

RE: A Regulatory Regime for Carbon Capture, Utilisation and Storage (CCUS)

06/08/2023

Tēnā koe,

Thank you for the opportunity to submit on the proposed policy for carbon capture, utilisation, and storage. We, [REDACTED] represent over 1000 medical and health professionals and organisations, and are the nation's only climate NGO focused on health and health-equity. Being health practitioners, our approach is evidence based, with a view to maximising health equity and environmental wellbeing.

[REDACTED] is concerned that carbon capture, utilisation, and storage schemes are a distraction from meaningful climate action. These schemes pose significant threats to our climate goals, and to health equity in Aotearoa NZ. The proposal will fail to abate emissions, will not ensure environmental integrity, and is not appropriate for the Aotearoa NZ context. Therefore, there is no need for the proposed regulatory regime for CCUS.

We urge MBIE not to incentivise carbon capture schemes, and to reprioritise climate health and health equity.

Ngā mihi,

[REDACTED]

[REDACTED]

Submission - A Regulatory Regime for Carbon Capture, Utilisation and Storage (CCUS) - [REDACTED]

In medical and health fields, climate change is widely regarded as the greatest global threat to human and environmental health¹. Profound effects are already occurring here in Aotearoa NZ and across the world. There remains significant opportunity to minimise damage caused by climate change, but that window continues to shrink.

Carbon capture, utilisation, and storage (CCUS), are unreliable opportunities to widen this window. We understand CCUS to “refer to a suite of technologies that cover the capture of CO₂ from large point sources, including power generation or industrial facilities using fossil fuels or biomass for fuel. It also includes the capture of CO₂ directly from the atmosphere”².

In MBIE’s own words: CCUS will increase emissions

The circular reasoning for introducing CCUS policy is bold-faced. Across the world, CCUS has mostly been used for enhancing fossil fuel extraction. Using CCUS as a greenlight for proceeding with oil and gas exploration is not only a significant financial and technical risk³, it will increase climate damage and harms to human and ecosystem health. CCUS requiring further fossil extraction also flouts the Government’s responsibilities under Te Tiriti o Waitangi and to health equity. It also damages our relations with Pacific whanaunga, where Aotearoa NZ already fails to meet anywhere near its fair share of climate change mitigation.

We note that in MBIE’s own risk assessment accompanying the CCUS proposal, **CCUS uptake would result in additional emissions** from additional gas supply being unlocked⁴. Supporting further gas exploration and extraction not only does not ensure energy security for

¹ <https://www.thelancet.com/countdown-health-climate>

² <https://www.araake.co.nz/assets/Ara-Ake-Report-Carbon-Dioxide-Removal-and-Usage-in-Aotearoa-New-Zealand.pdf>

³ <https://ieefa.org/resources/carbon-capture-crux-lessons-learned>

⁴ <https://www.mbie.govt.nz/dmsdocument/28609-interim-climate-implications-of-policy-assessment>

our transition to a low-emissions economy, it will worsen health impacts associated with environmental damage and climate change. MBIE's own estimates indicate that further oil and gas extraction would add 14 million tonnes of carbon dioxide emissions to the country's tally, compared with keeping the ban in place - about the amount of greenhouse gas New Zealand's cars and trucks produce in a year⁵.

CCUS projects, so often linked with fossil fuel companies – have consistently over-promised and failed to deliver on their investment. The world's largest stand-alone CO₂ storage facility solely focused on storage continues to perform at only one third of its capacity, requiring significant resources to do even that⁶. **Moreover, where CCUS does work, it has little opportunity in NZ, and according to MBIE, will be applied in a limited fashion:**

- Despite cement and steel plants being amongst the highest point source emitters in Aotearoa NZ, MBIE said in its own risk assessment document that CCUS would have a lower economy of scale, and that CCUS would only be able to capture five percent of those emissions. *Then what's the point?*
- When CCUS is successful, it is utilising existing technology to filter and capture emissions at a major source, e.g. at a steel or cement plant. For dispersed or diffuse emissions, which comprise the majority of NZ's emissions, CCUS is not useful and is capital and resource intensive. Therefore, for NZ, any advantage of CCUS is significantly weakened, as described by a major report by the Government's own energy research centre³.
- Aotearoa NZ has relatively few point sources of CO₂ emissions and a far higher renewable contribution to electricity generation. This means that CCS has limited potential to help New Zealand mitigate climate change⁷.

CCUS, fossil extraction, and health damage

⁵ <https://www.1news.co.nz/2024/07/11/climate-impact-of-repealing-oil-and-gas-ban-revealed/>

⁶ <https://www.abc.net.au/news/2023-05-17/chevron-australia-carbon-capture-storage-gorgon-third-capacity/102357652>

⁷ <https://www.araake.co.nz/assets/Ara-Ake-Report-Carbon-Dioxide-Removal-and-Usage-in-Aotearoa-New-Zealand.pdf>

Health costs already arise from climate damage, inequitably borne by Māori, disabled people, poor people, Pacific whanaunga, and others at the margins⁸⁹. CCUS also causes health inequities via air and noise pollution¹⁰. Where CCUS could have any positive impact on health equity, it is by reliably capturing emissions - yet MBIE notes that CCUS will only increase emissions via fossil extraction. Other estimates have said that CCUS overall increases pollution and total costs to society, compared to not existing at all¹¹. No improvement in CCUS can change this conclusion while fossil fuel emissions exist, and carbon capture never reduces, instead mostly increases air pollution and fuel mining.

Each stage of the CCUS process poses major public health risks; also not present in MBIE risk assessments. At the capture site, during transport, and at the sequestration site¹². Each stage of CCUS technology also requires its own energy source, generating additional emissions and other pollutants, also requiring copious amounts of water, and often causing water pollution. The leakage of CO₂, an asphyxiant and intoxicant, can cause serious injury and death to workers and nearby communities; a recent leakage from a CO₂ pipeline in Mississippi served to reveal the inadequate health and safety regulations for CCUS operations¹³.

MBIE, Ministry for Big & Irresponsible Earthquakes

Aotearoa NZ is very tectonically active. CCUS may also trigger earthquakes (costly, and deadly), and also release their stored emissions, while also requiring highly tailored risk

⁸⁹<https://www.hhrjournal.org/2014/07/climate-change-and-the-right-to-health-for-maori-in-aotearoanew-zealand/>

⁹[http://www.nzmsj.com/climate-medicine-our-changing-climate-and-health-inequity-in-new-zealand.html#:~:text=Existing%20health%20inequities%20are%20expected%20to%20worsen%20through%20climate%20change.ischaemic%20heart%20disease%20\(24\).](http://www.nzmsj.com/climate-medicine-our-changing-climate-and-health-inequity-in-new-zealand.html#:~:text=Existing%20health%20inequities%20are%20expected%20to%20worsen%20through%20climate%20change.ischaemic%20heart%20disease%20(24).)

¹⁰<https://pubmed.ncbi.nlm.nih.gov/38600409/#:~:text=Recent%20findings%3A%20CCUS%20technologies%20have.like%20air%20and%20noise%20pollution.>

¹¹ <https://web.stanford.edu/group/efmh/jacobson/Articles/Other/19-CCS-DAC.pdf>

¹²https://www.oaklandinstitute.org/sites/oaklandinstitute.org/files/pdfpreview/carbon_capture_health_risks_1_page.pdf

¹³ <https://www.theguardian.com/us-news/2024/apr/19/exxon-pipeline-leak-carbon-capture-safety-gaps>

assessment¹⁴. Seismic risk was not mentioned in the MBIE documents for this proposal.

CCUS: corporate subterfuge and avoiding actual emissions reductions

Meaningful emissions reductions come from, well... reducing emissions. Not trying to catch them with closed fists.

Governments, industry, and society should prioritise and expedite the reduction of CO2 emissions before considering any carbon reductions via CCUS¹⁵.

Methane abatement is one of the cheapest options to reduce emissions associated with fossil fuels¹⁶. However, leaks continue unabated and unconsented in Taranaki¹⁷, posing harm to both environmental and human health. If existing extractors cannot ensure the cheapest and most important fixes, while flouting regional authority, how will further extraction, enabled by unreliable CCUS, be any better?

We already know the impact of agricultural methane emissions on Aotearoa NZ. We implore that MBIE turn its attention to supporting farm level emissions reductions, not to expensive techno-nonfixes that will only serve corporate fossil interests.

And if you really, really want to capture some carbon, the Government must protect existing carbon sinks from industrial projects¹⁸.

¹⁴https://www.researchgate.net/publication/286263693_Feasibility_of_Storing_Carbon_Dioxide_on_a_Tectonically_Active_Margin_New_Zealand

¹⁵<https://pubmed.ncbi.nlm.nih.gov/38600409/#:~:text=Recent%20findings%3A%20CCUS%20technologies%20have.like%20air%20and%20noise%20pollution.>

¹⁶ <https://www.iea.org/fuels-and-technologies/methane-abatement>

¹⁷ <https://www.rnz.co.nz/news/national/501353/lack-of-action-over-leaking-oil-and-gas-well-sparks-fury>

¹⁸<https://www.rnz.co.nz/news/on-the-inside/514537/5-reasons-why-the-fast-track-approvals-bill-threatens-nz-s-already-fragile-ecosystems>

