Draft Taranaki 2050 Roadmap comments

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23rd June 2019

Firstly, I appreciate this opportunity to comment critically on the Roadmap. There are many aspects that I support, not least that 'we' collectively are starting to address these issues, thinking about the future. I have not included all points of agreement here below, where I focus mainly on aspects with which I disagree and/or have alternative proposals.

Some aspects of the Roadmap will have benefits beyond the 'just transition' approach, as building community resilience will also help with emergency response to natural disasters here on these 'shaky isles', living in the shadow of Mount Taranaki.

I have not had time to read the entire document and links, so my comments are based on a relatively quick scan of the document.

Perhaps I missed the reasoning, but why are climate disruption (eg. extreme weather events – storms, floods and extended dry periods, rising air and sea temperatures), sea level rise, changing ocean chemistry (acidification and deoxygenation) and plastic pollution not included as 'drivers' on the interactive map or in the Context section?

Earth, including New Zealand, is in the midst of a mass extinction event, caused by humanity living unsustainably, exceeding planetary boundaries on critical life-support cycles. The indicators are that these will continue to deteriorate in the foreseeable future, at least to 2050.

This is the emergency our best thinkers have been warning us of for more than five decades, at least since the 1960s, with Rachel Carson's Silent Spring, the Club of Rome's Limits to Growth, the Ehrlichs' Population Bomb, and James Lovelock and James Hansen on climate change, among many other cogent, coherent warnings. That we have largely failed to address these warnings brings us to this point.

Taranaki is not immune to these impacts, and as drawn, the map, as indeed the document more generally, presents a utopian vision that fails to acknowledge the major challenges that need to be addressed to achieve anything remotely like a just transition and avoid Dystopia. Although only three decades ahead, the biosphere and 'enabling environment' in which present and future generations will live will be vastly different to that which has nurtured us.

These changes are already exemplified by increasingly extreme weather events (e.g. extra-tropical storms) putting strain on our aging infrastructure, terrestrial and marine heat waves and wildfires disrupting ecosystems and agricultural / fisheries production, habitat loss and widespread use of artificial pesticides and fertilizers, all driving high rates of species' extinction. Changing ocean chemistry will exacerbate these negative trends, disrupting food webs and fisheries.

The Roadmap needs to reflect the fact that the climate emergency and related impacts are the main drivers of the urgency of this transition.

Rationale.

Chapter 1. Context states:

'The Productivity Commission found that three particular shifts must happen for New Zealand to achieve its low-emissions goals:

- **a transition from fossil fuels to electricity and other low emission fuels across the economy;**
- **substantial afforestation; and**
- **changes to the structure and methods of agricultural production.'**

Additional shifts relevant for the Roadmap include bolstering water and food security, coastal habitation and maintenance of crucial infrastructure more generally.

Economic risks and opportunities.

Economic 'opportunities', particularly those in the business-as-usual 'think big' mode (which got us into this mess in the first place) should not be a driver. As Albert Einstein famously stated:

'We cannot solve our problems with the same thinking we used when we created them.'

Unfortunately, the situation globally is already dire, because of decades of wasted opportunities, corrupt vested interests and our overarching, fundamentally flawed economic model of 'endless growth on a finite planet'.

Yet there remains a strong underlying sense of denial as to the urgency, despite cogent and increasingly strident warnings from our best thinkers, both nationally and globally, as introduced above.

As Herman E. Daly (renowned economist) noted:

'The economy is a wholly owned subsidiary of the environment, not the reverse'.

And

'Current economic growth has uncoupled itself from the world and has become irrelevant. Worse, it has become a blind guide'.

Hence, while focused on Taranaki, the vision needs to be more grounded within the emerging national, Oceania regional and global changes, many of which will be negatively disruptive.

The Roadmap should be more focused on addressing these impacts, and on restoring environmental 'services' of unpolluted soils, water and air, and fostering community resilience and social justice.

Community engagement, resilience and adaptation.

Significant focus should be devoted to building community resilience and adaptation, especially among young people, through education and training opportunities, and with vulnerable communities - those who are already being 'left behind' in our decreasingly egalitarian, neo-liberalized society.

Next generations of students, along with Iwi, unions and community groups can play crucial roles in the transition process, and their roles could be reflected more strongly in the roadmap. Mātauranga Māori can form a core part, with collaboration to achieve outcomes in lowering emissions, environmental restoration and improving our health and well-being.

Food security.

Continuing loss of insects, including pollinators, through pesticides, habitat loss / alteration and climate change will have cascading impacts on food-webs. At the same time, the climatic conditions under which horticultural food crops thrive are changing. Hence, ***significant focus needs to be given to food security, notably through diversification aiming for self-sufficiency and to contribute to national demand.***

Major questions exist over future export opportunities, given our geographical isolation and high cost of international transport. The latter may be alleviated by new modes of transport, although this is not a given, and the real potential costs and benefits of the much-touted Hydrogen economy need to be carefully evaluated (see later).

Taranaki's present economy is heavily focused on production of milk and related products for export, largely via high input industrial dairying; and on production of fossil fuels, in large part for manufacture of methanol for export and urea for use locally and in NZ more generally.

These are unsustainable over the timeframe of this roadmap.

For dairying, opportunities for regenerative organic approaches can be phased up to scale, with significant benefits in terms of greenhouse gas emissions, water quality, human health and (potentially) export opportunities. There has been a long-standing focus among some local farmers on regenerative and organic practices, and these need to be nurtured. Conversely, the polluting industrial business models of mass production advocated by Federated Farmers and Fonterra need a major and rapid rethink.

Afforestation programs could have stronger focus on food trees, contributing to diversification. Riparian plantings could also focus more on food production.

Energy.

I hold significant concerns re the viability and purpose of carbon capture and sequestration, as promoted throughout the Energy section. As an example:

"*Taranaki will be proactive in lowering NZ's national emissions by displacing high emissions from coal, potentially utilising CCS and enabling multiple new sources of energy… for storage and distribution… the existing petroleum industry can contribute with continued emission reduction and CCS through the transition…*"

CCS has been touted by the fossil fuel industry for decades, and will continue to be for decades ahead, promoted to justify further exploration and mining, yet there are very few actual working examples, and those few demonstrate that it is costly, risky (as a form of deep-well injection) and with additional risk from failure through leakage. Tim Forcey, an acknowledged expert in this field, speaking via skype at the recent Climate Justice Taranaki Community Conference, clearly explained the failure of CCS in cutting down emissions and its promotion by industry.

Statements in the roadmap to "*Implement CCS, where economically viable…"* do not address the fact that this process is designed to enable continuing with fossil fuel 'business as usual' rather than transitioning rapidly to clean alternatives. The focus on 'economic viability' needs to be couched in terms of Herman Daly's quotes (see above), and also in light of opportunities for a sovereign monetary system replacing the present privatized, mostly foreign-owned debt-based system.

The Roadmap should not promote CCS, at risk of marginalising renewable energy opportunities.

Stating that *'Energy security is about developing a basket of solutions so the right technology can be selected for the appropriate solution, versus picking a winner'* is a sensible approach.

But this approach seems not to be adopted, as CCS and Hydrogen ('brown, blue or green' or all of the above?) appear favoured, if not already selected. This despite concerns during the 2050 workshops against *'putting all the eggs in one basket'* and *'picking a winner too early'*.

The Concept report (January 2019) is highly critical of Hydrogen and its findings need to be incorporated in the Roadmap.

Although not addressed in the draft Roadmap, I am also concerned about the promulgation by Venture Taranaki of the meme of 'green urea', as per my letter to the editor of Taranaki Daily News, published 3rd June 2019:

Is synthetic urea 'green'?

In your story on green hydrogen (Daily News June 1) Justine Gilliland, CEO of Venture Taranaki, commented that production of 'green urea' will benefit food production. Should synthetic urea ever be branded 'green'? Integral to the intensification of industrial dairying, urea is a major contributor to pollution of waterways and greenhouse gas emissions. Urea releases nitrous oxide, a potent and long-lived greenhouse gas with heating potential almost 300 times that of carbon dioxide. According to Stats New Zealand, more than 90 percent of nitrous oxide emissions are from agricultural soils, mainly from animal urine and nitrogen fertilizer, the application of which has increased ten-fold since 1990, used in ever greater quantities across larger areas. Nitrous oxide emissions here increased by 50 percent from 1990, and contribute more than 20 percent of all agricultural emissions. If we are focused on reducing emissions, improving water quality, and creating a 'Just Transition', it would be beneficial to reduce stock numbers and synthetic urea, rather than pretending it is green, despite production from 'green hydrogen'. Increasing numbers of farmers are using biological, regenerative and organic methods productively and profitably. With more than 2,000 square km of farmland operating under biological principles, and with premiums paid for organic produce, New Zealand has great potential for a win-win here, living up to our 100 percent pure, clean green image. This will, however, pose significant challenges for the synthetic fertilizer industry, requiring a major shift from outdated, polluting business models by Fonterra, Federated Farmers and others.

My other key concerns include the actual potential of a Hydrogen industry in reducing emissions; and the environment and social impacts of mining (mostly overseas) for raw materials needed to develop an over-capacity of renewable energies to enable production of sufficient quantities of 'green' hydrogen for export.

These issues are not represented in the roadmap, which risks being co-opted on energy by the same 'business-is-booming and to hell with the consequences' thinking that got us into this mess in the first place. See Einstein quote above.

Finally, there is a strong case to develop / expand bioenergy production from farm and forestry wastes, along with other renewable sources of energy (eg. wave) that are decentralized and thus more resilient to extreme events.

Given the above, the new energy centre should provide support for community-based, distributed renewable energy projects, providing demonstration and results in GHG emission reduction and community resilience.

Food and Fibre.

The vision for farms with *'multiple farm outputs that promote diversified land use, provide long-term stable employment opportunities, and use low-emission practices…'* is worthwhile, as is increased focus on production of plant-based proteins.

However, it is not enough to simply wish for *'a balanced mix of sheep, beef, poultry, dairy, forestry, wetlands, food crops, native bush, and sustainable farms.'* By 2050, indeed much earlier, Taranaki agriculture needs to transition off the industrial polluting model, as noted in my Daily News letter above. There are valid alternative, regenerative models already developed locally. These need to become the norm, and rapidly.

Tourism.

The vision is strong, although potentially overly optimistic. There are significant risks with expecting international tourism to be a major source of future employment and income for Taranaki, and indeed NZ more generally. This is because of our geographical isolation and the climate impact from air transport, the potential for it to increase significantly in pricing, depending on success in development of alternative fuels and a future realistic price on pollution.

This section would benefit from inclusion of alternatives to high through-put tourism and practical steps to ensure sustainability. Importantly, so-called carbon offsets for flying are fraught with problems, and have failed in many cases.

Despite my concerns raised above, international air travel is one aspect that could potentially benefit from development of hydrogen, or other non-polluting sources, as an energy carrier.

Maori economy; People and Talent; and Innovation and R&D.

These are intricately linked and offer strong opportunities for developing greater self-reliance, which should be the foundational aspect of the roadmap here in Taranaki, as elsewhere.

The focus on lack of investment fails to consider options for future funding from developing a 'sovereign money' system, rather than continuing with present privatized (mainly foreign) banking practices based on debt creation.

Infrastructure and Transport.

It is encouraging that resilience and localised solutions, including community micro-grids to boost energy affordability and resilience, are valued. Potable water supply and waste treatment deserve similar localized foci. There are numerous pros and cons that need to be analysed, and here also the new energy centre can play a role.

The Parihaka renewable energy case study should also be considered carefully in respect of local solutions. I am also encouraged by the vision for increased public transport, including a low-emissions rail network; fewer cars, and re-design of roads to support active transport and allow for more green space.

As introduced above, it is crucial to build infrastructural and systemic preparedness to extreme climate events, including capability of civil defence to deal with climate emergencies and resilience of basic services.

One of the more tractable issues is the collective infrastructural and human impacts of erosion from increasing storminess and rising sea level on safety / security of coastal habitation, electricity supply and transport. MfE and local government are addressing this, as is the insurance industry. Given Taranaki's long, storm-battered coastline, these deliberations will prove crucial to the Roadmap.

The Tasman Sea, as with oceans globally, is becoming more 'stormy'. Wave heights and wind strengths are increasing and will continue to do so as more heat energy is absorbed by the atmosphere and oceans. Taranaki had several 'near-misses' in the last few years, including Ex-Tropical Cyclones Fehe' and Gita, and more are certain to arrive.

Sea level will also rise at increasing rates in coming decades. IPCC calculations of rate of rise are likely to be conservative. With the rapidity of change in polar ice-sheets, their growing instability and continued climate forcings and feedbacks, sea level may rise by a metre over the next three decades, as occurred 125,000 years ago, during the Eemian high stand.

Measures to help ensure infrastructural resilience in water, food, energy and transport are crucial.

Environmental Sciences and Regulation.

It will be our life-supporting environment, our biosphere's future 'health', that will define the success or otherwise of the Roadmap - of a future for people in Taranaki and further afield.

Environmental science has shown us that we are presently in the 6th great extinction event in Earth's long history, has elucidated its many causes, and demonstrated that our collective 'footprint' is unsustainable. Put simply, we need to change radically if we hope to pass on a viable future for our children.

The main vested interests of concern in respect of the 2050 Roadmap in New Zealand are industrial agriculture, operating through the lobby group Federated Farmers and the large dairy coops, and the fossil fuel industry. These form an alliance in Taranaki through the agricultural reliance on production of fossil fuel-derived urea, and have held undue sway on policy and legislation for decades, including development and amendments to the RMA, CMA and EEZ-CS Act.

To achieve those vested legislative gains, industry has employed a premeditated strategy of lobbying governments and confusing the public over the past 40 years, with stunning success both here and internationally. This is THE main reason we are presently in a climate emergency.

The 100 carbon majors and their smaller colluding cohorts have known of the massive impacts of their industry on climate, sea level, ocean chemistry and pollution by 'waste plastic' since at least the 1980s.

Yet last year, globally, more greenhouse gases were emitted by humans to the atmosphere than at any time in our history, and despite our small overall contribution, New Zealand is among the highest per capita emitters. It is wishful thinking to believe that industry will *'contribute with continued emission*

reduction', at least not until forced to do so by legislation, such as a carbon tax, rational revisions of the RMA, CMA and EEZ-CS Acts to close the gaping emissions loopholes and ultimately the inclusion of ecocide as an international crime under the Rome Statute.

Regulatory capture was raised repeatedly at the regulation workshop, but is not addressed in the roadmap.

It is foolhardy to expect industry to do anything other than act in its own self-interest at the continuing expense of our biosphere – an 'externality'. See the Einstein quote above.

It is crucial to have reliable, independent, quantitative indicators of environmental status and trends.

It is also crucial to have a regulatory regime that is fit for purpose (i.e. not corrupted via regulatory capture by vested interests).

The roadmap would benefit from a stronger focus on development of an enabling regulatory regime for cooperative ownership and investment initiatives that are sustainable and community focussed.

Lyndon DeVantier,

24th June 2019