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Committee Secretary  
Standing Committee on Climate Change, Energy, Environment and Water  
PO Box 6021  
Canberra, ACT 2600

Dear Committee Secretary

**Re: *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)***

Please find CO2CRC's submission to the House of Representatives Standing Committee on Climate Change, Energy, Environment and Water's inquiry into the 2009 and 2013 amendments to the 1996 London Protocol provided below.

By way of background, CO2CRC is a not-for-profit research organisation that has been investigating Carbon Capture, Utilisation and Storage (CCUS) for twenty years. CO2CRC develops and trials next-generation low-emission technologies in commercially relevant, first-of-a-kind demonstrations.

Our portfolio is developed in line with industry and government priorities, which enables collaboration and financial efficiencies to trial the new low-emission technologies. CO2CRC works with national and international discipline leaders, manages interdisciplinary and inter-institutional research projects and has well-established, decade-long relationships, strong international brand recognition, and an outstanding health and safety record. The organisation has an internationally recognised track record of safely delivering complex demonstration projects within a well-established governance structure.

CO2CRC is well regarded nationally and internationally, not only for the quality of its science but also for its independence.

As an independent organisation, CO2CRC considers the signing by Australia of the Article 6 Amendment of the London Protocol as essential. The signing will yield significant environmental and economic benefits to Australia, its major Asia Pacific trading partners, and neighbouring developing countries such as Timor Leste. Failure to sign, or further delays, would entail significant risks to the projects necessary to deliver the government's legislated emissions targets.

Yours sincerely



Dr Matthias Raab  
Chief Executive Officer

## Submission by CO2CRC 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)”

### Submission Summary

Carbon capture and storage (CCS) is a safe, proven and increasingly cost-effective technology that can deliver large-scale reductions in emissions for a wide range of industries. Critically, CCS is not only necessary but essential. Indeed, the IPCC (reference below) stated recently that there is no pathway to net zero which involves increased energy usage globally that does not rely critically upon the greatly accelerated rollout of CCS. The CCS industry is responding robustly to the challenge of net zero globally and, within Australia, to the mandated 43% reduction target by 2030. Domestically, there are approximately 15 large CCS projects which are in the concept selection, development or operational phases, with many more in the earlier evaluation phase. Many of these Australian projects will involve the construction of large CCS storage “hubs”, which store CO<sub>2</sub> obtained from multiple domestic sources onshore and offshore, as well as, in the longer term, from overseas. It is the latter class of projects, involving the geo-sequestration of CO<sub>2</sub> imported from overseas, which are dependent upon Australia signing the amendment to Article 6 of the London Protocol (*Article 6 Amendment*).

The signing of the Article 6 Amendment is critical for several reasons. Firstly, there is a groundswell of CCS projects which offer Australia the opportunity to secure its own economic prosperity whilst meeting the nation’s agreed emissions targets. The approvals for these projects are, however, both time-sensitive and dependent upon an appropriate and supportive domestic regulatory environment. A once-in-a-generation opportunity to deliver Australian CCS projects, at scale, via large CCS hubs which could make a truly significant difference to the nation’s emissions, could be lost if the Article 6 Amendment is not signed and signed expeditiously. Major companies can and will relocate their CCS investments to countries that have more attractive and supportive regulatory frameworks. Secondly, many of our key trading partners in the Asia Pacific are actively assessing projects that involve the capture of CO<sub>2</sub> from activities and processes in their own countries, often using Australian LNG etc, with the subsequent export of that CO<sub>2</sub> for permanent geological storage in Australia. Countries such as Japan, the Republic of Korea and Singapore do not have appropriate geological storage options and hence their projects – and the ability of these countries to meet their own emissions agreements – are dependent on Australia’s approval of the transboundary shipment of CO<sub>2</sub>. Consequently, further delays in the approval by Australia of the Article 6 Amendment of the London Protocol will adversely affect economic and environmental outcomes both nationally and globally, especially for many of our key strategic Asia Pacific partners. Finally, developing nations such as Timor Leste recognise the long-term economic opportunity that transboundary CO<sub>2</sub> shipment and storage offers; an example of this is the proposed Bayu Undan CCS project, which involves the transportation of CO<sub>2</sub> from Darwin LNG to Bayu Undan. Revenue from this project alone could provide Timor Leste with much-needed revenue.

It is for the reasons listed above, as well as for the factors discussed in more detail in the supporting material below, that CO2CRC urges the inquiry to support the Article 6 Amendment.

## Supporting Information

### [CCS & Trans-boundary CCS: Safe, Reliable, Necessary and Urgent](#)

According to the IPCC's Working Group III's (WGIII) Contribution to the Sixth Assessment Report (AR6; 2022), carbon capture and storage (CCS) is a key necessity if the global emissions reduction targets are to be met. In fact, AR6 notes that there is no scenario involving the future increased use of energy globally that does not require CCS to meet the agreed global emission goals.

Even with the most optimistic uptake of renewable energy, annual storage rates using CCS will need to be 3 gigatons, nearly 75 times the current storage levels. Other, more realistic IPCC scenarios require even greater amounts of CCS-related CO<sub>2</sub> storage. Relatively conservative estimates undertaken by the OGCI and the GCCSI suggest that the existing global CCS storage capacity of approximately 39 million tonnes per annum (2018) will need to be increased approximately 100 times, to 3.8 Gt per annum to meet 2040 Paris Agreement targets.

As of September 2022, the total capacity of CCS projects in development globally was 244 million tonnes per annum (Mtpa) of CO<sub>2</sub>, an increase of 44 per cent over the preceding 12 months (GCCSI annual report 2022). The majority of these projects are situated in either North America or Europe, where a range of financial incentives and encouraging policy settings are driving and accelerating the CCS project rollout. As with Australia, many of these projects involve transboundary CCS and hence require the signing of the Article 6 Amendment, which for some countries and projects has already been done. Within Australia, there are approximately 15 major CCS projects in the detailed planning, approval or implementation stages; perhaps 5-6 of these are already contingent on the amendment to allow transboundary CO<sub>2</sub> transportation.

CCS represents the only suite of proven, viable and available technologies that can significantly reduce emissions from existing and new oil and gas developments, with the injection of CO<sub>2</sub> into proven storage reservoirs being both technically possible and increasingly cost-effective. It has been shown that the storage of CO<sub>2</sub> within the many suitable geological formations and settings presents no risk to the environment or to Australia's emission profile. Similarly, the transport of CO<sub>2</sub> via ships and pipelines has also been demonstrated to be safe through decades of large-scale industrial use and has taken place within a well-established regulatory and safety framework.

The future of CCS in Australia and elsewhere appears certain to be dominated by large CO<sub>2</sub> capture and storage hubs, which will collectively provide the vast storage capacity necessary to meet the national and global emissions reduction targets. An example is the Middle Arm Hub in Darwin, currently in the planning and development stage.

In summary, CCS is not only necessary, but also an essential and urgent priority that is accepted as a critical component of the national and global emissions reduction strategies. Australia's amendment to Article 6 of the London Protocol should be considered and adopted expeditiously, so that project momentum within Australia and with its key trading partners can be maintained and our collective targets met.

### Long Stranding Bi-Partisan Support for Article 6 Amendment

There has been long-standing, bi-partisan support for the Article 6 Amendment.

In 2009, the Rudd Government voted in the IMO plenary to support the signing and this support was maintained by the Abbott, Turnbull and Morrison Governments. The latter also voted in favour of the 2019 Provisional Application decision, which allows Parties that have accepted the Amendment to provisionally apply the Amendment as if it was legally operative prior to entry into force.

This genuine bi-partisan support for the Article 6 amendment has created a positive environment for business planning and project development, something that the agreement to the amendment will strengthen further. Signing will provide the regulatory certainty that these very expensive, long-term CCS projects require.

In summary, signing the Article 6 Amendment will be a confirmation of long-held policy by both parties and will contribute significantly to creating a positive investment environment.

### Minimal Risks in Signing Article 6 Amendment

Any transboundary shipment and storage of CO<sub>2</sub> under the Article 6 amendment can be accommodated within Australia's greenhouse gas (GHG) accounting and regulatory frameworks with relatively minor adjustments to the existing methodology. The GHG accounting framework already has existing treatments to measure and account for CCS-related emissions and further regulations will be developed to ensure any projects meet the additional requirements set out in the London Protocol amendment and supporting decisions. Importantly, no project can proceed without meeting the requirements for full measurement, monitoring and long-term liabilities for emissions and other environmental safeguards that will be required for all such projects.

In summary, given that the technical understanding regarding geological carbon storage and the regulatory approvals process for CCS within Australia are both well advanced, it seems that the risks related to the signing of the Article 6 Amendment appear to be very low.

### Industry's Response to Emissions Reduction Targets

Industry within Australia is moving proactively with a wide range of investments related to CCS, as shown in Figure 1. Many CCS projects are now in the project pipeline, with another tranche of projects at an earlier stage of formulation.

A significant percentage of these projects will rely in some measure upon transboundary transportation of CO<sub>2</sub>, with CO<sub>2</sub> transported from overseas locations – typically within the Asia Pacific – into large CCS storage hubs within Australia and Australia's waters. These London Protocol "dependent" projects will all be very large projects which have high storage rates and long lifespans. Clearly, it is these projects which will have the capacity to make the earliest and deepest cuts to Australian and global emissions. Consequently, it is essential, if our national and global emissions targets are to be met, that these projects proceed and proceed promptly. Our major Asia Pacific trading partners, such as the Republic of Korea, Singapore and Japan, have many projects, critical to their emissions planning, that rely upon the transboundary transportation of CO<sub>2</sub> into Australia.

In summary, many of the projects that the Australian CCS industry is rolling out are, to a greater or lesser degree, reliant upon the signing of the Article 6 Amendment.

### Status International of the Article 6 Amendment

Nine other CCUS deploying Parties (Republic of Korea, Denmark, Estonia, Finland, Islamic Republic of Iran, Netherlands, Norway, Sweden and the United Kingdom) have already accepted the Article 6 Amendment, thereby enabling a number of major transboundary CCS projects to proceed down the project approvals and development pathway. Critically, the delays within Australia are occurring at the same time as our business competitors in North America and Europe are rolling out CCS projects - including transboundary projects - at a dramatically accelerated rate, facilitated by supportive government legislation and legislative processes and very attractive government financial incentives. In an environment wherein competition for investment funding is intense, further delays will only make the required investment environment more challenging.

By moving to formalise this support through the acceptance of the Article 6 Amendment and by updating the enabling national (Sea Dumping Act 1981) and associated regulatory structures to align with the internationally agreed London Protocol and requirements for carbon accounting under the UNFCCC, Australia will remove a critical legal barrier to project development and investment. Thereby, Australia will support its clean energy trading partners to move towards their own net-zero targets and to unlock investment decisions in 2023-24 and subsequently. This will clear a pipeline of major clean energy projects that represent significant infrastructure, trade and employment opportunities in the Asia-Pacific region, opportunities that rely upon the certainty from Australia regarding its commitment on the Amendment.

In summary, acceptance of the Article 6 Amendment will create options and opportunities for the development of new industries and trade across the region, as well as for strengthening the already vital regional relationships with the Republic of Korea, Japan, Singapore and Timor Leste and other strategic partners. Maintaining Australia's globally competitive stature requires action.

### Recommendations

CCS projects have long lead times to commencement and then staged, gated investment processes in Australia and in partner countries. Without the removal of the current legal impediments to transboundary shipment and storage, companies are unable to consider and then make the very significant required investments and this introduces costly delays which will inevitably make the achievement of our shared climate and business transformation goals - within the required timeframes - almost impossible.

CCS is an essential and urgent priority that is accepted as a critical component of national and global emissions reduction strategies. Australia's amendment to Article 6 of the London Protocol should be considered carefully and then adopted expeditiously, so that project momentum within Australia and with its key trading partners can be maintained and, thereby, our collective emissions targets can be met.

In summary, CCS is safe, reliable and necessary, industry has a pipeline of projects awaiting approval, there is bi-partisan support for the Article 6 amendment, the risks are very low, quantifiable and manageable and transboundary CO<sub>2</sub> transportation is rolling out globally, and our trading partners are relying upon Australian action. The Australian Government has a great opportunity to show leadership in CCS within the Asia Pacific region and, by removing this regulatory impediment, facilitate developments between Australia and its strategic partners, to the benefit of our respective economies and environments.

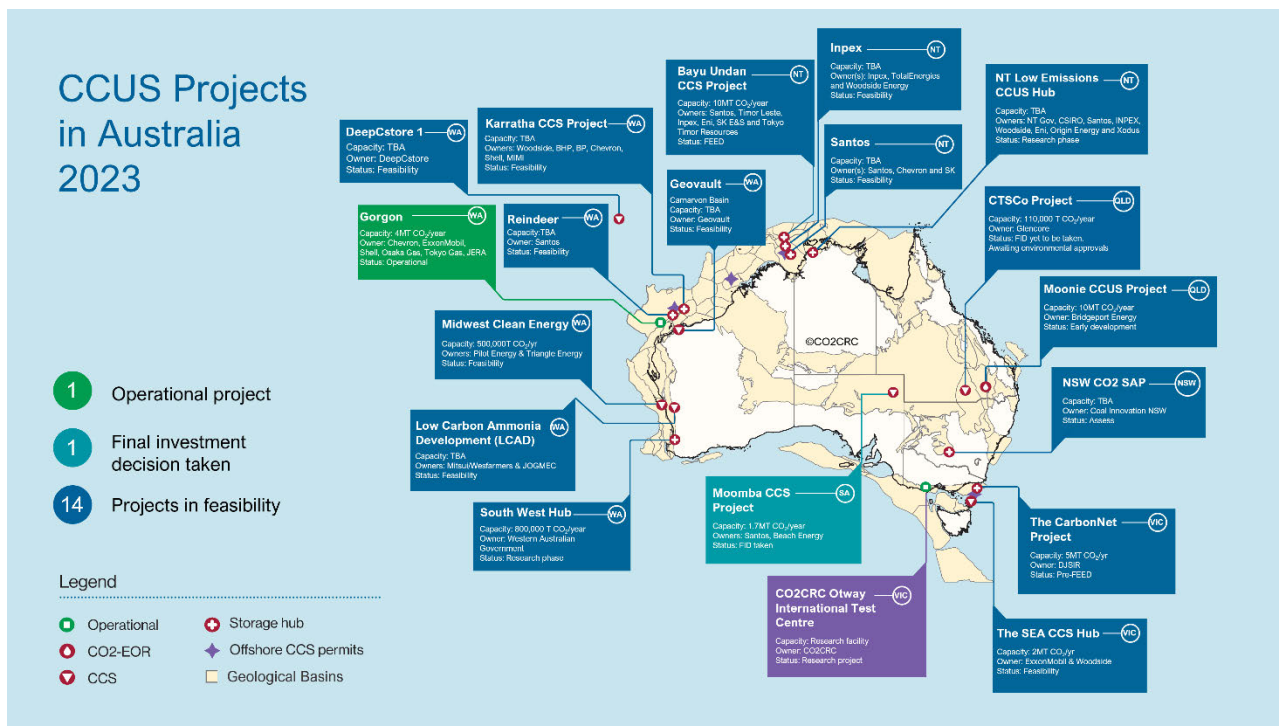


Figure 1. A map showing the location of planned and active CCS projects in onshore and offshore Australia.