Submission relating to the Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Amendment (Miscellaneous Measures) Act 2019

Submission made by Professor Peter J Cook CBE FTSE

Basis of the submission

This personal submission is based on my geological experience of onshore and offshore activities regarding petroleum and greenhouse gases. I have occupied senior executive positions relating to these topics in Australia and overseas, served as a senior adviser to governments and industry and have published a number of relevant books and papers including "Delineating the Continental Shelf: the Scientific and Legal Interface" and "Clean Energy Climate and Carbon". I initiated Australia's first pilot CO_2 storage project in the Otway Basin in 2004.

This submission provides general comment from a scientific and technical perspective. It does not attempt to consider in detail the many legal and regulatory aspects of the Act

1. Australia has some of the world's best opportunities for storage of greenhouse gases (almost exclusively CO2) and it must seek to use this important mitigation option for the Nation's benefit – including enabling it to meet its agreed international greenhouse gas obligations. This is a modest Amendment but it will be vital for any future project using offshore and nearshore storage of carbon dioxide as a greenhouse gas mitigation option.

2. The legislation, which allows for cross-boundary permits and operations, is essential to the future of the Carbonnet Project and the related Hydrogen Energy Supply Chain (HESC) Project and is an important element of Australia's technology-neutral hydrogen strategy

3. The Carbonnet Project is a world leading initiative aimed at producing zero emission hydrogen from Victorian brown coal, using carbon capture and offshore geological storage of carbon dioxide. It has been waiting for this legislation for quite some time. It is important that the legislation now progresses speedily. Further delays will jeopardise the Project

4. The legislation and related regulations are appropriately grounded in well-established petroleum legislation but at the same time it is important to note that there are significant differences between the operational and safety aspects of petroleum operations and CO_2 operations, not least being that oil and gas is highly flammable and CO2 is inert.

5. It is therefore important that GHG -related legislation does not slavishly follow oil and gas legislation and regulations. This needs to be borne in mind by regulators who are very familiar with oil and gas operations but not CO2. Because of unfamiliarity, there is always the potential for regulators to 'over-regulate' , to be on the 'safe side,' with consequent increases in costs and time to the CCS project. It is important that not be allowed to happen as it could be a major impediment to development of a CCS-related industry in Australia.

6. For the most part existing oil and gas acreage and operations take precedence over GHG activities. In general, this is appropriate, but there may be some circumstances where it is in

the public interest to give a GHG lease precedence. It would appear that the Minister has discretion to enable such an outcome and this is appropriate. It is agreed that an administrative tribunal is not an appropriate mechanism

7. As far as I can see, the legislation does not make reference to enhanced oil recovery using CO2-based enhanced oil recovery (CO2-EOR), presumably because this is already adequately covered in oil and gas legislation. But increasing attention is being given to EOR especially overseas, because of its CO2 storage potential. EOR, just like CCS, involves injection of CO2 into suitable rocks. There have been instances overseas where it appears more rigorous monitoring regulations relating to CO2 are applied to CCS than to CO2-EOR. Such an approach should not be adopted by Australia.

8. Oil and gas activities produce a major income stream and this in turn can support a complex and expensive regulatory regime. In the absence of a carbon price or other options, offshore geological storage of CO2 produces no income stream and is not in a position to support an expensive regulatory scheme. At the same time, it is essential that any CO2 operations are safe and adequately monitored. This almost certainly means that regulation of early offshore CCS projects will need significant government support. This is appropriate, as it will provide the Regulator with the opportunity to learn in partnership with this nascent industry, thereby producing an appropriate and cost-effective regulatory regime and making Australia a preferred destination for offshore CCS investment.

9. The rules governing GHG Assessment Permits and the time for which they can be held appear complex, especially given the early stage the offshore CCS is at. Greater flexibility would seem warranted.

10. The legislation has provision for cash-bid permit. The focus of the legislation should not be to maximise the financial return through cash bids. For the foreseeable future the focus should be to maximise the benefit to Australia through the speedy and effective application of offshore CCS, both as a mitigation option and as the basis for a hydrogen industry and clean energy industry more broadly

11. Some years ago I suggested that holders of existing offshore O&G permits should be given a one-off no cost opportunity to add GHG to that acreage, with a requirement that after a defined period of time, a percentage of the GHG acreage be relinquished (though not the O&G permit already held). I believe this would have encouraged offshore GHG storage assessment which in turn would have generated interest in this potential opportunity. I still consider this an idea worth pursuing, but recognise that this may not be possible, or appropriate, within the present Bill.

Peter J Cook

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