

House Standing Committee on Climate Change, Energy, Environment and Water

6 June 2023

House of Representatives

Parliament House

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Supplementary submission regarding proposed amendments to the London Protocol:

I would like to thank the House Standing Committee on Climate Change, Energy, Environment and Water for this opportunity to make the following supplementary submission regarding 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)'.

I have made this supplementary submission as an Australian citizen concerned about the long-term environmental risks and unforeseen consequences of adopting the 2009 and 2013 amendments to the London Protocol for the transfer and storage of carbon dioxide in Australia and across international boundaries.

I live on the Mornington Peninsula in Victoria and do not represent any organisation regarding this submission.

1. Summary:

This supplementary submission will present additional information and questions about proposed amendments to the London Protocol and the potential long-term environmental, legal and financial costs of the transportation and storage of carbon dioxide streams (CO₂) beneath Australian territorial waters.

I oppose amendments to the London Protocol that would increase the potential for adverse risks and pollution impacts to the Australian marine environment, prolong climate change impacts from the production of fossil fuels within Australia and create long-term legal and financial liabilities for future generations of Australians.

I listened to the live broadcast of the CCEEW public hearing on 26 May 2023 to hear the Committee ask questions and witness responses and await the written transcript of the hearing to be made public ⁽¹⁾.

2. Environmental impacts:

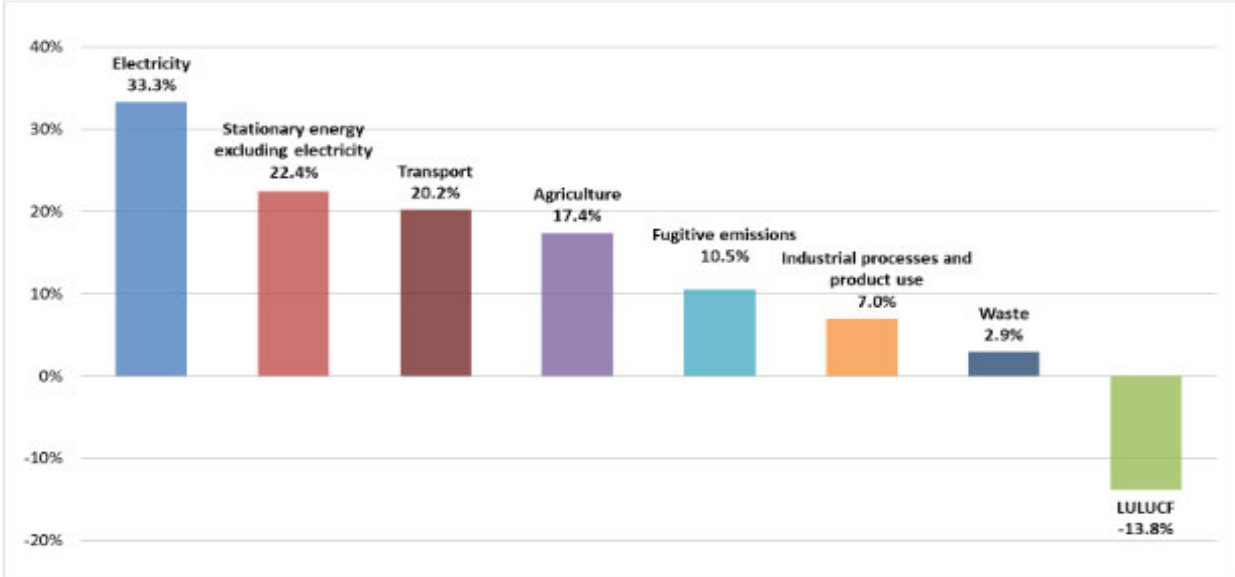
"How will Australian citizens be informed about the proposed London Protocol amendments and the environmental impacts of undersea transportation and storage of CO₂ beneath Australian territorial waters?"

The Australian public would have little knowledge of the concept of capturing CO₂ emissions, transporting CO₂ in undersea pipelines and storing CO₂ beneath the seabed in Australia or in other nations. There has been little public consultation on proposed amendments to the London Protocol and no public communications program on the environmental benefits or risks of transporting CO₂ around Australia.

1. https://www.aph.gov.au/Parliamentary_Business/Committees/House/Climate_Change_Energy_Environment_and_Water/LondonProtocol/Public_Hearings

The issue of climate change and the urgent need to decarbonise our economy is well understood and supported by most Australians. Australia produced over 460 million tonnes of CO₂-e in 2022 ⁽²⁾ with electricity generation creating 33.3% of total emissions, transportation at 20.2% and fugitive emissions (fossil fuel production, LNG exports) creating 10.5% of greenhouse gas emissions ⁽³⁾. The expansion of liquefied natural gas (LNG) exports since 2014 has contributed to a 27.4% increase in stationary energy emissions.

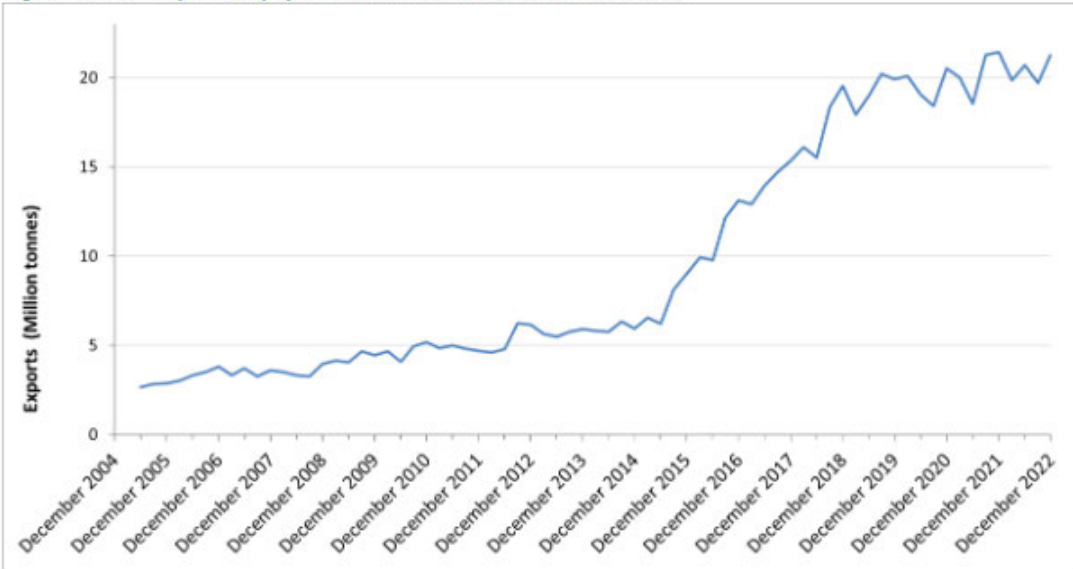
Figure 3: Share of total emissions, by sector, for the year to December 2022



Source: Department of Climate Change, Energy, the Environment and Water

The successful uptake of solar panels and electric vehicles in Australia has resulted in a reduction in residential CO₂ emissions and proof that Australians want to reduce their carbon footprint. However, the majority of Australia’s emissions comes from energy production, fossil fuel combustion and LNG production and exports.

Figure 9: LNG exports, by quarter, June 2005 to December 2022



Source: Department of Climate Change, Energy, the Environment and Water

The massive construction boom in LNG infrastructure and port terminals around Australia has led to an increase in carbon emissions and fugitive emissions that were greater than predicted to the Australian people before 2014. Despite attempts to contain CO₂ emissions with carbon capture and storage (CCS) at the Gorgon LNG project on Barrow Island in Western Australia, carbon emissions continue to increase at that site (4),

In regards to proposed amendments to the London Protocol to allow transport and storage of CO₂ in Australia and between Asian countries (primarily Japan, South Korea and Singapore), it is concerning to hear claims that the construction of thousands of kilometres of CO₂ pipelines, new infrastructure, monitoring equipment and undersea reservoirs will result in significant environmental benefits for Australia and Asia.

The additional greenhouse gas emissions from the operations of CO₂ pipelines and CCS storage are unknown.

It is in the public interest that the Australian people are fully informed of all aspects of the proposed amendments to the London Protocol including potential environmental risks, financial costs, legal liabilities, climate change impacts, etc. from the CCS projects claiming to reduce CO₂ emissions in Australia and Asia.

Community acceptance of the proposed London Protocol amendments will require detailed information, transparency and resources in order to deal with uncertainty and concern regarding CCS.

Genuine engagement with the Australian people on the potential environmental impacts of importing carbon dioxide streams for sub-seabed sequestration, ocean fertilisation and new regulations regarding greenhouse gas inventories will be required by governments and proponents in order to gain social licence.

3. Legal and Financial liabilities:

“Who will hold long-term responsibility for the environmental impacts of transportation and storage of CO₂ emissions within Australia and across international boundaries?”

The issue of legal liability has not been adequately addressed in regards to potential environmental impacts from the import, export and sub-seabed storage of CO₂ in Australia and across international boundaries.

There are many potential risks and hazards involved in the transportation of CO₂ via undersea pipeline and its storage beneath the sub-seabed. These risks include loss of containment, leakage, rupture, seismic events, etc. These risks and mitigations may be the initial responsibility of CO₂ pipeline operators during the construction and operation phases for the first few decades but would the Australian taxpayer later take on full ownership and liability in the long-term?

Long-term common law liability obligations for CO₂ stored beneath Australian territorial waters could cost billions of dollars in the future if CCS projects fail to securely transport and store carbon emissions below the sub-seabed. Transfer of responsibility and liability from the project proponents to the Australian Government (or other party nations) must be carefully considered to ensure new regulations and laws do not expose the taxpayer to unlimited monitoring, remediation and rehabilitation costs.

The issue of liability would be crucial once a CO₂ storage reservoir is full and sealed under constant pressure.

2. <https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-gas-inventory-quarterly-update-december-2022>

3. <https://www.dcceew.gov.au/sites/default/files/documents/nggi-quarterly-update-dec-2022.pdf>

4. <https://www.theguardian.com/environment/2023/apr/21/emissions-wa-gas-project-chevron-carbon-capture-system-pilbara-coast>

4. CO2 pipeline and storage financial costs:

“Who will provide funding for the construction, operation, monitoring and decommissioning of CO2 pipelines and storage reservoirs located within Australia and in other countries?”

The finances required to build thousands of kilometres of new CO2 pipelines within Australia and across South East Asia would be immense – who will provide funding and insurance to cover environmental damage? ExxonMobil is currently seeking \$100 billion to capture CO2 from industrial facilities along the Houston Ship Channel and store the carbon emissions beneath the Gulf of Mexico sea floor (5).

A key issue for financing CCS is the lack of verifiable data to prove the effectiveness of commercial-scale projects against stated claims by proponents. The Institute for Energy Economics and Financial Analysis (IEEFA) reported that “... the actual costs are largely untested and in most cases, unproven, as their performance and costs have not been verified by third parties. Additionally, the permanence of CO₂ storage will need to be proven over a millennia timescale. This will require appropriate monitoring and verification standards, liability frameworks, and additional emissions buffers to protect the climate and public from CO₂ leakage.” (6).

The Safeguard Mechanism reforms recently passed by Parliament may allow future CCS projects to abate or offset carbon emissions in order to meet ‘international best practice’ zero net greenhouse gas emissions using Australian Carbon Credit Units (ACCUs). CCS proponents may seek financial incentives or funding from the Federal Government to reduce CO2 emissions from their operations within Australia (7).

It would be unfortunate if the Australian taxpayer provided funding for CO2 pipeline projects that transported carbon dioxide from LNG facilities extracting natural gas from new gas fields in Australia – storing new CO2 streams from new LNG operations would not rapidly reduce Australia’s overall CO2 emissions inventory.

5. Conclusion:

I have strong concerns about the long-term consequences of adopting the 2009 and 2013 amendments for the London Protocol and their impacts on Australia’s environment and society in the future.

The potential liabilities and financial costs could be significant if proposed undersea CO2 pipelines and storage reservoirs fail to contain every molecule of carbon dioxide securely and the Australian taxpayer providing guarantees to pay for ongoing remediation and rehabilitation for any environmental damage caused.

I hope the Committee will seek out further information on the environmental, legal and financial risks of adopting the London Protocol amendments and use all means necessary to ask questions of any corporation or government department in order to gather the evidence it needs to complete its work.

I thank the Committee for their time and consideration of this supplementary submission.

5. <https://insideclimatenews.org/news/25092022/exxon-houston-ship-channel-carbon-capture/>

6. <https://ieefa.org/articles/investment-risks-carbon-capture-and-storage-currently-outweigh-its-potential>

7. <https://www.afr.com/companies/energy/safeguard-changes-to-kick-forward-carbon-capture-20230410-p5cz9j>

6. Additional questions:

1. How many kilometres of CO2 pipelines are projected to be built within Australia and to Asia by 2050?
2. What % of Australia's carbon emissions (currently 460 Mt CO2-e in 2022) are projected to be captured and transported on by CO2 pipelines for undersea storage by 2050?
3. How would proponents respond to multiple leaks or ruptures in undersea CO2 pipelines in a worse case scenario and what would the response time be to seal a leak at deep sea level?
4. What new regulations and laws would be required in Australia before adopting the amendments for the London Protocol?
5. What permanent effects could a CO2 pipeline leak have on the surrounding marine environment?
6. How would a CO2 plume move in the marine environment due to a pipeline leak or rupture and at what speed?
7. What due diligence has been conducted on the marine life that exists in the sub-seabed where CO2 would be sequestered beneath Australian waters?
8. How has the Precautionary Principle been utilised to anticipate threats of harm or risks to the marine environment due to the operations of transferring CO2 in undersea pipelines and storage beneath the sub-seabed?
9. What effect would seawater have on undersea CO2 pipelines regarding corrosion, pressure and leakage?
10. How would current natural gas pipelines manage CO2 streams at higher pressures than methane and what modifications would be required for long-term undersea transportation of carbon dioxide?