

# Climate Justice Taranaki (CJT) Submission on the 2021 Draft Advice of the Climate Change Commission

## I. The Key Points

1. We need to rapidly shift to a circular economy that is largely self-sufficient and resilient to extreme climate chaos, notably via downsizing our highly emissions-intensive export economy (e.g. dairy & meat, forestry, tourism) and developing locally sustainable production that supports fair employment and gives effect to Te Mana o Te Wai.
2. To best achieve this transition, the central government must subsidise local governments in making structural changes and infrastructural investments to enable the public sector and communities to downshift energy demands and foster more sustainable lifestyles.
3. The government needs to protect workers and families from massive dislocation and strengthen financial safety nets for communities, iwi and hapū , as we transition away from emission intensive industries. A major overhaul of our tax and welfare systems is urgently needed to build a sustainable economy that is reliant on more equitable wealth sharing.
4. We support the CCC's advice for an end to coal for food processing and a substantial reduction in natural gas use overall.
5. The CCC's advice on agriculture needs to be much stronger, including more substantial stock reduction, and support for those who want to shift to regenerative agriculture or food production following mātauranga Māori. There also needs to be a clear time frame for phasing out synthetic nitrogen fertilisers and immediate bans on the import of 'blood phosphate' from the Western Sahara and palm kernel extract (PKE) from Southeast Asia.
6. Shift efforts from exotic forestry to protecting all remaining natural vegetation and wetlands, and rewilding Aotearoa at a grand scale.
7. Shift focus from electric vehicles to shrinking private car ownership and providing efficient public transport that is affordable or free.
8. Stop wasting time and public resources on hydrogen, especially in Taranaki where it's being hijacked by the oil and gas and petrochemical industries to perpetuate environmental destruction.
9. Dismantle the dysfunctional emissions trading scheme (ETS) or at the very least, stop giving emission intensive industries free carbon units. Introduce a fair carbon tax that does not penalise low-income earners.

## II. Introduction

Overall we applaud the Climate Change Commission Draft Advice for its broad and courageous perspective on the massive changes that are needed for Aotearoa New Zealand to fulfil its commitment under the 2015 Paris Climate Accord. This concrete statement of blunt reality is long overdue.

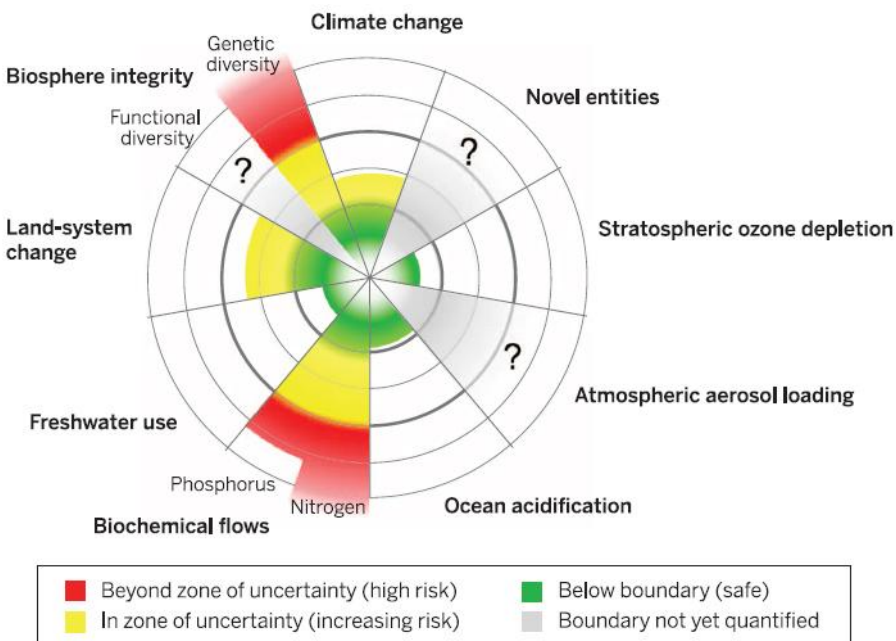
In general, we feel there are three overarching areas that need to be further explored:

- 1) Our export-driven economy,
- 2) Support for local governments, and
- 3) Protection for workers and families.

Below we elaborate on the three areas.

### 1. We Need to Rapidly Downsize Our Export Economy

Climate change is the biggest crisis of our time, but it is not the only one. Globally we have already exceeded four of the nine planetary boundaries within which humanity is safe to operate: climate change, biodiversity loss, biochemical flows (nitrogen and phosphorus) and land system change (Rockstrom, et al. 2009<sup>1</sup>; Steffen, et al. 2015<sup>2</sup>).



<sup>1</sup> <https://www.stockholmresilience.org/download/18.8615c78125078c8d3380002197/ES-2009-3180.pdf>

<sup>2</sup> <https://science.sciencemag.org/content/347/6223/1259855/tab-pdf>

In Aotearoa New Zealand, our export-driven economy is responsible for the bulk of our greenhouse gas emissions, water pollution, soil erosion, biodiversity loss, ecosystem degradation and widening inequality. We have now lost 90 percent of our wetlands and 65 percent of our native forest while some 40 percent of our land has become exotic grassland<sup>3</sup>.

The most obvious example of an export-driven industry in NZ is agriculture. Consider the amounts of native habitats that have been destroyed for dairy and meat production, the rivers that have been polluted, the contaminated drinking water, the soils that have been eroded away or compacted, the amount of GHGs from production, processing and transport, the debt<sup>4</sup>, <sup>5</sup>, <sup>6</sup> levels of the dairy industry, the disproportionately high suicide<sup>7</sup> rates among farmers, and so on. Is our agricultural sector really 'world-leading' and deserved to be protected in the current form?

The advice on agriculture is meek because the goal is set to maintain today's production levels, predominantly for export. It also assumes that farmers would continue to achieve productivity improvements in line with historic trends. It fails to acknowledge the wide-ranging impacts of an export driven industrial agriculture model, and the co-benefits of the alternatives. The latter include diversification, a shift from volume to value, niche, sustainable production<sup>8</sup> and more focus on domestic markets.

NZ's forestry is also export driven, worth \$6.4 billion in 2018, and supported by an estimated 1.66 million hectares (6% of NZ's total land area) of net stocked planted production forest as of April 2020<sup>9</sup>. Nearly half of the forestry products go to China while at least 50 other countries take the rest<sup>10</sup>. Imagine the transport emissions involved that are not accounted for by any nation including ours.

Tourism has been the top export/foreign revenue earner, at least pre-Covid. Though less obvious, tourism is far from benign. In a recent interview, the Parliamentary Commissioner for the Environment described tourism as the 'Elephant in the room' in terms of its impacts on climate, ecosystem integrity and local communities<sup>11</sup>. The commissioner urged the government to take advantage of the current pause in tourism resulting from Covid to reset.

Its follow-up report on tourism offered four proposals: 1) a Departure Tax 2) Environmental criteria for future tourism infrastructure funding 3) Tightened rules on conservation lands and waters 4) Strengthened standard for self-contained freedom camping<sup>12</sup>.

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<sup>3</sup> <https://www.mfe.govt.nz/publications/environmental-reporting/environment-aotearoa-2019>

<sup>4</sup> <https://www.nbr.co.nz/article/dairy-debt-major-concern-nz-economy-nzsa-conference-told-b-178651>

<sup>5</sup> <https://www.nzherald.co.nz/business/fonterra-debt-under-spotlight-after-196m-loss/7YGFTZTJO6EKYLB7DIMT6ZLIAY/>

<sup>6</sup> <https://www.newshub.co.nz/home/rural/2020/10/fonterra-sells-farms-in-china-to-pay-down-debt.html>

<sup>7</sup> <https://www.stuff.co.nz/business/farming/99964077/farmer-suicides-highlight-vulnerability-as-official-figures-rise-for-past-year>

<sup>8</sup> <https://home.kpmg/content/dam/kpmg/nz/pdf/June/agri-agenda-2017-kpmg-nz.pdf>

<sup>9</sup> <https://www.mpi.govt.nz/forestry/new-zealand-forests-forest-industry/forestry/new-zealands-forests-statistics/>

<sup>10</sup> <https://www.mpi.govt.nz/forestry/new-zealand-forests-forest-industry/forestry/wood-product-markets/>

<sup>11</sup> <https://www.rnz.co.nz/national/programmes/ninetoon/audio/2018784289/tourism-is-not-benign-and-must-change-environment-commissioner>

<sup>12</sup> <https://www.pce.parliament.nz/publications/not-100-but-four-steps-closer-to-sustainable-tourism>

Clearly it is imprudent to keep business as usual. We cannot simply substitute all fossil fuel energy with renewable energy technologies or use methane vaccines to suppress methane generation in cows, to perpetuate unsustainable export industries and economic growth. In a recent lecture titled '*Slower by design, not disaster – Managing without Growth*', Canadian Professor Emeritus Peter Victor eloquently explained the impetus behind zero-growth economics<sup>13, 14</sup>.

Circular economy<sup>15</sup> looks beyond the current 'take-make-waste' extractive industrial model, entails designing waste out of the system by maximising the life cycles of materials. It is already happening in Aotearoa<sup>16</sup>. The Ministry for the Environment's Regulated Product Stewardship needs to be supported and strengthened<sup>17</sup>.

Doughnut economics proposed by Professor Kate Raworth refines the circular model with an inner circle of social foundation or minimal social standards. The aim is that "*no one falls short on life's essentials (from food and housing to healthcare and political voice), while ensuring that collectively we do not overshoot our pressure on Earth's life-supporting systems, on which we fundamentally depend...*" explained Raworth<sup>18</sup>. The 'Amsterdam City Doughnut' was recently launched as a transformative tool for downscaling the 'doughnut' holistically<sup>19</sup>.

Indeed, to have a chance of pulling back planetary boundaries that we have breached, and to responsibly contribute our fair share to reigning in global climate and social crises, we must rapidly downsize our export economy which carries a hugely oversized energy and resource footprint. In place of that, we must nurture and grow a thriving, self-sufficient domestic economy that is resilient to extreme climate chaos.

The CCC needs to recommend major investment in knowledge banking of sustainable practices to meet local needs sustainably. This would reduce the need for importation with this being complicit in deforestation, pollution, and workers exploitation overseas, as well as massive freight emissions that remain unaccounted for.

Ecologically sustainable food production is paramount, not just for Aotearoa, but globally. However, the CCC clearly acknowledges that "*the role of Aotearoa in helping to address global food security challenges is likely to be limited*" (CCC Evidence ch12). Our real contribution to the world more likely lies in research and technical innovation, and indeed in reducing emissions and pushing for effective global efforts to reduce climate impacts on food sustainability, as the CCC concludes.

Dairy scientist Danielle Appleton warns that our dairy export model (70 percent of NZ's milk is turned into food ingredient powders for export) is facing fierce competition from emerging

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<sup>13</sup> <https://www.resilience.org/stories/2019-02-20/managing-without-growth-slower-by-design-not-disaster/>

<sup>14</sup> [https://degrowth.org/wp-content/uploads/2011/05/Victor\\_Growth-Degrowth-and-Climate-Change.pdf](https://degrowth.org/wp-content/uploads/2011/05/Victor_Growth-Degrowth-and-Climate-Change.pdf)

<sup>15</sup> <https://www.ellenmacarthurfoundation.org/circular-economy/concept>

<sup>16</sup> <https://www.circulareconomy.org.nz/>

<sup>17</sup> <https://www.mfe.govt.nz/waste/product-stewardship-responsible-product-management/regulated-product-stewardship#about>

<sup>18</sup> <https://www.kateraworth.com/doughnut/>

<sup>19</sup> <https://www.kateraworth.com/wp-content/uploads/2020/04/20200406-AMS-portrait-EN-Single-page-web-420x210mm.pdf>

technologies such as plant protein and synthetic yeast-based dairy. Using examples like whey protein powder and A2 milk developed here, and Turners & Growers' team creating climate change resistant apple trees, Appleton emphasized that we should be *"selling smart ideas"*. *"We can help feed the world by showing others how to grow and process food in a smarter way, not selling as much stuff" but "ideas... that don't cost us anything to ship to the other end of the world"*, Appleton 2019<sup>20</sup>.

Domestically, we need a major push for local food production to feed our communities especially as climate chaos becomes more prevalent and we can no longer rely on imported foods. Investing in local, diverse, regenerative food production and revitalising mātauranga Māori have the potential to drive a thriving local economy, support healthy communities and reduce emissions and wastes. Likewise, growing trees for timber and fibre to support our own transition away from emission intensive construction materials like steel and cement will have numerous advantages over the continuation of exotic pine forestry destined for export.

Furthermore, a nationwide rewilding programme will provide jobs, with the potential to compensate some of those lost by various export dependent industries, and bring back health and wellbeing to nature and people<sup>21, 22</sup>.

## **2. Central Government Must Subsidise Local Governments in Making Structural Changes and Infrastructural Investments**

Significant structural changes and infrastructure investment will be required to enable the public sector to move to carbon neutral by 2025<sup>23</sup> and for Kiwis to make the lifestyle changes that are necessary. These, in turn, will require significant support from central and local governments, whether it is to replace coal/gas boilers with electric or bioenergy systems, remodelling cities to become walkable<sup>24, 25, 26</sup>, creating urban villages<sup>27</sup> or subsidising farmers to rewild some of the land.

One case in point, the CCC's call for local authorities to facilitate increased uptake of public and active transport is good, but the only feasible way to get a large number of people out of their cars quickly is to make public transport efficient, convenient, affordable and, in some cases, free. Local councils can't do this unless the central government repeals the law requiring public transport to be 40% user pay, and subsidise local councils in making public transport free and efficient (frequent enough buses, covering the right routes). Right now all NZ councils are dealing with a major infrastructure deterioration and significant rates rises - moreover they're limited in non-rates methods of funding. The CCC should acknowledge the major challenge of

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<sup>20</sup> <https://www.youtube.com/watch?v=4Nx0O6h6jfQ>

<sup>21</sup> <https://rewilding.academy/rewilding/sir-david-attenborough-rewilding-our-planet/>

<sup>22</sup> <https://rewildaotearoa.org.nz/>

<sup>23</sup> <https://www.beehive.govt.nz/release/public-sector-be-carbon-neutral-2025>

<sup>24</sup> <https://localgovernmentmag.co.nz/walkable-cities/>

<sup>25</sup> <https://www.hotcity.co.nz/latest-updates/walkable-city-centre-good-economy>

<sup>26</sup> <https://www.greaterauckland.org.nz/2013/10/16/jeff-speck-the-walkable-city/>

<sup>27</sup> <https://sustainingcommunity.wordpress.com/2016/09/06/urban-village/>

providing cost effective public transport in low density rural/provincial regions, rather than purely focussed on urban areas.

Furthermore, while we understand the CCC's advice focuses on climate mitigation, it would be helpful to acknowledge the real, far-ranging challenges and costs of climate adaptation and resilience, from managed retreat from the coast to supporting communities in distributed energy and water supply.

### **3. We Must Protect Workers and Families from Massive Dislocation**

The shutdown and downsizing of polluting industries to meet NZ emissions targets has the potential to cause massive dislocation of NZ workers. Coal Action Network Aotearoa, in its Jobs After Coal (2014/2015)<sup>28</sup> laid out a just transition pathway for coal workers which included skill audit, transfer, retraining and community planning. We strongly support the CCC recommendation that *"the Government develop an Equitable Transition Strategy to support an equitable inclusive and well-planned climate transition"* and to *"ensure that they are including young people, regional Aotearoa, low-income communities, some Māori and Pasifika and people with disabilities to make sure they benefit from the opportunities and are not disproportionately impacted."* (Advice p.19). We also support the CCC's emphasis on the need to ensure that Māori communities are appropriately resourced for the transition and to *"co-develop plans to make this happen"* and *"recognise people are the experts - our communities know what actions need to be taken to benefit or empower them."*

Moreover, we feel this recommendation could go further in specifying the financial support that workers may need while retraining for suitable careers in our new low emissions economy. Options the CCC could suggest include a universal Guaranteed Minimum Income (GMI)<sup>29</sup>, paid for by a Wealth Tax<sup>30</sup>, to every New Zealand citizen under any circumstances at the level of an average wage and indexed for inflation.

We also appreciate the CCC's challenge to the government to implement funding and financing mechanisms to enable emissions reductions plans to be implemented effectively and to address *"distributional"* effects of policy change both now and for future generations. Given the ongoing debate about the appropriate way to fund the COVID19 recovery, it would be helpful for the CCC to suggest some possible financing alternatives, such as direct monetization or money financing<sup>31</sup> which leaves no debt burden on future generations (Positive Money, 2021)<sup>32</sup>.

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<sup>28</sup> <https://coalaction.org.nz/jobs-after-coal>

<sup>29</sup> Author Max Rashbrook proposes that a non-universal but unconditional GMI of \$22,000 could be an affordable way of providing generous support for those who are truly in need without layers of bureaucracy. Rashbrook also calls for greater funding for active labour market programs which provide high quality skills training.

<https://www.stuff.co.nz/national/the-detail/300016192/the-detail-could-a-universal-basic-income-work-in-new-zealand>

<sup>30</sup> [https://www.greens.org.nz/research\\_shows\\_new\\_zealanders\\_want\\_income\\_support\\_increased](https://www.greens.org.nz/research_shows_new_zealanders_want_income_support_increased)

<sup>31</sup> <https://www.scoop.co.nz/stories/PO2102/S00122/treasury-advice-to-government-lacks-courage.htm>

<sup>32</sup> [https://www.parliament.nz/en/pb/petitions/document/PET\\_108140/petition-of-don-richards-the-reserve-bank-covid-19-recovery](https://www.parliament.nz/en/pb/petitions/document/PET_108140/petition-of-don-richards-the-reserve-bank-covid-19-recovery)

A total reform of the currently unfair, volatile electricity pricing<sup>33,34</sup> regime would also help workers who may be displaced and their families. The Engineers for Social Responsibility demand change to our wholesale electricity market so that it gives precedence to renewable electricity, and a properly regulated and controlled electricity market which reflects the real cost of electricity generation. These will provide real incentives for more renewably generated electricity, rather than nonrenewables, and immediately reduce electricity prices.

Dr. Geoff Bertram of Victoria University explained that currently, most of NZ's bulk electricity is produced at low cost but is paid for as if it is high cost generation. This anti-competition arrangement delivers vast profits to the power plant owners (1/3 government, 2/3 private corporations) while competition is limited to retailing of over-priced electricity. Bertram calls for an overturn of statute law that forms the "*iron cage*" of neoliberal legislation<sup>35</sup>.

### **Iron Cage of the Law** (Letter to the editor - Dominion Post 25th August 2020)

This could indeed be a good time for New Zealand to step out from under the shadow of neoliberalism, as several big names said in "NZ's next economic revolution" Dominion Post (Aug 22). But no political party proposed to overturn the looming edifice of statute law that casts the shadow.

The Commerce Act 1986 stripped our common law protections against monopoly.

The State-Owned Enterprises Act 1986 turned providers of essential services into profit-focused predators.

The State Sector Act 1988 degraded the public service.

The Employment Contracts Act 1992 smashed unions and opened the path to low wages and inequality.

The Public Finance Act and Fiscal Responsibility Act locked fiscal policy and policy thinking into a cramped austerity box.

The Ministry of Works and Development Abolition Act 1988 left public works dependent on opportunistic private contractors.

The Electricity Industry Reform Act 1998 has left us an unproductive Frankenstein monster with its knee firmly on the throat of our poorest households.

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<sup>33</sup><https://www.nz.co.nz/news/business/438143/meridian-contact-facing-hefty-bills-consumers-to-get-refunds-after-undesirable-trading-situation>

<sup>34</sup><https://www.nz.co.nz/national/programmes/ninetonoon/audio/2018789154/brace-for-higher-power-bills-amid-volatile-wholesale-market>

<sup>35</sup> [https://www.energywatch.org.nz/issues/EW83\\_9-2020.pdf](https://www.energywatch.org.nz/issues/EW83_9-2020.pdf)

Alternative options abound, but while the iron cage of neoliberal legislation holds our politics prisoner, elections are reduced to mere beauty contests. A pity.

Geoff Bertram, Karori

The health of a nation and its economy depends on the wellbeing of each individual and family. The many social problems notably homelessness, child poverty, family violence and mental health decline, are indicative of extreme inequality. It is also time to truly recognise women's contribution to the wellbeing of the society and economy<sup>36</sup>. A wellbeing budget is not enough. A major overhaul of our tax, welfare and housing<sup>37, 38</sup> systems are urgently needed to build a sustainable economy that is reliant on more equitable wealth sharing.

### III. Commission Recommendations We Wish to Strongly Endorse

- The CCC's unequivocal assertion that the Zero Carbon Act isn't sufficient to uphold NZ's commitment to limit warming to 1.5 degree Celsius.
- The emphasis on ensuring an inclusive, equitable and well-planned transition, to minimise disruption and inequalities, maximise the opportunities, and be enduring as a result.
- The challenge to local and central government to establish more effective ways to incorporate the views of all Kiwis into the transition process (eg the Citizens Assembly model).
- The clear statement that we need to end the use of coal.
- The emphasis on planting new permanent native forests, as opposed to exotic plantation forests, to build enduring carbon sinks and deliver benefits for erosion, soil health, water quality and biodiversity.
- The call for more compact urban design to facilitate better uptake of public and active transport.

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<sup>36</sup> There is a long-standing and obvious inequity in there being no accounting of payment for reproductive and unpaid labour of women's contribution to NZ's economy. The current childcare service is limited (usually only available for 40 hours a week and 40 weeks per year), expensive and generally of low quality. With the increasing difficulty in travel and other problems associated with Covid, the wellbeing and development opportunities for children and Mothers are further compromised. This obvious structural failure continues to oppress women. A payment replacement such as they have in Scandinavian countries should be implemented as being long overdue. It would reduce existing inequities and prevent further inequities against Mothers and their children specifically. It would improve social outcomes and cohesion in communities considerably and immediately.

<sup>37</sup> Our current systems penalise the elderly in terms of support by gouging the "family home" to pay for care often to the detriment of partners or children (Family Proceedings Act) which may become a bigger issue as housing gets more and more problematic as it will and families need to access their legal entitlements to be housed.

<sup>38</sup> <https://www.rnz.co.nz/news/on-the-inside/439145/opinion-non-homeowners-paying-the-cost-of-covid-19-recovery>



- The call to replace high energy construction materials such as steel and cement with timber. We feel the CCC should also set deadlines for phasing out steel and cement.
- The call for low interest loans to help existing homeowners make their homes more energy efficient.
- The endorsement of a future NZ as a circular economy that produces very little waste. Waste disposal as with industrial pollution should be charged back to the company and point of origin to enable proper reuse and recycling to stop toxic waste going to landfill in NZ or anywhere else. Due diligence must be paid to regulation against poor practice or toxic materials, associated with any imported goods along their supply chains.

## IV. Specific Areas of the CCC Advice We Feel Need to be Revisited

### Focus

- The CCC needs to ensure the focus remains on industries and Government entities<sup>39</sup> causing the bulk of GHG emissions, environmental impacts and social injustice, rather than penalising individuals<sup>40</sup> or limiting their access to resources they need to live a decent life.

### Agriculture

- As expressed earlier, the advice on agriculture from the CCC is far too weak. It appears that it has been formulated to maintain the status quo to a large extent, despite the urgent need to reign in our much oversized agricultural emission, and the obvious many co-benefits of transitioning away from industrial agriculture. Indeed ending fossil fuel-derived urea and substantially reducing all nitrogen fertilisers will also protect our freshwater and the health of our people<sup>41, 42</sup>. We are concerned that the advice may have been restrained under the influence of industry lobbying, misinformation<sup>43</sup> from vested interest or pressure from government agencies<sup>44</sup>. We feel that MfE would benefit from

<sup>39</sup> Military activities worldwide are the largest emitters and cause of human sufferings while foreign rocket companies privatise the access to space without regards to curbing emissions or inhumane military operations overseas  
<https://www.theguardian.com/environment/2019/dec/16/the-climate-emergency-military-emissions-and-greta-thunberg>  
<https://www.rnz.co.nz/news/business/437449/rocket-lab-confirms-public-listing-through-merger-deal>  
[https://www.teaomaori.news/us-army-satellite-claimed-risk-nzs-national-security?\\_ga=2.233027869.265941919.1615446323-911656569.1567894384](https://www.teaomaori.news/us-army-satellite-claimed-risk-nzs-national-security?_ga=2.233027869.265941919.1615446323-911656569.1567894384)

<sup>40</sup> Why your 'Carbon Footprint' is a lie: <https://www.youtube.com/watch?v=1J9LOqiXdpE>

<sup>41</sup> A recent study from Victoria and Otago Universities revealed that up to 800,000 New Zealanders may be exposed to increased risk of bowel cancer due to elevated levels of nitrate in drinking water. The use of fossil fuels to make synthetic nitrogen fertiliser for industrial farming globally has been labelled one of the biggest experiments on human health ever done (Dr Mike Joy interview)  
<https://www.rnz.co.nz/news/national/436879/up-to-800-000-new-zealanders-may-have-increased-bowel-cancer-risk-due-to-nitrates-in-water>

<sup>42</sup> Still the MPI objected to setting a nitrogen bottom line, against MfE and other expert advice, in favour of economics.  
<https://www.rnz.co.nz/news/in-depth/437383/mpi-opposed-nitrogen-bottom-line-over-economic-concerns>

<sup>43</sup><https://www.stuff.co.nz/environment/climate-news/124373102/government-report-challenges-claims-of-carbonneutral-meat-farms>

<sup>44</sup> <https://www.stuff.co.nz/business/farming/124564692/intensive-winter-grazing-rules-deferred-until-may-next-year>

some strong, clear advice from the CCC to enable it to work effectively in the industries-dominated He Waka Eke Noa<sup>45</sup>.

- The CCC's dismissal of the value of regenerative agriculture, supposedly due to the lack of evidence of effectiveness in NZ, is disappointing. International research has shown that an organic no-till approach<sup>46, 47</sup> (that avoids artificial chemical inputs) leads to significant CO<sub>2</sub> storage<sup>48</sup> in both cropland and pasture, as well as reducing soil loss and improving water retention and nutrient cycling. Some predict that worldwide we have just sixty years of cultivable soils but solutions<sup>49</sup> that focus on restoring soil biology and 'closing the loop' abound. While there may not be robust estimates of the potential emissions reductions, the CCC's own evidence (ch4c) acknowledged that some local farmers have increased their profitability and resilience through lowered input costs, market premium and increased ecosystem services derived from using more regenerative practices<sup>50, 51</sup>.
- Local practitioners have also pointed out that NZ soils are actually not 'saturated' with carbon because of the shallow topsoil, 150mm compared to 5 meters in the temperate region. There is therefore a real opportunity to sequester carbon into the deeper top soils (below 150mm) by sowing pasture species with large, deep roots and other management practices, according to researchers at the NZ Agricultural GHG Research Centre<sup>52</sup>. All these warrant further investigations and direction, at least support for further research and on-farm trials. MPI's Sustainable Food & Fibre Futures program<sup>53</sup>, with its regenerative farming stream, is a good start and warrants recognition and support.
- Notably, a recent peer-reviewed, white paper co-authored by over 60 scientists and researchers from numerous NZ research institutions including Landcare, universities and other entities, have laid out the research pathways needed to build science-based evidence and narratives on regenerative agriculture in Aotearoa NZ (Grelet, et al., 2021)<sup>54</sup>. We call on the CCC and the government to review and support some of the research pathways laid out in the paper.
- Furthermore, the CCC needs to recommend a deadline for ending the production and application of synthetic nitrogen fertilisers. US ammonia fertiliser factories which typically use natural gas as feedstock and fuel to produce fertilisers have been shown to release significantly higher methane emissions than officially reported<sup>55</sup>. There is little reason to

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<sup>45</sup> <https://hewakaekenoa.nz/wp-content/uploads/2020/12/HWEN-Programme-Structure-Oct-2020.pdf>

<sup>46</sup> <https://www.purdue.edu/newsroom/research/2010/101220VynNitrous.html>

<sup>47</sup> <https://regenerationinternational.org/2018/06/24/no-till-farming/>

<sup>48</sup> <https://www.smh.com.au/environment/sustainability/from-moonscape-to-emission-offsets-the-farmers-breaking-new-ground-2021-02-12-p571xk.html>

<sup>49</sup> [https://grow.foodrevolution.org/screening/?fbclid=IwAR02tDfZjdBOo\\_uxUSkkWJYqS7e1AxdjwhH5WBkUrcTgKzQurUe8Ko4ISZw](https://grow.foodrevolution.org/screening/?fbclid=IwAR02tDfZjdBOo_uxUSkkWJYqS7e1AxdjwhH5WBkUrcTgKzQurUe8Ko4ISZw)

<sup>50</sup> <https://www.no-tillfarmer.com/articles/6230-new-zealanders-benefit-from-no-till?v=preview>

<sup>51</sup> <https://www.collectiveintelligence.co.nz/podcasts/28-jules-matthews-regenerative-agriculture-coach/>

<sup>52</sup> <https://www.nzagrc.org.nz/soil-carbon,listing,595,grassland-soils-have-potential-to-offset-ghg-emissions.html>

<sup>53</sup> <https://www.mpi.govt.nz/funding-rural-support/sustainable-food-fibre-futures/>

<sup>54</sup> [https://ourlandandwater.nz/wp-content/uploads/2021/02/Grelet\\_Lang\\_Feb-2021\\_Regen\\_Ag\\_NZ\\_White\\_ePaper.pdf](https://ourlandandwater.nz/wp-content/uploads/2021/02/Grelet_Lang_Feb-2021_Regen_Ag_NZ_White_ePaper.pdf)

<sup>55</sup> <https://online.ucpress.edu/elementa/article/doi/10.1525/elementa.358/112487/Estimation-of-methane-emissions-from-the-U-S>

expect any difference in the fertiliser industry here in NZ, especially when emission figures from the petrochemical industry are largely jointly compiled in the name of commercial sensitivity.

- We also call on an immediate ban on the import of 'blood phosphate' derived from the disputed territory of Western Sahara<sup>56</sup>. Despite local and NZ-wide condemnation, Ballance Agri-Nutrients and Ravensdown remain adamant in continuing the import, inadvertently funding armed conflicts, for the sake of cheap phosphate rock to make superphosphate. As explained earlier, globally we have already exceeded the planetary boundary on biochemical flows (nitrogen and phosphorus). Modelled data has shown that 66 percent of NZ's river length phosphorus concentrations above the expected natural range, posing a risk to aquatic species (Stats NZ, 2020)<sup>57</sup>. Fertiliser Association NZ acknowledged that even adopting the 4Rs (right place, right time, right rate and right form)<sup>58</sup>, up to 10 percent of applied phosphorus fertiliser would be lost from farms. When managed poorly, up to 85 percent could be lost (FANZ, 2020)<sup>59</sup>.
- Palm kernel imports to New Zealand should also be banned due to its contribution to rainforest destruction in Southeast Asia and the consequential climate impacts<sup>60</sup>.
- Furthermore, ending the use of glyphosate<sup>61</sup> will help to restore the health of freshwater ecosystems, rebuild their resilience to stresses including climate change, and support rewilding efforts.

## Forestry and Rewilding

- The CCC identifies up to 1.4 million ha of marginal lands that could be planted as forestry, especially permanent native forests because these lands are steep and prone to erosion. Yet the proposal aims for just 300,000 ha of native forest plantations by 2035, stating limitations in nursery capacity, pest control and fencing. The CCC's forestry proposal also includes 380,000 ha of exotic plantations.
- We offer a different perspective here. Rather than treating nursery capacity and the need for pest control and fencing as limitations, why not manage them as opportunities for employment, training, community engagement, business, research and innovation?
- Furthermore, if we substantially reduce our reliance on exotic forestry for export, we will have more land, resources and opportunities for various sustainable land uses<sup>62</sup>. These include planting tree crops<sup>63</sup> that produce a wide range of useful products for the

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<sup>56</sup> <https://thespinoff.co.nz/society/19-11-2020/how-blood-phosphate-has-made-new-zealand-complicit-in-a-foreign-war/>

<sup>57</sup> <https://www.stats.govt.nz/indicators/river-water-quality-phosphorus>

<sup>58</sup> <https://access.onlinelibrary.wiley.com/doi/abs/10.2134/jeq2019.02.0085>

<sup>59</sup> <https://www.fertiliser.org.nz/Site/news/articles/phosphorus-use-guidance-notes.aspx>

<sup>60</sup> <https://www.nzherald.co.nz/the-country/news/fonterra-report-concedes-palm-kernel-imports-reverse-emissions-progress/IQSBKPUUIXXRLB7EFODRUCGP4/>

<sup>61</sup> [https://www.eurekaalert.org/pub\\_releases/2020-03/mu-wuw030220.php](https://www.eurekaalert.org/pub_releases/2020-03/mu-wuw030220.php)

<sup>62</sup> <https://www.permaculturenews.org/2017/11/27/importance-tree-crops-sustainable-agriculture/>

<sup>63</sup> <https://treecrops.org.nz/about-nztca/about-treecrops/>

domestic market, native forest plantation for selective, sustainable harvest or protected permanently, wetland restoration for biodiversity and as a carbon sink, and of course rewilding. This proposal is in alignment with an overall shift from an export-driven to a self-reliant circular economy we described earlier.

- We support paying via way of compensatory carbon credits to farmers, potentially foresters also, to retire and rewild their land. If humans can rewild one-third of land used for the agricultural industry, it'd give earth a fighting chance to recover and for us to reconnect with nature, to reset our development pathways and to learn how to actually live sustainably on the planet. A recent study<sup>64</sup> looking at 62 natural sites worldwide concluded that conserving and restoring them outweigh private benefits from exploitation and typically benefits human prosperity.
- Another point that the CCC seems to have largely ignored is the crucial importance of protecting existing natural and regenerating forests and other vegetation, whether they are on farms or public lands. Deforestation on sheep and beef farms alone, amounted to an average of 1,885 ha annually from 2013 to 2016, contributing to nearly a quarter of NZ's total deforestation area over that period (MfE, March 2021)<sup>65</sup>. So while scrubland on such farms act as a small net sink of CO2 emissions, almost three quarters of this is lost from clearance back to pasture. Needless to say, the protection and restoration of existing natural vegetation offer a much more effective and affordable way of locking in carbon sinks, alongwith biodiversity and ecosystem benefits, than planting new forests. However, rewilding needs to be cognizant of risks of wildfire and of forests becoming net emitters rather than sequestering CO2 as climate warms. Much of these mechanisms is not clearly understood, so any major planting requires careful planning lest we make the future situation worse<sup>66, 67</sup>.
- We urge that the CCC give more attention and guidance on wetlands. Ramsar (2018)<sup>68</sup> provides five key messages: 1) the wise use and restoration of wetlands is essential to protect stored carbon and reduce avoidable carbon emissions, 2) prioritizing wetland protection and restoration can enhance climate adaptation and resilience, 3) wetlands play a vital role in retaining water on the landscape, maintaining local climate and water cycles and reducing temperature extremes, 4) there are co-benefits from protecting and restoring wetlands, and 5) protecting and restoring wetlands represents progress towards meeting the Sustainable Development Goals and Paris Agreement on Climate Change.
- In Aotearoa, the majority of the drained peatland is under intensive farming. Dried peatland is responsible for up to 6% of agricultural emissions here. We support Forest

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<sup>64</sup> <https://www.nature.com/articles/s41893-021-00692-9>

<sup>65</sup> <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/Net%20emissions%20and%20removals%20from%20vegetation%20and%20soils%20on%20sheep%20and%20beef%20farmland.pdf>

<sup>66</sup> <https://www.nature.com/articles/d41586-019-00122-z>

<sup>67</sup> <https://www.pnas.org/content/116/51/25734>

<sup>68</sup> [https://www.ramsar.org/sites/default/files/documents/library/bn10\\_restoration\\_climate\\_change\\_e.pdf](https://www.ramsar.org/sites/default/files/documents/library/bn10_restoration_climate_change_e.pdf)

and Bird's call for the government to put in place a National Wetland Restoration Plan<sup>69</sup> and more nature-based solutions for climate mitigation and adaptation. A recent Ministry for the Environment report (MfE, March 2021)<sup>70</sup> confirmed that GHG emissions from organic soils in drained wetlands can be reduced and possibly reversed by rewetting the soils or converting them back to wetlands despite the potential or increased methane emissions.

- Coastal habitat conservation and restoration, such as salt marsh and mangrove, are critical in protecting the coastline from erosion and storm surge associated with sea level rise, providing nursery grounds for fisheries, as well as holding and capturing so-called Blue Carbon<sup>71</sup>. Coastal ecosystems, though small in terms of total areas, sequester carbon in coastal soil at a greater rate than terrestrial forests, and are able to store it for millennia.
- Furthermore, the ocean presents itself as a huge carbon sink. A recent study<sup>72</sup> revealed that bottom trawling worldwide releases as much GHG emissions as aviation. Marine conservation through marine protected areas and spatial planning will help to safeguard marine biodiversity, provide food sources and secure marine carbon stocks<sup>73</sup> that are at risk to overexploitation from trawling to mining. The CCC should support the call from the Deep Sea Conservation Coalition to end all bottom trawling within seven years<sup>74</sup>.

## Transport

- While we support electrification of transport, especially light vehicles and trains, we do not think that replacing each ICE vehicle with an electric one is the solution. We need to significantly reduce private car ownership in NZ. At 0.82 vehicles per capita<sup>75</sup> in 2019, this puts us among the top five in the world. Even Luxembourg, the highest in the EU, counts at just 694 vehicles for every 1,000 inhabitants<sup>76</sup>. By reducing the number of private passenger vehicles, we will also reduce traffic congestion, road accidents and the emissions and costs associated with road building and maintenance. In addition to providing adequate and affordable or free public transport, financial disincentives may need to be considered to discourage private car ownership.
- A soft measure that we would like the CCC to consider is lowering the speed limit on roads. This was done here in NZ during the oil shocks in the 1970s, with the speed limit

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<sup>69</sup> <https://www.forestandbird.org.nz/resources/restoring-peat-wetlands-our-climate-change-secret-weapon>

<sup>70</sup> <https://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/Net%20emissions%20and%20removals%20from%20vegetation%20and%20soils%20on%20sheep%20and%20beef%20farmland.pdf>

<sup>71</sup> <https://oceanservice.noaa.gov/facts/bluecarbon.html>

<sup>72</sup> <https://www.theguardian.com/environment/2021/mar/17/trawling-for-fish-releases-as-much-carbon-as-air-travel-report-finds-climate-crisis>

<sup>73</sup> [https://www.nature.com/articles/s41586-021-03371-z.epdf?sharing\\_token=TijpVjm1xX5Rbmw5kutffRNRgN0jAjWel9jnR3ZoTv0MwjSp\\_dqdYRo11ccDn9dqPW5D1xJuK8fpT\\_\\_q4KFNUwr3chDwJyG9IO5W1aWFy5onfZKtxUPkvQTnzNtoVopyg-N66E6j3SdEzqNh2U nnVHpAntYD9CYy7I3QNIz6il184RD1jaDt2fU8YI8bdsQppKG7J6tfBiSTN74eTrygUTMPeqTv4M1289Ys38rtf2Cvdu\\_CmOwJ\\_4F56QrdVDd8bOQIfKdMFnRt3Xj-0wtTkxw%3D%3D&tracking\\_referrer=time.com](https://www.nature.com/articles/s41586-021-03371-z.epdf?sharing_token=TijpVjm1xX5Rbmw5kutffRNRgN0jAjWel9jnR3ZoTv0MwjSp_dqdYRo11ccDn9dqPW5D1xJuK8fpT__q4KFNUwr3chDwJyG9IO5W1aWFy5onfZKtxUPkvQTnzNtoVopyg-N66E6j3SdEzqNh2U nnVHpAntYD9CYy7I3QNIz6il184RD1jaDt2fU8YI8bdsQppKG7J6tfBiSTN74eTrygUTMPeqTv4M1289Ys38rtf2Cvdu_CmOwJ_4F56QrdVDd8bOQIfKdMFnRt3Xj-0wtTkxw%3D%3D&tracking_referrer=time.com)

<sup>74</sup> <http://www.savethehighseas.org/2021/03/18/bottom-trawling-releases-more-carbon-than-air-travel-groups-urge-government-action/>

<sup>75</sup> <https://www.transport.govt.nz/statistics-and-insights/fleet-statistics/sheet/vehicle-ownership-2>

<sup>76</sup> <https://www.acea.be/statistics/tag/category/vehicles-per-capita-by-country/>

lowered from 100 down to 80 km/h, to reduce oil demand and account deficit<sup>77</sup>. Car free days were also introduced. Surely with the climate emergency we are in, all measures need to be considered, especially relatively affordable interventions like lowering the speed limit which would also improve road safety. Electric vehicles will also benefit from this, with increased range at lower speed and reduced demand on electricity for recharging the batteries.

- Based on an EU simulation, reducing the speed limit from 120 to 110 km/h could cut fuel consumption by 12-18 percent, assuming smooth driving and 100 percent compliance in speed limit (EEA, 2020)<sup>78</sup>. Lowering the speed also reduces emissions of NOx and particulate matters, and improves safety. The UK has recently reduced the motorway speed limit from 70 to 60 miles/h in badly polluted areas<sup>79</sup>, following the Dutch's reduction of day time speed from 130 to 100 km/h<sup>80</sup>. Interestingly, a study has reviewed that lowering the speed of the global shipping fleet by 10 percent would reduce GHG emissions by 13 percent, lower total sound energy from shipping by 40 percent and halve the ship strike risks with marine mammals<sup>81</sup>.
- We are glad to see the CCC's recommendation "*to change the way we build and plan our towns and cities and the way people and products move around.*" We see this as the top priority in reducing emissions from the transport sector and the pollution health impacts on city dwellers while supporting more active lifestyle and community cohesion. We ask that the CCC recommend the central government to provide substantial financial support to enable local governments to make these changes (See earlier section). We would appreciate it if the CCC could put more focus on connecting rural communities as well as urban residents.
- Rail<sup>82</sup>, being the most efficient and lowest emitting mode of transport, for both passengers and goods, warrants major government investment and incentives. Transition engineer Prof. Susan Krumdieck of Canterbury University made compelling arguments for the "*transition from diesel trucks to integrated electric rail, coastal shipping and local electric delivery*", rather than hydrogen-based transport<sup>83</sup>.

## Hydrogen and Carbon Capture and Storage

- The CCC's recommendations on hydrogen appear to be contradictory to its own evidence. The recommendations include increasing the use of green hydrogen in transport (particularly in heavy trucks, trains, planes, and ships), scaling up the

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<sup>77</sup> <https://www.greatauckland.org.nz/2014/01/03/new-zealand-and-the-1970s-oil-shocks/>

<sup>78</sup> <https://www.eea.europa.eu/themes/transport/speed-limits-fuel-consumption-and>

<sup>79</sup> <https://www.dailymail.co.uk/news/article-8724495/Motorway-speed-limit-cut-60mph-reduce-emissions-badly-polluted-areas.html>

<sup>80</sup> <https://www.bbc.com/news/world-europe-50396037>

<sup>81</sup> <https://www.frontiersin.org/articles/10.3389/fmars.2019.00505/full>

<sup>82</sup> <https://www.carbonbrief.org/eight-charts-show-how-aggressive-railway-expansion-could-cut-emissions>

<sup>83</sup> <https://theconversation.com/why-new-zealand-should-invest-in-smart-rail-before-green-hydrogen-to-decarbonise-transport-153075>

manufacture of hydrogen-derived synthetic fuels in the first three emissions budget periods, diversifying into hydrogen for energy (electricity) security, and assessing the place that hydrogen has in the new national energy strategy.

- However, the evidence report states that *“hydrogen heating is highly unlikely to be a lower cost decarbonisation choice than direct electrification due to its inherent inefficiencies in its production from electricity, then combustion for heat. Conversion losses can be upwards of 70%.”* (CCC Evidence ch.4a p.9-10). Although it may be used to displace or supplement natural gas in some energy intensive industries that require high temperatures (e.g. cement, lime and glass), such applications are still at the research stage. The evidence also states that producing hydrogen, whether through water electrolysis or fossil fuel reformation, requires massive amounts of high purity water. Each kilogram of green hydrogen requires 9 litres of water to produce, raising a *“concern regarding Crown-Māori relations and kaitiakitanga.”* Can NZ afford to sacrifice so much of our fresh water for such an extremely inefficient energy storage system?
- In terms of using hydrogen as feedstock (in place of natural gas) in urea and methanol production, the CCC indicated that the emission reduction cost would be \$250 and \$500 per tCO<sub>2</sub> respectively. The CCC evidence also concluded that *“to completely displace natural gas in heavy industries across Aotearoa... would require significant new large scale, low cost renewable electricity generation, low cost transmission to production sites and declining costs in key technologies such as electrolyzers. It would also require the development of a robust supply chain”* (CCC Evidence ch.4a p.15). We fear that if pursued, communities would unfairly end up bearing the cost burden<sup>84</sup>, for propping up a highly polluting industry like urea production<sup>85</sup> that drives industrial agriculture and poisons our drinking water<sup>86</sup>.
- In Taranaki, there is also the real concern of hydrogen being used as a trojan horse to perpetuate oil and gas exploration and mining, along with the far-reaching environmental and social harm. Strategies focusing on so-called ‘clean coal’ and then ‘blue hydrogen’ have been employed by the fossil fuel industry in Australia to prolong business as usual<sup>87,88</sup>. Fossil fuel lobbying has also been widely documented in the EU<sup>89</sup> and in NZ itself. A case in point is the decision to convert the New Plymouth Wastewater Treatment Plant’s gas-fired thermal drier to one that will take a fuel blend with up to 15-20 percent hydrogen<sup>90</sup>, with central government and private funding. This will lock in the reliance on natural gas for over two decades and waste precious time and money that could have been invested in real climate solutions<sup>91</sup>.

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<sup>84</sup><https://climatejusticetaranaki.files.wordpress.com/2019/10/cjt-submission-on-mbie-hydrogen-green-paper-oct19-v3-final.pdf>

<sup>85</sup><https://www.stuff.co.nz/business/120070092/government-invests-199m-from-pgf-in-gamechanging-south-taranaki-hydrogen-facility>

<sup>86</sup><https://www.mnz.co.nz/news/national/436879/up-to-800-000-new-zealanders-may-have-increased-bowel-cancer-risk-due-to-nitrates-in-water>

<sup>87</sup> <https://reneweconomy.com.au/hydrogen-blues-is-this-the-gas-industry-version-of-clean-coal-33772/>

<sup>88</sup> <https://www.thefifthstate.com.au/columns/spinifex/hydrogen-in-the-gas-grid-is-a-great-idea-if-you-own-the-gas-grid/>

<sup>89</sup> <https://euobserver.com/opinion/148873?fbclid=IwAR0uwfHNC3GxB>

<sup>90</sup><https://www.stuff.co.nz/taranaki-daily-news/news/123190645/council-being-asked-to-approve-43m-thermal-dryer-project-for-new-plymouth>

<sup>91</sup> <https://www.newsroom.co.nz/why-hydrogen-is-not-a-cure-for-emissions>

- Indeed, the technological inefficiency, high costs and heightened safety risks of producing, storing, transporting, using and converting hydrogen have been widely affirmed. Notably, Professor of Mechanical Engineering Susan Krumdierck’s keynote lecture<sup>92</sup> at the Convergence for Carbon Transition 2020 crash tested the case of hydrogen, and clearly reviewed the foolishness of going down the hydrogen path<sup>93</sup>.
- Crucially, we question whether NZ has adequate legislation and safety rules and protocols to deal with hydrogen development<sup>94, 95, 96</sup>.
- We support the CCC’s reservation over carbon capture and storage (CCS), not only because this technology is largely in a research and concept phase in Aotearoa. Overseas examples have shown that CCS is largely used by the fossil fuel industry to extract additional fuel from old wells or to greenwash the use of coal. The CCS process itself is extremely energy demanding, so much so that in at least one case the Petra Nova in Texas, a natural gas plant was built to power the CCS process to supposedly capture the emissions from coal. The cost has become so undesirable that Petra Nova was closed down early this year<sup>97</sup>. There is also the question of monitoring and assurance that the gas injected indeed stays underground, and who bears the liability when the company leaves or goes broke.

## Methanex

- The CCC predicts that “*without continued exploration and development... it may become uneconomic for Methanex to continue operating in Aotearoa in its current form*” (CCC draft Advice p.63). It assumes that methanol production will end in 2029 when Methanex’s contract expires (CCC Evidence Chapter 12).
- Why not go one step further and advise the government to stipulate 2029 as the end date of Methanex’s operation at the latest, and in the interim remove the free NZU allocated to Methanex under the Emissions Trading Scheme (ETS)?

## Offshore Mitigation, Emissions Trading & Leakage

- Rather than fearing international competition and ‘emissions leakage’, the government should lead by example by removing all the free NZU currently given to so-called ‘emission-intensive trade-exposed (EITE)’ industries. This would create a more level playing field and the incentives needed for industries to invest in low emission

<sup>92</sup> <https://www.youtube.com/watch?v=M9AwGLnDI0Q>

<sup>93</sup> [https://www.energywatch.org.nz/issues/EW82\\_4-2020.pdf?fbclid=IwAR2pGlrutQm1znlT5uBMOalpLTIDfkg2G1Zjez\\_\\_j2cB6Qm4k1oHDNCibnl](https://www.energywatch.org.nz/issues/EW82_4-2020.pdf?fbclid=IwAR2pGlrutQm1znlT5uBMOalpLTIDfkg2G1Zjez__j2cB6Qm4k1oHDNCibnl)

<sup>94</sup> <https://www.fch.europa.eu/sites/default/files/3.%20Joseph%20Morelos%20-%20H2Safety.pdf>

<sup>95</sup> <https://www.nrel.gov/docs/fy15osti/60948.pdf>

<sup>96</sup> <https://www.hse.gov.uk/horizons/current-issues/energy-topics/hydrogen.htm>

<sup>97</sup> [https://earther.gizmodo.com/the-only-carbon-capture-plant-in-the-u-s-just-closed-1846177778?utm\\_medium=sharefromsite&utm\\_source=\\_facebook&fbclid=IwAR28TQogbOJvt5LZtgYM2aaQDkQGq0Bs9ZeAr-pBiC5D1fqwW9yqeqwwpto](https://earther.gizmodo.com/the-only-carbon-capture-plant-in-the-u-s-just-closed-1846177778?utm_medium=sharefromsite&utm_source=_facebook&fbclid=IwAR28TQogbOJvt5LZtgYM2aaQDkQGq0Bs9ZeAr-pBiC5D1fqwW9yqeqwwpto)



processes. The shocking fact is that in 2019, over 8 million NZUs were allocated to industries, over half of them to just three companies: NZ Steel, NZ Aluminium Smelter and Methanex in Taranaki (CCC Evidence ch12). The total free NZUs allocated represented a value of almost \$290 million. Imagine the good that this amount could have been used if not given away to perpetuate polluting industries. Rather than relying on or restricted by the dysfunctional ETS, the government should rapidly phase it out while instigating and investing in programs, tax reform, regulatory framework and on-ground efforts that actually reduce emissions<sup>98</sup>.

- In terms of offshore mitigation, we strongly support the zero allowance recommended by the CCC for the first three emissions. We encourage the CCC to extend it to 2050 and beyond. The world is in a global climate emergency, each nation needs to do its utmost in reducing emissions rather than trading responsibilities. We do not see the need to make an exception in the case of force majeure events.

## Empowering Youth

- The CCC needs to place more emphasis on empowering youth by supporting subjects like civics, permaculture, regenerative food production and other subjects of use in community. An example, call on the Tertiary Education Commission to offer apprenticeships<sup>99</sup> in green industries, transitioning away from oil and gas, and industrial farming. Enable more government and hapū run apprenticeships rather than companies'.

## V. Moving CCC Deadlines Forward and Our Recommendations

2022 (CCC assumes 2025) - No further native deforestation occurs.

2022 (CCC makes no recommendation) - No more draining wetlands.

2022 (not mentioned in CCC Advice) - Ban palm kernel and 'blood phosphate' imports.

2022-2025 (CCC makes no recommendation) - Phase out synthetic nitrogen fertilisers production and the use of glyphosate or equivalent chemicals.

2022-2030 (CCC makes no recommendation) - Phase out on-farm application of synthetic nitrogen fertilisers.

2022-2030 (CCC proposes 15%) - Reduce dairy, sheep and beef stocking numbers by at least 30% from 2018 figures.

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<sup>98</sup><https://climatejusticetaranaki.files.wordpress.com/2020/01/cjt-submission-on-climate-change-response-ets-reform-17jan20-final.pdf>

<sup>99</sup> <https://www.tec.govt.nz/teo/working-with-teos/itos/new-zealand-apprenticeships/>

2022 (CCC makes no recommendation) - No new permits for coal, oil or gas exploration and mining, including expansion or extension of existing or expiring permits.

2022 (CCC proposes 2025) - No new fossil fuel heating systems in new buildings.

2022-2030 (CCC proposes 2030 to begin phase out) - Phase out fossil fuel connections for all existing buildings.

2022-2030 (CCC proposes 2037 to end coal use in food processing) - Phase out coal<sup>100, 101</sup> and natural gas use in food growing and processing, with renewable electricity or bioenergy.

2022-2027 (CCC makes no recommendation) - Close down all coal mines and remediate sites.

2022 (CCC makes no recommendation) - Remove free NZU allocation to Methanex and other so-called 'emission-intensive trade-exposed' industries.

2025 (CCC proposes 2032) - Ban import of fossil fuel light vehicles.

2022-2027 (CCC assumes 2024 closure) - Tiwai Point closes with site remediation<sup>102</sup>.

2025-2030 (CCC assumes 2029 closure) - Methanex closes with site remediation.

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<sup>100</sup> <https://coalaction.org.nz/dirty-dairying/fonterra/fonterra-exits-coal#comment-605>

<sup>101</sup> <https://coalaction.org.nz/news/bathurst-to-close-canterbury-coal-mine-all-eyes-now-on-fonterra>

<sup>102</sup> <https://www.rnz.co.nz/news/national/438550/report-details-consequences-of-landfill-of-toxic-waste-at-tiwai-point>