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Bayu beware

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

This Bill appears primarily aimed at facilitating the Santos Barossa Project, its related Bayu-Undan carbon capture and storage (CCS) project and other fossil fuel projects off Australia's northern shores. CCS is a technology that has failed for decades, a fact omitted by public agency submissions relating to this Bill.

Rod Campbell
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Summary

Despite being presented as simply ratifying amendments to international agreements to which Australia has already committed, the Bill appears primarily aimed at facilitating the Santos Barossa Project off Darwin.

A goal of the Bill is to help companies better plan for transboundary carbon capture and storage (CCS) projects. The only company with a medium-term transboundary CCS project is Santos.

Santos' Barossa project is very carbon intensive and likely to incur significant costs under the Government's Safeguard Mechanism legislation. The company has stated that in order to comply with the Safeguard Mechanism it is developing the Bayu-Undan CCS project in East Timor's waters, where it has existing operations. Santos aims to have Bayu-Undan operating by 2026 and no other transboundary projects are expected for several years.

A recent House of Representatives Inquiry also considered this Bill but did not look into the science or merits of CCS. The House Inquiry justified this omission by claiming that these topics had already been covered by a 2007 parliamentary inquiry. However, much has changed since 2007.

Not only has the urgency of emissions reductions become more apparent since 2007, but contrary to that inquiry's view, significant reductions have already been achieved - without CCS. The 2007 inquiry was focused primarily on retrofitting CCS to coal fired power stations, not CCS as a justification for the expansion of fossil fuel exports as is currently proposed. A dissenting report from the 2007 inquiry makes no criticism of CCS, and memorably claims that climate change has been observed on other planets and moons in the solar system, justifying climate inaction on earth. Put simply, the 2007 report does not cover the science and status of CCS in a manner relevant to policy development in 2023.

What has not changed since 2007 is the failure of CCS to commercialise and be adopted at scale. There are just 30 operating CCS projects in the world and 20 of those are dedicated to extracting more fossil fuels. The remaining ten projects have a total nameplate capacity of just 11.6 million tonnes per year, less than the annual emissions of either Loy Yang A power station in Victoria or Bayswater power station in NSW. Few of those ten projects are actually operating at nameplate capacity, suggesting that all the operating, climate-focussed CCS projects in the entire world combined are

sequestering around 6.2 million tonnes of greenhouse gas per year, roughly the emissions of the Port Kembla Steelworks near Wollongong.

Santos' Bayu-Undan CCS project would have capacity of 10 million tonnes per year. This would make it 2.5 times the size of any operating project and almost ten times the current sequestration rate of that world's largest project. No analysis of the plausibility of this proposal appears to have been submitted to, or conducted by, the House Inquiry.

The failure of CCS to sequester significant quantities of climate pollution is entirely unremarked upon by public agencies that provided submissions to the House Inquiry and other related processes. The Climate Change Authority and CSIRO make no attempt to present or explain the current state of CCS globally in recent reports on carbon sequestration, reports referenced by Minister Plibersek in her second reading speech of the Bill. The Climate Change Authority's position is perhaps influenced by its several members with links to fossil fuel and carbon offset industries. The CSIRO has also been reprimanded by its Minister for 'renting out' its brand to the gas industry. Other agencies to provide submissions that border on misleading include:

- Geoscience Australia
- Department of Industry, Science and Resources
- Department of Climate Change, energy, the Environment and Water
- Northern Territory Government
- Department of Foreign Affairs and Trade

With so many urgent climate policy priorities in Australia it is hard to understand how this Bill has made its way to the top of the agenda. Specific, well-understood, policy-aligned legislative tasks like updating the 'water trigger' of the Environmental Protection and Biodiversity Conservation Act to cover shale gas in the Northern Territory, have stalled while this Bill has progressed. We urge the Government to return focus to the core issues of climate policy rather than progressing these changes that appear to be little more than a favour for major fossil fuel companies like Santos.

Introduction

The Australia Institute welcomes the opportunity to make a submission to the Senate Environment and Communications Legislation Committee inquiry into the *Environment Protection (Sea Dumping) Amendment (Using New Technologies to Fight Climate Change) Bill 2023 [Provisions]* (the Bill).

We note that this inquiry is likely to draw on the earlier House Standing Committee on Climate Change, Energy, Environment and Water *Inquiry into the 2009 and 2013 amendments to the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Protocol)* (the House Inquiry).

The Australia Institute strongly objects to the Bill. Despite being presented by the House Inquiry as simply ratifying amendments to international agreements to which Australia has already committed, amendments that would "provide a means for countries to respond to the real urgency of climate change,"[1] the Bill will result in the exact opposite. It will retard responses to climate change because it will facilitate development of new fossil fuel projects, particularly the Santos Barossa Project and other gas projects off Australia's northern shores.

[1] House Standing Committee on Climate Change, Energy, Environment and Water (2023) *Inquiry into the 2009 and 2013 amendments to the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Protocol),* https://www.aph.gov.au/Parliamentary_Business/Committees/House/Climate_Change_Energy_Environment_and_Water/LondonProtocol

Santos, Barossa and the Bill

Environment Minister Tanya Plibersek's Second Reading Speech states that if the Bill is passed, "companies would be able to better plan for transboundary projects for carbon capture and storage (CCS)".[2] The company with the most urgent need for a transboundary carbon CCS project is Santos.

Santos is proposing to develop the Barossa gas field in order to liquefy and export the gas at its Darwin LNG facility. The Barossa project will be a very carbon intensive operation and one that is likely to incur significant costs under the Government's Safeguard Mechanism (SGM) climate legislation. The Australia Institute estimates that the SGM adds up to almost $1 billion to Barossa's costs to the year 2030 if it is forced to buy carbon offsets.[3]

If Barossa could be linked to a successful CCS project, the cost savings for Santos could be significant. Successful CCS project are very rare, but even being able to claim that Barossa's emissions will be sequestered helps Santos in promoting the project to the public, investors, Indigenous stakeholders and regulatory agencies. The company is explicitly developing the Bayu-Undan CCS project to capture, or attempt to capture, Barossa's emissions. Figure 1 below is an extract from the Barossa Gas Project FAQ sheet:

Figure 1: Extract from Barossa Gas Project Frequently Asked Questions

How will you comply with the Safeguard Mechanism to ensure that Barossa is net zero emissions on day one of gas production scheduled for 2025?	The Government is still finalising the detailed guidelines for the Safeguard Mechanism. Santos expects to comply with the Safeguard Mechanism by storing the CO2 at the Bayu-Undan CCS project once the approvals are in place and the CCS infrastructure is operational. Before then, Santos will purchase carbon credits to offset reservoir CO2 emissions.

Source: Barossa Gas Project – Frequently Asked Questions (updated June 2023).

The same document also states that "Santos is working with the governments of Australia and Timor-Leste to progress regulatory frameworks and approvals." It seems likely that the timing of the Bill is a result of Santos' work with the Australian

[2] Plibersek (2023) *Environment Protection (Sea Dumping) Amendment (Using New Technologies to Fight Climate Change) Bill 2023: Second Reading*, https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22chamber%2Fhansardr%2F26709%2F0011%22

[3] Verstegan and Campbell (2023) The New Safeguard Mechanism and the Santos Barossa Gas Project,

Government. The Northern Territory Government's submission to the House Inquiry said:

> The first phase of development of the [Low Emissions Hub] envisages repurposing of the depleted Bayu-Undan gas field, located in the waters of Timor-Leste, as a depository for CO2. The Northern Territory Government has been working closely with Timor-Leste and the LNG industry to align regulatory requirements and ensure success of this project and its ensuing benefits to Timor-Leste, to Australia and to the Northern Territory.[4]

The Northern Territory Government submission makes it clear that there are other CCS projects in its jurisdiction that require the Bill to pass, but these are not expected to begin until "several years" after the Santos project, which is due to "be in operation by 2026", a goal that "will not be met" if the Bill ratifying the 2009 amendment to the London Protocol is not passed.

Based on these materials, it appears that this Bill is aimed at facilitating the Santos Barossa project rather than any genuine demand for Australian CCS services, or Australian capacity to provide such services. Australia, like everywhere else, has not been able to develop CCS into a viable, large-scale emissions solution.

[4] Northern Territory Government (2023) *Submission to the Inquiry into the 2009 and 2013 Amendments to the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Protocol),* https://www.aph.gov.au/DocumentStore.ashx?id=7f3e7146-25f6-49ca-bc7e-ddf4e83949fb&subId=735764

House report and the ‘science and merits of CCS’

The House report includes minimal detail on how many CCS projects are operating, the volume of greenhouse gasses they store, their costs, or any kind of assessment of how realistic the Santos project, and others, are. The House Committee report explains this omission:

> The Committee notes from the outset that this is not an inquiry into the science or merits of carbon capture and storage (CCS) which has been considered by past committees, such as the report of the House Standing Committee on Science and Innovation, *Between a rock and a hard place: The science of geosequestration*. CCS was considered in the course of the inquiry but only in the context of how it relates to the respective amendments.

The *Between a rock and a hard place* report was published in 2007. Its focus is on retrofitting CCS to coal fired power stations, something that has only been achieved once anywhere in the word since (see below). The 2007 report noted:

> In Australia and internationally there is currently a large stock of pulverised coal-fired power stations. Many of these plants are expected to operate for up to 40 more years. If serious cuts in emission are to be achieved by 2050, some form of post-combustion capture technology will need to be part of the CCS strategy.

The report is outdated, to put it mildly. That this committee would eschew substantive engagement with the questionable merits of CCS technology, while pointing to a report that is more than 15 years old, is deeply concerning. Many jurisdictions have achieved serious cuts in emissions already, and none of them did so through CCS. The report comes from a time when the following sentence could be written outside of parody: “The Australian coal industry [is] ‘calling for a carbon price signal to support the technology approach to abating and mitigating greenhouse gas emissions’.” That the context of local decarbonisation has changed so markedly since this report makes its relevance to this Bill even more tenuous.

There was already significant scepticism regarding CCS in 2007; the *Between a rock and a hard place* report quotes a 2004 Australia Institute report that estimated CCS could

(at best) be commercially viable by 2020 and reduce emission by 9% in 2030.[5] However, these views had little impact on the Committee, which recommended significant resourcing of CCS projects. A dissenting report by four Liberal Party members was not sceptical of the potential for CCS, but sceptical of anthropogenic global warming, famously claiming:

> Another problem with the view that it is anthropogenic greenhouse gases that have caused warming is that warming has also been observed on Mars, Jupiter, Triton, Pluto, Neptune and others.
>
> It is the natural property of planets with fluid envelopes to have variability in climate. Thus, at any given time, we may expect about half the planets to be warming. This has nothing to do with human activities.

The dissenting report was mocked at the time,[6] and, as the quotes above show, the main report has not aged well either. It is not, in our view, appropriate for a committee in 2023 to omit examination of the state of CCS use, technology and economics on the basis that this was done in the 2007 *Between a rock and a hard place* report.

[5] Saddler et al (2004) *Geosequestration: What is it and how much can it contribute to a sustainable energy policy for Australia?*, https://australiainstitute.org.au/report/geosequestration-what-is-it-and-how-much-can-it-contribute-to-a-sustainable-energy-policy-for-australia/

[6] Crabb (2007) *Aliens in the house from the Planet Propaganda*, https://www.smh.com.au/national/aliens-in-the-house-from-the-planet-propaganda-20070814-gdquou.html

Current state of CCS

We provide here a brief snapshot of operating CCS projects based on the report *Global status of CCS 2022*.[7] According to the Global CCS Institute, in 2022 there were just 30 CCS projects operating globally, with a combined nameplate capacity of 43 million tonnes per year. To put this in context, the combined emissions of just four coal fired power stations in Australia emit more greenhouse gasses than the total capacity of all currently-operating CCS projects in the world.[8]

Of the 30 operating CCS projects, 20 are dedicated to enhanced oil recovery (EOR). EOR projects inject carbon dioxide into underground reservoirs of oil and gas in order to extract more fossil fuels. To put it plainly, EOR projects are aimed at increasing greenhouse gas emissions, not reducing them. Over their lifecycle, we estimate that EOR projects result in three tonnes of CO2 emissions for every tonne of CO2 stored.[9] EOR can have CO_2 retention rates lower than 30 percent,[10] but can increase the amount of oil recovered by up to 40 percent and extend the life of oil fields by decades.[11]

The world's ten operating CCS projects that are not dedicated to EOR have a total nameplate capacity of just 11.6 million tonnes per year, as shown in Table 1 below:

[7] Global CCS Institute (2023) *Global status of CCS 2022*, https://www.globalccsinstitute.com/resources/global-status-of-ccs-2022/

[8] Emissions of Loy Yang A, Bayswater, Yallourn and Eraring in 2021-22 sum to 52.7 million tonnes. Clean Energy Regulator (2023) *Electricity sector emissions and generation data 2021–22*, https://www.cleanenergyregulator.gov.au/NGER/National%20greenhouse%20and%20energy%20reporting%20data/electricity-sector-emissions-and-generation-data/electricity-sector-emissions-and-generation-data-2021%E2%80%9322

[9] Ogge et al (2021) *Santos' CCS scam*, https://australiainstitute.org.au/report/santos-ccs-scam/

[10] Longden at al (2021) 'Clean' hydrogen? An analysis of the emissions and costs of fossil fuel based versus renewable electricity based hydrogen, http://iceds.anu.edu.au/files/2020%2003%2025%20-%20ZCEAP%20-%20CCEP%20Working%20Paper%20-%20Clean%20hydrogen%20emissions%20and%20costs_0.pdf

[11] United States Government, Office of Fossil Energy and Carbon management (2021) Enhanced Oil Recovery, https://www.energy.gov/fecm/science-innovation/oil-gas-research/enhanced-oil-recovery

Table 1: Operating CCS projects (excluding EOR-only projects)

Project name	Country	Year started	Industry	Nameplate capacity (Mtpa)
Gorgon Carbon Dioxide Injection	Australia	2019	Gas processing	4
Qatar LNG CCS	Qatar	2019	Gas processing	2.2
Quest	Canada	2015	Hydrogen	1.3
Sleipner CO2 Storage	Norway	1996	Gas processing	1
Illinois Industrial Carbon Capture and Storage	USA	2017	Ethanol	1
Boundary Dam 3 Carbon Capture and Storage Facility	Canada	2014	Power generation	1
Snohvit CO2 Storage	Norway	2008	Gas processing	0.7
Glacier Gas Plant MCCS	Canada	2022	Gas processing	0.2
Red Trail Energy CCS	USA	2022	Ethanol	0.18
Orca	Iceland	2021	Direct air capture	0.004
Total				11.6

Source: Global CCS Institute (2023)

Table 1 shows that the total nameplate capacity of operating CCS projects that are not entirely dedicated to extracting more fossil fuels is 11.6 million tonnes per year. For context, this is less than the annual emissions of either Loy Yang A power station in Victoria or Bayswater power station in NSW.[12]

Table 1 shows that the largest operating CCS project is Australia's Gorgon project, with a nameplate capacity of 4 million tonnes per year. Gorgon began operations years behind schedule and is currently operating at just one third of its nameplate capacity.[13] Gorgon has been subsidised by the Commonwealth and WA Governments, which further brings into question the viability of such schemes.[14]

[12] Clean Energy Regulator (2023) op cit.

[13] Mercer (2023) *World's biggest carbon capture plant running at one third capacity, Chevron Australia reveals*, https://www.abc.net.au/news/2023-05-17/chevron-australia-carbon-capture-storage-gorgon-third-capacity/102357652

[14] Swann (2018) *Gorgon-tuan problem*, https://australiainstitute.org.au/report/gorgon-tuan-problem/

The submission to the House Inquiry by the Australian Petroleum Production and Exploration Association (APPEA) claims that Santos' Bayu-Undan CCS project would have capacity of 10 million tonnes per year.[15] On this basis, Santos' proposal would be 2.5 times larger than any existing project and almost ten times the current sequestration rate of that world's largest project. No analysis of the plausibility of this proposal appears to have been submitted to the House Inquiry.

Most other projects listed in Table 1 are also problematic. There seems to be little transparency around the Qatar LNG CCS project.[16] Both of the Norwegian projects have recently encountered geological problems.[17] Boundary Dam, the world's only CCS-equipped coal fired power station, is operating at around half capacity and it is partially an EOR project.[18]

In short, all the operating CCS projects in the world would struggle to contain the emissions of the Port Kembla Steelworks near Wollongong (6.2 million tonnes in 2021-22).[19] Such critical analysis of CCS is almost entirely absent from public agency advice to the Minister and the House Inquiry.

[15] APPEA (2023) Parli*amentary Inquiry: Submission to the inquiry into the Amendments to the London Protocol*, https://www.aph.gov.au/Parliamentary_Business/Committees/House/Climate_Change_Energy_Environment_and_Water/LondonProtocol/Submissions

[16] Hodge (2022) *Carbon capture and storage (CCS) in the Middle East – a future powerhouse of the hydrogen industry?*, https://www.spglobal.com/commodityinsights/en/ci/research-analysis/carbon-capture-and-storage-ccs-in-the-middle-east.html.

[17] Hauber (2023) *Norway's Sleipner and Snøhvit CCS: Industry models or cautionary tales*?, https://ieefa.org/resources/norways-sleipner-and-snohvit-ccs-industry-models-or-cautionary-tales

[18] Anchondo (2022) *CCS 'red flag?' World's sole coal project hits snag*, https://www.eenews.net/articles/ccs-red-flag-worlds-sole-coal-project-hits-snag/

[19] Clean Energy Regulator (2023) *Safeguard facility reported emissions 2021-22*, https://www.cleanenergyregulator.gov.au/NGER/The-safeguard-mechanism/safeguard-data/safeguard-facility-reported-emissions/safeguard-facility-reported-emissions-2021-22

Public agency advice on CCS

Australia's public agencies make little mention of the very small volume of CCS capacity operating globally, or the reasons why CCS has not developed as anticipated.

In her Second Reading Speech, Minister Plibersek noted that the Climate Change Authority (CCA) had "come to a similar conclusion" as the House Committee around the London Protocol. The Minister appears to be referring to the CCA's recent "policy insights" paper.[20] Other than noting that CCS and other "engineered sequestration technologies" are "starting from a low base", this apparent "deep dive" into the topic makes no mention of the decades of failure of CCS and its minimal operating scale.

This omission is perhaps not surprising. The CCA is riddled with conflicts of interest, with only one climate scientist as a member, while several have strong links to carbon offset and fossil fuel industries.[21]

The CCA's policy insights paper is based on a more detailed research report that the Authority commissioned from CSIRO titled *Australia's carbon sequestration potential: A stocktake and analysis of sequestration technologies*.[22] Despite including a chapter on geological storage, including a section on "current uptake", the report makes no mention of the near complete failure of CCS globally. Despite decades of data to the contrary and examples like Gorgon locally available, the CSIRO report claims that "barriers to implementation of CCS are not technological, but rather relate to social license to operate, cost and government policy." It goes on to say:

> It is also interesting to note that many of the (CCS) projects in the pipeline are associated with the fossil fuel industry. This industry has recognised the need to shift to low emissions energy and is actively pursuing a range of technologies to achieve this… The scale and financial resources of the oil and gas industry, in addition to their products being the source of most CO_2 emissions, makes them well placed to drive the application of these technologies.

[20] CCA (2023) *Reduce, remove and store: The role of carbon sequestration in accelerating Australia's decarbonisation*, https://www.climatechangeauthority.gov.au/publications/reduce-remove-and-store-role-carbon-sequestration-accelerating-australias-decarbonisation

[21] Hemming and Campbell (2022) *Integrity and the Climate Change Authority*, https://australiainstitute.org.au/report/integrity-and-the-climate-change-authority/

[22] CSIRO (2022) *Australia's carbon sequestration potential: A stocktake and analysis of sequestration technologies*, https://www.csiro.au/en/research/environmental-impacts/emissions/carbon-sequestration-potential

The CSIRO seems entirely unphased that most of the fossil fuel industry CCS projects are driven not by a recognition of the need for low emissions energy, but to justify fossil fuel expansion. Like the CCA, the CSIRO has close links to the gas industry and has been warned by the Minister for Science and Industry against 'renting out its brand' to the industry.[23]

Beyond the CCA and CSIRO reports referred to by Minister Plibersek, the submissions to the House inquiry by public agencies make no mention of the failure of CCS to reach scale or commercial viability, or the reasons for this. Where global CCS capacity is mentioned, it is presented as being significant. Agencies emphasise the "maturity" of CCS and its apparent necessity, as shown in the following quotes.

Geoscience Australia

> The geological capture of carbon dioxide (CO2) is a widely recognised strategy for helping to mitigate the potential impacts of global climate change, and for reducing acidification within the world's oceans (e.g. IPCC, 2007; The Royal Society, 2005). The potential environmental impacts of CO2 capture and storage in geological basins are also acknowledged, as many countries assess and test the technology.
>
> Carbon capture and storage (CCS) is a mature technology with commercial-scale projects operating around the globe, both onshore and offshore. CCS is regarded by many, including the International Energy Agency (IEA, 2020; 2021) and Intergovernmental Panel on Climate Change (IPCC, 2022), as an essential tool to meet emission targets and climate goals.
>
> …
>
> Globally, around 35 commercial Carbon Capture Use and Storage (CCUS) projects capture nearly 45 million tonnes (Mt) of CO2 per year, which is equivalent to growing 2 billion trees a year.

Department of Industry, Science and Resources

> Australian offshore and onshore CCS has the potential to drive significant international investment into Australia, enhance economic relationships with regional partners, support Australia in achieving net zero by 2050 and assist global greenhouse gas emission reduction.

[23] Hannam (2022) *Science minister warns CSIRO against 'renting out' its brand to giant gas companies*, https://www.theguardian.com/australia-news/2022/oct/18/science-minister-warns-csiro-against-renting-out-its-brand-to-giant-gas-companies

The Climate Change Authority through its Carbon Sequestration Potential project has identified that achieving the Paris Agreement goals will require urgent and ambitious cuts to global greenhouse gas emissions, supplemented by the removal and storage of carbon dioxide from our atmosphere, which may include offshore CCS.

Australia is well placed to capitalise on the emerging offshore CCS industry due to many competitive Advantages.

…

Although the CCS industry is still working towards large-scale commercial levels in Australia, the sequestration potential for geological storage is high.

Department of Climate Change, energy, the Environment and Water

There are important benefits in establishing a global framework to regulate the international trade of CO2 to enable countries to manage their CO2 emissions. Carbon Capture and Sequestration (CCS) is recognised as having the potential to play a key role in decarbonising energy intensive industries and hard-to-abate sectors such as cement and chemical production. The Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) both recognise the role that CCS can play in emissions scenarios, with the aim of limiting global temperature rise to 1.5°C or under 2°C of pre-industrial levels. The possibility of international trade of CO2 for the purpose of sub-seabed sequestration has received increasing attention because many countries do not have the capacity to permanently store CO2 in territorial geological formations.

International climate change initiatives

The IPCC, IEA, and International Renewable Energy Agency (IRENA) recognise that a range of CO2 removal technologies are required to meet global net zero emissions. Offshore CCS is part of a suite of decarbonation strategies and offers a viable storage solution to emissions reduction projects that capture CO2.

Northern Territory Government

Climate change poses major challenges to environmental stability, economic growth and human development in the Asia-Pacific region. This region includes 13 of the 30 countries most vulnerable to the impacts of climate change, and without concerted action, the region could see an additional 7.5 million people fall into poverty due to climate impacts by 2030. Allowing import and export of large quantities of CO2 will help alleviate climate-based social impacts.

…

> The full value of the Northern Territory's CCS value chain is yet to be determined. Based on the recommended capped price of AU$75 per tonne, the Northern Territory's offshore fields offer potential for a CO2 disposal market that grows from AU$400 million in 2026 to in excess of AU$1.5billion per annum for duration of its operation beyond 2040. The value of the Northern Territory's CCS facility to the Asia-Pacific region has the potential to grow further if it is developed as a service, supply and support industry capable of providing key outcomes such as technology, skills and training. Potential economic gains will not be optimised if the 2009 amendment is not accepted. The size of the potential CCS market across the Asia-Pacific region means that competition is of no serious concern in the immediate future. To reach net zero emissions in the Asia-Pacific region, over 17Gt of CO2 will need abatement annually. In addition to technological improvements and use of alternative energies, multiple large-scale CCS facilities with the capacity to import and export CO2 will need to be constructed quickly to meet this goal.

Department of Foreign Affairs and Trade

> In 2022, there were 30 operational CCUS projects globally, 11 under construction and 153 in development. This total of 196 projects represented a 44 per cent increase from 2021. North America is home to most existing initiatives.
>
> Several offshore carbon dioxide (CO2) sequestration projects are operational and have been for many years. For example, Norway's Sleipner offshore CCS project has operated off the coast of Norway since 1996 and sequesters 0.9 million tonnes of CO2 annually. Norway's Snovit offshore CCS project has been in operation since 2008 and sequesters 0.7 million tonnes of CO2 annually.
>
> …
>
> Many countries are prioritising CCUS projects as a critical part of their climate and energy policies. These countries are contributing to the steady development of an international market for transboundary movement of CO2. Some countries are driven by their lack of alternative options for decarbonisation, others by the revenue potential of selling access to subsea storage options in their territorial waters or exclusive economic zones.

It is not surprising that public agencies support the policy of the government of the day, nor is it unusual that agencies support a proposal to ratify an amendment to an

existing treaty. Trade and market-focused policies such as what the Bill aims to achieve have long been favoured by departments such as DFAT.

But such support should at least come with context and critical analysis of CCS data presented by these agencies. This omission is so extreme that it gives the impression that the agency submissions intend to mislead. Such a conclusion should be unthinkable but writing in the week that the Royal Commission into the Robodebt Scheme handed down its final report, it appears all-too-possible.

Conclusion

The most disappointing aspect to this Bill is that after a 'lost decade' of climate policy, there are so many urgent climate policy priorities in Australia. How can our climate targets be met? How to decarbonise transport and other sectors? How to phase out fossil fuel subsidies?

Even specific, well-understood, policy-aligned legislative tasks like updating the 'water trigger' of the Environmental Protection and Biodiversity Conservation Act to cover shale gas in the Northern Territory, seem to be given little priority.[24] But following the Government's $1.5 billion subsidy for fossil fuel supporting infrastructure in Darwin, perhaps it should not be such a surprise that this favour for Santos and its Barossa project has made its way to the top of the agenda.

[24] Allison and Barwick (2023) *MP Marion Scrymgour calls for hold on Beetaloo Basin approvals over fracking risks*, https://www.abc.net.au/news/2023-05-16/marion-scrymgour-nt-beetaloo-basin-fracking-water-concern/102351558