Meridian plans to maintain the station to extend its life for many more.
- **Supporting technology choice and innovation.** As a 100% renewable energy company Meridian supports anyone who wants to produce electricity from renewable resources such as solar. Meridian retails to well over 50% of New Zealand's solar installations and shows leadership in this area by providing new customers with useful information so that they can make an informed choice.[4]. For larger customers we have also provided technical advice; Meridian provided technical expertise for Auckland Museum's solar panel installation and guidance throughout the supplier selection process[5].

However, there are some risks which can adversely impact the electricity sector's contribution to emission reduction.

[1] https://www.youtube.com/watch?v=_bOJAkTdu-Y
[2] https://www.youtube.com/watch?v=Dh8yARscBmc
[3] https://www.meridianenergy.co.nz/about-us/benmore-hydro-station/
[4] https://www.youtube.com/watch?v=CnfqbpNTcZU
[5] https://www.youtube.com/watch?v=oeO6QuG9Kc0

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- **Maintain New Zealand's renewable foundation**. New Zealand's high percentage of renewable generation is built on a foundation of hydro electricity. Water use is under increasing pressure, particularly from increased consumptive use, new users and environmental limits with potential to reduce hydro generation. The role and value of hydro generation gives effect to Central Government policy and priorities but must be delivered through local government decision making via their local water management plans and consent decisions.
- **Policy clarity and certainty are vital**. Investments based on a policy or target setting require both clarity and confidence in the Government's stance over the long-term because investments in the energy sector last for decades. Australia's handling of its renewable energy target and subsidisation of solar technology[6] shows how instability and uncertainty mutes investment and in some cases, results in a massive cost to consumers and the economy.

Fairness and durability are key principles. Meridian supports the Government setting a target that is considered "fair" by the global community and feasible for the New Zealand economy as it will drive durable decisions in both policy and investment. Given the significant role of the electricity sector, careful scrutiny is required of the Landcare modelling to ensure that its assessment is credible and plausible. Our initial assessment of Landcare's modelling is that carbon emissions from the electricity sector have been overestimated by 20-30Mt over 2021-2030 (2-3Mt per annum). This is due to using a 2007 baseline year which does not account for changes in the generation mix since that time, and the associated the reduction in the sector's emissions profile. Adjusting for this would reduce the abatement requirement for any target by 20-30Mt over the 2021-2030 period[7]. However, Landcare's modelling has potentially overestimated electricity sector abatement, increasing international permit purchases by up to $0.6 billion more than implicitly assumed. This reinforces the conclusions in the Government's policy paper about the critical role of international carbon markets with respect to the cost of meeting New Zealand's emissions target.

We look forward to engaging with the Government on domestic policy settings. If you have any questions about this submission, please contact me.

Yours sincerely,

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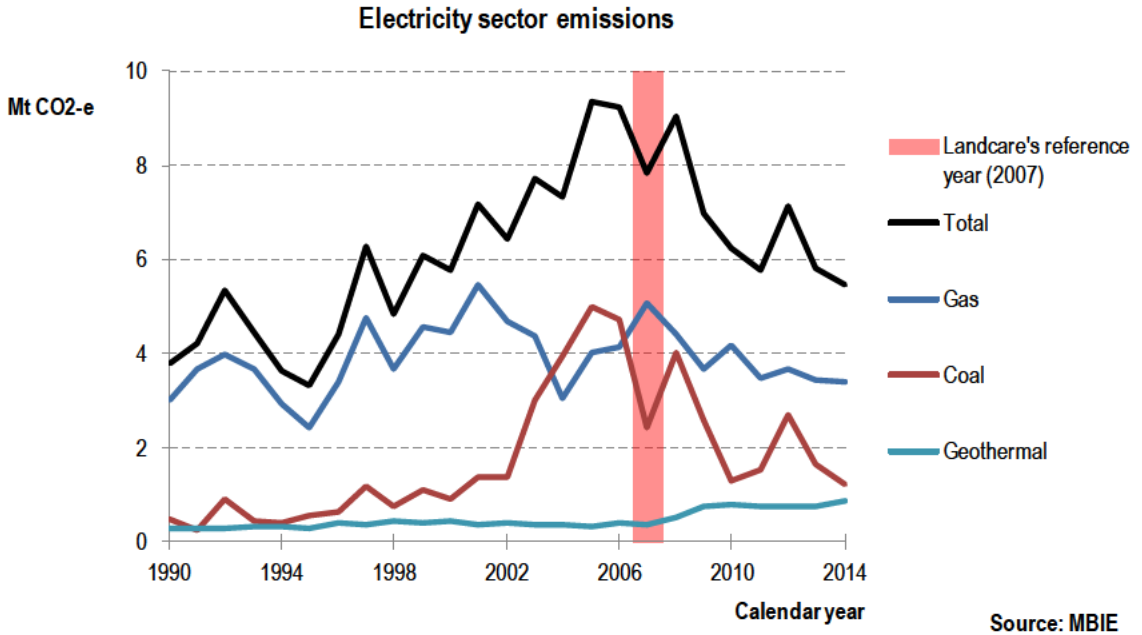
[6] http://grattan.edu.au/report/sundown-sunrise-how-australia-can-finally-get-solar-power-right/
[7] See our response to question 4 for further details.

Question	Comment
Question 1: (a) Do you agree with the above objectives for our contribution (b) what is most important to you	If the Government is prepared to sign the agreement, then the priority has to be that the contribution is perceived as fair and ambitious. Otherwise, the agreement will not be taken seriously by all signatories, associated policy will be unstable and objectives 2 (manage impacts on society appropriately) and 3 (guide long-term transition to a low emissions world) will be compromised.
Question 2: What do you think the nature of New Zealand's emissions and economy means for the level of target that we set?	It is essential that that the cost and technical feasibility within sectors is well understood by Government. We have commented on this in the main body of our letter regarding the emissions abatement capability of the electricity sector. The domestic policy response must ensure consistent signals not only within sectors, but across sectors. The same holds for our interaction with global markets. By signing an agreement, Government is committing to achieve an outcome which affects the globe. If Government support's this goal and the commitments of other countries then it should be indifferent to meeting our obligation via domestic initiatives or via international markets.
Question 3: What level of cost is appropriate for New Zealand to reduce it greenhouse gas emissions? For example, what do you think would be a reasonable impact on annual household consumption?	New Zealanders will have to accept collective responsibility for the Government's post 2020 target and its impact on costs, both direct and indirect. However, just as our target needs to be seen as fair by other nations, our domestic policies must also be considered fair by households and consumers. Doing otherwise will not be durable for policy or investments and will ultimately feed through to costs being higher than they ought to be. While Meridian has not identified a specific level or range of acceptable household impacts, it is clear that fairness and durability are key principles to consider when considering this issue.
Question 4: Of the opportunities for New Zealand to reduce its emissions (as outlined on page 15 of the discussion document), which do you think are the most likely to occur, or be most important for New Zealand?	An important outcome from Landcare's quantitative analysis[8] is that for the period to 2030, domestic abatement is around 9Mt p.a, with over 5.5Mt coming from the electricity sector via reductions in emissions/output from thermal stations. It appears that this 5.5Mt potential reduction has been overstated due to: • using 2007 as the reference year,

[8] http://www.mfe.govt.nz/node/20771

Question	Comment
	• not accounting for emissions from geothermal generation; • not accounting for emissions from any thermal plant that generate to support variation in New Zealand's peak and energy demand. To address the first point, since 2007, electricity sector emissions have reduced from around 8Mt to below 6Mt due to a combination of increased zero (wind) and low-emission (geothermal) generation, and reduced output from coal and gas plant.  It is also worth noting that zero-emissions from the sector (as modelled in Landcare scenario U1L) is infeasible given that geothermal plant already emit around 0.8Mt per annum, and this would increase (perhaps to 2Mt p.a.) if significant additional geothermal plant is built (though new wind and hydro would not have this effect at they have zero

Question	Comment
	emissions). Considering the electricity sector, this implies that: • Current state emissions are in the range of 5-6 Mt per annum (not 8 Mt as the Landcare baseline assumes) • Replacing baseload thermal generation with low-emission generation could drop total electricity sector emissions to 3-5 Mt. • A feasible net reduction over current levels is therefore 1-3 Mt per annum This has two implications for New Zealand's target which the Government needs to consider. Firstly, if the electricity sector's emissions are lower than the baseline figures assumed by Landcare, then the projections of New Zealand's gross domestic emissions will also be lower, reducing the overall abatement required to meet a target (e.g., from 260 Mt to 240Mt by re-setting the baseline from 8 Mt to 6 Mt). In terms of abatement, Landcare's modelled reduction of 5.5Mt p.a. (2007 baseline) therefore translates to 3.5Mt p.a. using the 2015 baseline. The net difference in abatement implies up to 1.5Mt p.a. additional purchases from the international market (or $0.6 billion over the 2021-2030 period). These averages are likely to underestimate the effect because the Landcare projections of sector emissions continue to fall, despite there being non-zero emissions from geothermal plant and *increased* geothermal generation. To get cost-effective reductions of electricity sector emissions below gross levels of 3-4Mt would require an innovative step change. The discussion on new opportunities highlights the need to have a consistent set of signals within and across all sectors in the economy so that cost-effective investments and trade-offs can be made. In terms of energy security, we observe that New Zealand becoming reliant on overseas-sourced technologies is conceptually similar to New Zealand being reliant on overseas-sourced fuels; it is just a shift in the source of risk rather a reduction in it.
Question 5: How should New Zealand take into account the future uncertainties of technologies and	Government needs to have an unbiased view of New Zealand's abatement options across all sectors, and keep it constantly updated. Technologies will develop to meet customer preferences around their use, cost, and function.

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costs when setting its target?	Investments/behaviours to reduce emissions will impact the relevant markets and sectors – government policy needs to consider the "all-up" costs and benefits and the risks taken by investors, and the taxpayer. Similarly, domestic markets can develop these options if they are efficient across sectors, and globally. Government should avoid choosing a new technology – it is more important that clear and stable signals and systems are provided that ensure investment across the sectors is targeted and coordinated.
Question 6: Is there any further information you wish the Government to consider? Please explain.	New Zealand's high level of renewable generation should not be taken for granted. As noted in the consultation paper New Zealand currently produces around 80% of electricity from renewable generation. Around 75% of New Zealand's renewable energy is from hydro sources such as the Waitaki Power Scheme and Manapouri power station which Meridian own and manage. In parallel to this consultation on emissions, Government is making decisions about water rights and interests which can have a material impact on the level and flexibility of hydro generation, and ultimately New Zealand's renewable foundation and the costs to meet its emissions commitments.