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Tēnā koe

Transition to a lower net emissions economy

The New Zealand Nurses Organisation would like to briefly respond to your recent issues paper. We have consulted members and staff, including nurses with expertise, interest and employment in roles managing sustainable procurement, waste disposal, management and practice in hospital, community and general practice settings.

The impact of climate change on individual and population health over both short and long timescales has profound implications for the planning and management of health service delivery. Accordingly transitioning to a lower emissions economy is of paramount importance to our 48,000 members, who provide frontline health care in every health setting throughout the country and who understand how air and water quality, disasters, relocation, increasing zoonotic disease etc. impact on the mental and physical health of New Zealanders.

There is substantial evidence and numerous examples of effective “regulatory, technological, financial and institutional systems, processes and practices” supporting transition to a lower net emissions; prevarication and lack of political will and leadership remain the greatest barriers to the systematic reduction in emissions Aotearoa New Zealand signed up to with Kyoto Protocol decades ago. The goal of a ‘gradual’ transition is more of the same and NZNO strongly recommends commitment to URGENT, coordinated regulatory action to fast-track to a low carbon economy based on sustainable practices and increasing equity. We particularly note the effectiveness of the United Kingdom’s 2008 Climate Change Act, almost a decade ago, in providing a positive overarching direction and regulatory framework for action and innovation. Similar legislation is needed here.

Health industry/sector

NZNO is surprised that the health sector was not included in the industry sectors explored in your issues paper. Health accounts for the greatest proportion of government spending, and the health industry, including consumer access to health services, contributes to greenhouse gas emissions and should therefore be a prime target for mitigation, as happens internationally. We draw your attention to the co-benefits for health of effective action on climate change, and the international programmes and collaborations that have been established for many years eg Global Green and Healthy Hospital Network (GGHHN)¹ and the Climate and Health Alliance (CAHA)². There are many replicable examples of initiatives in both collaborations that have reduced costs and emissions and maximized the health and well-being of individuals and communities. The

¹ <http://www.greenhospitals.net/sustainability-goals/>

² <http://www.caha.org.au/>

GGHNN's goals indicate the areas where substantial gains are to be made:

- LEADERSHIP: Prioritize environmental health
- CHEMICALS: Substitute harmful chemicals with safer alternatives
- WASTE: Reduce, treat and safely dispose of healthcare waste
- ENERGY: Implement energy efficiency and clean, renewable energy generation
- WATER: Reduce hospital water consumption and supply potable water
- TRANSPORTATION: Improve transportation strategies for patients and staff
- FOOD: Purchase and serve sustainably grown, healthy food
- PHARMACEUTICALS: Safely manage and dispose of pharmaceuticals
- BUILDINGS: Support green and healthy hospital design and construction
- PURCHASING: Buy safer and more sustainable products and materials

As most of these areas are subject to regulatory control under public health, building, environmental, energy and other legislation, it should be possible to set a coherent range of meaningful and consistent standards to deliver lower net emissions and improve population and environmental health. The industry/sector approach is useful on a number of levels, and we urge the Commission to speak to sustainability officers in DHBs, to the Australian based CAHA (which many DHBs are members of) and to Ora Taiao, the New Zealand Health and Climate Alliance, comprising expert and committed health professionals who are working in these areas. Our understanding is that substantial progress has been made in recycling and reducing waste in packaging and pharmaceuticals, in more efficient purchasing (eg via PHARMAC's expanded role procuring medical devices and community medicines), but that there has been very little action with regard to food supply. Indeed the *opposite* course was set by the former Health Benefits Limited (HBL)'s perverse drive to centralise food and linen services, regardless of the implications for quality, security of supply, health, or community/regional wellbeing, and certainly with no consideration of the impact on emissions. A regulatory requirement to consider and account for environmental factors such as emissions may have ensured more lasting and effective results from the \$500 million public funding 'invested' in HBL by DHBs.

The updated New Zealand Health Strategy shows a marked shift from population based primary health care to a focus on new technologies; it will be important to ensure that energy efficiency is one of the criteria considered when telehealth applications are introduced. There is significant potential to reduce transport costs and improve timely access to health services, especially for those in rural areas, but the costs, and who bears them, must be fully accounted for. The energy requirements for big data processing, which is increasing exponentially, are as fundamental to health as to other sectors and it is critical to ensure a secure affordable power supply and protection of data. We suggest the government should reconsider the generous terms given to the Rio Tinto Group to power their aluminium smelter at Tiwai Point and instead explore the potential for utilising that considerable source of renewable energy for developing an international data processing centre in Invercargill, which has some experience in this area.

Lowering emissions by reducing energy consumption/wastage

Lifting the standards required for housing insulation and thermal efficiency (and providing support for homeowners to comply) is possibly the most powerful and effective action with proven co-benefits for health and equity as the extensive research has shown³. Preferentially subsidising the use of natural woollen insulation, which, unlike fiberglass insulation, is effective even when wet and is a fire retardant, could also benefit the declining wool industry.

In a similar vein, reducing energy wastage from inefficient excessive and poorly directed lighting, particularly

³ He Kainga Oranga, the Housing and Health Research Programme publications, retrieved <http://www.healthyhousing.org.nz/publications/>

street, sports and recreational area lighting would have significant public and environmental health benefits. There is a significant body of research examining the impact of artificial light at night (LAN) which can be harmful to the environment, and interferes with fauna and flora⁴, and human health, particularly cancers that may be influenced by melatonin^{5,6} as well as hypertension, obesity, sleep disruption and mental disorders⁷. This is one of the reasons that shiftwork, which mainly involves working at night under artificial lights, has been identified as a potential carcinogen and recognised as an occupational health risk factor^{8,9}. The relationship between exposure to LAN and breast and prostate cancers where, unlike other cancers, higher rates are observed in developed countries, has been thoroughly explored by Haim and Portnov who offer a range of very useful guidelines to regulators for measures to reduce harmful effects (Chapter 15), which we recommend your attention¹⁰. It is particularly relevant given the wholesale trend towards LED lighting, that blue light (shorter wavelengths) suppresses melatonin more than twice as much as light at longer wavelengths¹¹ because LED lighting is more efficient at shorter wavelengths.

In summary, we recommend that a bold approach and coherent national regulation is needed to deliver lower emissions within the shortest timeframe possible.

Naku noa, nā



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⁴ Rich, Catherine, and Travis Longcore, eds. *Ecological Consequences of Artificial Night Lighting*. Washington: Island Press, 2006.

⁵ Hansen J (2001) Light at night, shiftwork, and breast cancer risk. *J Natl Cancer Inst* (2001) 93 (20): 1513-1515. doi: 10.1093/jnci/93.20.1513

⁶ Navara KJ, Nelson RJ (2007) The dark side of light at night: physiological, epidemiological, and ecological consequences. *J Pineal Res* 43: 215–224. doi: 10.1111/j.1600-079x.2007.00473.x

⁷ Haim, Abraham and Portnov, Boris A. (2013) *Light Pollution as a New Risk Factor for Human Breast and Prostate Cancers* London: Springer. DOI 10.1007/978-94-007-6220-6. (Page 6)

⁸ Straif K, Baan R, Grosse Y, et al. *Carcinogenicity of shift-work, painting, and fire-fighting*. *Lancet Oncol.* 2007;8:1065–1066. IARC Working Group on the Evaluation of Carcinogenic Risks to Humans

⁹ Hansen J (2001) Light at night, shiftwork, and breast cancer risk. *J Natl Cancer Inst* (2001) 93 (20): 1513-1515. doi: 10.1093/jnci/93.20.1513

¹⁰ Haim, Abraham and Portnov, Boris A. (2013) *Light Pollution as a New Risk Factor for Human Breast and Prostate Cancers* London: Springer. DOI 10.1007/978-94-007-6220-6

¹¹ Harvard health letter. May 2012. *Exposure to blue light at night, emitted by electronics and energy-efficient lightbulbs, harmful to your health*. Retrieved October 2017. <https://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side>