

Environment Protection (Sea Dumping) Amendment (Using New Technologies to Fight Climate Change) Bill 2023

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Doctors for the Environment Australia (DEA) is an independent, self-funded, non-government organisation of medical doctors in all Australian states and territories.

DEA's work is based on the premise that humans need a future with clean air and water, healthy soils capable of producing nutritious food, a stable climate, and a complex, diverse and interconnected humanity whose needs are met in a sustainable way. We are therefore interested in environmental protection and restoration to promote human health and social stability.

DEA's members work across all medical specialties, including academia and public health.

Recommendations

DEA is opposed to the proposed Environment Protection (Sea Dumping) Amendment (Using New Technologies to Fight Climate Change) Bill 2023 (the Bill).

- Carbon Capture and Storage (CCS) remains unproven and costly. It should not be promoted or supported within legislation as it fundamentally undermines our efforts to decarbonise. Supporting CCS diverts funding from proven technologies that will reduce emissions while delaying our transition to renewables. It has no place in a credible pathway to reach net-zero.
- The oceans and aquatic ecosystems need protection. Concentrated carbon dioxide (CO₂) is toxic. Leakage within a marine environment poses a threat to aquatic ecosystems both directly through acidification and indirectly through affecting sediment toxicity. The safety and environmental concerns require a regulatory framework that is robust. The Bill does not provide such assurances.
- The Bill would need to describe requirements for those countries sequestering CO₂ to demonstrate the regulatory capacity and readiness on the part of their governments to ensure the same level of environmental protection as Australia, or the mechanism by which that can or will occur.
- The Bill needs to be situated and consistent with other legislation related to emissions reduction such as the Safeguard Mechanism, the Paris Agreement, and laws pertaining to environmental protection. This requirement has not been adequately addressed.

Climate and health

The latest [Synthesis Report \(SYR\) of the United Nations Intergovernmental Panel on Climate Change \(IPCC\) Sixth Assessment Report \(AR6\)](#) on climate change confirms the urgent need for ambitious action to limit global warming.

The report highlights the profound impacts climate change is already having around the globe and that these will continue to intensify. Every increment of warming will intensify multiple concurrent hazards, with the people most affected being those least responsible.

The IPCC report makes numerous references to human health, ranging from the mental health impacts associated with increasing temperatures, to trauma from extreme events, and loss of livelihoods and culture. Most importantly, it reconfirms that there is no room for new fossil fuel projects – deep and rapid cuts to emissions are required this decade if we are to even have a 50% chance of limiting warming to 1.5°C.

The Bill's contribution to emissions reduction

The Bill through ss19(7b) effectively sanctions and makes possible the export of CO₂ streams for CCS. It will be a key enabler of gas expansion allowing new and highly polluting fossil fuel projects to be opened up using CCS as a justification.

CCS remains unproven technology which has never been demonstrated to achieve its target at scale. The Chevron's Gorgon project is a case in point. [As the largest operating CCS project in the world](#), it has failed to deliver on emissions reductions as forecasted. At a cost of over A\$3 billion, \$60 million of which was federal government funding, the project is still only sequestering around 50% of what was projected after 5 years. Furthermore, this target represents only a small percentage of total emissions.

To sanction the export of CO₂ for CCS would effectively be greenwashing to facilitate the ongoing development of fossil fuel projects in Australia. [As outlined by the International Energy Agency \(IEA\)](#) as well as the IPCC, new fossil fuels projects are incompatible with reaching net-zero by 2050.

Supporting CCS diverts funding from proven technologies that will reduce emissions while delaying our transition to renewables.

Safety and environmental concerns about transporting CO₂ and sub-seabed CCS

While the gas industry has underplayed the risks associated with CCS, the escape of CO₂ could result in severe and irreversible environmental harm. Environmental risks of CCS and its import/export include unintentional releases of CO₂ streams into the environment during transport in ships and pipelines and from storage facilities. Unlike the leakage of carbon dioxide into the atmosphere, within a sub-seabed setting dissolved carbon dioxide leads to the acidification of water affecting a range of aquatic organisms. Ocean acidity even adversely impacts our food system, including [stunting the growth of shellfish](#). In addition, acidification affects the mobility of metals which increases sediment toxicity. Both [laboratory and field experiments have highlighted this threat cross a range of aquatic species](#).

[There are also a range of geomechanical risks posed by CCS](#) due to the unavoidable pore pressure build up. These include caprock failure, reactivation of existing faults and the resultant induced seismicity, surface uplift and CO₂ leakage.

Large-scale shipping of CO₂ is in its infancy. [There are numerous technical and operational challenges as the gas has to be dehydrated, liquified, stored, loaded, offloaded and injected. Each of these stages requires appropriate safety protocols](#) and uses as yet unquantified amounts of energy, adding even further to greenhouse gas emissions. Moisture-laden CO₂ (such as that transported for CCS) is highly corrosive. In addition, the [loss of CO₂ to the atmosphere from ships during transport is between 3 and 4% per 1000km](#). This means that a 20% loss of CO₂ could be expected from any CO₂ export activities between Asian countries such as Japan or Korea and Australia.

These safety and environmental concerns require a regulatory framework that is robust and addresses all of these issues. However, the permitting provisions are not sufficiently prescriptive. While the Bill requires the Minister's satisfaction of certain matters prior to the granting of a CO₂ export permit, within the 'Risk Assessment and Management Framework for CO₂ Sequestration in Sub-Seabed Geological Structures', there are no compliance requirements. Neither are there compliance requirements within the Specific Guidelines on Assessment of CO₂ Streams for Disposal into Sub-Seabed Geological Formations (the Specific Guidelines).

Furthermore, there is no requirement for environmental impact assessments to be undertaken for CCS import or export. With respect to those countries sequestering CO₂ such as Timor Leste and the Bayu Undan

project, the regulatory capacity and readiness on the part of their governments is unclear. Of particular concern is whether Timor Leste can ensure the same level of environmental protection as Australia, or the mechanism by which that can or will occur.

Lack of a coherent legislative framework

There are a range of other problems with the Bill and the regulatory framework governing CCS import and export. The legislation should not be passed until the following matters are resolved and/or implemented into the legislation:

- the relationship between the Bill and other regulatory frameworks (including the Offshore Petroleum and Greenhouse Gas Storage Act, the Environment Protection and Biodiversity Conservation Act and state-based environmental assessment regimes)
- responsibilities around transboundary liability
- the impact on emissions inventory reporting and Paris Agreement target compliance
- the relationship with the Safeguard Mechanism
- the consistency of any activities and trade with the global effort to achieve the Paris Agreement.