Canterbury
District Health Board
Te Poari Hauora ō Waitaha

Submission on Low Emissions Economy

To: Productivity Commission

Submitter: Canterbury District Health Board

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Proposal: The Productivity Commission is seeking comment to inform their inquiry into how NZ could reduce its domestic greenhouse gas emissions through a transition towards a lower emissions future, while at the same time continuing to grow incomes and wellbeing.

SUBMISSION ON LOW EMISSIONS ECONOMY ISSUES PAPER

Details of submitter

1. Canterbury District Health Board (CDHB).

2. We welcome the opportunity to comment on the New Zealand Productivity Commission's Low Emissions Economy Issues Paper.

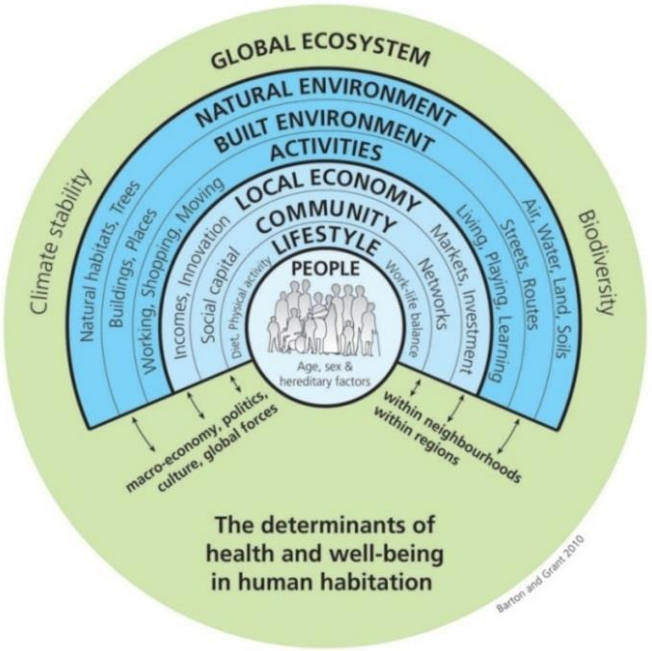
CDHB's interest in this consultation

1. The CDHB is responsible for promoting the reduction of adverse environmental effects on the health of people and communities and to improve, promote and protect their health pursuant to the New Zealand Public Health and Disability Act 2000 and the Health Act 1956.

2. The Ministry of Health requires the submitter to reduce potential health risks by such means as submissions to ensure the public health significance of potential adverse effects are adequately considered during policy development.

3. Health and wellbeing is influenced by a wide range of factors beyond the health sector. These influences can be described as the conditions in which people are born, grow, live, work and age, and are impacted by environmental, social, economic and behavioural factors. They are often referred to as the 'social determinants of health[1]. The diagram[2] below shows how the various influences on health are complex and interlinked.

[1] *Public Health Advisory Committee. 2004. The Health of People and Communities. A Way Forward: Public Policy and the Economic Determinants of Health. Public Health Advisory Committee: Wellington.*
[2] Barton, H and Grant, M. (2006) A health map for the local human habitat. The Journal of the Royal Society for the Promotion of Health 126 (6), pp 252-253. http://www.bne.uwe.ac.uk/who/healthmap/default.asp



Introductory comments linking climate change and health

4. Climate change, health and health equity are inseparably linked.[3]

5. As a result of climate change, New Zealand will face many adverse effects that may impact on an individual's health, wellbeing and ability to be a productive member of society. Leading health threats include water and food shortages, extreme weather events, heat related deaths and illness, food and water-borne disease, changing patterns of infectious disease and mental / psychological distress.[4] In New Zealand there will also be new health and social pressures relating to the arrival of climate migrant and refugee populations and flow-on health impacts from changes in global and local economies and policies in response to climate change.[5] Health impacts will depend on the extent and rate of warming in New Zealand, the adaptive capacity of individuals and society and the policies and programmes New Zealand chooses to use to mitigate and adapt to climate change.[6]

6. These impacts will not be felt equally across the population and will be influenced by factors such as geographic location and socio-economic status and will be disproportionately borne by the most disadvantaged populations.[7] Maori are at risk

[3] Climate Change and Health in New Zealand. Climate Change Policy Statement. New Zealand College of Public Health Medicine. 2013.
[4] Ibid
[5] Climate Change and the Right to Health for Maori in Aotearoa / New Zealand. Rhys Jones, Hayley Bennett, Gay Keating. Alison Blaiklock. Health and Human Rights Journal. Number 1 Vol 16. June 2014.
[6] Climate Change and Health in New Zealand. Climate Change Policy Statement. New Zealand College of Public Health Medicine. 2013.
[7] Climate Change and the Right to Health for Maori in Aotearoa / New Zealand. Rhys Jones, Hayley Bennett, Gay Keating. Alison Blaiklock. Health and Human Rights Journal. Number 1 Vol 16. June 2014.

of disproportionate impacts compared with non-Maori, not only because of differences in health and socio-economic status, but also because of indigenous relationships with the environment, customary practices such as collection of kaimoana with exposure to food-borne disease risk and differential access to health services.[8] The New Zealand College of Public Health Medicine's 2013 Policy Statement on Climate Change contains a summary of the main health impacts of climate change in New Zealand and the implications for Maori health.[9]

7. Many of the actions required by governments and private entities to mitigate and adapt to climate change can have health co-benefits.[10] These include reduction in heart disease, cancer, obesity, Type 2 diabetes, respiratory disease, motor vehicle injuries and improvements in mental health.[11] These co-benefits arise because some emission reduction measures impact on important determinants of health, especially energy intake (nutrition) and expenditure (physical movement)[12] and risks related to exposure to air pollution.[13] However, health co-benefits will not automatically flow nor will benefits improve health equity unless policies and interventions are specifically designed so that health related benefits accrue preferentially to those most disadvantaged and negative consequences minimised.[14]

8. There are significant opportunities to improve health outcomes and reduce health inequalities while transitioning to a lower-net emissions economy. This submission focuses on potential actions that will reduce emissions and offer health benefits.

9. The CDHB also emphasises in this submission the importance of a "Health in all Policies" approach[15] as a process for implementing the expectations associated with New Zealand's commitment to the Paris Agreement. This will ensure that any analysis of options to move to a low emissions economy considers the impact on the health of the population (both positive and negative) and any inequities that may be created or exacerbated by any climate change mitigation options taken.

[8] Climate Change and Health in New Zealand. Climate Change Policy Statement. New Zealand College of Public Health Medicine. 2013.
[9] Ibid
[10] How the low carbon economy can improve health. BMJ. 2012;344;e1018
[11] Climate Change and Health in New Zealand. Climate Change Policy Statement. New Zealand College of Public Health Medicine. 2013.
[12] Ibid
[13] How the low carbon economy can improve health. BMJ. 2012;344;e1018
[14] Climate Change and the Right to Health for Maori in Aotearoa / New Zealand. Rhys Jones, Hayley Bennett, Gay Keating. Alison Blaiklock. Health and Human Rights Journal. Number 1 Vol 16. June 2014.
[15] http://www.who.int/healthpromotion/frameworkforcountryaction/en/

Framework

(Question 2)

10. The framework that has been used in Chapter 3 of the Issues Paper (focusing on targeting mitigation opportunities of emissions at source) means that the Productivity Commission may not adequately consider other factors that could impact on reducing emissions and would also have significant benefits for the health and wellbeing of New Zealanders.

11. The CDHB agrees that consumption patterns could also be considered as a useful framework for analysis, with a focus on reducing demand for emission-generating activity. The main drivers of household consumption-related emissions in New Zealand are food, transport and housing utilities (accounting for 89% of emissions) with higher income households having higher emissions.[16] Within these key categories of spending, some specific categories emit the most; meat and dairy within food, petrol within transport and electricity use within housing utilities.[17] There are options to reduce emissions in these areas that have health co-benefits, as highlighted further on in this submission.

12. The inquiry could also further consider other ways of reducing emissions that relate to how we live. For example, urban design initiatives that improve density to reduce waste from urban sprawl (e.g. reducing requirements for increased infrastructure and transport), technologies that could facilitate community sharing of resources (for example ride sharing technologies to support car-pooling now and driverless vehicles in the future), encouraging behaviour change through an understanding of the impacts of choices made (e.g. electricity and waste reduction measures), potential for changes to work environments to reduce travel (e.g. moves to increased use of ICT to reduce air travel and daily commuting) could be considered.

[16] Greenhouse Gas Emissions in New Zealand: A Preliminary Consumption-Based Analysis. Carl Romanos, Suzi Kerr and Campbell Will. Motu Working Paper 14-05. Motu Economic and Public Policy Research. 2014.

[17] Ibid

Active and Public Transport and Better Urban Design

(Question 10)

13. The CDHB considers that policies and incentives to reduce use of single-occupancy private vehicles and encourage uptake of active and public transport should be considered as essential contributors to reducing emissions through transport (even more so than encouraging the use of electric vehicles). Moving to electric vehicles alone will not contribute significantly to health gains as motorised transport is responsible for the vast majority of deaths from road injuries and is a major contributor to sedentary lifestyles associated with obesity and other non-communicable diseases[18]. They also contribute to particulate matter which can contribute to health issues.[19] Electric vehicles also may be recharged from non-renewable sources, take a lot of carbon to produce as well as making no difference to congestion.

14. Active and public transport use are important contributors to health through increased physical activity (which has significant impacts on reducing heart disease, stroke and some cancers, as well as reducing symptoms of depression and anxiety), reduced air pollution (which impacts on major respiratory illness) as well as making cities more liveable and making it easier for people to connect with one another, which also improves wellbeing.[20]

15. Encouraging active and public transport use can be achieved through a number of approaches including better urban design, improving infrastructure, media and social marketing campaigns, travel demand management programmes in various settings including schools and businesses and other education programmes.

16. Good urban design encourages active and public transport and therefore emphasis should be placed on regulations and policies that facilitate good urban design planning. A systematic review of interventions to promote physical activity found that urban planning interventions in land use and transport were among the most effective, and better than approaches focused on individuals.[21] More densely populated cities tend to have a more balanced distribution of car/active/public

[18] How the low carbon economy can improve health. BMJ. 2012;344;e1018

[19] https://www.theguardian.com/environment/2017/aug/04/fewer-cars-not-electric-cars-beat-air-pollution-says-top-uk-adviser-prof-frank-kelly

[20] Active and public transport infrastructure: a public health perspective. Community and Public Health. Canterbury District Health Board. 2016

[21] How the low carbon economy can improve health. BMJ. 2012;344;e1018

transport mode share and the spatial structure of the city, in particular the relative location of homes, employment and amenities has a direct impact on the number and length of trips.[22] Making neighbourhoods more walkable is also associated with reduced risks of non-communicable diseases and encourages moving away from using cars for short trips.[23]

17. The CDHB suggests that a "Health in All Policies" approach to urban design should be encouraged as this would ensure that the health implications of urban planning decisions are considered. [24]

18. Reducing car usage and encouraging active transport requires policies and infrastructure that prioritises cycling and walking.[25] Commuter behaviour is heavily influenced by the type and perceived quality of infrastructure that is encountered on each trip. Prioritising the development of infrastructure such as building cycleway networks and cycling facilities such as cycle storage and good pedestrian networks and walking facilities (such as seating and shelters) in city centres and neighbourhoods is important in encouraging active transport use. More specific separation and traffic calming measures also contribute. The CDHB's Community and Public Health Unit has undertaken a literature review which provides further detail as to the types of infrastructure that make the most difference.[26]

19. Investment in and provision of transport network space for rapid transit / public transport infrastructure also needs to be prioritised in urban design decisions as it leads to both lower emissions and health co-benefits associated with the incidental walking that is usually involved.[27] Disadvantaged populations benefit most significantly from improved public transport that improves their independent mobility and access to goods, services, employment and education.[28]

20. Travel demand management (TDM)[29] policies should be required to be developed for all public sector organisations (including schools). It is particularly important in

[22] Active and public transport infrastructure: a public health perspective. Community and Public Health. Canterbury District Health Board. 2016
[23] Associations between urban characteristics and non-communicable diseases. Community and Public Health. Canterbury District Health Board. 2016
[24] For more information about a Health in all Policies approach see https://www.cph.co.nz/your-health/health-in-all-policies/ and for specific information on urban design see http://www.healthychristchurch.org.nz/media/36566/urbandesignandplanning.pdf
[25] Co-benefits to health of climate change mitigation – Transport sector. World Health Organisation.
[26] Associations between urban characteristics and non-communicable diseases. Community and Public Health. Canterbury District Health Board. 2016
[27] Co-benefits to health of climate change mitigation – Transport sector. World Health Organisation.
[28] Ibid
[29] https://www.nzta.govt.nz/resources/tdm-manual/

the case of new builds to incorporate TDM from the earliest stages. This would incorporate initiatives to encourage use of active and public transport options as well as ride sharing / car-pooling initiatives.

Food Systems

(Question 4)

21. Opportunities for reducing emissions in agriculture (as asked in question 4) needs to be considered within a broader context of opportunities within the wider food system; this is the context within which the response to this question has been framed below.

22. Food is a key contributor to health, health inequalities and carbon emissions. In New Zealand it is estimated that food makes up a third of CO2-e consumption-related emissions in households.[30]

23. Healthy eating, including increased plant and reduced red meat and animal fat consumption with a focus on lean meats and gaining essential nutrients through a balanced, whole food diet, would reduce emissions associated with food production and likely lead to reduced rates of bowel cancer and heart disease.[31] In addition, the increasing amount of energy-dense, nutrient-poor foods being consumed which are highly processed and packaged are not only poor for health outcomes but also have high environmental production costs.[32]

24. Urban design decisions also impacts on the food system. Urban sprawl decreases the productive land available close to cities, thereby increasing transportation costs. This adds to the cost of food, especially fruit and vegetables, and has a disproportionate impact on low income households and their ability to purchase healthy foods. Urban design decisions could also encourage the allocation of land for community food growing within subdivisions.

25. Eliminating food waste is another method for reducing emissions associated with food production. Nationally in New Zealand, 122,500 tonnes of food worth over $872 million is thrown out annually.[33] Education to encourage appropriate food

[30] Greenhouse Gas Emissions in New Zealand: A Preliminary Consumption-Based Analysis. Carl Romanos, Suzi Kerr and Campbell Will. Motu Working Paper 14-05. Motu Economic and Public Policy Research. 2014.
[31] Climate Change and Health in New Zealand. Climate Change Policy Statement. New Zealand College of Public Health Medicine. 2013.
[32] Sustainable development: The key to tackling health inequalities. Sustainable Development Commission. UK. 2010.
[33] https://lovefoodhatewaste.co.nz/food-waste/what-we-waste/

purchasing as well as on-site food waste disposal (composting) and effective waste stream management are possible solutions.

26. Moves to increase local food production (closer to the source of consumption), encouraging the purchase of seasonal and locally produced food and encouraging the growing of food by individuals will also impact both on emissions and health.

More Efficient Buildings

(Question 16)

27. The CDHB supports the need to consider the design of buildings as a way to reduce emissions. Better designed buildings which require low levels of heating and cooling will reduce emissions from burning solid fuel as well as reducing the electricity required. At the same time health outcomes associated with cold, damp housing will be improved.

28. Direct effects of cold homes on health include excess mortality from cardiovascular and respiratory disease, increased respiratory problems in children, increased illnesses such as colds and flu, mental health problems and the exacerbation of conditions such as arthritis.[34]

29. There is also considerable international evidence that air pollution causes excess morbidity and mortality particularly through increases in the incidence of respiratory and cardiovascular disease.[35] Urban outdoor air pollution is the eighth most common risk factor for death in high income countries.[36]

30. Retrofitting houses with insulation and clean heat options, including heat pumps and ultra-low emission burners, would reduce emissions and has been shown to increase indoor temperatures, decrease relative humidity, reduce energy use and improve the self-reported health of occupants.[37] The evaluation of a healthy housing programme in Canterbury, which targeted the high users of the hospital in winter, showed a massive 29% reduction in winter illness and hospital stays following insulation and heater installations.[38]

[34] Housing, home heating and air quality: A public health perspective. Community and Public Health. Canterbury District Health Board. 2012
[35] Ibid
[36] Ibid
[37] Ibid
[38] Healthy Homes – Investing in Outcomes CDHB 2016

31. Housing quality, including more energy efficient homes, can also have a mediating effect on fuel poverty. Therefore improving energy efficiency for low income households can create a condition of affordable warmth for many people.[39]

32. Suitable policies and incentives designed to increase the proportion of existing housing stock with insulation and ventilation, solar panels, especially for low income households, are an important way to encourage the public to take up opportunities to reduce the amount of energy needed to heat water and rooms. Particular attention needs to be paid to the private rental housing sector, who have been much slower to utilise subsidies and advice.

33. Energy efficiency programmes targeting low-income households also have non-energy benefits for different stakeholders and society as a whole. There are direct financial co-benefits that accrue to governments and energy providers, and property owners and participants and indirect economic co-benefits to participants, ratepayers, property owners, and society. There are also social welfare and livelihood co-benefits to participants, the local community and society as a whole. Examples include improved human health, reduced emissions, higher property values, improved appearance of the community, local job creation, lower school and work absenteeism, reduced unwanted household mobility, and potentially lower outlays on government or utility energy subsidies.[40]

34. For all the reasons outlined above, the CDHB supports the reinstatement of subsidies for clean heat and insulation in low income households.

35. Improving the efficiency of buildings in the design phase via improved codes for insulation, glazing, heat recycling etc is also supported as a public health approach to reducing the need for heating and cooling and improving the health of building occupants.

36. The CDHB is aware that coal is still used in many public buildings for process heat production, including hospitals and schools. CDHB is in the process of moving away from coal use at its hospitals and this will significantly reduce CO^2 emissions from CDHB. It should be mandated that public sector capital infrastructure development projects meet green standards and therefore should be sufficiently funded to allow

[39] Evaluating the co-benefits of low income energy –efficiency programmes. Heffner G, Campbell, N. OECD IEA 2011
[40] Ibid

for consideration of the long-term environmental impacts of energy and other design choices made. This is common in many other jurisdictions internationally.[41]

Energy generation

37. Clean energy sources either on-site or from sources such as hydroelectric power provide significant opportunity to move away from polluting sources whilst also maintaining profitability. Technological advancements and implementation of sustainable practises including stormwater first flush diversion and storage, passive solar heat generation and retention and utilisation of ground sourced heating (with appropriate mitigation measures to ensure no water contamination) provide opportunities to reduce overall energy consumption.

38. There is significant underutilised potential for energy generation from both solid and liquid waste disposal. Capturing of gases to use for energy generation has been incorporated into some waste disposal infrastructure including Christchurch's Bromley Wastewater Treatment Plant - https://www.ccc.govt.nz/services/water-and-drainage/wastewater/treatment-plants/christchurch-wastewater-treatment-plant/

39. Diversion of recycling and organics from disposal into municipal landfills has potential to reduce emissions from reduced transport costs and allows for reuse of materials that otherwise would take up landfill space and degrade and require the production of new products, which is inefficient both economically and environmentally.

Factoring in health co-benefits and impacts (Questions 31 and 33)

40. As outlined above, there is the potential for many health benefits to accrue as a result of a move to a more sustainable approach to economic development. Health and equity co-benefits associated with moving toward a low emissions economy also have the potential to significantly reduce costs on the health care system.[42] These co-benefits need to be considered in any options analysis undertaken.

41. Income is an important determinant of health and consideration will need to be given as to how to mitigate potential inequalities resulting from a move to a low emissions economy on those with less income. The CDHB recommends using

[41] https://www.informa.com.au/insight/tasmania-commits-to-green-ratings-for-new-public-buildings/
[42] Climate Change and Health in New Zealand. Climate Change Policy Statement. New Zealand College of Public Health Medicine. 2013.

health impact assessment methodologies (or similar)[43] to adequately consider health and equity impacts of options so that health inequalities that already exist are reduced and not further exacerbated by any changes proposed. For example, in the CDHB region, ECAN has successfully implemented an Air Plan which included a health impact assessment which focused specifically on fuel poverty and helped identify those most at risk of fuel poverty. The plan was changed to mitigate these risks where possible.

42. Because health and climate change are inseparably linked, the CDHB recommends that a Health in All Policies approach be implemented as a way to fully consider the opportunities and risks of moving to a low emissions economy.

Person making the submission

Evon Currie Date: 28/09/2017

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[43] http://www.health.govt.nz/our-work/health-impact-assessment/about-health-impact-assessment