



Submission to the Ministry of Business, Innovation and Employment on Proposals for a Regulatory Regime or Carbon Capture, Utilisation and Storage

Date: 04 August 2024

This brief submission is made on behalf of the Submissions Working Group of [Nelson Tasman Climate Forum](#), a community-led organization with the purpose of bringing communities together for urgent climate action. We will comment on selected aspects of the consultation.

The consultation's central focus is on *regulation* of CCUS technology. However the document expresses considerable enthusiasm for adoption of this technology. We have serious reservations about the adoption of CCUS in New Zealand, despite its inclusion in IPCC emissions reduction pathways.

- The infrastructure for CCS is both expensive and very carbon intensive. Life cycle analysis of proposed New Zealand projects would be needed to calculate whether there was an actual net reduction in global warming potential, at what point in the life cycle of a CCS unit the emissions benefits exceeded the costs, and whether the initial carbon emissions costs of carbon-intensive CCS infrastructure might blow the national carbon budget for that period.
- We are concerned about whether there are suitable sites for storage on our seismically active islands. There is continual seismic activity at some level in New Zealand. This seems likely to greatly increase the potential for leakage from underground storage sites. Leakage from earthquake-induced rock fractures would likely be uncontrollable.
- CCS is also known to trigger small earthquakes¹ through underground pressure changes. In New Zealand the crust is already highly stressed and near fracture at many points. In a country where AF8 is understood to be a high probability in the next decades² and an even larger earthquake on the Hikurangi subduction zone is quite possible³, any potential triggering event would seem to be a significant concern.

¹ Mark D. Zoback zoback@stanford.edu and Steven M. Gorelick Earthquake triggering and large-scale geologic storage of carbon dioxide. PNAS (Proceedings of the National Academy of Sciences of the USA, June 18, 2012, 109 (26) 10164-10168 <https://doi.org/10.1073/pnas.1202473109>

² Langridge, R. 2021. Research finds Alpine Fault quake more likely in the next 50 years. <https://www.gns.cri.nz/news/research-finds-alpine-fault-quake-more-likely-in-the-next-50-years/>.

³ Crimp, L. 2024. Earthquake disaster risk from NZ's Hikurangi subduction zone. <https://www.rnz.co.nz/news/national/516720/earthquake-disaster-risk-from-nz-s-hikurangi-subduction-zone>.

- Carbon capture and storage cannot be seen as a solution to the problem of reducing additional atmospheric CO₂ and CH₄. It is a delaying tactic and as such, may dangerously postpone the necessary measures to actually decrease carbon emissions. The availability of seismically stable, geologically suitable storage sites is likely to be limited; the solution is temporary, at best.
- Storage sites for gases will have to be monitored and maintained forever. The government proposes regulations to ensure the company provides for the first 15 or 20 years. Thereafter this cost will fall on the taxpayer. With time, the number and volume of sites will increase, and costs to taxpayers will steadily grow. There is no suggestion in this consultation of the magnitude of these costs, in either the near or far future. This is a highly undesirable outcome. The alternative, to insist that the company providing the CCS facility continues to monitor and repair leaks forever, is clearly not feasible. There is no desirable outcome (similar to the situation with nuclear waste). The feasible and desirable alternative is to invest the same resources into cutting carbon emissions now, especially when it eventually must be done anyway and to avoid CCUS.
- Utilisation of CO₂ is included in proposals, with use of the newer term CCUS. It should be clear that the most common use is to pump the gas into oil wells to increase the yield of oil. This oil, of course, will be burned and will add to atmospheric greenhouse gases and to global heating – hardly a desirable outcome.
- The MBIE document consulting on regulation of CCUS cites its potential in reducing the cost of gas production, especially for higher CO₂ content gas fields, thus enhancing the commercial production of natural gas. As natural gas is a fossil fuel, its combustion adds to atmospheric greenhouse gases and worsens global heating. It is very odd to add this as an argument for a technology that is claimed to decrease carbon emissions.

Comment

Our advice to the New Zealand government is to avoid this overhyped technology whose main purpose is to delay moving to a decarbonized economy. New Zealand has had the wisdom to avoid another overhyped technology, nuclear power generation, and thus dodge the near-unsolvable problem of nuclear waste. Carbon dioxide waste in underground caverns in seismically active Aotearoa would be a burden on the population forever. We strongly object to the idea of having to pay ever-increasing amounts of public money to deal with this burden. We have cited several other reasons to avoid CCUS, and hope our government has the wisdom to stand aside and focus on what really matters in reducing emissions – cutting them at source. The biosphere has been managing carbon capture, utilization and storage effectively for aeons in healthy diverse forests and soils.