

In the Matter of
The Productivity Commission Issues Paper
Low-emissions Economy

Submission by
Waimakariri District Council

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Person for Contact: Geoff Meadows, Policy Manager



General Submission

The Waimakariri District Council welcomes the opportunity to submit to the Productivity Commission in response to the Inquiry into how New Zealand can maximise the opportunities and minimise the costs and risks of transitioning to a low net-emissions economy. The Commission's Terms of Reference and issues paper have been read with interest and the following general comments are offered.

The issues paper does however use terms and concepts that are complex, and unlikely to be used in everyday conversations and discourse. While most New Zealanders are vitally interested in matters that have an impact on climate change, the issues paper is not a document that would be widely read and easily digested for most New Zealanders.

In a time when there is increasing pressure on local government to develop timely and sensible responses and actions to climate change, the Productivity Commission could perhaps develop more innovative methods of engaging the public in consideration of this important matter, rather than simply following an issues paper with a draft report in response to submissions.

It may well be that the Commission might make recommendations to the government following this report about how the wider community may indeed be better informed and involved in these intergenerational issues of national importance, given the extent and nature of the adjustments that may be involved.

1. New Zealand's Commitments to Emissions Reductions

It is noted that under the Paris Agreement, New Zealand is already committed to reduce its emissions by 30% below 2005 levels by 2030, and that the *Climate Change Response Act 2002* commits this nation to reduce emissions by 50% below 1990 levels by 2050. In developing an effective emissions-mitigation strategy for New Zealand that will also be economically and politically sustainable, it is important that not all Green House Gases (GHG) are treated in the same way for the purposes of emissions accounting. The "two baskets" approach as outlined on page 61 of the issues paper is a sensible policy response to emissions accounting so that long-lived gases such as carbon dioxide are treated differently to short-lived gases such as methane. This "two baskets" approach addresses the cumulative emissions of carbon dioxide as the main driver of global mean surface warming, since carbon dioxide remains in the atmosphere for up to hundreds of years.

The 2016 report by Motu Economic and Public Policy Research (Motu 2016), commissioned by the Parliamentary Commissioner for the Environment states that:

"...the overriding need to reduce carbon dioxide emissions is scientifically uncontentious. For the climate to stabilize, net carbon dioxide emissions must ultimately be cut to zero. There is debate whether, when and how much action to take on other gases".

While it is noted that the initial design of New Zealand's Emissions Trading Scheme was for "all-sectors and all gases", the exclusion of agriculture since 2013 has deepened the uncertainty of including methane and nitrous oxide in GHG emissions accounting. Given that it is vital to reduce carbon dioxide emissions to zero as soon as possible to have any chance of keeping global temperature increases to two degrees, a sensible and balanced policy response is to account for methane and nitrous oxide separately to carbon dioxide.

The Vivid Economics 2017 report *Net Zero in New Zealand* (Vivid Economics 2017) suggests a range of scenarios to achieve domestic carbon neutrality beyond 2050, and points out that

New Zealand is distinctive in at least three respects; its significantly decarbonized energy sector, its large share of land sector emissions, and its large forestry sector. These scenarios involve a significant departure from the technologies and practices commonplace in New Zealand today. Local governments are faced with planning in the long-term for their communities, and need to incorporate planning for dealing with disruptive technologies.

The Local Government New Zealand (LGNZ) Leaders' Climate Change declaration (2017) supports an ambitious transition plan towards a low carbon and resilient New Zealand, and a more ambitious national schedule of climate change mitigation.

2. *International Trading in Carbon Credits*

It is noted that New Zealand holds a large stock of accumulated international emission unit credits, and that these will be used to meet 2020 commitments. From a global perspective, this could be seen as a cynical response to international commitments, and which could allow this country do very little in reducing carbon dioxide emissions. In a similar way that the "all gases, all sectors" approach diminishes the imperative to reduce carbon dioxide emissions, using accumulated carbon credits from international trading could meet international commitments without reducing domestic carbon dioxide emissions.

It is noted that viable carbon trading might emerge in the future, however it is encouraging that in the meantime this inquiry is about reducing domestic greenhouse gases.

3. *Emissions Source and Mitigation Opportunities*

Although the exotic conifer *pinus radiata* plays a major role in sequestering large amounts of carbon dioxide, it does nothing to enhance or improve New Zealand's indigenous biodiversity. In fact wilding conifers are pest plants in Canterbury, and so the suggestion in the issues paper on page 22 to simply plant and leave radiata pine to grow and eventually revert to native bush, is a suggestion that causes some alarm. Natural reversion to native bush is not likely to establish itself, as the issues paper suggests, under the canopy of radiata pine. This suggestion is at odds with the Canterbury Biodiversity Strategy (2008). Carbon sequestration should be developed as an option that is in keeping with enhancing New Zealand's indigenous biodiversity (see LGNZ think-piece on *Addressing New Zealand's Biodiversity Challenge* (August 2017)).

It is noted that transport is the second biggest emitter after agriculture. The Vivid Economics suggestion to develop policy settings that encourage a switch from road transport to rail and coastal shipping is supported.

4. *Policy instruments towards low-emissions technologies*

The general principle that the polluter pays for their emissions is supported provided this is in the context of reducing carbon dioxide emissions and not increasing agricultural emissions per the "two baskets" approach.

The suggestion of decoupling economic growth and emissions-reduction on page 63 is important, as several European economies have demonstrated, such as the United Kingdom from 2000-2014.

Specific response to Questions in the Issues Paper

Q1. The Commission could add the most value to this inquiry by improving the quality of the public debate towards a low-emissions economy, and engaging with local communities in a more meaningful way through information sessions, public meetings and interactive media.

Q2. Reducing emissions at their source is a sensible approach provided short-lived gases are accounted for differently than long-lived gases.

Q3. It is not technically and economically feasible to reliably measure biological emissions at a farm level.

Q4. Without changing livestock-based agriculture as is currently known, there is little opportunity to reduce agricultural emissions. However the future of livestock-based agriculture may quickly change with disruptive technologies which would make this portion of GHG emissions irrelevant.

Q5. Changing the use of agricultural land is only in the hands of private land owners so long as existing technologies prevail. Governments can invest in research and development for alternatives to land-based agriculture.

Q6. One of the main barriers to sequestering carbon in forests is the international counting rules that exclude riparian plantings of less than 30 metres. Most riparian revegetation that is underway in New Zealand is less than 30 metres wide. The accumulative re-forestation of riparian margins on a nation-wide basis should be accounted for in sequestration calculations.

Q7. The development of permanent carbon sinks for international sequestration has an economic value in international terms. The economic value of setting aside vast tracts of land in the protected area estate, to be held in perpetuity for the people of New Zealand, should be recognized in an Emissions Trading Scheme. The value of eco-systems services that are provided by the protected area estate should be further accounted for in an Emissions Trading Scheme.

Q8. The main barrier to the uptake of electric vehicles is their expense and the limits of their range. More planning is needed along State Highways to allow for electric vehicle recharging stations.

Q9. Exempting electric vehicles from road user charges is a sensible policy setting.

Q10. One of the major opportunities to reduce transport emissions is switching heavy freight from road transport to rail and coastal shipping. Coastal shipping particularly makes sense for the South Island with most freight coming across the inter-island ferries. This was highlighted particularly after the November 2016 earthquake and the closure of road and rail transport links via Kaikoura, and the re-routing of road transport via Highway 27. It is noted that rail freight currently accounts for 0.2% of New Zealand's total emissions.

Q11. The discussion on energy for manufacturing (pages 26 to 27) does not include the merits of low-emission fossil fuels such as coal-seam gas, and the current existing abundance of this resource in New Zealand. Countries that have switched to using this abundant natural resource (which is plentiful on a global scale) have reduced their emissions and freed up other fossil fuels for lower carbon-emitting uses. The Commission could have further discussion in their draft report about alternative sources of fuel for manufacturing, including "urban mining" for resources such as tyres, as well as other forms of product stewardship.

Q12. Most discussion on sources of renewable energy centre around New Zealand's vast hydro-electricity generating capacity which contributes to the reticulated national grid. More

discussion needs to be generated in national debate about household-level, non-reticulated renewable energy. Communities of households with their own solar and wind generation are more resilient following natural disasters, and moves individual households towards self-sufficiency and away from dependence on corporate utilities.

Q13. For Canterbury, climate change scenarios involve more frequent wind storms and more frequent high rainfall events, but less rainfall and more sunshine on an annual basis. These scenarios auger well for sources of renewable energy at a household level. (More windstorms interrupt power supply for reticulated systems but are not so much an issue for household-level wind generators and solar systems).

Q14. As for Q12 above.

Q15. It is noted that the industrial processes and products from the metal industry, mostly iron, steel and aluminium production, contributes to about 3% of New Zealand's total emissions. The powering of aluminium production from cheap renewable energy becomes a vexed question in the context of emissions reductions when aluminium production requires the oxidation of carbon anodes, and that for every tonne of aluminium produced, results in the production of some 1.5 tonnes of carbon dioxide. It seems obtuse to subsidise aluminium production with cheap, renewable energy when there is an inherent production of carbon dioxide in the way aluminium is produced. The principle of "polluter pays" is not seemingly being applied in current policy settings in the costs of producing aluminium.

Q16. The opportunities for reducing emissions in building design are immense in improving the energy efficiency of buildings. The Christchurch *Exemplar Homes* program has demonstrated that through careful design, buildings can yield significant energy efficiency gains. Although the Building Code sets out energy efficient standards, these standards are a currently a low bar if New Zealand is to achieve zero emissions by 2050. Given that the life of most buildings is over 50 years, the Royal Society has a cogent argument that the Building Code should be made far more stringent than it currently is.

Q17. Avoiding the creation of waste, and as mentioned in response to Q11 above, the regulation of product stewardship, is the principal opportunity in reducing emissions in waste. The Kate Valley land fill, a co-operative venture between five Canterbury local governments, already harvests methane from land fill to contribute to the national electricity grid. Kaikoura District Council is an exemplary local government that has achieved zero waste to land fill.

Q18. Some of the important interactions between emission sources and technological changes in the economy include the increasing demand for electricity sources with the uptake of electric vehicles. With New Zealand's currently high reliance on renewable energy for electricity generation, this country is well placed to transition to a fully electric fleet. The low carbon price in the ETS has certainly been too low to influence behaviour to date.

Q19. The most obvious type of direct regulation would be adjusting the Building Code to ensure higher energy efficiency buildings are constructed over the next 30 years.

Q20. Clearly the evidence is unequivocal that the ETS is not effective based on a carbon price of \$5.00 per tonne. Carbon sinks for sequestration may become viable alternatives for landholders if there were a higher carbon price.

Q21. Market-based instruments could include a carbon tax, linking vehicle registrations to emissions, and exempting road user charges for electric vehicles.

Q22. Government investment in research and development of innovative and disruptive new technologies would best help New Zealand transition to a low-emissions economy.

Q23. Local government support for low-emissions infrastructure is fundamental. Financial institutions and borrowing sources could offer lower interest rates on loans for low-emissions infrastructure

Q24. Alternative approaches to subdivision planning that doesn't lock network infrastructure into reticulated delivery systems would provide options for household-level renewable energy.

Q25. Public procurement that takes account of life-cycle greenhouse gas emissions could act as an important policy lever at local government level.

Q26. Deep uncertainty exists about future technological changes that make long-term planning difficult. The credibility and predictability about futurism does not give households, local government and businesses confidence about investing in low-carbon technology or production. Often the problem lies in the speed of technological advances that could make early investment in new technologies obsolete.

Q27. The political economy is predicated on the social capital or consensus of the community. There is a growing mistrust of science and technology on a world-wide scale.

Q28. The *Climate Change Response Act 2002* as originally designed is probably an adequate legislative framework to deal with climate change, provided the legislation is flexible enough to keep abreast of international developments and commitments.

Q29. An independent body to oversee New Zealand's domestic and international climate change commitments is a sensible approach.

Q30. An adaptive system that discourages irreversible investment in large and expensive fixed assets would seem to be a key policy setting. The Motu example on page 54 is worth exploring to enable a flexible but certain Emissions Trading Scheme.

Q31. There is a significant gap in understanding whether specific emissions-related policies are likely to achieve acceptance.

Q32. Emissions Trading Schemes that do not place a realistic economic value on carbon fail to realise the benefits and values of the scheme, and do not accurately price the cost of emissions.

Q33. There does not seem to be a cogent reason why diversifying New Zealand's export mix should not be considered to be a co-benefit.

Q34. "Thinking globally and acting locally" was an adage that came from the Rio Summit in 1992 and still has critical application today. Top-down solutions to collective-action problems without local involvement typically founder.

Q35. Subsidising households to transition to household-level renewable energy (solar panels and wind generators) would be a sensible measure. Similarly moving to rainwater tanks for drinking water reduces the reliance on groundwater drinking water sources and increases household resilience following natural disasters.

Q36. An essential component of an effective emissions mitigation strategy is making carbon pricing economically meaningful, where the true cost of emissions is calculated into the costs of production.

Q37. New Zealand should adopt the “two baskets” approach so that the focus is on reducing carbon dioxide emissions in the immediate term. Using separate pricing schemes for long-lived and short-lived gases is a sensible policy setting.

Q38. New Zealand’s climate change policies should show global leadership and not be overly concerned about emissions leakages in other countries.

Q39. New Zealand has opportunities for an economic niche in specialised green technologies that are relatively small on a global scale, but significant in contributing to New Zealand’s Gross Domestic Product.

Q40. A long-term vision of a low-emissions economy might look like a total electric vehicle fleet, and large tracts of agricultural land and low-grade land cover converted to carbon sinks of indigenous vegetation for sequestration. In lower density rural areas energy efficient buildings would be supported by household-level renewable energy sources (domestic wind generators and solar panels), with households self-sufficient with rainwater for domestic consumption, re-using grey water, and comfortable with alternative non-reticulated sewage disposal, all leading to highly resilient households in the teeth of natural disasters. Urban areas would be compact and at higher densities than at present to minimise transport use. Energy efficient design and green technologies would be widespread with infrastructure networks optimised at subdivision level including solar farms, district heating and wind generation. Most industry would be based on an economic niche in the international market making high value-added products for a low-emissions international economy.