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Low-emissions economy - Draft report

Genesis Energy Limited (**Genesis**) welcomes the opportunity to provide a submission to the Productivity Commission (**the Commission**) on the *Low emissions economy – Draft report* (**the report**).

Collective effort and responsibility is needed to achieve climate ambition

Genesis shares the Government's ambition to tackle climate change head on by planning a transition to a lower emissions economy.

In our view, a successful transition that does not negatively impact New Zealand consumers will not be achieved through the efforts of a select few. Both collective effort and collective responsibility is needed: with effort we will move from ambition to action to make meaningful changes to our economy, and with responsibility we will appreciate the impacts these changes will have on all New Zealanders.

Accordingly, we have looked forward to the Commission's draft findings, which provide a key signpost for New Zealand to fulfil this collective task. We appreciate the considered analysis provided in the report, which recommends that a cross-sector approach will set us on the right path to a low-carbon future. We agree:

- Increased afforestation, electrification of transport, and changes to agricultural production are the three key drivers that will be crucial in achieving New Zealand's emissions-reduction goals;[1]

- A well-functioning and efficient electricity system – one that balances the trade-offs between cost, emissions-reduction and reliability - is central to the transition and will play a critical role in decarbonising other parts of the economy;

- In particular, we agree with the Commission's finding that with current technology and costs, further reducing emissions from electricity generation will increase wholesale prices. Higher wholesale prices will increase costs for consumers and diminish the role

[1] We note the recent comments from the Parliamentary Commissioner for the Environment that if the current Government wishes to be more ambitious [than the previous Government] then important policy decisions will need to be made sooner rather than later in the agricultural and transport sectors. See www.selectcommitteenews.com; Notes on the Environment Select Committee 17 May 2018.

that electricity can play in supporting high-emissions sectors to decarbonise e.g. transport; and

- We fully support the recommendation that the Government should be wary of specifying targets for further emissions reduction from electricity generation **until** technology is available at a reasonable cost. We see a real risk to consumers if the transition is rushed; or fails to appreciate the downstream effects of a rising emissions price on household bills, or the unintended consequences of disproportionate intervention in one sector over proportionate interventions across the entire economy.

We also agree with the Commission that a stable, credible policy environment with the strength of cross political party support is needed to empower New Zealanders to plan for the transition in ways that will limit negative financial consequences for businesses and households.

In our view, achieving meaningful policy objectives will require an all-gasses emissions trading scheme (**ETS**) that sends the right signals to all sectors; a stable legislative framework that sets shared emissions-reduction targets; policy interventions that support the pace of change required, particularly in the agriculture, transport and forestry sectors where we stand to maximise emissions reduction gains; and funding commitments for the scale of investment and innovation required.[2]

How to read our submission

The remainder of our submission focuses on the report's recommendations in respect of:

- Electricity;
- Transport;
- Emissions pricing;
- Land use; and
- Short and long-lived gases.

We have commented on 16 of the Commission's recommendations, and answered three questions. We also provide some concluding remarks and our contact details should you wish to discuss any of these matters further.

The key role of a well-functioning and efficient electricity system

R12.1 *'Given rapid changes in electricity-generation technology and potential effects of rising electricity prices on adoption of low-emissions technology in other parts of the economy, the Government should not use subsidies or regulation to favour particular technologies that generate low-emissions electricity'*

➔ Genesis agrees with the recommendation in principle but provides some additional points for consideration

Genesis, like the Commission, sees the potential risk of subsidising specific technologies that may be superseded or create unintended technology lock-in; or create incentives that lead to unforeseen negative outcomes for consumers e.g. quality and security of supply issues as experienced in other jurisdictions.

[2] We welcome the Government's recent announcement to commit $100 million over 10 years to the Green Investment Fund in the 2018 budget. See: https://beehive.govt.nz/release/green-light-our-net-zero-emissions-future-sustainable-jobs-and-growth.

This poses a shared problem for energy policy makers the world over: how do you enable consumers to maximise the benefits of new technologies without foreclosing the future on their behalf?

Generally, our view is that rather than attempting to predict the future or import 'other country thinking', it is better to have the right levers in place for all technologies to compete on an equal footing to best suit the needs of New Zealand's changing electricity sector. This includes providing equal access to connect to electricity networks for all generation technologies, and enabling national directives on the benefits of renewable energy generation.

That said, as New Zealand works towards a collective ambition for a lower emissions economy, there may be some circumstances where targeted policy intervention can be supported if there is a sufficient case for collective benefit that outweighs the risk of technology lock-in.

When considering the case for policy intervention, it would be useful to take lessons from other jurisdictions to avoid making the same mistakes, and understand how subsidies or incentives could be applied in a New Zealand specific context.

We note that the United Kingdom and some European countries (e.g. Spain, Germany) provide evidence of where subsidising renewable technologies has come at a high cost for consumers. We also note that in New Zealand our existing high penetration of renewables means we are much further on the path to electricity sector decarbonisation than many other jurisdictions.[3]

R12.2 *'The Government should be cautious in specifying targets for emissions within the electricity sector, and make sure that technology is available to meet them without significantly increasing wholesale electricity prices above the levels achieved with current technology.'*

- ➔ Genesis agrees with the recommendation and provides some additional points for consideration

Genesis is pleased the Commission has acknowledged that a well-functioning and efficient electricity system is one that appropriately balances sustainability, affordability and reliability.

We are also pleased to see it recognise that New Zealand's biggest challenge to meet that balance as it further increases its renewable energy capacity is maintaining resource adequacy (i.e. reliability or security of supply) at reasonable cost to consumers. This is the biggest challenge we see as a large thermal generator planning the future of our generation portfolio when looking at the environmental sustainability and economic viability of coal and gas fired generation out to the 2030s. We explain further below:

The challenge

New Zealand has a significant seasonal demand challenge: it needs the most energy in winter, but has the best generation capacity in summer. According to Genesis' modelling, there is a need to account for around 2,000 gigawatt hours (GWh) of storage to meet demand, plus manage average seasonal inflow variation, between summer and winter.[4]

The current solution

[3] We note that with renewables totalling up to 85 per cent of annual generation, this puts New Zealand in the top three countries in the OECD, compared with an average of just 24 per cent. Of the thermal generation we do have, our coal use is in the fourth lowest among countries with coal-fired generation in the OECD. Genesis itself has reduced coal use by 80 per cent in the past decade, and halved its emissions.

[4] Genesis discussed its modelling with Sapare Research Group in its capacity as consultants to the Commission. We are happy to provide further details on request.

New Zealand currently relies on thermal generation from gas and coal to bridge the summer-winter, supply-demand differential as the least cost and most flexible generation option. This is particularly true in 'dry years' following periods of low rainfall where the winter energy shortfall grows by a further 4000 GWh hours.

As evidence of this, the report notes that Genesis' Huntly Rankine units (coal/gas fired) provide cover to companies such as Meridian Energy under a 'swaption'[5] agreement, and firm energy for Genesis' retail customers.

While this is true, it understates the key role the Rankines currently play in the wider electricity market. This was proven in 2017 when low lake levels saw thermal generation increase to meet demand from:

- Genesis' customers (approximately 17 per cent);
- Swaption customers (approximately 33 per cent);
- Wholesale market customers (approximately 50 per cent); and

Again, more recently, when the Rankines were quickly bought into operation to generate essential electricity through a storm event that had caused gas supply constraints.

Put simply, though it may be the sector's 'inconvenient truth', the whole of New Zealand's electricity sector currently relies, at least to some extent, on the availability of the coal and gas fired Rankine units

The future solution?

Unfortunately, there is no economic 'silver bullet' to replace gas and coal to fill the supply-demand gap right now, which is exacerbated in a future that demands more electricity generation in support of the decarbonisation of other sectors e.g. transport and industrial processing.[6]

Rather, unless we want to significantly overbuild renewable generation in the near term – which poses challenges for investors and consumers, so far as overbuilding is economically irrational and unlikely to generate investment returns; and is likely to require significant hydro spill and reduce the efficiency of existing renewables – it makes more sense to understand how to transition from coal to gas (or from baseload thermal to peaking thermal) as the first order priority, and out of thermal altogether in the longer term (as technologies improve and costs fall).

This is because coal and gas have some special features that are of immediate benefit: they can be stored at low cost in large volumes, and offer flexible generation i.e. gas- and coal-fired power generation can be turned on and off as needed, and used interchangeably in the Rankine units.[7] It should also be noted that thermal generation currently provides important ancillary services support e.g. voltage and frequency keeping services across the transmission system.

Any single current technology option – including solar, batteries, wind, geothermal, occasional gas peaking and hydro - is limited in its ability to match these capabilities, notwithstanding the cost to do so:

[5] Genesis currently has two swaption agreements, which, when signed extended the life of the Rankines out to 2022. The agreements provide for thermal energy to be made available during the winter months as needed to maintain security of supply, with 150 MW available to Meridian Energy and 100 MW available to Contact Energy.
[6] Modelling, including our own, the report's and that recently published by Transpower, is clear – to different extents - that increases in electricity demand will require new generation to be built in addition to that needed to phase out current thermal generation. See: https://www.transpower.co.nz/resources/te-mauri-hiko-energy-futures for Transpower's modelling.
[7] This means coal can provide an alternative to gas if there are constraints on the gas network e.g. pipeline or upstream outages.

Geothermal	Geothermal generation is typically more suited to baseload operation than peaking. While it can be turned off in summer and back on in winter, this would increase the effective per unit cost of investment. It is also important to note geothermal is not emissions-free.
Wind	Wind generation is intermittent, meaning it can only operate when there is sufficient wind resource available. It cannot be stored.
Hydro	Hydro generation can be stored and it is flexible but there is limited scope for new build at the scale required to provide seasonal storage. If existing hydro storage is used more conservatively in order to get through dry periods, then this will lead to significantly increased hydro spill when it is not dry.
Solar	Solar generation, like wind, is intermittent and can only operate when the sun is shining. The monthly solar generation profile is similar to hydro inflows: it is lowest in winter so would increase the winter energy shortfall. While it can be stored in batteries (see below) it is not commercial at the scale required as yet.
Batteries	Battery technology is currently viable at a consumer level only e.g. when combined with solar. While grid-scale trials are underway, our modelling shows it is difficult to see batteries being commercial to manage seasonal storage (estimated cost of $2-3 trillion).
Occasional gas peaking	Retaining some form of discretionary gas peaking capacity is possible but there needs to be consideration of both the logistics (access to flexible gas supply contracts; expanded gas storage facilities) and economics (cost of increased storage and limited operating use).

These are not simple challenges that can be solved overnight so it is essential that as a sector we get past the rhetoric and work towards the creation of a plan that allows the sector to undertake the next steps to decarbonisation. For example, Genesis has announced its ambition to exit coal by 2030, which has provided a timeframe for industry and government stakeholders to work together to replace that capacity with suitable alternatives.

This kind of forward-planning, combined with price signals from the ETS, advances in (and falling costs of) technology, and improvements to planning tools that enable renewable energy projects will trigger the necessary response from industry in the coming years as we look to what options will best balance sustainability, affordability and reliability in the future.[8]

Q12.1 *Does decision making under the Resource Management Act 1991 (**RMA**) unduly constrain investment in renewable electricity generation, particularly wind and hydro generation? In what ways could the National Policy Statement on Renewable Electricity Generation 2011 (**NPS-REG**) be strengthened to give clearer direction to regional, district and unitary councils to make provision*

[8] As per the recently published World Energy Issues Monitor 2018, the future climate framework is an 'action priority' that is keeping energy leaders busy at work: the industry is already advancing its plans for a lower carbon future. See: https://www.bec.org.nz/__data/assets/pdf_file/0018/146430/World-Energy-Issues-Monitor-2018.pdf

for renewable electricity generation in their regional and district plans, regional policy statements and resource management decisions?

Genesis believes that there is confusion among some decision makers as to how the NPS-REG should be applied to activities under the RMA, including how it should be understood alongside other planning tools e.g. local and regional plans. This means despite its best intentions, the NPS-REG fails to send sufficiently clear signals about the significance of renewable electricity generation and further clarity e.g. directive language is needed to give it more teeth.

A 2016 report published by the Ministry of Business, Innovation and Employment (**MBIE**) and Ministry for the Environment (**MfE**) made similar observations. It found the NPS-REG had not resulted in nationally consistent approaches to drafting of local or regional planning instruments, and had not made it any easier to obtain consent for renewable energy projects.[9]

It is our view that the Government should strengthen the weight local and regional councils give to the NPS-REG by providing specific directives in the wording of the NPS-REG itself e.g. how to balance consideration of other planning documents such as the National Policy Statement on Fresh Water Management (**NPS-FM**). This should be considered a priority for action so that new renewable projects can be consented without undue constraints.

We also consider more directive language in the NPS-REG should provide for consents that have been granted but not exercised to be varied appropriately. Market commentary[10] shows there is an expectation among policymakers that 2,500 MW of already consented wind projects are ready to go to help New Zealand increase its renewable generation.

We urge caution here because these consents may need to be varied if the projects, some of which were consented 10 years ago, are to remain economic due to several factors e.g. a requirement to adjust to international advancements in wind turbine technology; a need to consent and build the transmission infrastructure that will enable development.

In addition, guidance should be provided on how to deal with consent renewal applications, particularly for hydro schemes. This is of particular relevance so far as we all can agree 'New Zealand's largely decarbonised electricity sector is a major advantage,'[11] which could be eroded over time if existing renewable energy operators are unable to reconsent power schemes appropriately.[12]

On a related note, the continued operation of nationally significant hydro-electric generation must be explicitly recognised and provided for in the NPS-FM by populating 'Appendix 3'. This has been anticipated since the NPS-FM was first amended in 2014, but it should be considered a greater priority in the context of mapping the transition to a lower carbon economy.

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[9] See: http://www.mfe.govt.nz/publications/rma/report-of-outcome-evaluation-of-national-policy-statement-renewable-electricity. We provided a submission to MBIE and MfE that included a case study from our consenting of the Castle Hill Wind Farm project. While the NPS-REG was useful to provide a basic policy framework that supported renewable electricity development, and we did in fact gain consent, it had little influence over the consent conditions relevant to the local, site specific concerns. Essentially, once consent was granted in principle, the NPS-REG failed to stand up against more directive language used in local and regional plans when it came to imposing consent conditions (of which there are over 400).

[10] Dr Megan Woods on the Nation: http://www.newshub.co.nz/home/shows/2018/05/interview-megan-woods.html; Energy News coverage: http://www.energynews.co.nz/news-story/wind/37552/bigger-turbines-may-halve-nz-wind-costs; http://www.energynews.co.nz/news-story/electricity-retailers/36639/govt-should-set-energy-not-electricity-targets-whineray.

[11] The report, page 7.

[12] We note that statements in the preamble of the NPS-REG regarding the prioritisation and allocation of freshwater has meant that in a number of cases, RMA decision makers have given less weight to the NPS-REG provisions when making decisions that have to balance the competing and often conflicting uses of freshwater. The water utilised for hydro-electricity generation accounts for more than half of New Zealand's annual electricity generation, and the use of water for this purpose should be provided for in RMA statutory planning documents to ensure that freshwater management decisions do not adversely affect New Zealand's lower carbon ambitions.

R12.3 *'The Electricity Authority (**the Authority**) should continue its programme of work to update pricing and regulation to facilitate the integration of distributed energy resources (**DER**) and demand response (**DR**) into the electricity system.'*

➔ Genesis agrees with the recommendation and considers this should be a priority for sector regulators

The Commission advises that fundamental changes to the current regulatory framework, including distribution pricing structures, access terms to electricity networks and rules surrounding data exchange between parties are needed to enable DER and DR.

Genesis has been advocating for some time that existing policy settings will inevitably fail to cope with rapid changes in the electricity sector and will not deliver in the best interests of consumers.[13]

As the way we generate, store and consume electricity changes, it is crucial that there is a level playing field for competition in the emerging technology space, which can be achieved by drawing clear lines under what are contestable and non-contestable activities for regulated monopolies e.g. electricity distribution businesses (**EDBs**).

We also consider it is crucial EDBs move to provide simplified national standards of access for service, standardised and simplified pricing models and standardised access for DER and DR. In our view, a focus on simplified standardisation will reduce the current state of complexity and inefficiencies in the distribution sector, and provide the necessary foundations for enabling future products and services, including low-emissions DER and DR.[14]

The Authority should prioritise its work programmes focused on *Equal access*; *Data and data exchange*; *Default distribution agreement* and *Distribution pricing,*[15] while collaborating with the Commerce Commission (**ComCom**) and MBIE to deliver flexible yet certain policies that enable DER and DR.

R12.4 *'The Electricity Authority should…undertake a review of and develop measures to raise the capabilities of the electricity distribution businesses.'*

➔ Genesis agrees with the recommendation and considers this should be a priority for sector regulators

The Commission raises concerns that EDBs may not have the capability to match the scope or speed of the required regulatory change needed to fully support future innovation that will benefit customers and reduce emissions. This includes recognising the work of the International Energy Agency, which suggested changes to the governance of some EDBs would help harness economies of scale.[16]

Genesis has shared similar views in various other forums; encouraging sector regulators to move past a view that incrementalism will suffice and reflect on the ability of networks to adapt or scale up to meet the future.[17] We agree it is time for a 'fresh look at EDB capabilities,'[18] and support the Authority considering how it can work with ComCom and MBIE to progress this as a priority.

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[13] Genesis Energy submission on Enabling Mass Participation: https://www.ea.govt.nz/dmsdocument/22334.
[14] Another recent example of where there would be demonstrable benefits from standardisation across EDBs comes from lessons learned during the April 2018 storm event in Auckland. With widespread damage across its network, Vector would have benefited from the support of 40 qualified tree-cutters who were available to help. Unfortunately, EDBs have different pre-qualification requirements for tree trimming across different networks, so those 40 ready and willing tree-cutters were unable to provide their services.
[15] Genesis Energy submission on Multiple Trading Relationships: https://www.ea.govt.nz/dmsdocument/23197.
[16] See: https://www.iea.org/publications/freepublications/publication/energy-policies-of-iea-countries---new-zealand-2017-review.html
[17] Genesis Energy submission on Priorities for the electricity distribution sector: http://www.comcom.govt.nz/dmsdocument/16116.
[18] The report, page 344.

Electric vehicles offer some of the most promising mitigation opportunities

Q11.1 *How could New Zealand signal a commitment to a widespread transition away from fossil-fuel vehicles? For example, should New Zealand explicitly aim to phase out the importing of fossil-fuel vehicles by some specified future date?*

The Commission notes a rapid uptake of low emissions vehicles – primarily electric vehicles (**EVs**) - is one of the three key drivers to reducing New Zealand's emissions and that to achieve this, there will need to be a widespread transition away from fossil-fuel vehicles (**FVs.**)

We consider the Government should signal the transition by providing a specific target date by which New Zealand will have phased out the importing of FVs. In our previous submission to the Commission[19], we highlighted the leadership of countries like Norway and the Netherlands that have set similar targets and advocated for New Zealand to adopt a bold target.

Following modelling completed since then, Genesis recommends that if New Zealand wants a domestic light vehicle fleet that is predominately EVs by 2050, we should work to phase out the importing of FVs no later than 2030.[20]

This is because there is a need for a long and sustained build-up in our domestic vehicle market of EVs, the majority of which will need to come from import markets such as Japan. Carefully accelerated phasing out of importing FVs will be critical to send the right signals to offshore EV suppliers and the New Zealand public that we are serious about transitioning our fleet.

We also note that while the focus in the near term is primarily on enabling the uptake of EVs, we should be wary of locking out other technologies that may become available at reasonable cost and at scale in the future e.g. hydrogen and biofuel. Accordingly, the Government's transition should send signals for a transition away from FVs to low emissions vehicles generally, to balance the intention to provide a viable plan for emissions reduction in the transport sector with the risk of 'backing the wrong horse'.

R11.1 *'The Government should introduce CO2 emissions standards for light vehicles entering the New Zealand fleet.'*

- ➔ Genesis agrees with the recommendation and provides some additional points for consideration

The Commission highlights a concern that New Zealand is one of the few developed countries without vehicle emissions standards, and that unless we develop these as a matter of urgency, we risk becoming a 'dumping ground' for high-emitting vehicles imported from overseas markets.

Genesis supports the development of a carefully designed emissions standard, particularly if it can be sufficiently dynamic so as to operate in sync with the phasing out of importing FVs.

R11.2 *'The Government should introduce a price feebate scheme for vehicles entering the fleet.'*

- ➔ Genesis agrees with the recommendation and provides some additional points for consideration

The Commission considers an appropriately designed feebate scheme is one component of the four-part package required to incentivise EV uptake. Genesis agrees; we consider a well-

[19] Genesis Energy submission on Low emissions economy inquiry: https://www.productivity.govt.nz/sites/default/files/sub-low-emissions-118-genesis-energy-limited-372Kb.pdf.
[20] Genesis is happy to share further details of this modelling on request.

designed price feebate scheme would provide the right signals to consumers to purchase low emissions vehicles.

In our view, the feebate should be upfront only, and have no recurring component at annual registration. This is because, as noted by the Commission, private owners heavily discount future savings so the most benefit would be achieved from up front discounts.

We see there is a risk that a fixed per vehicle fee – e.g. one that is the same for a zero-emission second hand import and a more expensive New Zealand-new vehicle - would bid up the price of Japanese second-hand vehicles and do little to build a domestic market. Instead, a percentage feebate at the point of import with a cap is preferable. This would target the local market more effectively, while not overly subsidising the most expensive low-emission options.

Genesis also considers the Commission could explore additional policy add-ons including low-interest, revenue neutral loan schemes for some consumers (e.g. small businesses, low-income households) to help reduce the upfront cost of EVs and spread the cost over the life of the asset. This would also ensure that EV incentives are targeted to those with the highest need, supporting the 'just' transition.

Q11.2 *'Should a price feebate scheme cover vehicles within the heavy vehicle fleet? What other policies are appropriate for incentivising the uptake of low-emission heavy vehicles?'*

Genesis considers heavy vehicles could be included in the price feebate scheme but this is less essential in the initial design of the scheme, where light vehicles should be a priority.

We note that businesses discount future cost savings less aggressively than households so once total cost of ownership for a low emission heavy vehicle (EV or other) is below that of a FV, businesses with capital could be expected to respond. Businesses that lack capital (e.g. small businesses) could benefit from the policy add-on suggested in our response above to R11.2.

R11.3 *'The Government should provide financial support for charging infrastructure projects to support the uptake of EVs.'*

- ➔ Genesis agrees with the recommendation so far as it is efficient to do so

The Commission notes that investment in charging infrastructure has been relatively strong with current levels of government support (e.g. the Low Emissions Vehicles Contestable Fund) but there are some gaps emerging. Genesis supports the Government to provide financial support to fill those gaps only where it is commercially viable to do so.

Efficiently investing in public charging infrastructure is crucial to avoid both over-investment (i.e. New Zealand's high proportion of off-street parking, opportunities for workplace charging and increasing vehicle range could result in wasteful investment at consumers' expense) and technology lock-in (i.e. other low emissions vehicle opportunities may emerge at scale and provide equal or greater benefits to EVs that should not be discounted).

R11.4 *'The Government should encourage government agencies where practical to procure low-emission vehicles.'*

- ➔ Genesis agrees with the recommendation and considers this should be a priority for the Government

The Commission highlights that many previous submitters called for the Government to play a greater leadership role in promoting the uptake of EVs as one of our greatest current emissions reduction opportunities. Genesis echoes this call for action, because we see a strong uptake in commercial fleets will be essential to building a deep second-hand market for consumers. We note that we are ourselves in the process of transitioning our light commercial fleet to EVs.

R11.6 *'The Government should make emissions reductions a stronger strategic focus in transport investment.'*

➔ Genesis agrees with the recommendation and provides some additional points for consideration

Genesis notes the Commission's findings that road vehicles have been the primary driver of emissions growth since 1990. Currently, at 19 per cent of total emissions, transport emissions are some 300 times larger than those from the electricity or waste sectors. To turn the dial back on transport emissions, it is our view the Government should undertake a stronger strategic focus in transport investment for the future, which includes supporting low emissions vehicles – EVs and other - as discussed above.

Sending the right investment signals via emissions pricing

R4.1 *'The Government should reform the NZ Emissions Trading Scheme (**ETS**) rather than replace it with a carbon tax. The reforms should provide a good balance between control over unit supply (i.e. an effective emissions cap) and protection against excessive volatility in the price of emission units.'*

➔ Genesis agrees with the recommendation in principle, but provides some additional points for consideration

Genesis is pleased to see the Commission clearly state the ETS should not be replaced with a carbon tax. We consider the ETS should [continue to] be the central policy lever that aims to incentivise businesses and households to make decisions that lead to emissions reductions.

We note the Commission considers the ETS has been ineffectual to-date in reducing emissions due to low prices driven by international exposure, sector exclusions and policy uncertainty. We do not agree.

In the electricity sector, we would argue carbon prices have had an influence on retirement of thermal generation and investment in new renewables. Since the ETS was introduced in 2008, for example:

- Genesis has retired 500 MW of thermal energy and reduced coal use by 80 per cent;
- Two other large thermal power stations – Otahuhu B and Southdown – have been decommissioned;
- Over 1000 MW of wind and geothermal generation capacity has been built; and
- Over 2000 MW of wind generation capacity has been consented.

Where the ETS has failed to influence behaviour is in sectors that are currently excluded e.g. agriculture. The exclusion of agriculture, which accounts for half of New Zealand's total emissions, cannot continue. Agriculture, albeit with initial free allocation, should face the burden of carbon costs without delay to ensure the ETS includes all sectors and all gases as initially designed.

Moving forward, Genesis considers the focus should be on providing more stability, transparency and forward guidance on emissions prices to support participants' decision making; and that a broad-based scheme (i.e. with no or few exemptions) is needed to send the right signals to those market participants.

Accordingly, we support MfE to continue to review the ETS and in principle support a price cap and floor that will reduce excessive volatility to protect consumers and enable long-term investment decisions from participants. We look forward to the opportunity to comment further on this later in the year during consultation with MfE.

Land use needs to change substantially to enable New Zealand's transition

R10.3 *'Agricultural emissions should be fully included in the ETS.'*

➔ Genesis agrees with the recommendation – please see our response to R4.1 above

R10.4 *'To address potential effects on emissions leakage and international competitiveness resulting from including agriculture in the ETS, the Government should provide free allocation of New Zealand units (**NZUs**) to cover a large majority of agricultural emissions, based on their historic level. The Government should withdraw these allocations over time as the stringency of agricultural emissions policies increases overseas and the availability of mitigation options increases; and to be consistent with New Zealand transitioning to a low-emissions economy by 2050.'*

➔ Genesis agrees with the recommendation

R10.7 *'The Government should continue to refine the ETS for forestry to make it easier and less risky for small foresters to participate.'*

➔ Genesis agrees with the recommendation, particularly noting that increased afforestation is a key driver to meeting our emissions-reduction goals

R10.8 *'The Government should increase its yearly funding for research on agricultural mitigation technologies to a level that better reflects the potential value of successful outcomes. Funds could, for instance, be allocated from the proceeds of auctioning NZUs.'*

➔ Genesis does not agree with the recommendation as it stands and provides some additional points for consideration

Genesis agrees that complementary policies [to the ETS] are necessary to enable the scale of change required to New Zealand's land use. This includes policies to support research and development (**R&D**) of technologies that will reduce agricultural emissions.

We also agree that funding for R&D could be provided from the proceeds of auctioning NZUs. We do however consider this funding should be shared across multiple sectors i.e. not limited to agriculture. Investment should be made into low emissions vehicle opportunities, renewable energy generation technologies, waste reduction opportunities et cetera.

To share R&D funding to projects that can best reduce emissions, there should be a tender system designed. R&D funding for low emissions initiatives could also be redirected from the former Crown Irrigation Fund, which was previously allocated to incentivise farm conversions.

The collective effort requires single all-gases target in legislation

R8.1 'The Government should establish separate long-term domestic targets for short- and long-lived gases, together with a regular series of reviews of progress against these targets…The Government should support these separate targets with a single all-gases target. The all-gases target should be set in primary legislation.'

➔ Genesis agrees with the recommendation and provides some additional points for consideration

Genesis considers setting a single all-gases target in primary legislation is an important step in the right direction towards sharing the burden of climate change mitigation across all of the New Zealand economy. In our view, this is crucial in the collective effort that is needed to reduce emissions overall.

We support setting separate domestic targets for long and short-lived gases, provided both gases are exposed to the emissions price as per the ETS. We agree that differential treatment for methane, for example, would lead to over-prescribed emissions reduction pathways, limited scope to link to international markets and increased complexity.

Ambition becomes action in the transition to a low emissions economy

Now is the time for New Zealand to take the next steps in the transition to a low emissions economy and we consider the Commission has provided a useful platform from which we can plan our pathway.

The report is clear that a cross-sector approach is needed to achieve our emissions reduction goals, while calling for action in the transport, agricultural and forestry sectors to maximise our chance for success. Genesis supports this recommendation and those that relate to our sector [the electricity sector] particularly.

We agree that the electricity sector stands to play a crucial role in the decarbonisation of other sectors, and that accordingly, the Government should be wary of setting targets for emissions reduction. It should also be careful not to pick technology winners and losers; walking the line between risking unintended consequences e.g. technology lock-in, and identifying cases where targeted intervention is sufficiently convincing to justify the risk.

The focus from this point must be on how to make the meaningful change that is needed, while ensuring the transition is 'just' for New Zealand businesses and households. Designing the stable and credible policy environment the report outlines will be key and Genesis looks forward to further engaging on this with other stakeholders.

In the meantime, if you would like to discuss any of these matters further, please contact Margie McCrone by email: margie.mccrone@genesisenergy.co.nz or by phone: 09 951 9272.

Yours sincerely

Marc England
Chief Executive